METHOD AND APPARATUS FOR EARLY TERMINATION OF A GAME

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Abstract

Methods and apparatus are provided for allowing a player of an extended game to terminate the game prior to its natural conclusion. The extended game may include a secondary game or a bonus game at a gaming device. The player may choose to terminate the game as an alternative to continuing play. In terminating the game, the player may receive a termination value. In some embodiments, the termination value may compensate the player for a failure to realize a payout associated with the game's natural conclusion.
FIG. 1
FIG. 2
<table>
<thead>
<tr>
<th>HANDLE PULLS REMAINING</th>
<th>SQUARE 1</th>
<th>SQUARE 2</th>
<th>SQUARE 3</th>
<th>SQUARE 4</th>
<th>SQUARE 5</th>
</tr>
</thead>
<tbody>
<tr>
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<td>6</td>
<td>6</td>
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</tr>
<tr>
<td>HANDLE PULLS REMAINING</td>
<td>TERMINATION VALUE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>-------------------</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FIG. 6
WOULD YOU LIKE TO TERMINATE THE GAME NOW?

IF SO, YOU HAVE YOUR CHOICE OF RECEIVING 12 COINS, OR A VOUCHER FOR A $20 DISCOUNT AT OUR STEAK HOUSE RESTAURANT.

IF YOU WISH TO CONTINUE PLAYING, THE GAME WILL LIKELY LAST FOR ANOTHER 10 MINUTES.

PLEASE SELECT FROM ONE OF THE FOLLOWING CHOICES BY TOUCHING THE SCREEN.

720

YES: I WOULD LIKE TO TERMINATE AND RECEIVE THE 12 COINS

730

YES: I WOULD LIKE TO TERMINATE AND RECEIVE THE VOUCHER

740

NO: I WOULD LIKE TO CONTINUE PLAYING

FIG. 7
1. RECEIVE A GAME INITIATION SIGNAL FROM A PLAYER

2. REQUEST CONFIRMATION OF THE PLAYER'S DESIRE TO BEGIN PLAY

3. INITIATE THE GAME

4. CONDUCT A PORTION OF THE GAME

5. DETERMINE A TERMINATION VALUE FOR THE GAME

6. RECEIVE AN INDICATION OF THE PLAYER'S DESIRE TO TERMINATE THE GAME

7. TERMINATE THE GAME, AND PROVIDE THE PLAYER WITH A PAYMENT BASED ON THE TERMINATION VALUE

FIG. 8
<table>
<thead>
<tr>
<th>RANDOM NUMBER</th>
<th>COMBINATION</th>
<th>EXPECTED HITS PER CYCLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-8570</td>
<td>NONWINNING COMBINATION</td>
<td>8570</td>
</tr>
<tr>
<td>8571-9250</td>
<td>CHERRY/ANY/ANY</td>
<td>680</td>
</tr>
<tr>
<td>9251-9930</td>
<td>ANY/ANY/CHERRY</td>
<td>680</td>
</tr>
<tr>
<td>9931-10130</td>
<td>CHERRY/CHERRY/ANY</td>
<td>200</td>
</tr>
<tr>
<td>10131-10330</td>
<td>ANY/CHERRY/CHERRY</td>
<td>200</td>
</tr>
<tr>
<td>10331-10398</td>
<td>CHERRY/ANY/CHERRY</td>
<td>68</td>
</tr>
<tr>
<td>10399-10418</td>
<td>CHERRY/CHERRY/CHERRY</td>
<td>20</td>
</tr>
<tr>
<td>10419-10460</td>
<td>BAR/ORANGE/ORANGE</td>
<td>42</td>
</tr>
<tr>
<td>10461-10466</td>
<td>ORANGE/ORANGE/BAR</td>
<td>6</td>
</tr>
<tr>
<td>10467-10508</td>
<td>ORANGE/ORANGE/ORANGE</td>
<td>42</td>
</tr>
<tr>
<td>10509-10528</td>
<td>BAR/PLUM/PLUM</td>
<td>20</td>
</tr>
<tr>
<td>10529-10533</td>
<td>PLUM/PLUM/BAR</td>
<td>5</td>
</tr>
<tr>
<td>10534-10583</td>
<td>PLUM/PLUM/PLUM</td>
<td>50</td>
</tr>
<tr>
<td>10584-10587</td>
<td>BAR/BELL/BELL</td>
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<td>10588-10607</td>
<td>BELL/BELL/BAR</td>
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<tr>
<td>10608-10627</td>
<td>BELL/BELL/BELL</td>
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</tr>
<tr>
<td>10628-10647</td>
<td>BAR/BAR/BAR</td>
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</tr>
<tr>
<td>10648</td>
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**FIG. 9**
<table>
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<tr>
<th>PAY COMBINATION</th>
<th>NUMBER OF COINS AWARDED</th>
<th>EXPECTED HITS</th>
<th>PLAYER WIN / LOSS</th>
<th>EXPECTED HITS (X) WIN / LOSS</th>
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<td>680</td>
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<td>680</td>
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<td>7 / 7 / 7</td>
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<tr>
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<td>8,570</td>
<td>-1</td>
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</table>

FIG. 10
METHOD AND APPARATUS FOR EARLY TERMINATION OF A GAME

[0001] This application claims the benefit of priority of:

[0002] (1) U.S. Provisional Patent Application Serial No. 60/452,176, filed Mar. 4, 2003, entitled Method and Apparatus for the Early Termination of a Game; and


[0004] The entirety of each of these applications is incorporated by reference herein.

[0005] This application is a continuation in part of:

[0006] (3) U.S. patent application Ser. No. 10/420, 981, filed Apr. 22, 2003, entitled Gaming Device Method and Apparatus Employing Alternate Payout Features; and


[0008] The entirety of each of these applications is incorporated by reference herein.

BACKGROUND

[0009] Gaming devices are very popular in the U.S. and abroad. Gaming devices, such as slot machines, video poker machines, video blackjack machines, video roulette machines, video keno machines, and video bingo machines, provide many casinos and other entities with the majority of their profits.

[0010] Players enjoy playing interesting games on gaming devices. However, players often face competing pressures for their time and attention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] FIG. 1 is a block diagram of a system consistent with some embodiments of the present invention.

[0012] FIG. 2 is a block diagram of some embodiments of a casino server.

[0013] FIG. 3 is a block diagram of some embodiments of a gaming device.

[0014] FIG. 4 is a front planar view of an illustrative gaming device, according to some embodiments.

[0015] FIG. 5 is a table illustrating an exemplary data structure of a termination value database for use in some embodiments of the present invention.

[0016] FIG. 6 is a table illustrating another exemplary data structure of a termination value database for use in some embodiments of the present invention.

[0017] FIG. 7 is a depiction of the display screen of a gaming device on which an offer is presented to terminate a game, for use in some embodiments.

[0018] FIGS. 8 is a flow chart illustrating an exemplary process according to some embodiments of the present invention.

[0019] FIG. 9 depicts a table illustrating an exemplary data structure of a probability database for use in some embodiments of the present invention.

[0020] FIG. 10 depicts a table illustrating an exemplary data structure of a payout database for use in some embodiments of the present invention.

TERMS AND DEFINITIONS

[0021] As used herein, the term “bonus game” may refer to a game at a gaming device that may extend for a relatively long period of time (e.g., for longer than a typical handle pull) and that may involve themes, graphics, prizes, and other features not present during routine play involving handle pulls.

[0022] As used herein, the term “casino server” may refer to an electronic device (e.g., a computer) that communicates with one or more gaming devices. In a manner well known in the art, the casino server may function as a computer server and may control the actions of gaming devices. The casino server may also contain databases to record statistics such as coin-in, coin-out, jackpot information, theoretical wins, etc.

[0023] As used herein, the term “extended game” may refer to a gambling event that may include a secondary game or bonus game. However, an extended game does not include a game involving only a single handle pull.

[0024] As used herein, the term “game character” may refer to a character, which may be a cartoon and/or digitally generated, which is involved in rendering or illustrating a game situation, game event, or sequence of game events. The game character may additionally provide entertainment. The game character may explain payouts, try to steal objects from the player, try to defend objects held by the player, and the like. The character could be a life-like animation of a television character, or even just the audio associated with a well-known character.

[0025] As used herein, the term “gaming device” may refer to any electrical, mechanical, or electro-mechanical device that, in a manner well known in the art, accepts wagers, steps through a process to determine an outcome, and pays winnings based on the outcome. The outcome may be randomly generated, with a slot machine; may be generated through a combination of randomness and player skill, as with video poker; or may be generated entirely through player skill. Gaming devices may include slot machines (both video and mechanical reeled), video poker machines, video blackjack machines, video roulette machines, video keno machines, video bingo machines, pachinko machines, video lottery terminals, handheld gaming devices, and the like.

[0026] As used herein, the term “handle pull” may refer to a complete primary game at a gaming device, involving the placement of a wager, the determination of an at least partially random or pseudo-random outcome, the determination of a payment amount, and the providing or crediting of a player with the payment amount.
As used herein, the term “natural conclusion” may refer to an end situation of a game that is reached, or that may be reached, provided a player does not elect to terminate the game earlier.

As used herein, the term “outcome” may refer to a symbol or set of symbols resulting from a handle pull at a gaming device. An exemplary outcome is “cherry-cherry-cherry”.

As used herein, the term “parameter” may refer to a variable describing one aspect of a game. For example, a parameter may be the number of handle pulls remaining to complete a game. A parameter may take on particular numerical or other values (such as “four”, indicating e.g., that there are four handle pulls remaining). These values are the possible settings of the parameter.

As used herein, the terms “payout” and “payment” may be used interchangeably to refer to money, cash, coins, casino tokens, cashless gaming receipts, or equivalents provided to a player by a gaming device. A payout or payment may be associated with a particular outcome of a handle pull, such as with “bar-bar-bar” or with a particular situation of a game, such as a final situation of a secondary game. A player may also realize a termination value in the form of a payment.

As used herein, the term “peripheral device” may refer to a device operatively connected to a gaming device that is configured to assist in the operation of game-related functions.

As used herein, the term “player tracking card” may refer to a plastic or paper card (resembling a frequent shopper card) issued by casinos to a player as a way of identifying the player at a slot machine or table game. As is well known in the art, such cards typically have encoded thereon (in machine-readable and/or human-readable form) a player identifier (e.g., a six digit number) which uniquely identifies the player (e.g., because the number is associated with a record in a database that includes corresponding player information). At a slot machine, the player inserts the card into a reader device and the player identifier is read from the card, most often magnetically. From the player identifier which the reader device reads, the corresponding player information may in turn be read from the database, typically via a network connection between the reader device and a device hosting the database.

As used herein, the term “primary game” may refer to a game that involves a single handle pull at a gaming device. A primary game may include most routine play of a gaming device.

As used herein, the term “secondary game” may refer to a game that requires at least two handle pulls as inputs to the game. For example, a secondary game may include an aggregation game in which “cherry” symbols obtained during multiple handle pulls are “aggregated” in a memory and displayed on screen. A secondary game may have a payout that is separate and/or independent from any payout provided in conjunction with a primary game (e.g., a handle pull).

As used herein, the term “setting” may refer to a particular value or instance of a parameter describing the situation of a game. For example, a parameter might describe the location of a game character on a game board. The setting of the parameter may be “location twelve.”

As used herein, the term “terminate” may refer to an act, undertaken by a player, gaming device, or both, of ending the play of a game prior to its natural conclusion.

As used herein, the term “termination value” may refer to a payment that a player may receive as an alternative to continuing with the play of a game.

DETAILED DESCRIPTION

Applicants have recognized that gaming sessions can be more exciting when a player can engage in a game that lasts for prolonged periods of time.

Applicants have recognized that gaming sessions can be more exciting when a gaming session includes a game that encompasses more than one handle pull.

Applicants have recognized that gaming sessions can be more exciting when a player can accumulate value other than cash or coins.

Applicants have recognized that players in a gaming session may be forced to leave prior to completing a game, due to other obligations.

Applicants have recognized that players in a gaming session may not wish to abandon games in which they have accumulated value.

Various embodiments are considered in which games at a casino or other gaming venue may last for an extended duration of time, and for which a player may therefore be required to make commitments of time, money, or other resources. Having made such commitments a player may desire to break them for any of a number of reasons. Therefore various embodiments of the present invention provide a player with the means of terminating a game early while still receiving some payment, prize, or other benefit.

In some embodiments, a player may initiate play of a game. When the game is underway, the gaming device may determine a termination value. The termination value may be, for example, an amount of money that may be paid to a player should he immediately terminate the game. A termination value may be determined based on a number of factors. One factor that may be important is the amount a player might be expected to win were he to continue with the present game until its scheduled, or natural, conclusion. Accordingly, a termination value may be set approximately equal to a player’s expected winnings for a game. The termination value may persistently be displayed for the player, so that player always knows the amount he may receive if he decides to terminate a game. In one or more embodiments, the gaming device may present an explicit offer to a player to terminate a game.

If a player does agree to terminate a game, then the player may receive an immediate payment in the amount of the termination value. The game may thereupon end, with no further possibility for the player to continue play.

In various embodiments, the player has other means of completing a game more rapidly. For example, the gaming device may accelerate the rate of play by e.g., initiating handle pulls automatically on behalf of the player.
Some embodiments of the present invention allow a player at a gaming device to participate in a secondary game in addition to a primary game. Primary games may include standard slot machine games, video poker, and other games that are well known to those skilled in the art. For example, a primary game played on a gaming device may include the placement of a wager by a player, the pressing of a “spin” button by the player, the generation of an outcome by the gaming device, and the payment of the player by the gaming device based on the outcome. The secondary game may last two or more handle pulls, and may depend in part on the results of primary games. For example, a secondary game may involve the accumulation of symbols that are obtained in two or more primary games. A secondary game may also involve the traversal of a game board by a game character, in which the movements of the game character are dictated by results of the primary game. The play of secondary games may create a more interesting and diverse experience for players. Rather than being resolved within seconds, as many primary games are, secondary games may last for minutes or even hours, and may unfold in many different and exciting ways.

During the play of secondary games, players may accumulate value, or “equity” which may take the form of cash or credits, but which may also take other forms. For example, one form of equity may include the position of a game character on a game board in a secondary game. A character that is further advanced may be more valuable to a player, as the character may have a greater chance of reaching some target location corresponding to a payout in the secondary game. Another form of equity may include a number of symbols that have been aggregated in a secondary game. A player may receive a payout in a secondary game for aggregating a predetermined number of symbols obtained through the primary game. Accordingly, a player is more likely to receive a payout the more symbols he has already aggregated. Therefore, the number of symbols already aggregated in a secondary game may constitute value, or equity for the player. Various other forms of equity will described further in the various embodiments below.

Referring now to FIG. 1, an apparatus 100 according to embodiments of the present invention includes a casino server 120 that is in communication with one or more gaming devices 110. Each of the gaming devices may comprise computers, such as those based on the Intel® Pentium® processor, that are adapted to communicate with the casino server 120; portable types of computers, such as a laptop computer; a palm-top computer; a hand-held computer; a Personal Digital Assistant (PDA); or a cellular telephone. Other equivalent devices capable of performing the methods specified herein would be apparent to one of skill in the art.

Any number of gaming devices may be in communication with the casino server 120. The number of each depicted in FIG. 1 is solely for purposes of illustration.

The casino server 120 may communicate with the gaming devices directly or via a network, including without limitation the Internet, a wireless network protocol, a local area network (or any combination thereof), through a Web site maintained by casino server 120 on a remote server or over an on-line data network including commercial on-line service providers, and bulletin board systems. The casino server may communicate with the gaming devices directly or indirectly. In yet other embodiments, the devices may communicate with casino server 120 over radio frequency (RF), cable TV, satellite links and the like.

Those skilled in the art will readily understand that devices in communication with each other need not be continually transmitting to each other. On the contrary, such devices need only transmit to each other as necessary, and may actually refrain from exchanging data most of the time. For example, a device in communication with another device via the Internet may not transmit data to the other device for weeks at a time.

The casino server 120 may function as a “Web server” that generates Web pages (documents on the Web that typically include an HTML file and associated graphics and script files) that may be accessed via the Web and allows communication with the casino server 120 in a manner known in the art.

In various embodiments, the casino server may perform any functions described herein as being performed by a gaming device, and vice versa.

FIG. 1 depicts only an embodiment of the invention. Other arrangements of devices to perform various methods specified herein will be readily appreciated by those of skill in the art.

FIG. 2 illustrates an embodiment 200 of the casino server 120 (FIG. 1). The casino server 120 may be implemented as a system controller, a dedicated hardware circuit, an appropriately programmed general-purpose computer, or any other appropriate device including without limitation electronic, mechanical or electro-mechanical devices.

The server of the illustrated embodiment comprises a processor 210, such as one or more Intel® Pentium® microprocessors. The processor 210 is in communication with a communications port 220 and a data storage device 230. The communications port 220 allows the processor 210 to communicate with other devices, such as a gaming device. The data storage device 230 comprises magnetic memory, optical memory, semiconductor memory or any combination thereof. The data storage device 230 may include, for example, Random Access Memory (RAM), Read-Only Memory (ROM), a compact disc, digital video disc and/or a hard disk. The processor 210 and the storage device 230 may each be, for example: (i) located entirely within a single computer or computing device; or (ii) connected to each other by a remote communication medium, including without limitation a serial port cable, a telephone line, a network connection or a radio frequency transmitter. In some embodiments, the casino server 120 may comprise one or more computers that are connected to a remote server computer for maintaining databases.

The data storage device 230 stores a program 240 for controlling the processor 210. The processor 210 performs instructions of the program 240, and thereby operates in accordance with the present invention, and particularly in accordance with the methods described in detail herein. The program 240 may be stored in a compressed, uncompiled and/or encrypted format, as well as in a variety of other forms known in the art. The program 240 furthermore includes program elements that may be necessary, including without limitation an operating system, a database manage-
ment system and "device drivers" for allowing the processor 210 to interface with peripheral devices. Appropriate program elements are well known to those skilled in the art, and need not be described in detail herein.

[0059] According to an embodiment of the present invention, the instructions of the program 240 may be read into a main memory from another computer-readable medium, such as into RAM from a hard drive or ROM. Execution of the sequences of the instructions of program 240 causes processor 210 to perform process steps described herein. In alternative embodiments, hard-wired circuitry may be used in place of, or in combination with, software instructions for implementation of the processes of the present invention, as would be understood by those of skill in the art. Thus, embodiments of the present invention are not limited to hardware, software or any specific combination of hardware and software.

[0060] As will be understood by those skilled in the art, the schematic illustrations and accompanying descriptions of the databases presented herein are exemplary arrangements for stored representations of information. A number of other arrangements may be employed besides those suggested by the tables shown. Similarly, the illustrated entries of the databases represent exemplary information only; those skilled in the art will understand that the number and content of the entries can be different from those illustrated herein. Based on the present disclosure many other arrangements of data will be readily understood by those of skill in the art.

[0061] FIG. 3 illustrates an embodiment 300 of a gaming device. Well-known examples of gaming devices include video poker, video blackjack, pachinko, mechanical slot machines and video slot machines. The gaming device may be implemented as a dedicated hardware circuit, an appropriately programmed general-purpose computer, or any other appropriate device including without limitation electronic, mechanical or electro-mechanical devices. Accordingly, the gaming device need not include the various components depicted in FIG. 3.

[0062] The gaming device of the illustrated embodiment comprises a processor 310, such as one or more Intel® Pentium® microprocessors. The processor 310 is in communication with a communications port 320 and a data storage device 350. The data storage device 350 comprises magnetic memory, optical memory, semiconductor memory or any combination thereof. The data storage device 350 may include, for example, Random Access Memory (RAM), Read-Only Memory (ROM), a compact disc and/or a hard disk. The processor 310 and the storage device 350 may each be, for example: (i) located entirely within a single computer or computing device; or (ii) connected to each other by a remote communication medium, including without limitation a serial port cable, a telephone line, a network connection or a radio frequency transceiver. In some embodiments, the gaming device may comprise one or more computers that are connected to a remote server computer for maintaining databases.

[0063] The data storage device 350 stores a program 360 for controlling the processor 310. The processor 310 performs instructions of the program 360, and thereby operates in accordance with the present invention, and particularly in accordance with the methods described in detail herein. The program 360 may be stored in a compressed, uncompiled and/or encrypted format, as well as in a variety of other forms known in the art. The program 360 furthermore includes program elements that may be necessary, including without limitation an operating system, a database management system and "device drivers" for allowing the processor 310 to interface with peripheral devices. Appropriate program elements are well known to those skilled in the art, and need not be described in detail herein.

[0064] According to an embodiment of the present invention, the instructions of the program 360 may be read into a main memory from another computer-readable medium, such as into RAM from hard drive or ROM. Execution of the sequences of the instructions of program 360 causes processor 310 to perform process steps described herein. In alternative embodiments, hard-wired circuitry may be used in place of, or in combination with, software instructions for implementation of the processes of the present invention, as would be understood by those of skill in the art. Thus, embodiments of the present invention are not limited to hardware, software or any specific combination of hardware and software.

[0065] The processor 310 may also be in communication with one or more input devices 340 and one or more output devices 330.

[0066] Examples of input devices include: a button; a touch screen; a handle; a player tracking card device, which performs functions related to player tracking cards, such as reading player tracking cards and communicating information read from such cards to the processor 310 (Typically, information read from such cards includes unique player identifiers, such as a sequence of digits or a sequence of alphanumeric characters); a ticket reader, which is capable of reading tickets and particularly indicia registered on tickets and like material; a credit card reader which generally allow a card such as a credit card or debit card to be inserted therewithin and information to be read therefrom.

[0067] Examples of output devices include: a cash dispenser, which dispenses coins and/or bills to players that have requested to have funds be dispensed; a ticket printer, which may be commanded to print onto a substrate, such as paper or other material; a display screen, such as a liquid crystal display, a plasma display and a video display monitor.

[0068] According to some embodiments, data storage device 350 may store various databases, such as termination value database 365, (table 500 of FIG. 5, and/or table 600 of FIG. 6), probability database 370 (table 900 of FIG. 9), and payout database 375 (table 1000 of FIG. 10).

[0069] Player Database

[0070] Referring to FIG. 4, an illustrative gaming device 400 includes a display screen 410, which displays a game board for a secondary game. Gaming device 400 also includes a card reader 420 for reading, e.g., player tracking cards. A handle 430 is used for initiating plays (i.e., initiating handle pulls), in a manner known in the art. A display area 440 provides information, such as a termination value of a secondary game and a number of spins (i.e. plays or outcomes) remaining (e.g., that are needed in order to bring the secondary game to completion). The display area 440 also
includes a button labeled “Terminate Game” that allows a player to signal a desire to discontinue play of a game, such as a secondary game.

[0071] Reels 432, 434, and 436 display the outcome of a handle pull in the form of a reel symbol on each reel, as is known in the art. Button 450 allows a player to select a secondary game for play. In the illustrated gaming device, the secondary game is a “Board Game.” Button 460 allows a player to choose to play the gaming device in conventional fashion, without the simultaneous play of a secondary game or a bonus game.

[0072] Termination Value Database

[0073] FIG. 5 is a tabular representation 500 of one embodiment of a termination value database. The tabular representation 500 of the termination value database includes a number of example records or entries, each defining a number of handle pulls 510 remaining in a game. Those skilled in the art will understand that the termination value database may include any number of entries. The tabular representation 500 also defines fields for each of the entries or records. The fields specify: (i) a termination value 520 for a game in which a game character is on square one of the game board; (ii) a termination value 530 for a game in which a game character is on square two of the game board; (iii) a termination value 540 for a game in which a game character is on square three of the game board; and (iv) a termination value 550, for a game in which a game character is on square fifty of the game board. It will be appreciated that other fields may include termination values corresponding to other positions of a character on a game board. It will also be appreciated that other records may include other numbers of handle pulls remaining in a game.

The termination value database of FIG. 5 may provide a termination value corresponding to a particular situation of a game, the situation involving a particular number of pulls remaining (e.g., a setting for a parameter describing the number of pulls remaining in a game), and a particular square occupied by a game character (e.g., a setting for a parameter describing the particular square that is occupied by a game character).

[0074] Not all of the fields depicted in FIG. 5 are required, and various substitutions, deletions and other changes to the tabular representation will be readily apparent to those of ordinary skill in the art.

[0075] FIG. 6 is a tabular representation 600 of one embodiment of a termination value database. The tabular representation 600 of the termination value database includes a number of records or entries each defining a number of handle pulls 610 remaining in a game. For each record or entry, termination value field 620 specifies a termination value for a game with the corresponding number of pulls 610 remaining.

[0076] Not all of the fields depicted in FIG. 6 are required, and various substitutions, deletions and other changes to the tabular representation will be readily apparent to those of ordinary skill in the art.

[0077] FIG. 7 is a depiction of a display screen of a gaming device 700. On the display screen, an offer 710 is presented giving a player options for terminating a game or for continuing with the game. Buttons 720, 730, and 740 allow the player to select one of the options being offered.

[0078] FIG. 8 is a flow chart 800 consistent with some embodiments of the present invention. The steps of FIG. 8 may be performed by a gaming device and may allow a player to begin play of a game and to subsequently terminate play of the game before the game has reached a state of completion. The steps depicted in FIG. 8 include: (i) receive a game initiation signal from a player 810; (ii) request confirmation of the player’s desire to begin play 820; (iii) initiate the game 830; (iv) conduct a portion of the game 840; (v) determine a termination value for the game 850; (vi) receive an indication of the player’s desire to terminate the game 860; and (vii) terminate the game, and provide the player with a payment based on the termination value 870. It will be appreciated that the steps depicted in flow chart 800 need not be practiced in the order listed, but may be practiced in any practicable order. Further, various steps may be added or deleted without detracting from the intent of various embodiments of the invention.

[0079] FIG. 9 depicts a table 900 illustrating an exemplary data structure of a probability database for use in some embodiments of the present invention. A gaming device may employ a database such as that depicted in FIG. 9 in generating a random or pseudo-random outcome for a handle pull. For example, a gaming device may generate a random number, and then determine the record of table 900 such that the random number that has been generated falls within the range specified in the “Random Number” field 940. The gaming device may then determine the corresponding symbol combination for the outcome by reference to field 950.

[0080] FIG. 10 depicts a table 1000 illustrating an exemplary data structure of a payout database for use in some embodiments of the present invention. The payout database may, among other things, allow a gaming device to determine a payout corresponding to a particular outcome of a handle pull.

[0081] What follows is a discussion of various embodiments of the invention. A player may begin by placing a wager at a gaming device. The wager may entitle the player to play an extended game, such as a bonus game. Conventional gaming devices require a player to place a wager for a primary game (e.g., for a handle pull), after which a player may enter a bonus game only if the player obtains one of a predetermined set of outcomes for the handle pull. Various embodiments of the present invention allow a player guaranteed access to a bonus game once the player has placed the wager. Therefore, in various embodiments, a wager is completely sufficient to allow a player entry into a bonus game.

[0082] Once the gaming device has provided entry to the player into a bonus game, the gaming device may determine a first game situation. For example, the gaming device may determine a starting situation where all game parameters take on predefined starting settings. The gaming device may also determine various actions or events in the game. For example, in a game involving the traversal of a game board by a game character, the gaming device may generate a random number and advance the game character by the randomly determined number of squares. As another example, in a game involving the revelation of hidden symbols from various locations on the display screen of the gaming device, an action may include a player selection of a location and the subsequent removal of the symbol from
the selected location. The gaming device may thus determine a second situation of a game, which may occur once one or more actions or events have occurred in the game. In particular, the second situation may include at least one setting of a parameter that is different from the parameter’s setting in the first situation. For example, in the second situation, a “Pulls remaining” parameter may have the setting of nineteen, whereas in the first situation the same parameter may have the setting of twenty. Of course, the first situation need not be a starting or initial situation of the game, but may itself be a situation of the game that has arisen after one or more actions or events.

[0083] For any situation of the game, the gaming device may determine a termination value. The termination value may represent an amount of cash, credits, coins, casino tokens, or equivalent that a player may receive as an alternative to continuing play of a game, such as a bonus game. Thus, a player who might expect to win something if he plays a game out to its conclusion, may still receive some value from quitting a game early. This may alleviate player concerns of having to fulfill obligations while in the middle of a game. For example, a player may be involved in a bonus game that lasts twenty minutes. The player may be doing well in the game, yet may all of the sudden realize that he has to catch a bus, or meet a friend for dinner. Thus, the player may wish to leave the game early, but may feel conflicted about having to leave a game during a favorable situation. By receiving a termination value for leaving the game early, the player may still realize some winnings from a favorable game situation.

[0084] Methods of determining or calculating a termination value will be discussed further below. However, it may be noted that a termination value may be based specifically on a game situation. Thus, the settings of any parameter describing the game situation may influence the termination value. For example, a game in which there are still twenty player decisions to be made may have a higher termination value than a game in which there are only ten player decisions to be made, all other parameter settings being equal. This is because a game in which there remain twenty player decisions may give the player more time to accumulate winnings in the game that can later be realized by the player in the form of a payment. Thus, in various embodiments, a termination value may be based on an average or expected payment a player would receive from a game if he were to continue play of the game to its natural conclusion. A termination value may also be based on a maximum payment a player would be expected to receive from continuing play of a game, a minimum amount a player would be expected to receive, and/or based on the player’s wager in the game. For example, a termination value may be set equal to one third of the maximum amount a player could win through continued play. A termination value might be set equal to the minimum amount a player could expect to win through continued play. A termination value might be set equal to seventy percent of the wager required to play the game.

[0085] In some embodiments, a termination value may be set equal to a separate premium amount, e.g., a “bonus insurance premium” that is returned to the player if the bonus round is not completed. For example, a player may pay an insurance premium prior to the start of an extended game. If the player terminates the game early, the player may receive a termination value that is determined based on the insurance premium. Thus, the termination value may function as an insurance payout.

[0086] A termination value may be calculated by the gaming device. For example, the gaming device may perform one or more mathematical operations in order to arrive at a termination value. One type of termination value that may be calculated includes an expected amount that would be won by a player should he continue play of the game. In order to arrive at an expected amount, the gaming device may calculate a first probability of the bonus game reaching a third situation from the second situation. For example, the third situation may be one possible final situation the game might reach. The gaming device may then determine a first payment that is associated with the third situation. For example, if the player would have a balance of winnings of “forty” in the third situation, then the player would receive a payment of forty credits. The gaming device may also then calculate a second probability of the gaming device reaching a fourth situation, which may be a different possible final situation of the game. The gaming device may then determine a payment associated with the fourth situation. The gaming device may then calculate an expected value as a termination value using the first and second probabilities, and the first and second payments. For example, the gaming device may calculate a termination value by summing the product of the first probability and first payment with the product of the second probability and the second payment. Of course, the calculation may also include a third probability for a fifth situation, a fourth probability for a sixth situation, and so on. Furthermore, the calculation may include a third payment for a fifth situation, a fourth payment for a sixth situation, and so on.

[0087] A termination value may also be determined through simulation. A gaming device may simulate one or more possible future courses of the game. For instance, the gaming device may determine a final situation of a game assuming one or more events or actions in a game. The gaming device may determine a payment associated with the final game situation. The payments determined for the final situations of multiple simulations may be averaged or otherwise aggregated in a way to determine a termination value for the present game. In various embodiments, a termination value may be determined based on the payment associated with one or more game situations that are simulated, or determined based on an assumed sequence of actions or events in a game.

[0088] In various embodiments, the gaming device may determine a termination value for the second situation by reference to a third situation, where the third situation is found to be identical to the second situation. A third situation may be found to be identical to a second if the setting of each parameter describing the third game situation is identical to the setting of the same parameter describing the second game situation. As an example, once the second situation has arisen, the gaming device may consult a database of game situations for which termination values have already been determined. If the gaming device finds a match between the second situation and a situation in the database (e.g., the third situation), then the gaming device may use the predetermined termination value for the third situation as the termination value for the second situation.
In various embodiments, there may not be an exact match between the second situation and any situation stored in a database for which termination values have been predetermined. Accordingly, the gaming device may find one or more situations that are similar to the second situation, and for which termination values have already been determined. Based on the termination values for the similar game situations, the gaming device may determine a termination value for the second game situation.

In some embodiments, the gaming device determines a termination value for a second situation based on a termination value associated with a third situation, and a termination value associated with a fourth situation. For a given parameter, the second situation may have a first setting, the third situation may have a second setting, and the fourth situation may have a third setting. In particular, the first setting may be between the second setting and the third setting. For example, the third situation may have twenty seconds remaining in the game (e.g., the setting of the “time remaining” parameter may be “twenty seconds”). The second situation may have twenty-two seconds remaining in the game. The fourth situation may have twenty-four seconds remaining in the game. Thus, the setting of the “time remaining” parameter for the second situation may lie between the setting of the same parameter with respect to the third and fourth situations. Accordingly, one way of determining a termination value associated with the second situation is to choose a termination value that lies between the termination value associated with the third situation the termination value associated with the fourth situation. For example, if the termination value associated with the third situation is eight coins, and the termination value associated with the fourth situation is ten coins, then the termination value associated with the second situation may be set to nine coins.

For the purposes of the present discussion, it may be assumed that the gaming device determines a termination value for the second situation of the game. It should be noted that a different termination value may be determined for each possible or actual situation of a game, so that a termination value that had been determined for the first situation of the game may not be applicable to the second situation of the game.

Once the gaming device has determined a termination value for the second situation of the game, the gaming device may display the termination value. For example, the display screen of the gaming device may include a box in the upper right hand corner with the text: “Termination value: nine coins” or “Surrender now and receive nine coins.” The termination value may be displayed without any prompting or request by the player. For example, the gaming device may automatically display the termination value during any given situation of a game, or during all situations. The gaming device may update the display of the termination value as the situation of the game changes.

In various embodiments, a termination value may be displayed as an offer. For example, the gaming device may print the following text: “Would you like to stop the game now? We will give you fourteen coins for quitting. Press button ‘A’ if you wish to stop. Press button ‘B’ if you wish to continue.” An offer may provide a player with an explicit choice of whether to continue the play of a game, or whether to discontinue play of the game. If the player elects to discontinue, he receives the termination value as compensation. In various embodiments, a termination value may be displayed on its own during some portion of the game, and as an offer during other portions of the game.

In some embodiments, an offer to terminate may be presented as an outcome in the primary game. For example, a symbol on the primary game might read “quit while you are ahead.” The player might then decide whether or not he wishes to terminate.

A player may indicate that he does wish to terminate, or discontinue play of a game, in several ways. Among them, the player may accept an offer to terminate a game. For example, the player may press a designated area of a touch screen, or a designated button on his gaming device. If there is no explicit offer, then the player may touch a button or area of a touch screen labeled “terminate game,” “stop game,” or the like. Thus, the player may actively set forth a desire to quit the game. The gaming device may then, in various embodiments, present to the player a confirmation message asking whether the player is sure he wants to terminate play of the game. A confirmation message may be useful for players who do not realize the consequences of terminating a game. For example, the confirmation message may indicate to the player that he will not be able to take any further actions in a game, and he will give up the possibility of any further winnings in the game, should he agree to terminate the game. A confirmation message may also be useful for a player who has accidentally indicated that he wishes to terminate a game.

In some embodiments, a player may indicate a desire to terminate a game through inaction. For example, if a game requires player decisions (such as selecting areas from which to reveal hidden symbols), and the player does not provide any input, then the inactivity may be interpreted as a desire to terminate a game.

A player who terminates the play of a game in progress may be provided with the termination value associated with the situation of the game at which the player terminated. In particular, the player may be provided the termination value if discontinuing play was an alternative to continuing play. To continue with the preceding discussion, the player may decide to terminate the game when the second situation of the game has arisen. Once the player has indicated his desire to terminate, and possibly confirmed such desire, the game may end. In other words, no further action may occur in the game. No further situations may be determined. The player may also be provided with the termination value. For example, the gaming device may dispense coins in the amount of the termination value.

Although the foregoing discussion has made reference to bonus games, the discussion may also apply to secondary games. In the case of secondary games, one game parameter may describe the number of handle pulls remaining. That is, actions in a secondary game may be determined by the outcomes of handle pulls, even though payments provided to players as a result of handle pulls (or primary games) are determined differently than are payments provided to players from the results of secondary games. A secondary game may be considered to be terminated, or finished early, when a number of handle pulls remaining in the secondary game is greater than zero.
In embodiments involving secondary games, a player need not provide an explicit wager in order to initiate the secondary games. Rather, the player may provide wagers for handle pulls. The outcomes of the handle pulls may then provide input into the secondary games. For example, an “advance three spaces” symbol that appears on the reels in a primary game may cause a game character in a secondary game to advance three spaces on a game board. As with a bonus game, a gaming device may determine one or more situations of a secondary game. The gaming device may determine a termination value associated with a second situation of a secondary game. The gaming device may offer the player the option of terminating a secondary game early (e.g., in the second situation). If the player elects to terminate the secondary game early, the player may receive the termination value. The gaming device may determine the termination value using simulations of future courses of the secondary game. The gaming device may also determine the termination value by comparison of the secondary game to other situations for which a termination value has been predetermined.

There may be a variety of triggering conditions. In some embodiments, triggering conditions may be indications that a player is impatient to finish a game. In some embodiments, a triggering condition is that a player’s rate of play exceeds a predetermined threshold. For example, in a secondary game, the player is making an average of more than ten handle pulls per minute. This rapid rate of play may indicate an impatience to complete the secondary game. Accordingly, the gaming device may provide the player an offer to terminate the game, so that the player may immediately conclude the game.

In some embodiments, a triggering condition may be that the force with which a player presses a button of the gaming device exceeds a predetermined threshold. For example, the player is pressing a button with a peak force of more than ten newtons. Again, a player who is pressing a button with a high degree of force may be indicating an impatience to conclude a game.

In various embodiments, a gaming device may not persistently display a termination value for a game. In various embodiments, a gaming device may not display a termination value without at least some player prompting. In various embodiments, a gaming device may not display a termination value at all. In embodiments where a termination value is not displayed, a gaming device may display a termination value only if the player indicates that he wishes to discontinue the play of an extended game, such as a secondary game or a bonus game. If a termination value is displayed only upon player request, then a player may be less likely to terminate a game, and thus more likely to enjoy the remainder of a game. Thus, in various embodiments, a gaming device may receive an indication that a player wishes to discontinue the play of an extended game at a gaming device. The indication may come from the player pressing a “stop game” or similar button. After receiving the indication, the gaming device may then display the termination value for the extended game.

A player who indicates a desire to terminate a game may change his mind after he sees the termination value. For example, the player may decide that the termination value is too low. Accordingly, the player may not wish to stop the game after all. In various embodiments, the gaming device does not terminate a game until after receiving a confirmation from the player that the player wishes to discontinue play of the extended game in exchange for the player receiving the termination value. The player may confirm that he wants to terminate a game by pressing a button, where the button is a “confirm,” “agree,” or other such button indicative of a player’s desire to discontinue the play of an extended game. If the player does provide suitable confirmation, then the gaming device may provide the termination value to the player. The gaming device may thereafter stop the game and determine no further situations of the game.

In some embodiments, an extended game may not be stopped before its natural conclusion. However, the advent of the natural conclusion may be accelerated. In this way some of the same objectives of terminating a game may be accomplished. Namely, a player may have the opportunity to leave a gaming device in order to attend to other obligations, without waiting for an extended game to slowly run its course.

An extended game may proceed towards a conclusion through successive determinations of game situations. For example, a gaming device may determine a first game situation, followed by a second game situation, followed by a third game situation, and so on. The gaming device may tend to wait for a predetermined time interval between the determinations of successive game situations. For example, the gaming device may wait three seconds between the determination of successive game situations. The wait may be designed to create suspense for a player. However, a gaming device may also wait because successive game situations depend on player actions. There may be natural limits on the speed of player actions. For example, a player may be limited in his ability to rapidly make a decision in an extended game and to indicate his decision in the game by touching a touch screen. Thus, the lengths of time between the determination of game situations may depend in whole or in part on the player. It should be noted that the present discussion may also apply to the display of a game situation. For example, a gaming device may always wait three seconds before displaying a new game situation (e.g., before displaying a new position of a character on a game board), even though the gaming device might have determined the new game situation long ago. Similarly, a gaming device may be unable to display a new game situation until after a player has proceeded with some decision or some other action in the game.

In accelerating the natural conclusion of a game, some of the lengths of time that separate the determination of successive game situations, or the display of successive game situations, may be shortened. For instance, if it is
normally two seconds between when a gaming device determines successive situations of a game, the time may be shortened to one second. In this way, the game will conclude more rapidly. It should be noted, however, that a gaming device may just as well shorten the time between game situations which are not successive. For example, a gaming device may shorten the time between when first and third game situations are determined, even though a second situation is determined after the first but before the third.

[0109] In view of the foregoing, in various embodiments, a gaming device may receive an indication that a player wishes to accelerate the conclusion of an extended game at a gaming device. The gaming device may then determine a first length of time based on the indication. The first length of time may be a new length of time that the gaming device is going to wait between determinations of a first and second game situations, which may or may not be successive. For example, the first length of time may be one second, which may mean that the gaming device is now going to wait only one second between determining and/or displaying the first game situation and the second game situation. The gaming device may determine a first situation of the extended game at a first time. The gaming device may then determine a second situation of the extended game at a second time. The gaming device may wait until the second time such that the elapsed time between the first time and the second time is equal to the first length of time. For example, the gaming device may determine the first game situation at 3:00:01. The gaming device may determine the second game situation at 3:00:02, such that the elapsed time is equal to one second, or the first length of time.

[0110] Additionally, in various embodiments, the gaming device may display, at the first time, an indication of the first situation. The gaming device may display, at the second time, an indication of the second situation. For example, for either situation, the gaming device may display a position of a game character on a game board, or a number of symbols aggregated, or a number of credits won. Note, however, that the first situation need not be displayed at precisely the first time. Rather, for example, the first situation may be displayed a little bit afterwards or at any other time. Similarly, the second situation need not be displayed at exactly the second time.

[0111] As an aid to determining the first length of time, the gaming device may also determine a second length of time, which is a length of time that the gaming device normally takes between determining and/or displaying situations of a game. The second length of time may be used as a reference. For example, if the gaming device normally takes two seconds (the second length of time) between determining successive game situations, then the gaming device may determine the first length of time such that the first length of time is less than the second length of time. In this way, the game will tend to conclude more rapidly than normal.

[0112] Thus, in various embodiments, a gaming device may determine a second length of time, in which the second length of time is associated with extended games whose conclusions have not been accelerated, such that the first length of time is less than the second length of time.

[0113] The extended game of the foregoing discussion may be a bonus game. If the extended game is a secondary game, then the extended game may require player decisions. As such, the length of time between determinations of game situations may not be entirely under the control of the gaming device. In such cases, the gaming device may take control from the player of one or more actions previously performed by the player. For example, rather than allowing a player to initiate handle pulls on his own, the gaming device may initiate handle pulls automatically. That is, the gaming device may spin the reels, generate an outcome, and provide a payout, all without input from the player. Accordingly, the gaming device may accelerate the player decision process. For instance, the gaming device may make handle pulls much more rapidly than a player is capable of doing. The conclusion of the secondary game may thereby be accelerated. In various embodiments, however, the gaming device must obtain the player’s agreement before taking control of actions previously performed by the player.

[0114] In various embodiments, a player need not terminate a game early, for example, if the player has a pressing obligation to meet. In some embodiments, a player may have the situation of the game stored. The player may then stop playing the game temporarily, but may resume play of the game at a later time. To store the situation of a game, a gaming device may store the settings of all parameters describing the situation. For example, the gaming device may store the number of symbols aggregated, the number of credits accumulated, the number of handle pulls remaining, the position of a game character, and the setting of any other relevant game parameter.

[0115] When a player has elected to stop play and continue at a later time, the gaming device may also cease to display a game situation. For example, the gaming device may cease to display a balance of winnings associated with a particular game situation.

[0116] The gaming device may store a game situation in conjunction with a player identifier, such as a name, password, player tracking card number, or any other identifier. The player may, at a later time, present the identifier to the gaming device in order to resume play of the game. For example, by inserting his player tracking card into the gaming device, the player may automatically call up the situation of an unfinished game.

[0117] A player may initially indicate a desire to discontinue play of a game by pressing an appropriately labeled button on the gaming device, or by touching an appropriate area on the display screen of the gaming device. For example, the player may press a “Discontinue” button on his gaming device. When a player has expressed his desire to discontinue, the gaming device will have received an indication that the player wishes to discontinue play of a first extended game at a gaming device. The gaming device may then determine, at a first time, the first situation of the first extended game. For example, at the time that the player wishes to discontinue play of the first game, the gaming device may determine the first situation. The gaming device may then store the first situation of the first extended game.

[0118] After the player has discontinued play, the gaming device may be available for other players to play other games. Thus, the gaming device may determine, at a second time, a second situation of a second extended game, in which the second time is after the first time. For example, five minutes after the player of the first extended game leaves the
gaming device, a second player may sit down, and start a second game, for which the gaming device may now determine a second situation.

[0119] At a later point in time, the player of the first game may return to the gaming device and express a desire to resume play of the first game. For example, the player may insert his player tracking card after which the gaming device may prompt the player with a “do you wish to resume your stored game” message. The player may then press a “yes” or similar button or area of a touch screen in order to indicate an affirmative answer. Accordingly, the gaming device may receive an indication that the player wishes to resume play of the first extended game. The gaming device may then restore, at a third time, the first situation. For example, the gaming device may access in memory the stored settings for the parameters describing the first game situation. In particular, the third time may be after the second time, so that one or more intervening games may have been played between the time that the first extended game was stopped and the time that the first extended game was later resumed. After resumption, the gaming device may display an indication of the first situation. The gaming device may further allow the player to continue making decisions or taking other actions in the first extended game.

[0120] In various embodiments, a gaming device need not itself store a situation of an incomplete game. Rather, the gaming device may send an indication of the situation to the casino server, which may then store the indication of the game situation. When the player later returns to the gaming device and indicates a desire to resume play, the gaming device may request the indication of the stored situation from the casino server. The casino server may then transmit the indication back to the gaming device, whereupon the gaming device may restore the situation and allow the player to resume play. In various embodiments, a player may resume play of a game at a gaming device other than that at which he began play of the game. For example, a player may begin play of an extended game at a first gaming device, discontinue play, and then resume play of the same game at a second gaming device. Resumption at a different gaming device may be possible because the casino server may transmit an indication of the stored game situation to the second gaming device.

[0121] As will be appreciated, the foregoing discussion of the stopping and resumption of a first extended game may apply to secondary games or to bonus games.

[0122] Following is a detailed discussion of various embodiments of the present invention.

[0123] Applicants have conceived of games, such as extended games, that may be played at gaming devices. Games conceived by applicants may include games that encompass multiple handle pulls (e.g., secondary games), games that last for an extended period of time, and/or games that involve multiple random or non-random events.

[0124] Applicants have realized that games with the above features may alleviate the boredom inherent in many conventional games. For example, in a game that encompasses multiple handle pulls, a player will not always find himself in the same game situation prior to every handle pull. Rather, as the player makes handle pulls, the player may continue to make progress within the extended game. In a game that lasts an extended period of time, a player may have time to become immersed in the game. Games involving multiple random events may exhibit increased complexity, thereby keeping a player's attention.

[0125] Applicants have realized, however, that one or more of the conceived games, and potentially one or more other games, may require a commitment from a player. The commitment may be a time commitment and/or a monetary commitment. For example, if a player pays to play a game for which he must make one hundred handle pulls, then the player has made a time commitment of ten minutes, assuming the player can make ten handle pulls per minute. As another example, if a player pays upfront for a game in which he will not receive any winnings until the end of the game, then the player has made a monetary commitment to play the game.

[0126] Applicants have realized that a player may have various reasons for needing to break a commitment. For example, the player may grow tired, sick, or hungry, or may require the use of restroom facilities. Therefore, a player may wish to terminate a game in which he is involved prior to its scheduled conclusion. For example, a player may wish to quit a game scheduled to last for fifty handle pulls after having made only twenty handle pulls. As another example, a player may wish to quit a game scheduled to last for twenty minutes after only fifteen minutes.

[0127] In accordance with applicants' identification of the possible need for a player to break a commitment, applicants have invented methods by which a player may effect the early termination of a game. In accordance one or more embodiments described herein, a player may be able to terminate a game while still recovering at least a portion of the financial commitment the player has made to the game. Further, in accordance with one or more embodiments described herein, a player may be able to terminate a game while still receiving a portion of any winnings the player might be expected to receive were he to finish the game.

[0128] Applicants have considered several types of games that may increase a player's enjoyment of his gaming experience. In some embodiments, a player repeatedly initiates the generation of a random or pseudo-random outcome (e.g., the player repeatedly initiates a handle pull). For example, the player initiates the spinning of video or mechanical reels of a slot machine. As another example, at a video-poker device, the player initiates the dealing of a hand of cards. After an outcome has been generated, the player may receive a payment of winnings in standard fashion. For example, if the player receives an outcome of “bell-bell-bell”, then the gaming device may immediately provide the player with a payout corresponding to the outcome of “bell-bell-bell” listed in a pay table. In addition to, or instead of allowing a player to receive payouts, outcomes or symbols within the outcomes may control action in a secondary game. For example, in aggregation games, certain types of symbols may be tracked over the course of multiple handle pulls. As part of the secondary game, the player tries to obtain a predetermined number of the required type(s) of symbols. As another example, in games involving the traversal of a game board by a game character, certain symbols or outcomes generated on the reels of the gaming device may cause the game character to move along the game board. In games involving the comple-
tion of a jigsaw puzzle, certain symbols obtained on the reels may correspond to puzzle pieces. The puzzle may then advance towards completion by incorporating the puzzle pieces. In games involving the advancement toward completion of other types of puzzles (e.g., of a Rubik’s Cube®), certain symbols or outcomes on the reels may cause the puzzle to advance towards completion.

[0129] Symbols or outcomes may additionally have numerous other types of functions. For example, a symbol may provide a player with a defensive measure against one or more potentially adverse future outcomes. A symbol may also serve as a tool or aid to a player should the player ever reach a particular game situation. For example, a symbol might provide the player with a treasure map, for use if the player should ever reach a game situation in which his game character must find treasure hidden on an island.

[0130] Applicants have considered games in which a player may make a fixed payment in order to initiate all of the handle pulls of a game. For example, a player might make a fixed payment in order to initiate one hundred handle pulls of a game. Applicants have also considered games in which a player must make a new payment, or wager, prior to initiating each handle pull of a game. For example, in an aggregation game, a player makes a $1 wager prior to making every handle pull. The aggregation game ends once the player has accumulated one hundred “cherry” symbols. The game may therefore finish e.g., after fifty handle pulls, or after three hundred handle pulls, depending on the player’s luck in achieving “cherry” symbols.

[0131] Some Types of Games

[0132] Several types of games are now discussed. The following games may be played in various embodiments.

[0133] Various embodiments include aggregation games. In such games, a player may be required to aggregate certain types of symbols. For example, the gaming device may keep track of every time the player achieves a “cherry” symbol over the course of the multiple handle pulls of the game. At the end of the game, the player may receive a payout based on the number of symbols aggregated. Aggregation games might also include games in which a player must aggregate outcomes. For example, the player tries to achieve the outcome “bar-bell-bar” as many times as possible. Aggregation games may also include games in which a player must aggregate combinations of symbols. For example, a player must aggregate as many “diamond” symbols and “ruby” symbols as possible. In one variation of aggregation games, certain symbols may expire after the passing of a predetermined amount of time, number of handle pulls, or upon the occurrence of some other circumstance. For example, a “cherry” symbol obtained by a player more than forty handle pulls in the past may be removed from a group or tally of aggregated “cherry” symbols.

[0134] Various embodiments include jigsaw puzzle games. In such games, a player may be required to obtain symbols corresponding to the pieces of a jigsaw puzzle. Each such symbol obtained by the player may advance the puzzle towards completion. Such games may differ from aggregation games in that it may not necessarily benefit a player to accumulate many of the same type of symbol. In other words, a puzzle may only require one of a given puzzle piece in order to advance the puzzle towards completion. In a variation of a jigsaw puzzle game, a player must assemble a set of complementary symbols. For example, a player must assemble symbols representing all possible ingredients of a recipe. For instance, the player must obtain symbols corresponding to “flour”, “eggs”, “milk”, “water”, and “sugar”. For games involving the obtaining of a set of complementary symbols, a player may receive a payout at the end of a game based on the number or the percentage of the required symbols that were actually obtained. As with aggregation games, certain puzzle pieces, ingredients, or other accumulated symbols may expire.

[0135] Various embodiments include other puzzle games. In such games, a puzzle may require a certain number of “moves” in order to reach completion. For example, a Rubik’s Cube® puzzle in which the Rubik’s Cube® has been thoroughly scrambled may require twenty-two turns of one of the sides of the cube before all sides of the cube have become monochromatic (i.e., before the puzzle has been completed). In a game involving the sliding of numbered tiles within a confined playing surface, a certain number of sliding moves may be required before the tiles have been placed in numerical order (and the puzzle has thus reached completion).

[0136] Various embodiments include games involving the traversal of a game board by a game character. In such games, a game character may occupy certain spaces on a game path. The game character may be allowed to advance to other nearby spaces, or to other spaces connected by certain shortcuts. For example, a “45” symbol generated on the reels of a gaming device may advance a game character by five spaces along a game path. In a Monopoly® game, a shortcut may connect the “Go to Jail” space to the “Jail” space on the game board. Thus, when a game character lands on the “Go to Jail” space, the game character may immediately move to the “Jail” space on the game path. In games involving the traversal of a game board, a player may have a number of objectives.

[0137] In some embodiments involving traversal of a game board, an objective is for the game character to reach a certain space on a game path. For example, if a game path is one hundred squares long, then the objective may be for the game character to reach the 100th square. The player may then receive a large payout. The player may receive smaller payouts if the game character reaches other squares, such as the 99th square, the 50th square, etc. In some cases, the objective may be for a game character to pass a certain square rather than to occupy it. For example, in a Monopoly® game, a player may receive a payment if his game character passes the “Go” square.

[0138] In some embodiments involving traversal of a game board, an objective is for the game character to occupy, at least temporarily, one or more squares of the game board. In a Monopoly® game, an objective may be for a game character to occupy three squares of a game board corresponding to each property of a color group (i.e., each of three properties all of which are required to form a monopoly according to the game rules). By occupying each of three squares corresponding to the properties of a color group, the game character may have a chance to obtain each property, and to thereby form a monopoly.

[0139] In some embodiments involving the traversal of a game board, an objective is for a game character to progress
as far as possible along a game path. For example, player may be paid based on how many squares a game character has traveled from its original square over the course of one hundred handle pulls. An objective may include making multiple loops of a closed game path. For example, if a game path consists of spaces in a circular arrangement, then an objective may be for the game character to traverse the entire circular path as many times as possible.

[0140] In some embodiments involving the traversal of a game board, an objective is for a game character to travel further along a game path than an opposing game character. The opposing game character may represent the house, for example. As an example of the objective, a player’s game character may be required to make more complete loops of a circular game path than are made by an opposing game character. Such a game may be characterized as a racing game.

[0141] In some embodiments involving the traversal of a game board, an objective is for a game character to occupy, at least temporarily, one or more squares along a game path before such squares are occupied by an opposing game character. For example, in a Monopoly® game, an objective may be for a player’s game character to land on certain properties (and to thereby acquire the properties), before an opposing game character lands on the properties (and thereby acquires the properties, after which the player can no longer do so).

[0142] Various embodiments include games involving the defense of existing or acquired value. In such games, a player may begin with or may acquire certain valuable symbols, such as “treasure” symbols or “money bag” symbols. However, the player may risk losing the valuable symbols. For example, in an exemplary game called “Treasure Hunter”, a player may obtain a “treasure” symbol. If the player later obtains a “safe harbor” symbol, then the player may safely retain the acquired “treasure” symbol for the rest of the game. If, however, the player obtains a “pirate” symbol after obtaining a “treasure” symbol but prior to obtaining a “safe harbor” symbol, then animated pirates may “steal” the “treasure” symbol from the player. Thus, a player may be said to defend his acquired treasure by depositing it in the safe harbor. In another exemplary game called “Cops and Robbers”, a game character representing the player may steal money from a bank. However, the player only gets to keep the money if his game character deposits the money in the robber’s “lair” before a cop takes the money away from the robber. In another exemplary game called the “Garden Game”, a player begins a game with several animated carrots. The player is paid based on the number of carrots he retains at the end of the game. During the course of the game, the player may obtain “rabbit” symbols on the reels of the gaming device. Such symbols may result in animated rabbits eating the player’s carrots. Thus, “rabbit” symbols may be detrimental to the player. One objective of the game is therefore for the player to avoid rabbit symbols. In the “Garden Game”, the player may also have the possibility of obtaining “fox” symbols. The acquired foxes may serve as a defense against rabbits, as the foxes may chase away rabbits before the rabbits eat the player’s carrots.

[0143] Various embodiments include games involving a balance of winnings that are to be paid to a player only at the end of a game. In one exemplary game, a player pays $20 up-front. The player’s initial balance of winnings is then twenty. The player may then make ten thousand handle pulls. Each handle pull may deduct one from the balance of winnings. Additionally, the balance may be increased if a handle pull results in a winning outcome. Notably, the balance of winnings may go negative, in some embodiments. Thus, if the balance reaches zero, a player may still initiate his next handle pull, making the balance −1. At the end of the game, the player may receive a number of credits equal to any positive balance. One advantage of the present game is that a player need risk only a relatively small amount of money to make a relatively large number of pulls. The house may still expect to make a profit since, for many gaming devices, a player will be unlikely to have a positive balance after ten thousand handle pulls.

[0144] In some embodiments, games involving a balance of winnings that are paid only at the end of a game may allow the use of negative outcomes. Such outcomes, if they occur on the reels of the gaming device, may subtract from the balance of winnings. For example, if a balance of winnings is fifty, and a negative outcome occurs, the balance may be reduced to twenty-five. Thus, one objective of games of the present embodiments may be for a player to avoid negative outcomes.

[0145] It should be understood that many variations of the aforementioned game types are considered by applicants. In addition, game embodiments contemplated by applicants are not limited to the particular games described herein.

[0146] The following discussion includes broad headings describing method steps of various embodiments of the present invention.

[0147] Receive a Game Initiation Signal from a Player

[0148] A player may indicate his desire to participate in a game of the present invention in several ways. A player may press a “begin” button, “play game” button, or similarly labeled button. A button may be a physical button, such as a plastic button on the exterior housing of the gaming device, or the button may be a designated area of a touch screen. A player may additionally insert cash, coins, tokens, a stored value card, a credit card, or other means of consideration in order to provide payment for the game.

[0149] In one or more embodiments, a player may indicate one or more desired rules, objectives, or settings of one or more parameters of the game. For example, in a game involving the aggregation of “cherry” symbols, the player may indicate that the objective of the game will be to aggregate one hundred “cherry” symbols. The player may also indicate the number of handle pulls the game is to last. For example, the player may indicate that he will have twenty handle pulls in which to aggregate the required number of “cherry” symbols. The player may similarly indicate the amount of time he is to have for a game. For example, the player may indicate that he is to have ten minutes to make as many handle pulls as possible in which to aggregate the required number of symbols. Various rules, objectives, and settings of parameters that may by indicated by the player are described below.

[0150] In various embodiments, a player may indicate the number of symbols that must be aggregated in a game in order for the player to meet one or more objectives.
In various embodiments, a player may indicate the number of handle pulls that will be remaining in a game at the start of the game.

In various embodiments, a player may indicate the amount of time to be allowed for a game.

In various embodiments, a player may indicate the amount of a prize to be paid for the attainment of an objective.

In various embodiments, a player may indicate the number of spaces on a game path. For example, a game may feature a game character moving along a linear game path. The game character may advance by a certain number of spaces each turn depending on symbols obtained by the player on the reels of the gaming device. For instance, a "+3" symbol may advance the game character 3 spaces along the game path. The objective of the game may be for the game character to reach one of the last several spaces of the game path.

In various embodiments, a player may indicate an objective of a game character. Exemplary objectives include the space on a game board the character is required to reach, the spaces on a game board the game character is required to occupy (e.g., en-route to other spaces), reaching one or more spaces prior to an opposing game character, and so on.

In various embodiments, a player may indicate the amount of the wager required of the player in order to play a game.

When a player indicates one or more rules, objectives, or settings of game parameters, the gaming device may adjust other rules, objectives or other settings of game parameters in order to maintain profitability for the gaming device. For example, suppose a player indicates that an objective of an aggregation game is to aggregate ten cherry symbols over the course of one hundred handle pulls. Due to the relatively few number of "cherry" symbols required, and the relatively large number of handle pulls in which to do so, the player may have a high probability of achieving his objective. Therefore, the gaming device may set the amount of the prize to be paid for the attainment of the objective at a relatively low amount. In contrast, if the player indicates an objective of aggregating fifty "cherry" symbols within one hundred handle pulls, then the player may have a much lower probability of achieving the objective. Accordingly, the gaming device may set the amount of the prize to be paid for achieving the objective at a relatively high amount.

In one embodiment, an initiation signal from a player indicates a selection by a player of a game according to one or more embodiments of the present invention, as opposed to a game of the prior art. For example, a gaming device may allow a player to play a game that lasts fifty handle pulls, or a game that lasts a single handle pull. The player initiation signal may indicate which of the two games the player wishes to play.

Request Confirmation of the Player’s Desire to Begin Play

In one or more embodiments, a player may be prompted to confirm his desire to play a game. In particular, the player may be prompted to confirm his desire to play a game that involves a commitment on the part of the player, such as a time commitment or a monetary commitment. An exemplary prompt might consist of a text message reading, “Are you sure you would like to begin the Aggregation game? The average game takes about ten minutes. You will not be able to receive any winnings until the end of the game.”

In various embodiments, a prompt may indicate the average duration (e.g., minutes or handle pulls) of the game.

In various embodiments, a prompt may indicate the minimum possible duration of the game.

In various embodiments, a prompt may indicate the maximum possible duration of the game.

In various embodiments, a prompt may indicate the point at which a player might expect to receive a first payment of winnings. For example, a player might be able to receive a first payment of winnings five minutes into a game, fifty handle pulls into a game, halfway through a game, or at the end of a game. The first payment of winnings need not include all winnings that a player will receive during a game. For example, a player might receive a first payment of winnings half way through a game, followed by a second payment of winnings at the conclusion of the game. Of course, a prompt may also include the point at which a player might expect to receive a second, third, fourth, etc., payment of winnings.

In various embodiments, a prompt may indicate the minimum, maximum, or average duration for which the player will have to play before being eligible to terminate the game. Early termination of a game is described more fully herein.

In various embodiments, a prompt may indicate the wager or payment required to play the game. A game may, for instance, require a significantly larger wager than is required by a typical independent handle pull. For example, a game may cost $25 to play. A prompt may therefore serve to warn a player that he is committing a larger amount of money than he might be expecting. If the player has not yet inserted the required amount of funds, the gaming device may prompt the player that he must insert such funds before the game can begin.

In various embodiments, a prompt may indicate that a player will not be able to receive a refund of his wager or payment once he indicates his agreement to play the game.

In various embodiments, a prompt may indicate the rules of the game to be played.

In various embodiments, a prompt may indicate the object of the game to be played. For example, the object of a game may be to aggregate a certain type of symbol, or to move a game character to a particular location.

In various embodiments, a prompt may indicate the type of confirmation required of a player, and the manner in which a player may provide such confirmation.

In various embodiments, a player may confirm his desire to play a game by pressing an “I agree” or similarly labeled button or area on a touch screen.

In various embodiments, a player may confirm his desire to play a game by providing a written or electronic signature.
In various embodiments, a player may confirm his desire to play a game by using a keypad or other input device to spell out the words “I agree” or similar such words.

In various embodiments, a player may confirm his desire to play a game by entering a password or other player identifier into the gaming device.

In various embodiments, a player may confirm his desire to play a game by inserting or swiping a player tracking card.

In various embodiments, a player may confirm his desire to play a game by inserting or swiping a credit card or debit card.

In various embodiments, a player may confirm his desire to play a game by providing a biometric input, such as a thumb print, voice sample, image of his face, retinal image, etc.

In various embodiments, a player may confirm his desire to play a game by entering a check mark or similar mark next to a statement reading “I understand the rules and the nature of the game and I agree to participate in the game.” Of course, a statement may be worded in many other ways and may include other clauses.

In various embodiments, a player may confirm his desire to play a game by utilizing a specially marked area of a touch screen, a signature area, or any other area a player may use to indicate his agreement to play a game.

In various embodiments, a player may confirm his desire to play a game by utilizing a specially marked area of a touch screen, a signature area, or any other area a player may use to indicate he does not wish to play a game (i.e., he wishes to obviate any prior indication that he did wish to play the game). Exemplary such areas may be marked “Cancel” or “I do not wish to play.”

In various embodiments, a prompt may be displayed to a player on a display screen of a gaming device. A prompt may also be communicated to a player as an audio message. For example, a speaker of the gaming device may broadcast a prompt in the form of pre-recorded or computer-synthesized voice. In one or more embodiments, a human, such as a casino attendant, may prompt the player. For example, a casino attendant may approach a player and ask the player whether he is sure he would like to begin a game.

In accordance with various embodiments described herein, a prompt for agreement or confirmation to play a game may aid a player in making a final decision as to whether or not to play a game. A confirmation screen may warn a player that the game he is about to begin may require a greater commitment of time, money or other resources than the player might have been expecting. Players who did not intend to embark on such a game may thereby have an opportunity to withdraw from the game before making any commitment of resources. A confirmation screen thereby serves as a player-friendly tool that may increase customer satisfaction at a casino and that may result in fewer customer complaints. By informing a player of pertinent rules and objectives of the game, a confirmation screen may also help to mold the expectations of a player who may not have realized, for example, that the game differed from an independent handle pull.

When appropriate, the gaming device may initiate the play of the game. An appropriate time for game initiation may occur, for example, after a player has provided a game initiation signal, after a player has made any required payment or wager, and after the player has confirmed his desire to play the game.

When initiating a game, the gaming device may first set up a beginning game situation. In a game involving the traversal of a game board, a game character is placed at a predetermined starting space. If there is an opposing game character, then the opposing game character may be placed at a predetermined starting space. If the game board has the potential to assume more than one configuration, then the game board may begin in a predetermined starting configuration. For example, shortcuts may be placed connecting each of a first set of predetermined squares to a corresponding square from a predetermined second set of squares.

In various embodiments involving the assembly of a jigsaw puzzle, the puzzle may begin with a predetermined number of pieces in place (e.g., with no pieces in place).

In various embodiments involving the advancement of a puzzle towards completion, the puzzle may begin in a predetermined disordered state. For example, a Rubik's Cube® puzzle may begin with all sides of the larger cube containing squares of multiple colors.

In various embodiments involving the aggregation of symbols, the player may begin with a predetermined number of symbols aggregated (e.g., with none aggregated).

In various embodiments involving the defense of existing or acquired value, the player may begin with one or more representations of value. For example, in the “Garden Game”, a player may begin with one or more carrots. A player may also begin with one or more defensive measures. For example, in the “Garden Game”, a player may begin with one or more foxes guarding his carrots.

In various embodiments involving an evolving balance of winnings, a player may begin with the balance at a predetermined level, e.g., at twenty.

A beginning game situation may include a setting of a parameter describing a number of pulls remaining, or of an amount of time remaining. A beginning game situation may also include a predetermined pay table, particularly if a pay table may change over the course of a game.

In some embodiments, an initial game situation may be determined randomly. For example, the spinning of the reels of the gaming device may determine a position on a game board at which a game character begins.

Once the game has been initiated, the gaming device may provide an indication to the player to perform a required action. For instance, the gaming device may display to the player a message reading, “The game has begun! You may now make your first handle pull.”

Conduct a Portion of the Game

Once the game has been initiated, the gaming device may conduct the game. In conducting the game, the gaming device may receive one or more inputs from the
player. Player inputs may include the placement of wagers, the initiation of handle pulls, the initiation of other random processes, or the indication of decisions. A decision made by the player may include a decision of which of two game paths to traverse when the player’s game character reaches a junction in a game path.

[0196] Over the course of a game, the gaming device may update the game situation as needed. For example, if a symbol or outcome directs a puzzle to be advanced towards completion, then the gaming device may update the display of the puzzle to indicate further progress towards completion. If a symbol is of a type being aggregated, then the gaming device may add one to the tally of such symbols aggregated by the player. If a symbol causes the player to lose a representation of value, then the gaming device may remove the representation of value from the player’s possession (within the game). The gaming device may also display a counter which counts down the time remaining in a game, or which counts down the number of handle pulls remaining in the game.

[0197] Additionally, the gaming device may provide a player with payouts in a conventional fashion if, for example, the player has achieved a winning outcome.

[0198] Determine a Termination Value for the Game

[0199] At some point prior to the scheduled conclusion of the game, the player or some other entity may desire to terminate the game early. If the game is terminated early, it may be desirable for the gaming device to provide at least some payment or other prize to the player. The provision of such a prize may be considered fair in that a player may have been likely to win a payment or other prize if he were only to have completed the game. If the player is forced to complete a game in order to receive a payment or other prize, then the player may feel as if his time is being unfairly occupied. The player may resent being “forced” to remain at a gaming device. Furthermore, external obligations may force a player to leave or terminate a game early. For example, the player may have to catch a bus, train, or plane. A player may have a dinner or social engagement, or may have tickets to a show that is about to begin. A player may be tired, sick, or require the use of restroom facilities. Thus, if a player is forced to leave a game without receiving any payment, then the player may become resentful. In addition, if a player has to leave a game in progress without the game terminating, then other casino patrons might take the player’s place at the gaming device. Other casino patrons might thereby benefit unfairly from the player’s payment for the game.

[0200] In some cases, a casino may desire to terminate a game early. The casino may wish for the player to vacate the gaming device so that, for example, a more profitable casino patron might sit down. A casino may also fear a power outage, or other interruption, and may therefore wish for a player to break his ties to a gaming device.

[0201] In accordance with circumstances making it desirable to terminate a game, a casino may determine a “termination value” for a game. A termination value may represent, for example, an amount of money to be paid to a player should the player’s game be terminated. A termination value may be determined in a number of ways, and may incorporate the casino’s desire to maximize profits in addition to the casino’s desire to be fair to the player.

[0202] Numerous factors may enter into a determination of a termination value. In various embodiments, a termination value may be determined based on the amount a player might be expected to win were he to finish the current game. Such expected winnings may include winnings to be paid at the end of the game, and winnings that might be paid during the game (e.g., as payouts corresponding to winning outcomes). A determination of the amount a player might be expected to win may incorporate the probabilities of one or more random or pseudo-random events that would have been resolved over the course of the game, together with potential payouts to be achieved by the player. Thus, the amount a player might be expected to win were he to finish the current game might correspond to the mathematical notion of the expected value of one or more random events governing play of the game.

[0203] A determination of the amount a player might be expected to win might also incorporate a determination of the effects of player strategy upon the game. For example, suppose the game involves the playing of multiple hands of video poker for a fixed-up front payment, where the player receives a payment for any winning video poker hand at the end of the game. Evidently, the player’s expected winnings for the game are effected by the player’s strategy for discarding cards. In accounting for player strategy, the gaming device may predict the effects of future player decisions based on the player’s history. For example, if the player’s decisions have historically (e.g., for video poker hands already played in the course of the present game) resulted in expected winnings of 95 cents per hand of cards, then the gaming device may assume that the player’s expected winnings per hand of cards will continue to be ninety-five cents. The gaming device may also predict the effects of future player decisions based on a predetermined “typical” player strategy. Such a strategy may result in player winnings of ninety-three cents per handle pull, for example. In one or more embodiments, the gaming device may assume the player would use a strategy that is superior only to a strategy used by ten percent of other players (i.e., the player’s skill level is only in the 10th percentile among all players). The gaming device may assume the player’s skill level would fall in the 90th percentile among all players. Many other assumptions are possible. In one embodiment, the gaming device might assume that a player would use a random strategy. For example, the player might be assumed to discard each card from a hand of video poker with probability 1/2. In one embodiment, the gaming device might assume a player would use the worst possible strategy. In another embodiment, the gaming device might assume the player would use the best possible strategy.

[0204] In some embodiments, in order to exhibit a perceived degree of fairness towards the player, the casino may determine a termination value that is close to, or identical to, the amount a player might be expected to win from the current game. In a game involving strategy, a termination value may be determined based on a relatively good strategy, or at least based upon a historical strategy used by the player.

[0205] In various embodiments, a termination value may be determined based on an amount of winnings that a player is currently guaranteed to win. For example, suppose a player is in the middle of an aggregation game in which no further payment is required of the player, in which aggregated symbols cannot be taken away (e.g., through expira-
tion or through adverse outcomes), and in which the player has already aggregated forty symbols. Suppose further that
the player wins twenty coins for aggregating twenty-five symbols, one hundred coins for aggregating fifty symbols,
and one thousand coins for aggregating one hundred symbols. Given the current game situation, the player is already
 guaranteed to win twenty coins, because he has already aggregated more than the twenty-five symbols necessary to
receive a payment of twenty coins. Although the player may be likely to achieve ten more symbols (and to thereby
receive one hundred coins) were he to continue the game, the player is not yet certain to do so.

[0206] As another example, suppose the player is in the
middle of a game in which he must acquire and defend
representations of value. Suppose that the player has already
gathered three treasures worth a total of fifty coins, and that
the player has managed to place the treasures in a “Safe
Harbor” where they cannot be taken from the player. The
player is thereby guaranteed to receive a minimum of fifty
coins at the end of the game.

[0207] Note that a player may be guaranteed a certain
amount of winnings even under less obvious circumstances
than were suggested by the prior examples. For example,
suppose a player is in the middle of an aggregation game.
Suppose further that the player has already aggregated
eighty symbols, that the player has twenty handle pulls
remaining in the game, and that the player must acquire one
hundred symbols in order to receive a payment of five
hundred coins. In addition, suppose that each handle pull
always results in the appearance of at least one additional
symbol of the type being aggregated. Therefore, even
though the player has not yet aggregated the one hundred
symbols necessary to receive a five hundred-coin payout,
the player would be guaranteed to reach one hundred symbols
due to the nature of the game and the current game situation.

[0208] In accordance with some embodiments, the gaming
device may determine a termination value that is at least
equal to the amount of winnings that a player would be
guaranteed to receive should he complete the current game.

[0209] In various embodiments, a termination value may
be determined based on an amount of winnings that a player
has at least a predetermined probability of realizing were he
to continue the game. For example, in determining a ter-
nimation value for a game, a gaming device may determine an
amount of winnings that a player has at least a 0.9 prob-
ability of realizing were he to finish the game. For example,
suppose a player has thirty handle pulls remaining in a game
involving the advancement of a puzzle towards completion.
Suppose further that the puzzle is only one move from
completion, that the probability of obtaining an “advance
puzzle” symbol on any given handle pull is 0.1 (only one
such symbol may be obtained per handle pull), and that
winnings the player will receive for completing the puzzle
are two hundred coins. The probability of the player com-
pleting the puzzle is given by the expression \((1 - 0.1)^{30}\), or
approximately 0.96. Therefore, the player has more than a
0.9 probability of obtaining winnings of two hundred coins
if he were to finish the game.

[0210] According to some embodiments, the gaming
device may determine a termination value that is at least
equal to the amount of winnings that a player has at least a
probability of 0.9 (or other predetermined probability) of
receiving. In one or more embodiments, the gaming device
may determine a termination value equal to the prede-
termined probability in question multiplied by the amount
of winnings in question. For example, if the player has at least
a 0.9 probability of winning two hundred coins, then a
termination value may be set to be equal to or greater than
0.9*200, or one hundred eighty coins.

[0211] In various embodiments, a termination value may
be determined based on a maximum amount of winnings the
player would receive if he were to continue playing the
game. A determination of the maximum amount of winnings
might assume, for example, that all subsequent outcomes
obtained on the reels are jackpot outcomes. A determination
of the maximum amount of winnings might also assume, for
example, that symbols to be aggregated occur on every
outcome in every symbol position, that “advance puzzle”
symbols occur on every outcome in every symbol position,
that the proper sequence of symbols appear on a reel in order
to advance a game character to a winning space on a game
board, and so on.

[0212] In various embodiments, a termination value may
be determined based on an amount of winnings expected
from the current game situation for a player achieving
winnings at a predetermined percentile level. For example,
suppose the predetermined percentile is the 40th percentile.
Suppose further that, from his current game situation, a
player might be expected to win more than twenty coins
60% of the time, and less than twenty coins 40% of the time.
Therefore, the gaming device may consider the value of
twenty coins in determining a termination value for the
game. For example, the gaming device may set the ter-
nmination value at twenty coins.

[0213] In various embodiments, a termination value may
be determined based on the amount paid by the player in
order to play the game (e.g., the wager required to play the
game). For example, the player might have paid thirty coins
to play a game. Amounts paid to initiate each individual
handle pull may or may not be considered in the amount paid
by a player to play a game. For instance, in an exemplary
game, a player may pay thirty coins. The player may later
receive a payment of one thousand coins if he aggregates
fifty cherry symbols in his next one hundred handle pulls.
However, the player must make a standard wager for each of
the one hundred handle pulls he initiates. In this exemplary
game, the amount paid by the player may be considered to
be thirty coins, even though he may have paid additional
coins in the form of wagers over the course of making the
one hundred handle pulls. In one exemplary embodiment, a
termination value of a game may be set to be approximately
equal to the amount paid to play the game minus a prede-
termined constant. For example, for a constant of ten coins,
and for a game where a player has paid thirty coins to play,
the termination value may be set at thirty coins minus ten
coins, or twenty coins. In another exemplary embodiment, a
termination value may be set approximately equal to the
amount paid to play minus a predetermined constant mul-
tiplied by the number of handle pulls completed thus far in
the game. In other words, termination value=amount paid−
(constant)*((number of handle pulls completed). In this way,
a player is paid less the further he has progressed in a game.
The player cannot then easily take advantage of extra
information derived from playing further into the game (e.g.,
in deciding when to terminate a game).
In various embodiments, a termination value may be based on the importance of a player as a casino customer. For example, if a player has historically wagered more than $10,000 per month at a casino, the player may be considered an important casino customer. However, if the player has historically wagered less than $100 per year, the player may be considered a customer of marginal value to the casino. Thus, in one embodiment, the more important a player is as a customer, the higher the casino may set a termination value, so as to better please more important customers.

In various embodiments, a termination value may be determined based on playing characteristics exhibited by the player during the current game. For example, if the player has been playing slowly and/or making small wagers, then the casino may not expect to earn very much money from the player. Accordingly, the casino may be concerned with pleasing the player and may determine a relatively low termination value. Alternatively, following another line of reasoning, the casino may wish for the player to leave the gaming device, and may therefore determine a relatively high termination value in order to encourage the player to terminate the game early.

In various embodiments, a termination value may be determined based on the opportunity cost of the gaming device being occupied by the player. For example, suppose that the casino in which the gaming device resides is crowded and that the gaming device would likely be occupied by another casino patron were the player to leave. Furthermore, suppose that another casino patron would likely make large wagers at the gaming device and/or would play at a rapid rate. Then, the player’s being at the gaming device may create a high opportunity cost for the casino. However, if the casino is not crowded, or is currently being frequented by patrons who do not tend to make large wagers or to play rapidly, then the player’s occupying the gaming device may have a low opportunity cost for the casino.

In various embodiments, a termination value may incorporate a penalty for early termination. The penalty may be a fixed amount, or may depend on when the game was terminated. For example, if a ten-minute game is terminated after the first minute, the penalty may be relatively high. However, if a ten-minute game is terminated after the 8th minute, the penalty may be relatively low. In one exemplary embodiment, a termination value may be set as a player’s expected winnings for a game minus a fixed constant, the constant representing the amount of the penalty.

In various embodiments, a termination value may be determined based on a presumed player opinion as to his current game situation. For example a termination value may be set relatively low for a player who is presumed to view himself as being in an unfavorable game situation. In an unfavorable game situation, the player would presumably be happy to terminate early, even if a termination value is relatively small. In contrast, a termination value may be set relatively high for a player who is presumed to view himself as being in a favorable game situation.

A termination value may also be based on other psychological factors presumed to be exhibited by the player. For example, a player who has obtained many entertaining outcomes, who has played for a long time already, or who has had numerous “near-misses” of a jackpot, may presumably feel as if he has already had plenty of entertainment to compensate for the amount he paid to play the game. For such a player, a relatively lower termination value may accordingly be determined.

In various embodiments, a termination value may be based on a player’s indication of a desired termination value. For example, a player may indicate that he would be willing to terminate the current game in exchange for a payment of twenty coins. In accordance with one embodiment of the present invention, the gaming device may set the termination value as the value requested by the player. In another embodiment, the gaming device may compare a termination value requested by the player to a potential termination value determined in some other fashion. For example, the gaming device may determine a potential termination value as the player’s expected winnings from continuing the current game. Then, the gaming device might set the termination value equal to the lesser of the value requested by the player, and the potential termination value determined in the alternate fashion.

In one or more embodiments, a termination value may take the form of prizes or benefits other than money. For example a termination value may include one or more of the following: a free or discounted meal at a casino restaurant; a free or discounted hotel room; a free or discounted block of show tickets; one or more free spins at a gaming device (e.g., at a different gaming device); free or discounted merchandise; store credits at a casino retailer; and free or discounted products or services from a merchant affiliated with the casino. Accordingly, a termination value may be based on the availability of various prizes or benefits. For example, a termination value may be set as relatively large discount at a casino restaurant if the restaurant will have few customers at a time when the discount may be utilized. Note that a discount or other benefit may be applicable only at certain times, such as at times when a corresponding merchant would be expected to have little business.

A termination value may be set in such a way as to encourage the player’s patronization of certain casino properties. For example, a player may be provided a relatively large discount on a casino hotel room so as to encourage the player to remain at the casino. A player may be provided with “free spins” at a gaming device in order to encourage the player to try the gaming device. Thus, the determination of a termination value may help to optimize the revenues of a casino by encouraging more business from the player.

In various embodiments, a termination value may be determined based on the number of handle pulls completed by a player thus far in a game. In many situations, as a game approaches its end, it may become increasingly apparent to a player, and to a gaming device, what a player will likely win from the game. For example, in a game involving the aggregation of symbols within a block of one hundred handle pulls, it may become apparent by the 90th handle pull that a player has very little chance of aggregating enough symbols to receive a payout. For instance, the player may yet require a large number of symbols to reach his goal, even though he has only a few pulls remaining in which to do so. If a player is nearing the end of a game, then the player may presumably predict his winnings reasonably accurately, and may thereby elect to terminate a game if his winnings will likely be low, while continuing if his winnings will likely be high. Therefore, according to one or more
embodiments, a termination value is set to be relatively lower near the end of a game, and relatively higher near the beginning of the game. With a relatively low termination value occurring near the end of a game, a player may not easily take advantage of an ability to make a reasonably accurate prediction of his winnings. Accordingly a termination value may be set as a decreasing function of the number of handle pulls completed thus far in a game. Of course, similar reasoning may apply to a game that is limited by time rather than handle pulls. In games that are limited by time, a termination value may be set as a decreasing function of the time elapsed thus far in a game.

[0224] In various embodiments, a termination value may be determined based on the approximation of a fractional value or other value that cannot be represented by a casino's currency. For example, to arrive at a termination value, a gaming device may first determine a player's expected winnings from his current game situation. However, the expected winnings might come to a fractional amount of a coin. Therefore, the gaming device may determine a termination value as the expected winnings rounded to the nearest coin, or as the expected winnings rounded downwards to the nearest coin.

[0225] Following are several methods for determining a player's expected winnings were he to continue playing a game:

[0226] Monte Carlo Simulation

[0227] To determine an amount of expected winnings for a player associated with a particular gaming situation, a gaming device or operator of the gaming device may perform a simulation. Simulations may include simulations performed by a general-purpose computer, simulations performed by a gaming device (e.g., the gaming device enabling play of the game being simulated), or simulations performed by a human in conjunction with a gaming device.

[0228] To perform a simulation using a general-purpose computer, an operator may program the game rules, structure, and other game parameters into the computer. Game parameters may include, for example, the amount of winnings a player will obtain for any ending game situation. For example, a player receives thirty credits if his game character finishes on square eighty-two of a game path. In addition, game parameters may include a pay table used for each individual handle pull remaining. In other words, a player may win payouts that are paid prior to the ending of the game. The potential for such payouts might factor into a determination of the player's expected winnings for the remainder of the game. The operator may also program the current game situation into the general-purpose computer.

[0229] The operator may then instruct the general-purpose computer to simulate the playing of the game from the current game situation for a given number of iterations. For example, if the general-purpose computer is to simulate the playing of the game for one hundred iterations, then the computer may begin one hundred times at the current game situation, and for each of the one hundred times may randomly generate outcomes corresponding to the nine handle pulls remaining in the game. Then, for each of the one hundred iterations, the general-purpose computer may determine player winnings obtained in the last nine handle pulls of the game. Player winnings may result both from the final position of the player's game character, and from any winnings derived from the outcomes obtained on the reels of the gaming device. The general-purpose computer may then average together the one hundred amounts generated for player winnings. The average may then be assumed to represent the player's expected winnings for the game from the current game situation. Of course, any number of iterations may be used in the simulation. In general more simulations will tend to produce a more accurate estimation of a player's expected winnings.

[0230] Simulations may similarly be performed on a gaming device. Advantageously, the gaming device enabling the current game may already have the game rules, the game structure, and other game parameters programmed within an internal memory. The gaming device may then be instructed to automatically generate outcomes corresponding to a given number of iterations, with e.g., nine handle pulls being generated per iteration. In some embodiments, the gaming device does not display to the player the outcomes generated as part of the simulation. Rather, the outcomes may be generated internally without a corresponding movement of the reels. Similarly, the outcomes may have no effect on the player. Instead, the gaming device may track the effects the outcomes would have on the player were they to actually count. As with the embodiment using the general-purpose computer, the gaming device may determine an amount of player winnings for each iteration of the game. The gaming device may then average all such player winnings to determine an approximation to a player's expected winnings for the current game.

[0231] In one or more embodiments, a gaming device does not perform simulations automatically. Instead, an operator of the gaming device may manually play the gaming device over a number of iterations. The operator may thus insert coins, and physically initiate handle pulls. The operator may be able to configure the gaming device always to begin from the game situation being simulated (i.e., the player's current game situation). Alternatively, the operator may only attach significance to those iterations in which the game situation matches the player's current game situation. Having performed a desired number of iterations, an operator may average the amounts won from each significant iteration, and may thereby determine an approximation for a player's expected winnings from his current game situation.

[0232] As described herein, a determination of a player's expected winnings for a current game situation may involve the modeling of a player's strategy for games involving a strategy component. Thus, the simulations described herein may incorporate a strategy engine. The strategy engine may be a strategy translated into computer code. The strategy may correspond to the best possible strategy (e.g., the strategy providing the highest expected winnings), a strategy likely to be employed by a typical player, a strategy modeled after the current player, a random strategy, or some other strategy.

[0233] Direct Calculation

[0234] In some embodiments, the player's expected winnings from the remainder of a game may be determined by direct calculation. In a general case, the calculation may incorporate the probabilities of all possible future game events (or combinations of game events), together with the winnings a player would obtain should each event occur. A player's expected winnings may therefore be written as:
In the formula above, “E” represents the player’s expected winnings, “FGE<sub>k</sub>” represents the k<sup>th</sup> “future game event” (or sequence of game events), P(FGE<sub>k</sub>) represents the probability of event(s) FGE<sub>k</sub> occurring, and W(FGE<sub>k</sub>) represents the winnings the player would receive should the event(s) FGE<sub>k</sub> transpire. An example of sequence of future game events described by a single term FGE<sub>k</sub> may include the occurrence of the outcomes “bar-orange-cherry”, “bar-bell-bell”, and “cherry-bell-bell”. Such an example would correspond to a game in which three handle pulls remain. That is, a term FGE<sub>k</sub> represents a sequence of game events that would complete a game, not a sequence of game events that would still leave more events to come in a game. In another example, a game involving the traversal of a game board by a game character may have two handle pulls remaining. For such a game an exemplary sequence of game events corresponding to a term FGE<sub>k</sub> in the formula above might be “cat—advance two spaces—truck”, and “dog—advance one space—advance three spaces”. In this last example, the player’s winnings for a game in which events FGE<sub>k</sub> have transpired may incorporate the winnings a player would achieve with his game character ending up a total of six squares beyond its current square on the game board. Note that in the above formula, a sequence of events consisting of outcome A followed by outcome B is different from a sequence of events consisting of outcome B followed by outcome A. In other words, order matters.

The calculation of the formula above may be simplified if the probability of occurrence each future game event within a sequence of future game events represented by a term FGE<sub>k</sub> are independent. Then P(FGE<sub>k</sub>) is equal to the product of the probabilities of each of the future game events represented by FGE<sub>k</sub>. For example, if FGE<sub>k</sub> represents the outcome “bar-bell-orange” followed by the outcome “bar-cherry-7”, then P(FGE<sub>k</sub>) would be equal to the probability of the outcome “bar-bell-orange” multiplied by the probability of “bar-cherry-7”.

In certain game situations, the calculation of a player’s expected winnings from completing a game may be further simplified. In one or more types of games, a player’s winnings may be equal only to the winnings obtained on each individual handle pull. Furthermore, winnings won on a given handle pull are independent of the results of any other handle pull. In an example of such a game, a player pays ninety-five coins in advance to make one handle pull. Each handle pull is independent. The player’s balance of winnings is increased for each winning outcome achieved. At the end of the game, the player receives his balance of winnings. In the type of games under consideration, a player’s expected winnings for the game are equal to the amount of any current unpaid winnings plus the expected winnings per handle pull times the number of handle pulls remaining in a game. For example, suppose a player’s balance of winnings (not yet paid to the player) is seventy coins, and the player has ten pulls remaining. Further, suppose the player’s expected winnings for a single handle pull are 0.99 coins. The player’s expected winnings for the game are then 70+10*0.99, or 79 coins.

Comparison with Known Game Situations

In one or more embodiments, a gaming device, casino server, or other entity may maintain a database of game situations, or game states, and corresponding expected winnings from such game situations. For example, a game situation in an aggregation game may be fully described by a number of pulls remaining and a number of symbols aggregated thus far. Other game parameters, such as the amount paid to a player upon obtaining one hundred symbols, may remain constant from game to game. Thus, for an aggregation game, a gaming device may maintain a database consisting of a rectangular grid in which rows are indexed by a number of pulls remaining, and columns are indexed by a number of symbols aggregated thus far. Each database entry corresponding to a given row and column may then indicate the expected winnings for a player in a game situation defined by the particular row and column.

The expected winnings recorded in a database may consist of expected winnings that have been pre-calculated, as through Monte-Carlo simulations, or through some other means. One advantage of maintaining a database of expected winnings for every possible game situation is that calculating a player’s expected winnings in any given game situation may be time consuming. Therefore, in a circumstance where a player wishes to terminate a game, a termination value may be determined much more rapidly if the player’s expected winnings for the current game situation can be looked up immediately in a database. It should be noted that a database need not include a player’s expected winnings for all possible game situations. Instead, a database may include expected winnings for all game situations that have more than a predetermined probability of actually occurring during any given game. Additionally, a database may not contain a player’s expected winnings for game situations in which the player will not be allowed to terminate the game. A database may also not contain a player’s expected winnings for game situations in which a termination value will not be based on a player’s expected winnings.

It should be noted that a database may contain a formula for determining expected winnings from a given game situation rather than an explicit value of expected winnings. An exemplary formula might say, the player’s expected winnings from the current game situation are equal to the amount currently in the player’s win balance plus the constant 34.8. Such a formula would be trivial for a gaming device to execute in real time.

In some embodiments, a database may contain a player’s expected winnings only for certain exemplary game situations. The gaming device may then be instructed to approximate a player’s expected winnings for a given game situation by utilizing expected winnings for similar game situations contained in the database. For example, suppose a database gives a player’s expected winnings for an aggregation game as thirty-four coins if there are ten pulls remaining and the player has seventy symbols aggregated, and twenty-eight coins if there are ten pulls remaining and the player has sixty-six symbols aggregated. If a player is currently in a game situation in which he has ten pulls remaining and sixty-eight symbols aggregated, then the gaming device may interpolate the expected winnings for the two similar game situations stored in the database. The gaming device may arrive at an approximate value of thirty-one coins for the player’s expected winnings in the current game situation.

Note that many game situations may be described by a large number of variables, making it impractical for a
single database to store all possible game situations. For example, in a game of Monopoly®, a player’s game situation may include the number of pulls remaining, the specific properties acquired thus far, the particular square of the player’s game character, the particular square of the opposing game character, the specific properties acquired thus far by the opposing game character, the number of houses or hotels present on each property, and so on. In games where a game situation is described by a large number of variables, the approximation of a player’s expected winnings through comparison to similar game states stored in a database may be more practical than the storage of every possible game state.

[0244] It should also be noted that although a database has been described as storing values representing a player’s expected winnings for a particular game situation, a database may additionally or instead store actual termination values to be used for various game situations. As described herein, a termination value may be dependent on a number of factors besides or instead of a player’s expected winnings.

[0245] In one or more embodiments, a termination value may be dependent on a relatively few number of variables, even if many more variables would be required to completely describe a game situation. For example, in a Monopoly™ game, a termination value may be dependent only on the number of complete color groups that a player has acquired thus far, rather than on all the other variables described above.

[0246] In embodiments where a termination value is dependent on only a few variables (e.g., on one or two variables), then a “termination value table” may actually be displayed to a player. For example, a termination table may consist of multiple rows, each row corresponding to a number of handle pulls remaining in a game. Within each row is the termination value for a game with the corresponding number of handle pulls remaining. Thus, a player in the midst of a game might consult a termination value table in order to determine a payment he would receive if he were to terminate the game immediately. For instance, if the player had twenty-eight handle pulls remaining, he might look at row twenty-eight of a table to find his termination value of eight coins. Of course, termination tables may be based on other variables besides a number of pulls remaining. For example, a termination puzzle may be based on the amount of time remaining and upon the number of moves required for the completion of a puzzle.

[0247] At any given point in a game, the gaming device might display to the player a termination value that the gaming device has determined. As mentioned, the termination value may be displayed in the form of a table. Alternatively, the termination value might be displayed as a single value corresponding to the current game situation. As the current game progresses, the displayed termination value may change, reflecting possible changes in one or more factors discussed herein.

[0248] Provide an Offer to Terminate a Game.

[0249] In one or more embodiments, a gaming device may provide an offer to a player to terminate a game. For example, the gaming device might display a text message reading, “Would you like to terminate the current game? If you terminate the game, you will receive an immediate payment of twelve coins. To terminate, just press the area of the touch screen labeled ‘terminate game’”. Of course there are many variations to the wording of the offer. Also, the offer may be broadcast to the player using audio speakers, may be transmitted wirelessly to the player’s personal digital assistant (PDA), or may be otherwise communicated to the player. The gaming device may provide to a player an offer to terminate a game based on a number of triggering circumstances.

[0250] In various embodiments, an offer to terminate a game may be triggered if the player has pressed a “cash out” or similar button. Such a button may have no effect for a game. However, the gaming device may interpret the pressing of a “cash out” button as a desire to stop playing, and may thereby offer the player the option to terminate the game.

[0251] In various embodiments, an offer to terminate a game may be triggered if the player has had a pause in play for a predetermined period of time. For instance, the player has not made any handle pulls in the last two minutes.

[0252] In various embodiments, an offer to terminate a game may be triggered if the player has withdrawn his player-tracking card from the gaming device.

[0253] In various embodiments, an offer to terminate a game may be triggered if the player’s credit balance has reached zero.

[0254] In various embodiments, an offer to terminate a game may be triggered if a show or other special event is about to begin. The gaming device may provide the termination offer to allow the player to attend the special event. In one or more embodiments, the gaming device may inform the player of the occurrence of the event in conjunction with offering the player the option to terminate the game. In fact, the gaming device may offer the player tickets, discounts, passes, or other consideration in exchange for the player’s termination of the game.

[0255] In various embodiments, an offer to terminate a game may be triggered if the casino has become crowded with other patrons, who presumably may wish to use the gaming device occupied by the player.

[0256] In addition to offering the player the possibility of terminating a game, an offer may indicate a number other pieces of information to the player.

[0257] In various embodiments, an offer may indicate the amount of time (or the number of handle pulls) for which a player may expect to continue playing if he does not accept the offer to terminate.

[0258] In various embodiments, an offer may indicate the amount of time (or the number of handle pulls) before the player will have another opportunity to terminate the game.

[0259] In various embodiments, an offer may indicate a warning to the player that, should the player terminate the game, the player will not have the possibility of winning any prize in the current game.

[0260] In various embodiments, an offer may indicate a warning to the player that, should the player terminate the game, the player will not later be able to continue the game.
In various embodiments, an offer may indicate a suggestion of other options the player might have if he cannot continue with the play of the game. Such options may include accelerating the game, pausing play of the game, or playing a substitute game of a much shorter duration.

Receive an Indication of the Player’s Desire to Terminate the Game

A player may indicate his desire to terminate a game in a number of ways. The player may respond to an offer to terminate the game provided by the gaming device by pressing, for example, an “I agree” button. A player may also press a “terminate game” button or area of a touch screen, which may appear persistently throughout all or a portion of a game. A player might also press a “cash out” button, withdraw his player tracking card, or affect any of the triggers mentioned herein.

In one embodiment, a player may indicate a desired payment or other prize to be received in return for terminating a game. For example, a player may press a “terminate game” button, after which the gaming device may prompt the player with, “How much would you like as payment in exchange for terminating the game?” The player may then key in a desired amount using, e.g., a touch menu, a keypad, voice input, or other means. If the amount indicated by the player is acceptable to the gaming device (e.g., is less than termination value determined by the gaming device through some other means), then the gaming device may agree and allow the player to terminate in exchange for the desired amount. If, however, the amount indicated by the player is not acceptable to the gaming device, then the gaming device may provide a counter offer. For example, the gaming device might say, “Sorry, I can’t pay you fifteen coins, how about thirteen coins?” Or, the gaming device might say, “Sorry, I can’t pay you fifteen coins, how about thirteen coins and a $20 discount on a hotel room at the casino?” Alternatively, the gaming device may not allow the player to terminate the game at all.

Terminate the Game, and Provide the Player with a Termination Payment based on the Termination Value.

After a player has indicated a desire to terminate a game, and possibly after a player has confirmed his desire to terminate a game, the gaming device may actually terminate the game. The gaming device may indicate the game is over by displaying a “Game Over” message or a “Game Terminated” message. In addition, the game situation may be destroyed. That is, a game character may be removed from the square it occupied at the termination of the game, a puzzle may be scrambled, aggregated symbols may be removed, and so on. The gaming device may then pay the player based on the termination value. For example, the gaming device may pay a number of credits equal to the termination value to the player’s credit meter. The gaming device may also drop a number of credits equal to the termination value into the player’s coin tray. If the termination value is some other prize, then the gaming device may provide the player with a printed representation of a coupon, voucher, or other indication that the player is to receive a prize or other consideration.

ADDITIONAL EMBODIMENTS

In some embodiments, rather than terminating a game, a player may accelerate the ending of a game. For example, the player might indicate that the gaming device should initiate handle pulls rapidly and automatically on behalf of the player. The player may also be required to insert enough money to cover the wagers required to complete the game. The game may thereby be completed, but more rapidly than would be possible with a player initiating handle pulls manually. In one embodiment, the gaming device may initiate all handle pulls remaining in a game so rapidly that the player does not see any of the outcomes. It may therefore appear to the player as if the gaming device has just jumped immediately to a determination of the player’s winnings for the game. Once completed, the player may receive his winnings.

In some embodiments, a game may be modified so as to proceed more rapidly. For example, suppose a player is engaged in an aggregation game, where he tries to aggregate “ace of spades” card symbols over the course of one hundred hands of video poker. Rather than playing out the one hundred hands sequentially, the player may accelerate the game by playing multiple hands simultaneously. The player may play multiple hands simultaneously in the manner currently used in multi-way video poker. For example, by playing fifty hands at a time, the player may play through one hundred hands up to fifty times faster. In a game involving the traversal of a game board by a game character, the game may be modified, for example, to reduce the number of handle pulls remaining, but to increase the amounts by which a player might advance on a single outcome. For example, whereas initially reel symbols might read “advance two” or “advance four”, reel symbols in the modified game may read “advance twenty-six” or “advance fifty-two”. The game character may thereby cover a lot more territory in a shorter number of handle pulls. Note that the gaming device may modify a game in such a way as to provide a player with similar expected winnings to what the player would have had in the unmodified game given his current game situation.

In various embodiments, rather than modifying a game to allow it to proceed more rapidly, a different game may be substituted for the current game. The different game may finish more rapidly than the current game. Also, the different game may be structured so as to have similar expected winnings to those of the current game given the player’s current game situation. For example, in a game involving the aggregation of “ace of spades” symbols over the course of one hundred hands of video poker, a player may have enough symbols aggregated, with enough handle pulls remaining, to result in expected winnings of 18.7 coins. Rather than having the player finish the game, the player may be allowed to complete a new game. The new game consists of a single hand of video poker in which the initial five cards have already been dealt. The initial five cards contain four cards to a royal flush. The expected winnings for the player in such as situation are also approximately 18.7, e.g., for 9/6 Jacks or Better video poker.

In some embodiments, a player may place a “hedging” wager, in which the player benefits based on his own poor performance in the game. The hedging wager may result in the player’s being paid approximately the same amount for any possible game result. For example, if a game result is poor, then the player will be paid based on the hedging wager. If the game result is good, then the player will be paid based on the original payment made to play the
game. Since the player may thus be paid approximately the same amount regardless of how the game unfolds, the game may effectively be terminated immediately, with the player receiving his expected payment amount.

[0271] It should be noted that in some embodiments, a player may be paid a termination value for a game for which he made no payment to play. For instance a player may be automatically entered into an aggregation game when playing at a standard fruit-slot machine. At such a slot machine, the player may play in standard fashion, with the gaming device keeping track of acquired “cherry” symbols. The player may ultimately decide to stop playing after he has aggregated eighty-eight “cherry” symbols, out of one hundred required to receive a payment. Even though the player has not paid to play the aggregation game (other than the wagers he has made), the player may still receive a payment when quitting the gaming device.

[0272] In some embodiments, if a player desires to terminate a game, the game situation may be saved and the player may be allowed to resume playing at another time. The game situation may be stored, for example, at the casino server indexed by the player’s tracking card number. When the player later inserts his player tracking card into a gaming device, the gaming device may call up the game situation from the casino server and may allow the player to resume play. A player may also be provided with a record of his game state on a printed medium, stored on a smart card, stored on a PDA or cell phone, and so on. The player may later bring e.g., the printed medium with his game state to a gaming device in order to resume play at the current game state.

[0273] In various embodiments, a player may be assessed a penalty for stopping play of the game, even if the player will continue later. For example, the player may be required to pay five credits in order to have his game state saved. Alternatively, five credits may be deducted from the player’s winnings at the end of the game.

[0274] In various embodiments, a game may always be a minimum termination value. Thus, even on the last pull of a game, if a player can expect no winnings, the player may still terminate the game for the minimum termination value. The possibility of always being able to receive the minimum termination value may attract players to a game. The amount of a minimum termination value may, of course, be incorporated into the payment required to play the game.

[0275] In various embodiments, all or part of a payment provided to a player in exchange for terminating a game may come in the form of comp points.

[0276] In various embodiments, a player may be able to make tradeoffs among different variables describing his game situation. Such variables may include the number of handle pulls remaining, the number of “cherry” symbols aggregated, the number of moves required to complete a puzzle, the position of a character on a game board, the number and type of defensive measures in the possession of the player, the topology of the game board (e.g., if available paths on a game board may shift from place to place), and so on. The values of various variables describing a player’s game situation may constitute player “equity”. That is, the values of the variables may confer upon the player positive expected winnings. For example, if a game character on a game board has a highly advance position, then the player may expect to win money based on the likelihood of the game character’s reaching a favorable square of the game board. If a player has a large number of handle pulls remaining, then the player may have positive expected winnings in that the large number of handle pulls will give him time to advance a game character, to advance a puzzle towards completion, or to perform some other beneficial activities in a game. Thus, different variables may constitute different types of equity, and the tradeoff off of the value of one variable for another may constitute trading one type of equity for another.

[0277] An exemplary tradeoff to be made among different variables describing a game situation is as follows. The player’s number of spins remaining is reduced from one hundred to ten. However, the position of the player’s game character is advanced from the 19th square on a game path to the 81st square on the game path. Having performed such a trade-off, the player’s expected winnings for the game may remain the same. However, the game may now finish more quickly.

[0278] Another exemplary tradeoff among different variables describing a game situation is as follows. Suppose in an aggregation game a player must aggregate both “cherry” symbols and “orange” symbols. Suppose further that the player will receive a payment of twenty coins for acquiring either one hundred “cherry” symbols or one hundred “orange” symbols. For acquiring both one hundred “cherry” symbols and one hundred “orange” symbols, the player will receive forty coins. Suppose the player currently has forty-five “cherry” symbols and fifty “orange” symbols. In principle, the player might continue playing until he has acquired both one hundred “cherry” symbols and one hundred “orange” symbols. However, the player may not wish to wait so long. Instead, the player may give up his forty-five “cherry” symbols in exchange for forty more “orange” symbols. The player now has ninety “orange” symbols. The player needs only to acquire ten more symbols to receive twenty coins rather than needing one hundred five symbols to receive forty coins. Thus, the player may finish the game more quickly, assuming he will stop playing after obtaining one hundred “orange” symbols.

[0279] As may be appreciated, many other tradeoffs may be made among variables describing a game situation. Other tradeoffs may accomplish various objectives, including allowing the more rapid completion of a game. In some cases, a tradeoff may immediately cause a game to end. For instance, in the example of the “cherry” symbols and “orange” symbols described above, it is conceivable the player might have started with even more of each symbol, so that trading off one symbol type for another would have put one symbol type over one hundred.

[0280] In various embodiments, a player may pause the play of a game and continue at a later time. As the player may have equity in the game (i.e., the player’s game situation confers positive expected winnings upon the player), the storage of the game situation may be akin to the storage of money or other valuables. Accordingly, the player may earn interest on the stored game situation. For example, for every day that the player does not continue with the play of a paused game, the player may earn one or more comp points, one or more credits, one or more actual dollars, one
or more additional accumulated symbols in a game, one or more squares by which a game character is to advance, and so on.

[0281] In some embodiments, a player may pay a casino for each day or for each designated period of time that a game situation is stored and in which the game is not resumed. For example, the player may pay $1 per day, or may lose 1 credit per day off a possible payout from the game.

[0282] In various embodiments, all possible future sequences of game events are each converted into a potential single event. For examples, if two handle pulls remain in a game, then there are two outcomes yet to be generated in the game. Rather than generating such outcomes separately, two-outcome combinations may be made into a single outcome. For instance, six reels may be spun simultaneously to generate a two-outcome combination as a single outcome. Alternatively two-outcome combinations may be combined onto a single stop of a reel. For example a single stop on a reel may contain the outcome sequence “bar-bell-orange/cherry/cherry-7.” With all possible future game events combined onto single stops on a reel, an entire game may be completed with a single spin of a reel. Of course, such reels may have an extremely large number of reel stops, and may therefore be electronic in nature. It should also be noted that the gaming device may set the probability of occurrence of each reel stop containing a sequence of possible game events to be equivalent to what the probability of occurrence of the events would be they to occur sequentially in the game. Note also that a possible sequence of future game events may be compressed into a single event, even if the sequence of future game events would not be sufficient to finish the game. Then, for example, two spins of a reel might be required to complete a game rather than only one spin of a reel.

[0283] In various embodiments, a player may pay to reach a later stage of a game. One advantage is that the game may then be close to completion. The player may also pay for a particular game situation. For example, the player may be required to pay a relatively high amount for a favorable game situation, and a relatively low amount for an unfavorable game situation. If the game situation to which a player advances is approximately no more and no less favorable than the player’s current game situation, then the player may not be required to pay to advance to the later stage of the game. In such a case, the player may be engaging in a tradeoff of one variable for another (e.g., of handle pulls remaining for a degree of puzzle completion) as described herein.

[0284] In various embodiments, a game may be automatically terminated under one or more conditions. Exemplary conditions include, there is a pause in play of a predetermined length, or the player withdraws his player-tracking card. If the game is terminated automatically, then any termination value may be stored for the player. The player may later receive the termination value at a casino desk, upon return to the gaming device or upon visiting another gaming device.

[0285] In various embodiments, a player may be provided a receipt or other indication of a game’s termination. A receipt may indicate, for example, a game situation at the time when the player terminated the game, and the termination value received by the player. The receipt may also indicate the time of termination, the date, the gaming device, and so on.

[0286] In various embodiments, a player may terminate a game. The player may later decide that he would have liked to have continued with the game after all. The player may thereupon be given the opportunity to resume play. In order to resume play, the player may be required to pay an amount of money equal to any termination value that was provided to the player. If the player received a prize or other benefit when terminating the original game, the player may be required to forfeit the prize or benefit when resuming the game. The player may additionally be required to pay a penalty. Also, to resume a game, the player may be required to present a receipt proving that he had previously terminated the game that he now wishes to resume. The receipt may allow the gaming device at which the game is to be resumed to recreate the game situation at the point where the game was terminated.

[0287] An existing game that may have lasting duration is a sports bet. For example, prior to the start of the football season, a player may place a bet on which team will win the Super Bowl (the world championship of football). The player may then wait for many months after having placed his bet before being able to receive any winnings.

[0288] According to various embodiments of the present invention, a player may have the opportunity to terminate a sports bet early. For instance, the player may receive some payment on his original bet even prior to the resolution of the event on which the bet was originally made. As described herein, the payment a player receives upon the termination of his bet may be based on his expected winnings from the game, or based on a number of other factors. It should be noted that in the context of sports betting, a precise mathematical derivation of expected winnings may not be possible, as there may be no definite probabilities for how one team will fare against another, for what chance a player has of being injured, for what effects rain might have on a game, etc. Rather, in any derivation of expected winnings, the best estimates of sports experts may be used, or the implied probabilities of current betting odds may be used, in determining the probabilities of a team or teams performing in line with a player’s wager.

[0289] As an illustration, suppose that at the start of the football season, a player bets on a particular team to win the Super Bowl. If halfway into the season, the team is undefeated and is thought to have excellent prospects, then the player may be thought of as having a relatively favorable game situation. The player may thus be able to terminate the game and receive a relatively large termination value. However, if the player’s team has a mediocre record, then the player may receive a relatively small termination value.

[0290] In some embodiments, a player may have a choice of prizes to receive for terminating a game. For instance, the gaming device may offer the player a payment of $10, a $15 voucher at the casino restaurant, 100 comp points, $20 off a hotel room, or a fake-pearl necklace.

[0291] In some embodiments, a player may change the objective of a game while in the middle of play. For example, suppose, in a puzzle game, that certain reel symbols may cause the puzzle to advance towards completion,
and that certain other reel symbols may cause the puzzle to go in the wrong direction, i.e., to regress from completion. Suppose further that the puzzle is halfway from an initial state towards completion. The player may now change his objective from completing the puzzle to getting the puzzle to regress fully to its initial state. The new objective may be just as unlikely to be realized as the original objective (of getting the puzzle to reach completion). Therefore, the player may achieve the same payment for realizing the new objective as he would have for having realized the original objective.

[0292] In some embodiments, a player in a tournament situation may terminate his participation in the tournament in exchange for a payment. For example, a player may be engaged in a slot machine tournament in which all participants have one hour to win as many credits as possible at a slot machine. After half an hour, the player may desire to withdraw from the tournament. The player may then receive a payment based on one or more factors. Such factors may include the player’s chances of placing first, second, third, etc., in the tournament. The player’s chances may in turn be determined by the player’s current amount of accumulated winnings, by competitors’ accumulated winnings, by the number of competitors, by the player’s rate of play, and so on. Determining factors may also include the amounts of prize money to be paid to the top finishers in the tournament. Further, as any payment may be deducted from the prize fund of the tournament, the amount paid to the player may be subject to the approval of other players in the tournament.

[0293] In embodiments where a new (e.g., faster) game is substituted for a game to be terminated, it may be desirable, as mentioned, to structure the new game such that the player’s expected winnings for the new game are the same as the player’s expected winnings for the current game situation of the game being terminated. However, given the nature of the new game, including the pay table associated with the new game, it may be difficult or impossible to construct a game situation for the new game to match the expected winnings of the game being terminated. For example, it may be difficult to construct an initial hand of 9/6 Jacks or Better™ video poker in which the player has expected winnings of twelve credits. The nearest starting hands provide expected winnings of nine credits (a pat full house), and expected winnings of approximately 18.7 credits (four cards to a royal flush). Accordingly, one or more parameters of the new game may be altered in order to arrive at a new game situation with expected player winnings of twelve credits. For example, the pay table of the new game may be altered, the probability of occurrence of certain symbols may be altered, certain cards may be removed from a deck of cards, wild cards may be added, and so on.

[0294] In some embodiments, rather than terminating a game, a player may indicate a time by which the player desires to finish the game. For example, if a game is scheduled to last an additional twenty minutes, a player may indicate that he wishes to complete the game within the next five minutes. The gaming device may accordingly modify the play of the game. For example, the gaming device may allow the player to make handle pulls more rapidly, or to generate some outcomes simultaneously. The gaming device may increase the rate of play to such a tempo that the game is likely to conclude by the time desired by the player. The gaming device may also aid the player by generating outcomes automatically, e.g., at a rate faster than the rate at which a player would be capable of initiating the handle pulls. The gaming device may also modify a game in other respects. For example, the gaming device may shorten the length of a game path, lower the number of aggregated symbols necessary to receive a prize, and so on.

[0295] In one embodiment, if a gaming device offers a termination value to a player in exchange for the player terminating a game, and if the player declines, then the gaming device may return with a larger offer.

[0296] In one embodiments, a player may have multiple objectives in a game. For example, in a game of Monopoly®, one objective may be for the player’s game character to circle the game board. Another objective may be for the player’s game character to land on all three properties of a particular color group. Evidently, the accomplishment of some objectives in a game may be more time consuming than the accomplishment of other objectives. Accordingly, a player may terminate a game in so far as one objective is concerned, but may continue play of the game in so far as another objective is concerned. For example, in the Monopoly® example, a player may accept a termination payment, after which the player will no longer have the objective of acquiring the three properties. However, the player may continue to play the game in pursuit of his game character circle the board. Advantageously, the game is likely finish more quickly than if the player had pursued both of the original objectives. In one embodiment a termination value may be determined to be the amount paid by the player to play the game, or some fraction thereof.

EXAMPLES OF EMBODIMENTS

[0297] Following are several exemplary illustrations of various embodiments.

EXAMPLE ONE OF AN EMBODIMENT

[0298] In one exemplary game, a player makes an up-front payment for a block of handle pulls. Each handle pull results in an independent outcome being generated. Outcomes may include, for example, “bar-bell-orange” or “cherry-plum-cherry”. The gaming device keeps track of the payouts corresponding to the outcome of each handle pull. When the block of handle pulls has been completed, the gaming device then pays the player the sum of the payouts corresponding to the outcomes generated during the block of handle pulls. As an example, a player pays $19 for a block of twenty handle pulls. During the twenty handle pulls, the player achieves four winning outcomes, with payouts of $3, $12, $2, and $1. After having completed the block of handle pulls, the player then receives $3+$12+$2+$1, or $16 from the gaming device.

[0299] Suppose that a player has paid $19 for a block of twenty handle pulls as described above. After ten handle pulls, the player has achieved winning outcomes paying $2 and $6. Suppose now that the player wishes to terminate the game early because of a plane reservation. The player may therefore press an “end game” button. The gaming device may then determine the player’s expected winnings from the remaining ten pulls in the block of twenty pulls. If the expected payout for a single handle pull is $0.90, then the player’s expected winnings for the next ten handle pulls are $9. The gaming device may therefore determine that the
player’s expected winnings at the end of the game are $8 (the amount already won) plus $9 in expected winnings on the next ten handle pulls, for a total of $17. The gaming device may assess a $1 penalty for the early termination of the game. Therefore, the gaming device may pay the player $16 once the player presses the “end game” button. The player has therefore recovered a portion of his financial commitment in the game. The player has further been able to release himself from the rest of his time commitment so as to be able to attend to other priorities (i.e., catching a flight).

EXAMPLE TWO OF AN EMBODIMENT

[0300] In one or more exemplary games, an upper display screen of a gaming device features a representation of a game board, such as a Monopoly® board. At least one game character represented on the board corresponds to the player. Additional game characters represented on the board may correspond to one or more opponents of the player. For example, one game character may correspond to the house. A lower display screen depicts an expanded view of the square on which the player’s game character is located. In the expanded view, more detailed features of the game board may be visible. For example, in a Monopoly® game, houses or hotels built on particular squares (properties) may be realistically depicted (e.g., as real houses might look).

[0301] In one exemplary game with a Monopoly® theme, a player’s game character is pitted against three opposing game characters. Complete monopolies (i.e., like groups of two, three, or four properties, sometime also called color groups), are then randomly distributed amongst the four game characters. For example, a first game character might receive the orange and green color groups (for a total of six properties), while a second game character might receive the red color group and the railroad group (for a total of seven properties). Each game character also begins the game with a $1500 balance of Monopoly® money. The Monopoly® money is not redeemable for any real currency, but merely serves as a currency within the game.

[0302] In the game, each game character is allowed twenty-five turns. For the player, a turn consists of spinning the reels. The reels of the gaming device may then indicate a random number of squares by which the player’s game character is to advance along the game board. If the player lands on a “Chance” or “Community Chest” square, then the player may receive other indications, e.g., from randomly drawn “Chance” or “Community Chest” cards. Such other indications may also cause the player’s game character to move to a different square, such as a “Go” square or a “Jail” square. Additionally, the player may receive or pay Monopoly® money depending on the square on which he has landed. For example, if the player has landed on a property owned by an opposing game character, then the player may be required to pay rent to the opposing game character. Thus, the player’s balance of Monopoly® money may decrease, while the opposing game character’s balance increases correspondingly. If the player has passed “Go”, for example, then the player may receive an additional $200 Monopoly® money. If the player is currently in “Jail”, then the player’s game character may not be allowed to move for a set number of turns, unless a special outcome occurs on the reels, or unless the player pays $50 Monopoly® money.

[0303] During the player’s turn, or at some other time, the player may build or tear down houses or hotels on his color groups. The building of houses or hotels may allow the player to collect larger rents from opposing game characters should such game characters land on the player’s properties. The player may be required to spend some of his Monopoly® money to build houses or hotels. A player may have the opportunity to decide when to build houses or hotels. Alternatively, for the purposes of simplifying or speeding the game, houses or hotels may be built automatically for the player by the gaming device using a set of predetermined rules for when to build. A player may receive money for tearing down houses or hotels. Similarly, the decision to tear down houses or hotels may or may not be made automatically by the gaming device.

[0304] When it is the turn of an opposing game character, such a game character may also move along the game board according to randomly generated outcomes. Such outcomes may also be generated on the reels. If an opposing game character lands on a property owned by the player, then the game character may pay the player rent according to the number of houses and hotels contained on the particular property, and according to the rent schedule of the particular property. The player may thus build his balance of Monopoly® money.

[0305] In one or more embodiments, the gaming device controls the three opposing game characters. In one or more embodiments, the gaming device further controls the game so that greater numbers of houses and hotels are built on all properties towards the end of the game. Thus, as the player nears his last turn, the player faces the increasing possibility of landing on a heavily developed property of an opposing game character, and of therefore having to pay a high rent.

[0306] The player may ultimately win real money based on the amount of Monopoly® money he has remaining at the end of the game. If the player has a balance of Monopoly® money that is above a certain threshold (e.g., above $2000), then the player may win a jackpot payout of one million dollars. If the player has a balance lower than $2000, then the player may win other amounts of real dollars according to a predetermined pay schedule.

[0307] In one or more embodiments of a Monopoly® game, the game may begin without all properties having been distributed amongst the game characters. Game characters may then have the opportunity to randomly land on a property, and to purchase the property if it is not already owned by another game character. There is then the possibility that a player may be disadvantaged if an opposing game character purchases a property before the player’s game character lands on it. The property will then become unavailable to the player. Further, the player may be required to pay rent if his game character ever does land on the property.

[0308] In one or more embodiments of a Monopoly® game, an opposing game character may run out of Monopoly® money. Then, even though the opposing game character may own a number of properties, the game character may not have the money necessary to develop such properties, or even to keep such properties out of mortgage. The opposing game character may thus no longer pose a threat to the player.

[0309] In one or more embodiments of a Monopoly® game, a player may have the option to make a purchase or
other payment within the game using real money. For example, the player might insert $10 into a gaming device in order to purchase the “Boardwalk” property, or in order to purchase a hotel for “Virginia Avenue.” Alternatively, a player may have the option to purchase more Monopoly® money using real currency. The player may then use the Monopoly® money to make a payment or other purchase within the game.

[0310] In one or more of the exemplary Monopoly® games described herein, the player may have the option to terminate the game early. The player may then receive a payment. The payment may be based at least in part upon the player's current game situation, which may include the number of turns remaining for the player, the properties owned by the player, the degree to which the player's properties are developed, the player's current balance of Monopoly® money, the location of the player's game character on the game board, the locations of opposing game characters, the degree to which the properties of opposing game characters are developed, and so on. The player's current game situation may influence the player's expected winnings for the game, which might in turn influence the amount to be paid to the player for the early termination of the game.

EXAMPLE THREE OF AN EMBODIMENT

[0311] Henry sat down at a gaming device labeled “Treasure Hunter.” The gaming device had an upper display screen and a lower display screen. The upper display screen showed a map of several islands, including several islands each containing a treasure chest, a “Pirate Island”, and a “Safe Harbor” island. The upper display screen also showed a depiction of a ship belonging to the player. The player's ship would sail among the islands, gathering treasure and attempting to deposit the treasure at the “Safe Harbor” island. The player's ship would attempt to avoid pirate ships, which would steal any treasure contained aboard the player's ship. The player's ship would also attempt to avoid any hurricanes, which would also take away the player's treasure by sinking the player's ship. The lower display screen contained depictions of three slot machine reels, replete with treasure-themed symbols.

[0312] The object was to spin the reels on the lower screen until a “Treasure” symbol appeared. The player's ship would then sail to an island containing treasure and would pick up a treasure chest. Having obtained the treasure, the object was now to spin the reels again in order to bring the treasure to the “Safe Harbor” island. The player could get the treasure to the “Safe Harbor” island by obtaining a “Safe Harbor” symbol on the reels displayed on the lower display screen. Then, on the upper display screen, the player's ship would be shown sailing to the “Safe Harbor” island. Once the treasure was brought to the “Safe Harbor” island, the player would be guaranteed a certain payout corresponding to the acquired treasure. However, before getting to the safe harbor, the player risked obtaining a “Pirate Attack” symbol. If the player obtained a “Pirate Attack” symbol, then a pirate ship would be shown attacking the player's ship, and the player would lose any treasure on board. If the player obtained a “Hurricane” symbol, then the player's ship would be shown being sunk by a hurricane. The player would again lose any treasure on board. The player would, however, get a new ship.

[0313] For an initial payment of twenty credits, a player would be allowed to keep making handle pulls without further payment. Each handle pull would be part of the same game. The game would finally end when the player has treasure taken from him for the third time. At the end of the game, the player would be allowed to keep all the credits corresponding to the treasure he had deposited in the “Safe Harbor” island. Prior to starting the game, the player would also be given the option to pay forty credits, or some other multiple of twenty credits. The value of any treasure obtained by the player would then be increased proportionally.

[0314] Henry inserted sixty credits. He then pressed a button labeled “Begin Play: Sixty”, indicating that he wished to play a game in which the initial payment was sixty credits. On his first spin, he obtained the symbols “Dry Land—Dry Land—Dry Land”. There was no effect, even though three like symbols were lined up. Henry would only be paid by obtaining a “Treasure” symbol followed by a “Safe Harbor” symbol. On his second spin, Henry obtained the outcome “Dry Land—Treasure—Dry Land”. The upper display screen then showed Henry's ship sailing to an island with treasure on it. When the ship reached the island, the upper display screen showed a message, “Ahoy mate! You discovered treasure! Now get it to Safe Harbor!” Additionally, the upper display screen showed a close-up depiction of the island reached by Henry's ship. A treasure chest was shown sitting on the island with an “eighteen credits” label in close proximity. Henry then made another spin. The outcome was now “Dry Land—Anchor—Sail”. The outcome had no effect on the game. The upper display screen once again showed the original depiction of the map of the multiple islands. Henry made another handle pull. The outcome was now “Safe Harbor—Anchor—Dry Land”. The upper display screen then showed Henry's ship sailing to an island labeled “Safe Harbor”. Henry had now deposited a treasure worth eighteen credits at the “Safe Harbor” island. He was now guaranteed at least eighteen credits at the end of the game. However, Henry would not be paid until the end of the game.

[0315] Henry's next spin brought another “Treasure” symbol. Once again, his ship sailed to an island with treasure on it. Henry's following outcome was “Dry Land—Hurricane—Sail”. The top screen then showed an animation of a storm cloud blowing at the player's ship. The screen displayed the message, “Hurricane, ship sunk! Sorry, treasure on ship is lost.” Although Henry had lost his treasure and his ship, he was granted a new ship.

[0316] Henry later achieved another “Treasure” symbol. He was again able to deposit the treasure, now worth twenty-four credits, at the “Safe Harbor” island. Henry then obtained still another “Treasure” symbol, this one worth fifteen credits. However, soon thereafter, Henry obtained the outcome “Sail—Pirate Attack—Sail”. The upper display screen now showed a depiction of a pirate boarding the player's ship. The following message was displayed on the upper display screen, “Pirate Attack! Treasure Stolen!”

[0317] Henry had now had treasure taken from him twice. He had one more chance to acquire more treasure and to bring it to Safe Harbor. Unfortunately, the next time Henry acquired treasure, it was taken away by another “Pirate Attack” symbol. The upper display screen showed how
Henry had lost treasure three times. The message “three treasures lost” was displayed. Underneath the message were displayed, “hurricane sunk ship”, “pirate stole treasure”, and “pirate stole treasure”. Additionally, the screen displayed, “Game Over. Do you want to play again?” Finally, a large depiction of the “Safe Harbor” island was displayed on the upper display screen. It showed the two treasure chests gathered by the player. The total of Henry’s winnings, “forty-two credits” was also displayed next to the treasure. The gaming device then added forty-two credits to Henry’s credit meter.

[0318] In various embodiments of the “Treasure Hunter” game, a player may place treasure at another gaming device after having acquired the treasure. At another gaming device the treasure may be safe from being taken by pirates. By placing treasure at another gaming device, the player may be required to interact with the other gaming device in order to receive a benefit corresponding to the acquired treasure. The player may thus be encouraged to gamble at the other gaming device. Operationally, treasure may be placed at another gaming device if, for example, the player’s current gaming device is linked to the other gaming device via an electronic network. The player’s gaming device may thereby transmit information to the other gaming device (possibly via the casino server), indicating that the other gaming device is to display a representation of treasure to a person identifying himself as the player, and to provide a corresponding benefit to the person. Of course, the transmission of value or representations of value between gaming devices is possible for many other games and for many other representations of value besides “treasure” symbols.

[0319] In one or more embodiments of the “Treasure Hunter” game, a player may have the opportunity to terminate the game early. That is, the player may have the opportunity to terminate the game before a third treasure has been taken from the player. The player may then receive a payment that may be based, at least in part, on the player’s current game situation. The player’s current game situation may include the number or total value of treasures stored at the “Safe Harbor” island, the number or total value of treasures currently carried on the player’s ship, and the number of treasures already taken from the player. Note that the number of handle pulls completed thus far may not be a consideration in the player’s current game state, as the only determinant of the length of a finished game is the number of times that treasure is stolen from the player.

[0320] Although the present invention has been described with respect to particular embodiments thereof, those skilled in the art will note that various substitutions may be made to those embodiments described herein without departing from the spirit and scope of the present invention.

We claim:

1. A method comprising:
   receiving a wager from a player at a gaming device, the wager entitling the player to play a bonus game;
   determining a termination value of the bonus game; and
   providing the termination value to the player in exchange for the player discontinuing play of the bonus game.

2. The method of 1, further including displaying the termination value.

3. The method of 2, in which displaying includes displaying the termination value on the display screen of the gaming device.

4. The method of 1, further including:
   determining a first situation of the bonus game; and
   determining a second situation of the bonus game.

5. The method of 4, in which determining a termination value includes determining a termination value based on the second situation of the bonus game.

6. The method of 5, further including:
   offering the player a choice of receiving the termination value or continuing play of the bonus game; and
   receiving from the player a selection of the termination value.

7. The method of 1, in which determining a termination value includes determining a termination value based on at least one of:
   (1) a minimum amount that can be won through continued play of the bonus game;
   (2) a maximum amount that can be won through continued play of the bonus game;
   (3) an expected amount that would be won through continued play of the bonus game; and
   (4) the wager.

8. The method of 1, in which determining a termination value includes performing a simulation of possible future courses of the bonus game.

9. The method of 1, in which determining a termination value includes calculating a termination value.

10. The method of 1, in which determining a termination value includes:
   calculating a first probability of the bonus game reaching a third situation from the second situation;
   determining a first payment associated with the third situation;
   calculating a second probability of the bonus game reaching a fourth situation from the second situation;
   determining a second payment associated with the fourth situation; and
   calculating the termination value based on the first probability, the first payment, the second probability, and the second payment.

11. The method of 1, in which determining a termination value includes:
   determining a third situation, in which the third situation is identical to the second situation, and in which the third situation is associated with a predetermined termination value.

12. The method of 1, in which determining a termination value includes:
   determining a third situation, in which the third situation has at least one characteristic in common with the second situation, and in which the third situation is associated with a predetermined termination value.
13. The method of 1, in which in which the second situation has an associated first setting of a parameter, and in which determining a termination value includes:

determining a third situation, in which the third situation is associated with a first predetermined termination value, and in which the third situation has an associated second setting of the parameter;

determining a fourth situation, in which the fourth situation is associated with a second predetermined termination value, and in which the fourth situation has an associated third setting of the parameter;

in which the first setting is between the second setting and the third setting; and

determining the termination value based on the first predetermined termination value and the second predetermined termination value.

14. A method comprising:

receiving an indication that a player wishes to discontinue the play of an extended game at a gaming device;

displaying, only after receiving the indication, a termination value for the extended game.

15. The method of 14, further including:

receiving a confirmation from the player that the player wishes to discontinue the play of the extended game in exchange for the player receiving the termination value; and

providing the termination value to the player.

16. The method of 14 in which receiving an indication includes detecting the press of a button by a player of an extended game at a gaming device, the press indicative of a desire to discontinue play of the extended game.

17. The method of 14 in which the extended game is a bonus game.

18. The method of 14 in which the extended game is a secondary game.

19. A method comprising:

receiving an indication that a player wishes to discontinue play of a first extended game at a gaming device;

determining, at a first time, a first situation of the first extended game;

storing the first situation of the first extended game;

determining, at a second time, a second situation of a second extended game,

in which the second time is after the first time;

receiving an indication that the player wishes to resume play of the first extended game; and

restoring, at a third time, the first situation of the first extended game,

in which the third time is after the second time.

20. The method of 19 in which the extended game is a bonus game.

21. The method of 19 in which the extended game is a secondary game.

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