Systems and methods for facilitating a multi-player and inter-player competitive wagering game in conjunction with a base game, such as a traditional wagering game such as Keno or other online lottery games. A group of players may all participate in the traditional wager game as a group, and the player in the group who has the best result in the base game may be awarded all or part of the total group winnings from the base lottery game.
How much do you want to play per bet?
$1 $2 $5 $10

How many players?
2 3 4

For how many consecutive games do you want to play?
1 2 5 10 15

How many spots do you want to play per game?
1 2 3 4 5 6 7 8 9

Player 1
Player 2
Player 3
Player 4

FIG. 1a
FIG. 1b
Receive wager, game number, player number, and format options.  

Receive game play selections from a player.

All players entered selections?

Generate outcome(s).

Additional games on this ticket?

Record individual prizes/results

Award individual prizes.

Determine overall best player.

Award bonus prize to overall best player.

Receive ticket for redemption

Receive wager, game number, player number, and format options.

Receive game play selections from a player.

All players entered selections?

Generate outcome.

Additional games on this ticket?

Record individual prizes/results

Determine overall best player.

Award all winnings to best player.

Receive ticket for redemption
Fig. 2c

Players decide to play group game 211

Group Chooses Game Options 212

Each Player Chooses Play Selections 216

Players receive separate tickets. 228

Receive wager, player number, and format options. 213

Wager Option Selections

Receive game play selections from a player. 221

All players entered selections? 226

Yes

No

Generate outcome. 230

Display Results 231

Record individual outcomes/results 234

Assign winnings to best entry in group. 249

Determine overall best entry in group. 241

Ticket from "best" player group? 271

Yes

No

Provide consolatory message. 273

Award total prize. 276

If Individual Player Had Best Result In Group, Player Receives Prize For Multiplayer Game 281

Individual Player Presents Receipt For Redemptions 251

Tendered Receipt

Awarded Prize

Receive ticket for redemption 251

Receive game receipts 227

Game Receipts

Display Results Assign winnings to best entry in group.

Oct. 1, 2009 Sheet 4 of 8 US 2009/0247256 A1
### Fig. 3a

<table>
<thead>
<tr>
<th>Match</th>
<th>Prize $1 Wager.</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>$4,500</td>
</tr>
<tr>
<td>6</td>
<td>$85</td>
</tr>
<tr>
<td>5</td>
<td>$17</td>
</tr>
<tr>
<td>4</td>
<td>$3</td>
</tr>
<tr>
<td>3</td>
<td>$1</td>
</tr>
<tr>
<td>0, 1, 2</td>
<td>$0</td>
</tr>
</tbody>
</table>

### Fig. 3b

<table>
<thead>
<tr>
<th>#5 matched ($5 won)</th>
<th>Game 1</th>
<th>Game 2</th>
<th>Game 3</th>
<th>Game 4</th>
<th>Game 5</th>
<th>Total Won</th>
</tr>
</thead>
<tbody>
<tr>
<td>Player 1</td>
<td>3 ($1)</td>
<td>0 ($0)</td>
<td>2 ($0)</td>
<td>4 ($3)</td>
<td>0 ($0)</td>
<td>9 ($4)</td>
</tr>
<tr>
<td>Player 2</td>
<td>5 ($17)</td>
<td>0 ($0)</td>
<td>2 ($0)</td>
<td>1 ($0)</td>
<td>0 ($0)</td>
<td>8 ($17)</td>
</tr>
<tr>
<td>Player 3</td>
<td>3 ($1)</td>
<td>3 ($1)</td>
<td>0 ($0)</td>
<td>0 ($0)</td>
<td>0 ($0)</td>
<td>6 ($2)</td>
</tr>
<tr>
<td>Player 4</td>
<td>0 ($0)</td>
<td>0 ($0)</td>
<td>0 ($0)</td>
<td>0 ($0)</td>
<td>0 ($0)</td>
<td>0 ($0)</td>
</tr>
</tbody>
</table>
Fig. 4b

- Video Screen Display 416b
- Player Input Device 420b
- Processor 425b
- Memory 440b
- Network I/O Device 430b
- Cash-out Device 426b
- Wager Input Device 415b
- Game Software Component 470
- Terminal Interface Instructions 475
- Multiplayer Game Entry Client Software Component 481
- Multiplayer Game Play-slip Reader 483
- Multiplayer Game Ticket Issuance Component 487
METHOD AND SYSTEM FOR FACILITATING INTER-PLAYER WAGERING IN CONJUNCTION WITH A BASE GAME

RELATED APPLICATION AND PRIORITY CLAIM


BACKGROUND INFORMATION

[0002] Number selection games such as Keno have long been a staple for the gaming industry. They are played in many ways: using physical boards with bingo-like player cards and numbered balls, by individual players at individual machines as a video game, as casino or venue-wide games, or as online state or multi-state lottery games. These games are simple for players to understand and desirable and exciting to players despite traditionally having one of the highest profit margins for operators. The profitability of a wagering game for operators is directly related to how popular the game is to players, and how much players are willing to wager while playing the game. Popularity of a game is often a function of both the perceived likelihood of winning and the entertainment appeal of the game itself. The game operator may be a private business trying to realize a profit, or a state government trying to realize important supplemental revenue through state lottery programs.

[0003] Since Keno and other online drawing games are often played in a shared venue, such as a Keno parlor, bar, restaurant, or bowling alley, they are often played as a social activity by multiple players. However, these players generally do not directly compete with each other. One goal of the some of the example embodiments of the present invention is to enhance the social aspects of Keno and other online drawing games.

SUMMARY

[0004] One example embodiment of the present invention includes a method of facilitating a multi-player wagering game run together with a base wagering game. The method includes receiving entries for the base wagering game from a group of players, and receiving an indication that the group of players also wish to participate in the multi-player wagering game. The method will then determine at least one separate outcome of the base wagering game for each of the players in the group based at least in part on the received entries. The method will then provide information to the group of players that will allow the players to determine the outcome of the base wagering game. The method will then award at least a share of each player in the group’s prize in the base wagering game to one of the players in the group based on predetermined rules that compare the outcomes for the player’s entries in the base wagering game.

[0005] Another example embodiment of the present invention is a method of facilitating an inter-player wagering game run together with a base single player wagering game. The method will receive entries from a group of players who will enter the game as a group. The method will then determine separate outcomes for each player in the group for each of the plays of the base wagering game. The method will then determine a prize associated with each separate outcome of the base wagering game. The method will then award a final prize to one of the players in the group, who is selected based on a comparison of the separate outcomes the players in the group obtained for each of the plays of the base wagering game. The final prize will be based at least in part on the prizes that would have been awarded to the individual players in the group had they entered the base single player wagering game with the same entries.

[0006] Optionally, in addition to or instead of the other optional features, in the example method, the player who has the greatest sum of the separate outcomes of the plays of the base game compared with the other players in the group may receive the entire final prize.

[0007] Optionally, in addition to or instead of the other optional features, in the example method, each winning player may receive a portion of the final prize, based at least in part on the number of winning players.

[0008] Optionally, in addition to or instead of the other optional features, in the example method, one winning player may be awarded the entire final prize based on criteria that is not the sum of outcomes associated with each player.

[0009] Optionally, in addition to or instead of the other optional features, in the example method, the other criteria may include the sum of prizes associated with each player.

[0010] Optionally, in addition to or instead of the other optional features, in the example method, the method may include receiving an indication of an amount to be wagered by each player.

[0011] Optionally, in addition to or instead of the other optional features, in the example method, each player may be required to wager the same amount.

[0012] Optionally, in addition to or instead of the other optional features, in the example method, the amount to be wagered may be the amount wagered per game.

[0013] Optionally, in addition to or instead of the other optional features, in the example method, the method may include receiving an indication of the quantity of games, wherein the quantity of games is based on the indication of the quantity of games.

[0014] Optionally, in addition to or instead of the other optional features, in the example method, the method may include receiving a selection by each player, wherein the outcome associated with each player per game is based at least in part on the selection made by each player.

[0015] Optionally, in addition to or instead of the other optional features, in the example method, each of the games may include receiving a quantity of player selected numbers from a plurality of numbers for each of the players. The player selected quantity may be less than the plurality. The game may also include selecting a quantity of winning numbers from the plurality, where the outcome associated with each player for each game is the quantity of player selected numbers that match a number within the quantity of winning numbers.

[0016] Another example embodiment of the present invention is a method of facilitating a shared play Keno game run together with a base Keno game. The method includes receiving an entry from a group of players (more than one) who wish to enter the game together. Then receiving pick numbers for each of the players in the group for the base Keno game. Next, the method will provide each of the players in the group with a ticket showing their pick numbers, and record information that associates the tickets for the players in the group. The method will randomly determine draw numbers for the base Keno game, and determine the number of draw numbers
matched by the pick numbers for each player in the group. The method will then determine the base Keno game prize award for each player in the group. The method will then award the base Keno game prize awards for all the players in the group to one of the players in the group who had the best result according to predetermined share play game rules.

Another example embodiment of the present invention is a computer readable medium having stored thereon a set of computer-readable instructions configured, when executed by a processor, to cause the processor to control the performance of any of the methods described summarized above.

Another example embodiment of the present invention is a system for facilitating the play of a multiplayer wagering game run in conjunction with a single player wagering game. The system will include an input device configured to receive entries in the single player wagering game and group entries in the multiplayer wagering game. The system will include an entry module configured record and process entries for single players in the single player wagering game and to record and process group entries in the wagering game. The system will include a random result generator configured to determine game results shared by the single player wagering game and the multiplayer wagering game. The system will include a single player game outcome determining module configured to determine prizes awarded to individual players who have entered the single player wagering game based on the players’ entries and the game results. The system will include a multiple player game outcome determining module configured to determine the game outcome for the individual players in the group, and to award a prize to a winning player in the group by comparing the game outcomes for the individual players in the group to each other.

Optionally, in addition to or instead of the other optional features, in the example system the prize awarded to the winning player in the group may be the sum of the prizes that would have been awarded to the individual players in the group if they had made the same entry in the single player wagering game.

Optionally, in addition to or instead of the other optional features, in the example system the winning player in the group may be the player who has the best game outcome according to the rules of the single player wagering game.

 Optionally, in addition to or instead of the other optional features, the example system may include a game result issuance device configured to issue a receipt to entrants in the single player wagering game and also to issue a receipt to each player in the group for the multiplayer wagering game.

Optionally, in addition to or instead of the other optional features, in the example system the single player wagering game may be an online numbers draw game, and the single player game entries may be matched against randomly drawn numbers, and where group entries in the multiplayer wagering game may include a separate set of numbers for each player, which may be matched against the randomly drawn numbers.

Another example embodiment of the present invention may include a multiplayer drawing game run in conjunction with a single player drawing game. The game will include a game server. The game will include an input device configured to receive player entries in the single player drawing game. The entries include a spot number, a number of drawings entered, a bet amount, and a quantity of number selections equal to the spot number. The input device will be able to receive player entries in the multiplayer drawing game, multiplayer entries received from a group of players including a spot number, a number of drawings entered, a bet amount, and a quantity of number selections from each player in the group equal to the spot number. The input device will be able to communicate the entry information to the server. The game will include an output device configured to issue receipts to the single player and to each individual player in the group. The tickets (or receipts) each including the respective players respective entry information and a unique ticket identification number received from the server. The game will include a display device configured to display game drawing results to players. The game will include a ticket redemption device configured to receive tickets for redemption and to read the unique ticket identification number from the tendered tickets and communicate it to the server, and responsive to receipt of an authorization from the server to indicate that the tickets should be redeemed for a prize. The server is in communication with the input device, the output device, and the ticket redemption device. The server is configured to receive the entry information from the input device. The server is configured to receive from the input device and record the single and multiplayer entries, and to provide to the output device the unique ticket identification number for each ticket, the server also storing information associating the unique ticket identification numbers of the tickets issued to a players in a group.

Another example embodiment of the present invention includes a system for facilitating the play of a multiplayer wagering game run in conjunction with a single player wagering game. This system includes an input means for receiving individual entries in the single player wagering game and for receiving entries by a group in the multiplayer wagering game. The system also include a random result means for determining random results for the single player wagering game that are also shared by the multiplayer wagering game. The system includes a single player outcome determining means for determining prizes awarded to single players entering the single player wagering games based on the individual players’ entries and the random results. The system includes a multiplayer wagering game outcome determining means for determining the prize awarded to a winning player in the group, the winning player in the group being selected by comparing the single player game outcomes for each player in the group and determining which player in the best result in the group, and the prize being based at least in part on the sum of the prizes that would have been awarded to each of the players in the group had they made the same entry in the single player wagering game.

Optionally, in addition to or instead of the other optional features, in the example system the multiplayer outcome determining means may select the winning entry in the group by choosing the player who would have won the largest prize in the one or more plays of the single player lottery game.

Optionally, in addition to or instead of the other optional features, in the example system the winning player in the group’s prize is the sum of all the prizes that would have been awarded to each of the player’s in the group in the single player wagering game.

Optionally, in addition to or instead of the other optional features, in the example system the single player wagering game is an online numbers draw game, and
the single player game entries to be matched against randomly drawn numbers generated by the random result means, and where group entries in the multiplayer wagering game include a separate set of numbers for each player to be matched against the randomly drawn numbers.

Optionally, in addition to or instead of the other optional features, any example method may include receiving a shared play slip including the entries for all the players in the group.

Optionally, in addition to or instead of the other optional features, any example method may include issuing individual receipts to each player in the group.

Optionally, in addition to or instead of the other optional features, any example method may include redeeming one of the receipts for the share of each player in the group’s prize.

Optionally, in addition to or instead of the other optional features, any example method may include redeeming the individual receipts for at least portions of the prizes won by each respective player in the base wagering game.

Optionally, in addition to or instead of the other optional features, in any example method the base game may be a numbers game.

Optionally, in addition to or instead of the other optional features, in any example method the base game may be Keno.

**BRIEF DESCRIPTION OF THE DRAWINGS**

FIG. 1a illustrates a diagram of an example entry slip, according to one example embodiment of the present invention.

FIG. 1b illustrates an example entry receipt, according to one example embodiment of the present invention.

FIG. 2a illustrates an example procedure for facilitating a single draw inter-player game, according to one example embodiment of the present invention.

FIG. 2b illustrates an example procedure for facilitating a multi-draw game, according to one example embodiment of the present invention.

FIG. 2c illustrates an example procedure for facilitating a multi-draw game, according to one example embodiment of the present invention.

FIG. 3a illustrates an example pay table for an example procedure, according to one example embodiment of the present invention.

FIG. 3b illustrates a diagram of an example execution of an example procedure, according to one example embodiment of the present invention.

FIG. 4a illustrates a block diagram of an example system according to one example embodiment of the present invention.

FIG. 4b illustrates a block diagram of an example system according to one example embodiment of the present invention.

FIG. 5 illustrates a block diagram of an example distributed system according to one example embodiment of the present invention.

**DETAILED DESCRIPTION OF EXAMPLE EMBODIMENTS**

 Applicants believe that the appeal of wagering games may increase by adding a multi-player competitive component to games that otherwise lack player interaction. In some example embodiments of the present invention, players may be allowed not only to play a lottery or wagering game, but also to play the same or a similar type of game at the same time against other players in a group. This may provide an additional social appeal to the games.

Some example embodiments of the present invention include systems and procedures for providing a social or inter-player aspect to wagering games that, in their conventional form, are wagered on by players as individuals. This may be accomplished with several different approaches, and example procedures are illustrated below.

In some example embodiments, players may make individual wagering game entries according to the rules of a conventional wagering game, such as various online drawing games. For example, each player in a group may select a personal set of “lucky” numbers as their entry in a Keno game. These entries may be made at the same time as the other players in their group, e.g., using a shared play slip or entry form, a shared entry screen, or alternatively, may be made completely separately and then linked in some other way. The players’ game entries are then linked by the system, e.g., in the database recording players’ wager information. Players in the group may receive individual receipts for their entries in the game, but generally, the system will be aware that the tickets for players in a particular group are linked. Players in the group can then observe the results of the game, e.g., the number draws in a Keno game which are displayed on a screen in the gaming venue. Each player’s entry can be evaluated according to the rules of the conventional individual wagering game, both by the players themselves, and by the system. However, the prize awarded to an individual player depends on their relative result versus the other players in their group.

For example, in one example embodiment, the player with the best result in the group might receive all the prizes that would normally be due to every individual player in the groups. Alternatively, the player with the best result in the group might receive a fractional share of the prizes due each of the individual players in the group, or the player with the best result might receive a special bonus prize. It will be appreciated that in the first two examples the average payout of the game is exactly the same for the game operator; the prizes are merely redistributed between the players who choose to wager as a group. Some example embodiments may extend the group wagering to multiple draws of the same type of game with the prizes for individual draws being shared as described above, or alternatively, with a score kept according to predetermined rules over the multiple draws. The prizes may then be reallocated across the players in a group based on their respective cumulative scores. For example, a player who had matched the most total numbers in successive drawings might receive a share of all the other players in the group’s accumulated winnings across the series of drawings, even if they were not the top prize winner. This sharing of prizes across the group may increase player interest, and may also provide an entertaining competitive aspect to what would otherwise be an individual wagering experience. Moreover, this approach may also increase the maximum prize that a player can win without changing the underlying base game wagering structure.

Some example embodiments of the present invention are directed toward the number selection game called “Keno,” although it will be appreciated that these embodiments may be readily adapted to other games, particularly other future draw lottery games, based on number draws. The
basic game of Keno has eighty numbers, numbered one to eighty. The player selects a certain quantity of numbers, which is called a “spot.” So, for example, if a player is allowed to select six of the eighty numbers, that ticket is referred to as a “six-spot.” After a certain window of time has closed, betting for a particular game may end and the Keno operator may randomly select twenty of the eighty numbers, although more or fewer numbers may be chosen. The player may then be paid a certain predetermined prize depending on how many of the numbers the player selected that are in the twenty numbers the operator selected. Each number from zero to the total spot value has an associated probability. So, for example, in a two-spot, the player selects 2 numbers from the eighty. Of those two numbers, zero, one, or two may be found in the twenty selected by the operator. Each of those outcomes has an associated probability (e.g., it is approximately 56% likely zero of the player selected numbers are in the twenty, 38% likely one number is in the twenty, and 6% likely both numbers are in the twenty). The payouts associated with the various outcomes may change and depend on the game operator. The payouts are generally set so that the expected value of the overall game is in the game operator’s favor.

A typical example of probabilities was discussed above with reference to a two-spot ticket. However, the probability of any outcome on any sized ticket may be calculated with the following equation: 
\[ P_k(k) = \binom{80}{k}(\binom{80-k}{n-k}) \]
where \( k \) is the number of spots the player selected and \( n \) is the number of numbers the operator selects. The probability of selecting \( k \) numbers on an \( n \)-spot ticket is therefore \( P_n(k) \). In a number selection game that does not follow the basic 80/20 rule of Keno, the equation above may still be used to calculate the probabilities of any outcome by replacing 80 with the total possible numbers in the number selection game and replacing 20 with the quantity of numbers the operator selects. Other example embodiments of the present invention may be implemented with a variety of games including number selection games that do not use the standard 80/20 rule of Keno. It will be appreciated that one advantage of some of the example embodiments described herein is that they may be run simultaneously with a conventional drawing or other wagering game, and may still have the same expected payout. However, they allow players to play jointly, potentially increasing their interest, and the maximum potential payout to an individual player. In particular, a group of players may enter the conventional Keno game, or other wagering game, and then divide all or a share of the prizes they all win based on their relative performance in the base game.

FIG. 1a illustrates an example entry slip for a multiplayer wagering game, according to one example embodiment of the present invention. The example entry slip is for a Keno-type game, but it will be appreciated that other types of wagering games could be played in a similar multiplayer format. Entry slips are also sometimes called bet slips or play slips, although in some contexts, the term bet slips is instead used to refer to receipts. FIG. 1a illustrates one example of how to present the choices needed to place a wager to a group of customers. In addition to being presented on a tangible media, such as a paper card, the player options and player choices could also be presented and received electronically, e.g., on a single-touch screen display, on separate touch-screen displays for each player in the group, on cell phones, PDAs, or any other device capable of player input/output. The name of the game may be displayed on the entry slip, (e.g., “Winner Take All Keno” as illustrated, along with other information such as a logo, the operator name or other advertising). A bet amount area may be used to indicate an amount bet. Input options may be provided for how much to play per bet. In this example, the players may wager $1, $2, $5, or $10. In the example shown here, this number represents how much each player in the group contributes or wagers. So, for example, if there are four players and they select $1, then each player must contribute $1 for a total pooled bet of $4. In other example embodiments, the wager input may represent the total bet for all the players in the group, and thus each player may contribute a fraction of the wager. A “number of players” selection area may allow the selection of how many players will be in the game. In the illustrated example, only 2, 3, or 4 players are allowed to play the game as a group. However, in alternative example embodiments, it will be appreciated that more than 4 players may be allowed. The illustrated example play slip does not include a single player entry capability. However, it will be appreciated that the same entry form may also be modified so that it may be used for both regular “non-competitive” Keno (e.g., when 1 player is selected), and the group wagering examples discussed in the present application (e.g., competitive Keno, when 2 or more players are selected). Additionally, the entry form may allow for the selection by only one player and then allow the players in a group to combine their entries made on separate entry forms or game screens by giving instructions to an agent or entering instructions at a terminal.

FIG. 1b illustrates a diagram of an example individual player receipt or game ticket, according to one example embodiment of the present invention. A receipt of this type may be issued to each player, e.g., after submission of the entry form of FIG. 1a and tender of payment. Alternatively, a shared receipt may be issued to the players as a group, although this approach has the disadvantage that the operator cannot determine which of the players is the actual winner. As
a further alternative, a single receipt that may be separated into multiple parts, e.g., with parts separated by perforations, may be issued to the players as a group. Although a printed receipt is illustrated, electronic receipts using graphically secure authentication numbers may also be used. In another alternative approach, players may have electronic accounts, and their wagers may be stored in association with their respective accounts.

[0054] Game name area 110 again shows the name of the game, for example “Winner Take All Keno” in the illustrated example embodiment. Other general information may also be provided, such as advertising, the name of the game operator, a printout of the pay table for the game, etc. There may also be a number of players indicator (not shown), which may show the number of players, e.g., 1 for a single player conventional ticket, 2 for two players, 3 for three players in the group, or 4 if a four players are in the group. Player number indicator 140 shows which player in the group the ticket belongs to. Spot selection 142 may show the player’s selected spot number, the quantity of numbers that the player is attempting to match against the drawing. This number may generally be the same for all the players. The entry numbers 144 may show the selections made in 130a (in FIG. 1), for example the player’s selected “lucky numbers” or a system-selected quick pick. Other tickets, with a different player number (e.g., 140), may show the selection made in 130b, 130c, or 130d on the previously indicated play slip. These are the “lucky numbers” for the other players in the group. Date field 146 may show the date of the drawing. Although Keno tickets are generally bets and played in a sequential fashion on the same day, a date field 146 may be expanded to show both date of purchase and date(s) of drawing, and may include additional date and time information on tickets intended to be used over longer periods, such as a daily or weekly drawing. Draw count 152 may show the number of draws that have been purchased, e.g., the consecutive games for which the ticket is an entry beginning with the first draw indicated by game number 148. Game number 148 may show the game number of the first of the set of consecutive games for which the ticket is an entry receipt. Alternatively, 148 may list a set (e.g., 5) of game numbers, one for each game of the ticket. Wager amount 150 may show the per player per game wager of the ticket, e.g., what was previously entered in 120. (FIG. 1) Date 155 may show the date and time the ticket was printed. Authentication code 157 may be provided in both a human-readable numeric form and as a machine readable code, e.g., a bar code. The authentication code may include various information, such as a unique identifier or serial number for the ticket. Other information may also be encoded in the code 157, such as the time of purchase, the drawing for which the ticket is valid. The ticket id number may also encode an association between this receipt and any other receipt associated with this entry, e.g., receipts for other players in the same group. Also included in the authentication code may be a checksum or other feature to help prevent error.

[0055] It will be appreciated that other information may be included or omitted from the example ticket illustrated of FIG. 1b as the specific implementation may require.

[0056] FIG. 2c illustrates an example procedure according to an example embodiment of the present invention. FIG. 2c has two flows of control, the left associated with a player or group of players, while the right is associated with the game operator procedure. At 211, a group of players may decided to play a group game against each other. At 212, the group may choose game format options, such as wager amount, how many games to play, etc. Those wager and option selections may be received by the game operator at 213. At 216, each player may choose play selections. For example, in the Keno example, each player may select ten numbers from the eighty for their “ten-spot”). At 221, the game operator may receive the play selections from the player(s). At 226, the example procedure may loop back to accept the inputs from all the players in the group, until all the players have entered their selections. Examples of this may include, each player stepping up to a single terminal or retail counter to specify selections, or each player submitting selections from their own terminal, e.g. a casino terminal, a personal computer, a mobile phone, etc. It will be appreciated that in a distributed system, play entries may be received in parallel. Alternative embodiments may include each player submitting their information separately, and later linking those submissions together for a competitive multi-player game, e.g., by appearing together at an agent, or by using the Internet. This way, each player may go to a different retail purchase location, purchase a ticket, and later, though before the drawing, link that ticket to others for a competitive multi-player game.

[0057] Once all the players have entered their selections, at 227, the example procedure may issue each player an individual receipt. At 228, the players may receive these receipts, e.g. a printed receipt as illustrated previously, or an electronic receipt. At 230, the example procedure may then generate an outcome. At 231, the example procedure may then display the results, e.g., on a display in a shared venue, or via the Internet. At 233, the group of players may view the game results, and compare the group results to determine the outcome of the multiplayer game. This information may be provided on the results display, over the Internet, or from a redemption center when a ticket is submitted for redemption. At 234, the procedure may record the individual outcomes and results. At 241, the example procedure may determine which player in the group had the overall best entry, e.g., the highest prize, the most numbers matched, or some other predetermined criteria. At 249, the example procedure may then assign all the winnings to the best entry in the group. Alternative embodiments may include assigning only a portion of the winnings to the best player (e.g. all players keep 50% of individual winnings and the best player receives 50% of total winnings).

[0058] At 251, the individual players may present their respective receipts for redemption. In a true “Winner Take All” scheme, only one of the players will be awarded a prize, but alternatively other prize structures are possible. At 261, the example procedure may receive the ticket for redemption, and at 271, the example procedure may determine if the ticket is from the best performing player of the group. In alternative procedures, individual tickets may also be redeemed even if they are not the “best” in the group, e.g., for their residual share of prizes earned in the base game. If the ticket is not the best, a consolationary message may be provided at 273. If the ticket is from the best player, then at 276 the example procedure may award the total prize. At 281, the overall winning player may receive the awarded group prize.

[0059] FIG. 2a illustrates an example procedure for facilitating the operation of the wagering game. The example procedure may be conducted using the example system described later in the present application, although it will be appreciated that other systems may also be used to conduct the example procedure.
At 210, the procedure may accept player input such as wager amount, number of games to be played, number of players, and/or any format options, e.g., the example entries of 120, 123, 125, and/or 128 shown previously. (FIG. 1) At 220, the procedure may then accept game play selections for a player, e.g., 130a illustrated previously). At 225, the procedure may repeat for additional players, e.g., by reading 130b, 130c, and 130d illustrated previously). Once all the player selections are received, the game may begin. At 230, the procedure may generate an outcome. This may be accomplished, e.g., by drawing or randomly generating in some other manner, a set of twenty winning numbers, as discussed above for the Keno example. At 232, the procedure may record the individual results of each player, e.g., how many of that player's number selections were in the set of “winning numbers”. The procedure may also record how much was won because of those individual results. At 235, the procedure may repeat 230 and 232 until the total number of games whether consecutive, daily, or weekly, have been played. Once all the games have been played, the procedure may award individual prizes at 238. At 240, the procedure may determine the best overall player, e.g., the player who had the most winning numbers over the course of all the consecutive games depending on the same rules. At 250, the best player may receive a bonus prize. If two players are tied for “best,” e.g., two players each had the same quantity of winning numbers and that quantity is greater than any other player’s, the procedure may split the bonus prize among the tied “best” players. Alternatively, the procedure may have one, or more tie-breaking criteria, e.g., the player who won the most money. In this example, the prize structure may be that 50% of the individual awards are given to the individual winners and 50% of the individual awards are given to the “best” player. Any other ratio of prize structure may be implemented to afford individual prizes and a bonus prize to the overall “best” player, or to multiple players, e.g., the three best.

FIG. 2b is similar to FIG. 2a. Although the example procedure illustrated in FIG. 2b shows a true “winner take all” outcome. Instead of the individual awards of 238 and bonus award of 250, the “best” player as determined in the example procedure illustrated by FIG. 2b may receive all of the winnings which would be awarded to players in the group for their results in the base game. In this example, any prizes accumulated in 232 may all be given to the “best” player, or split among those tied for “best” player. It will be appreciated that other approaches, such as awarding a tie prize, e.g., half of the total prize for the group to the best player may also be used. Also, the rules for determining the best player may be varied, e.g., the player who matched the most draw numbers, the player who had the best result on any single game, the player who had the fewest number of spots matched. A reverse game that awards half the total prize to the player with the worst result may be used, and may have the effect of keeping all players engaged in the game, even if one of them is doing poorly. Another approach is to allocate the group prize separately and independently for each round or drawing, rather than over the total number of draws. This is expected that many other approaches, as well as combinations or variations of these approaches may be used.

Though the game of Keno was used to illustrate the example procedures described above, it should be appreciated that other games may be used to implement these procedures. Another example is slot machines, or video slot machine games. A set of players may be given a series of consecutive slot entries, each of which receiving individual awards for individual outcomes, but the sum of the prizes may go to the player who ended up with the most cherries. Thus, one player may receive three cherries on a round, winning a $10,000 jackpot. However, another player in the pool of players may receive one cherry on each of the four following rounds. This second player may then be awarded the $10,000 and any other prizes won for having more cherries than any other slot player in the set. Other embodiments may use video poker, lottery terminals, or any other game to encourage more wagers by introducing a competitive social aspect to the games. Another alternative example may include video poker. In that example, each hand may receive the traditional prize according to the probability of that outcome, but the overall winner may be the player with the most aces, the most pairs, or any other winning criteria. Also, with any game, should a tie result, the prize may be split among the winners, or tie breaking criteria may be used to decide a winner.

It will be appreciated that any of the above illustrated procedures may be implemented on a video game terminal, on a personal computer connected to the internet, with paper or electronic tickets sold at retail establishments, as part of a state lottery, as part of a multi-state lottery, on a mobile device, such as a mobile phone or PDA, or with any other instruments capable of facilitating the procedures illustrated above. Additionally, each player may be allowed to select what numbers that player would like to play in the game, or any/all of the players may be allowed to have those numbers generated for the player (e.g., a “quick-pick”). In particular, the example procedures may be implemented in software, e.g., in the components of the various game server systems described below.

FIGS. 3a and 3b illustrate example data structures that may be used to facilitate the play of the games described in the present application, according to an example embodiment of the present invention. Although a table or rectangular mat is shown, it will be appreciated that other data structures may also be used. FIG. 3a is an illustration of an example pay table for a 7-spot game. As shown in FIG. 3a, if S1 is wagers, the player who selects all 7 numbers correctly may win $4,500. Likewise, six numbers may win $85, 5 numbers $17, four numbers $3, three numbers $1, and two or less numbers $0. The pay table may be different for different number spots, or different wager amounts. Using the example pay table illustrated in FIG. 3a, FIG. 3b shows an example ticket with five consecutive games and four players. In Game 1, Player 1 and Player 3 each selected three numbers, which were found in the set of winning numbers for that game, and each won $3. Player 4 selected five correct numbers and won $17, and Player 4 selected no correct numbers and won $0. In Game 2, only Player 3 won with three correct numbers. In Game 3, Player 1 and Player 2 each had two correct numbers and won $0. In Game 4, Player 1 had four correct numbers and won $3. Additionally, Player 2 had one correct number and won $0. Nothing was won in Game 5. The final column shows that Player 1 had nine correct numbers in total, Player 2 had eight correct numbers, Player 3 had six correct numbers, and Player 4 had zero correct numbers. Based on these results, if a winner take all procedure (e.g., the example procedure illustrated in FIG. 2b) is implemented, Player 1 will be the “best” player for having selected the most winning numbers. Player 1 may then be awarded the total winnings of $23. As discussed, alternative embodiments are possible, such as a 50/50 split, with half the group's prizes going to the “best” player. In that embo-
ment. Player 1 may receive $13.50 (e.g., $4+$17/2+$2/2), Player 2 may receive $8.50, and Player 3 may receive $1. As the example shows, the player who ends up with the money (or bonus prize) is not necessarily the player who won the most money individually. In the example of FIG. 3b, Player 2 won far more money than the other three players, but Player 1 had more correct numbers. One benefit of this approach is that a result of one or two correct numbers matched would otherwise be a losing game in that the prize for those outcomes is $0. A player who appears to be losing, or who has already lost, in a single draw may lose interest as the particular round of drawing is being completed. However, in the example embodiment illustrated here, the losing event is now still an event of interest to the player as it increases the chances the player will end the set of games with the most winning numbers and take the pooled prize money.

FIG. 4a illustrates a block diagram of an example system according to one example embodiment of the present invention. Game device 400 may be a stand alone terminal or may instead be a distributed terminal to a centralized number selection game (e.g., a state-wide Keno game). Game system 400 has a processor 425 in communication with several peripherals. Game system 400 has a video screen display 416. The video screen display 416 may be used to show the results of a round of the number selection game (e.g., show what 20 numbers the operator selected so that each player may compare the displayed numbers to their own selections). If the system is local to the players, it may provide direct access to the players with the display and interface described here. However, if the system 400 is remote from the players, direct player interaction may be handled by terminals, such as those described below in FIG. 4b, or with personal computers. The example game system may operate in a local mode and also provide a direct interface to game players. Alternatively, if the game system is remote, the interface to game players may be provided with networked terminals or other devices and the interface features may be omitted. There may be an input device 420 which may be any device which allows the gaming system 400 to accept input from the user, for example, a playslip reader, a conventional keyboard, an external number keypad, a joystick, a mouse, or the video display 416 itself may accept touch-screen input. The gaming system 400 may also include a wager input device 415. The wager input device 415 may be designed, for example, to accept paper bills, or other slips detailing credit, or may be a device which reads magnetically or electronically stored information, to access electronically stored credit or debit accounts. In a distributed system, the wager input device 415 may include an electronic funds transfer module, or other component for receiving a wager over a network. The game system 400 may also include a network I/O device 430. The network I/O device 430 may be, for example, a serial port which may connect to a telephone line. The game system 400 may also include memory 440 to store the various graphics and instructions required to operate video screen display 416. It may be appreciated that some components may be left off, and additional components added as the specific implementation requires. For example, in an implementation where an example device similar to the one illustrated in FIG. 4a acts as a game server in a distributed system, components 415, 416, 420, and 426 may be located on terminals in the system, and not directly connected to the server device. In situations where these components are desirable, or specifically when the example device is a stand alone game terminal, these components, as well as others, may be included.

The game system 400 may also include a game software component 450. The game software component may contain the executable instructions in software, firmware, or hardware which are configured to provide the example game multiplayer game and base game. The game software component 450 may include or have access to a drawing or randomization component 453 which may be configured to provide random results, e.g., drawing numbers either by access to external events, or using computer random number generation.

The game software component 450 may include or have access to various game entry components. There may be a quick-pick generator 458 to randomly select entries for one or more players and generate a ticket automatically. There may be a multi-player entry component 457 to facilitate the multi-player game competition.

The game software component 450 may include or have access to a base game resolution component 452, which may be configured to determine base game outcomes for players based on the randomly selected winning numbers for each round of the game. The game software component 450 may include or have access to a multi-player resolution component 454, which determines player results in the multiplayer game, e.g., based on the player’s individual outcomes determined by the base game resolution component 452. The game software component 450 and other components may also have access to various stored data or data structures, e.g., e a results log 455, which may keep track of the drawing results of each game, as well as how well the players have done for the base game, e.g., how many winning numbers each player has selected over the set of consecutive games, as well as players’ results in the multiplayer game. There may be a prize pool 451, which may keep track of the prizes for the set of players. If the implementation does not award all of the prize money to one player, then the prize pool may need to track how much each player has won, both as an individual, and as a contribution to the group prize. There may be a component for logging data, so that a full auditable history of all events may be recalled as needed. There may be a redemption component 460, which may be connected to an entry component 456 and entry log 459. The redemption component may control and track redemption of game entries, e.g., the game tickets or receipts, and insure that only authentic winning receipts are redeemed for prizes, and that receipts are not redeemed for the same prize twice.

FIG. 4b is an illustration of an example terminal, according to an example embodiment of the present invention. Game device 400b may be a terminal in a distributed system. Game device 400b has a processor 425b in communication with several peripherals. Game device 400b has a video screen display 416b. The video screen display 416b may be used to show the results of a round of the number selection game (e.g., show what 20 numbers the operator selected so that each player may compare to their selections). There may be an input device 420b, which may be any device which allows the gaming device 400b to accept input from the user, for example, a conventional keyboard, an external number keypad, a joystick, a mouse, or the video display 416b itself may accept touch-screen input. The gaming device 400b may also include a wager input device 415b. The wager input device 415b may be designed, for example, to accept
paper bills, or other slips detailing credit, or may be a device which reads magnetically or electronically stored information. The game device 400b may also include a network I/O device 430b. The network I/O device 430b may be, for example, a serial port which may connect to a telephone line. The game device 400b may also include memory 440b to store the various graphics and instructions required to operate the video screen display 410b. Additionally, there may be a game software component 470 with terminal interface instructions 475, which allow the terminal to interface with the distributed system. The game software component 470 may have a multiplayer game entry client software component 481, which may be responsible for receiving individual game play selections from the individual players and establishing a linked group for the competitive game. The multiplayer game entry client software component 481 may also have a multiplayer game play-slip reader 483 and multiplayer game ticket issuance component 487. The multiplayer game play-slip reader 483, may be responsible for receiving an entry form and extracting the player selections for the competitive game. Multiplayer game ticket issuance component 487 may be responsible for issuing individual tickets to the individual players with data that indicates the group association for the competitive game. It may be appreciated the alternative embodiments will include more components or fewer components as the specific implementation requires.  

[0071] FIG. 5 illustrates a block diagram of an example distributed system according to one example embodiment of the present invention. FIG. 5 illustrates how the game may be distributed over a network 530. A player 501, as a representative of the group, or each individual player 501-504, may use an entry terminal 510 to make game selections and wager selections. The player 501 may be a representative of a group of players who want to play the game against each other and submits an entry slip on behalf of all the players. Alternatively, each player may be able to use an entry terminal separately and still play the game against each other. For example, players may be issued linked player ID cards, so that each player may sit at a terminal and have their data linked to the other players for entry in the competitive game. Alternatively, the system may allow for public or private groups. A first player may establish a game group open on anyone else using the system, and other players may join the group until the appropriate number of players are linked together. These groups may be made private so that friends may play together without other players on the system joining their group. Alternatively, a terminal may sell single player tickets, and these tickets may be linked together at a later time, but before the actual drawing. Players may be able to link tickets via personal devices (e.g., a cell phone, a computer, etc) and a network (e.g., the Internet). The player(s) may also use the terminal to enter a wager selection or tender the actual wagered amount, e.g., cash, credit slip, or electronic funds. In other example systems, instead of using the entry terminal 510 directly, may go to a retail clerk who enters the information into the entry terminal 510. In other example embodiments, entry may be made over the Internet, from a personal computer, mobile phone, PDA, etc.

[0072] Each player 501-504 may be issued a receipt 508 for their respective entry. The receipt may be paper, electronic, or left in an account record. The system may have a display 515 that shows one or more players 501-504 the game results 514. In other example systems, this may be implemented with a speaker that announces the numbers or through a human announcer, over the Internet web page, or other approaches. The system may have a redemption station 520 where the winning player(s) 505 (e.g., one or more of the group of players 501-504) may enter the receipt 508 to receive a prize 519. The network 530 is configured to interface with other locations 560 and other jurisdictions 570. The system may have a game server 540 configured to run the games. The game server 540 may have a wager record database 545 to record wagers or any number of other historical data the operator may need to recall.

[0073] It will be appreciated that, while many of the examples illustrated above have made reference to “players”, the example games that have been described work with anonymous entries, and the prizes could be awarded to “tickets” held by a bearer that correspond to an “entry”. However, in some implementations, personal identifiers, such as personal data or biometric data could be associated with tickets, so the tickets are registered to a person and can only be redeemed by a particular person.

[0074] It will also be appreciated that “winners” need not be single players or entries, rather, there could be multiple players of the game or different levels. It will be appreciated that the winners may be determined using a variety of possible predetermined rules, and that particular examples given here are merely exemplary.

[0075] It will be appreciated that all of the disclosed methods, games, and procedures described herein can be implemented using one or more computer programs or components. These components may be provided as a series of computer instructions on any conventional computer-readable medium, including RAM, ROM, flash memory, magnetic or optical disks, optical memory, or other storage media. The instructions may be configured to be executed by a processor, which when executing the series of computer instructions performs or facilitates the performance of all or part of the disclosed methods, games, and procedures.

[0076] It should be understood that there exist implementations of other variations and modifications of the invention and its various aspects, as may be readily apparent to those of ordinary skill in the art, and that the invention is not limited by specific embodiments described herein. Features and embodiments described above may be combined. It is therefore contemplated to cover any and all modifications, variations, combinations or equivalents that fall within the scope of the basic underlying principals disclosed and claimed herein.

1. A method of facilitating a multi-player wagering game run together with a base wagering game, comprising:
   - receiving entries for the base wagering game from a group of players;
   - receiving an indication that the group of players also wish to participate in the multi-player wagering game;
   - determining at least one separate outcome of the base wagering game for each of the players in the group based at least in part on the received entries;
   - providing information to the group of players that will allow the players to determine the outcome of the base wagering game; and
   - awarding at least a share of each player in the group’s prize in the base wagering game to one of the players in the group based on predetermined rules that compare the outcomes for the players’ entries in the base wagering game.
2. A method of facilitating an inter-player wagering game run together with a base single player wagering game, comprising:

- receiving entries from a group of players who will enter the game as a group;
- determining separate outcomes for each player in the group for each of the plays of the base wagering game;
- determining a prize associated with each separate outcome of the base wagering game; and
- awarding a final prize to one of the players in the group, who is selected based on a comparison of the separate outcomes the players in the group obtained for each of the plays of the base wagering game, wherein the final prize is based at least in part on the prizes that would have been awarded to the individual players in the group had they entered the base single player wagering game with the same entries.

3. The method of claim 2, wherein the player who has greatest sum of the separate outcomes of the plays of the base game compared with the other players in the group receives the entire final prize.

4. The method of claim 2, wherein each winning player receives a portion of the final prize, based at least in part on the number of winning players.

5. The method of claim 2, wherein one winning player is awarded the entire final prize based on a criteria that is not the sum of outcomes associated with each player.

6. The method of claim 5, the other criteria may include the sum of prizes associated with each player.

7. The method of claim 2, further comprising:

- receiving an indication of an amount to be wagered by each player.

8. The method of claim 2, wherein each player is required to wager the same amount.

9. The method of claim 7, wherein the amount to be wagered is the amount wagered per game.

10. The method of claim 2, further comprising:

- receiving an indication of a quantity of games, wherein the quantity of games is based on the indication of the quantity of games.

11. The method of claim 2, further comprising:

- receiving a selection by each player, wherein the outcome associated with each player per game is based at least in part on the selection made by each player.

12. The method of claim 2, further comprising:

- receiving a quantity of player selected numbers from a plurality of numbers for each of the players.

13. The method of claim 12, wherein player selected quantity is less than the plurality.

14. The method of claim 12, further comprising:

- selecting a quantity of winning numbers from the plurality, where the outcome associated with each player for each game depends on the quantity of player selected numbers that match a number within the quantity of winning numbers.

15. A method of facilitating a shared play Keno game run together with a base Keno game; comprising:

- receiving an entry from a group of players who wish to enter the game together;
- receiving pick numbers for each of the players in the group for the base Keno game;
- providing each of the players in the group with a ticket showing their pick numbers;

- recording information that associates the tickets for the players in the group;

- randomly determining draw numbers for the base Keno game;

- determining the quantity of draw numbers matched by the pick numbers for each player in the group;

- determining the base Keno game prize award for each player in the group; and

- awarding the base Keno game prize awards for all the players in the group to one of the players in the group who had the best result according to predetermined shared play game rules.

16. A computer readable medium having stored thereon a set of computer-readable instructions configured, when executed by a processor, to cause the processor to control the performance of the method of claim 1.

17. A system for facilitating the play of a multiplayer wagering game run in conjunction with a single player wagering game, comprising:

- an input device configured to receive entries in the single player wagering game and group entries in the multiplayer wagering game;

- an entry module configured record and process entries for single players in the single player wagering game and to record and process group entries in the wagering game;

- a random result generator configured to determine game results shared by the single player wagering game and the multiplayer wagering game;

- a single player game outcome determining module configured to determine prizes awarded to individual players who have entered the single player wagering game based on the players’ entries and the game results; and

- a multiple player game outcome determining module configured to determine the game outcome for the individual players in the group, and to award a prize to a winning player in the group by comparing the game outcomes for the individual players in the group to each other.

18. The system of claim 17, wherein the prize awarded to the winning player in the group is the sum of the prizes that would have been awarded to the individual players in the group if they had made the same entry in the single player wagering game.

19. The system of claim 17, wherein the winning player in the group is the player who has the best game outcome according to the rules of the single player wagering game.

20. The system of claim 17, further comprising:

- a game receipt issuing device configured to issue a receipt to entrants in the single player wagering game and also to issue a receipt to each player in the group for the multiplayer wagering game.

21. The system of claim 17, wherein the single player wagering game is an online numbers draw game, and the single player game entries are matched against randomly drawn numbers, and where group entries in the multiplayer wagering game include a separate set of numbers for each player, which are matched against the randomly drawn numbers.

22. A multiplayer drawing game run in conjunction with a single player drawing game, comprising:

- a game server;

- an input device configured to receive player entries in the single player drawing game, wherein entries include a spot number, a number of drawings entered, a bet
amount, and a quantity of number selections equal to the spot number, the configured to receive player entries in the multiplayer drawing game, multiplayer entries received from a group of players including a spot number, a quantity of drawings entered, a bet amount, and a quantity of number selections from each player in the group equal to the spot number, the input device configured to communicate the entry information to the server; an output device configured to issue receipts to the single player and to each individual player in the group, the receipts each including the respective player’s respective entry information and a unique ticket identification number received from the server;

a display device configured to display game drawing results to players;
a ticket redemption device configured to receive tickets for redemption and to read the unique ticket identification number from the tendered tickets and communicate the ticket identification number to the server, and responsive to receipt of an authorization from the server to indicate that the tickets should be redeemed for a prize; wherein the server is in communication with the input device, the output device, and the ticket redemption device, the server configured to receive the entry information from the input device, the server configured to receive from the input device and record the single and multiplayer entries, and to provide to the output device the unique ticket identification number for each ticket, the server also configured to store information associating the unique ticket identification numbers of the tickets issued to the players in a group.

23. A system for facilitating the play of a multiplayer wagering game run in conjunction with a single player wagering game, comprising:
an input means for receiving individual entries in the single player wagering game and for receiving entries by a group in the multiplayer wagering game;
a random result means for determining random results for the single player wagering game that are also shared by the multiplayer wagering game;
a single player outcome determining means for determining prizes awarded to single players entering the single player wagering games based on the individual players’ entries and the random result;
a multiplayer wagering game outcome determining means for determining the prize awarded to a winning player in the group, the winning player in the group being selected by comparing the single player game outcomes for each player in the group and determining which player in the group has the best result in the group, and the prize being based at least in part on the sum of the prizes that would have been awarded to each of the players in the group had they made the same entry in the single player wagering game.

24. The system of claim 23, wherein the multiplayer outcome determining means is configured to select the winning entry in the group by choosing the player who would have won the largest prize in the one or more plays of the single player lottery game.

25. The system of claim 23, wherein the winning player in the group’s prize is the sum of all the prizes that would have been awarded to each of the player’s in the group in the single player wagering game.

26. The system of claim 23, wherein the single player wagering game is an online numbers draw game, and where the single player game entries to be matched against randomly drawn numbers generated by the random result means, and wherein group entries in the multiplayer wagering game include a separate set of numbers for each player to be matched against the randomly drawn numbers.

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