METHOD AND APPARATUS FOR RACING A PLURALITY OF COMPETITORS

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ABSTRACT

A method of racing a plurality of competitors includes controlling a plurality of race competitors. A plurality of sequential stages for the race are provided. An initial position is associated for each competitor for each stage, and an end position is associated for each competitor for each stage. The respective end positions for the competitors in each stage constitute the respective initial positions for each competitor for the subsequent stage. Each competitor is moved from its initial position to its end position in each stage.
METHOD AND APPARATUS FOR RACING A PLURALITY OF COMPETITORS

FIELD OF THE INVENTION

[0001] This invention relates to methods and apparatus for racing a plurality of competitors.

DESCRIPTION OF THE PRIOR ART

[0002] Simulated horse race games using computer or video apparatus are known. However, such video games do not authentically reproduce real horse races.

SUMMARY OF THE INVENTION

[0003] According to one aspect of this invention, there is provided a method of racing a plurality of competitors comprising: controlling a plurality of race competitors; associating a start position with each competitor and associating a finish position with each competitor; moving each competitor from said start position to said finish position; wherein the progression of at least one competitor from the start position to the finish position is a non-linear progression.

[0004] Preferably, the start position comprises a race start position and the end position comprises a race finish position. Preferably, the progression of a plurality of said competitors from the start position to the end position is a nonlinear progression.

[0005] Preferably, the method comprises providing a plurality of sequential stages for the race. The method may include associating a position for each competitor with each of the plurality of stages. The method may include; moving each competitor during a current stage from a stage-start position corresponding to the position associated with the stage immediately prior to the current stage in the sequence of stages to a stage-end position corresponding to the position associated with the current stage.

[0006] According to one aspect of this invention, there is provided a method of the racing a plurality of competitors comprising: controlling a plurality of race competitors; providing a plurality of sequential stages for the race; associating a position for each competitor with each of the plurality of stages; moving each competitor during a current stage from a stage-start position corresponding to the position associated with the stage prior to the current stage in the sequence of stages to a stage-end position corresponding to the position associated with the current stage.

[0007] Preferably each stage is a simulated stage. The competitors may be simulated competitors. Conveniently, the method includes associating an initial position for each competitor for each stage and associating an end position for each competitor for each stage. In one embodiment, the stages and the competitors may be generated by data processing, and may be otherwise known as “virtual”.

[0008] Preferably, the method comprises providing a plurality of stages for the race; associating an initial position for each competitor for each stage and associating an end position for each competitor for each stage, wherein the respective end position of the competitors in each stage constitute the respective initial positions of the competitors for the subsequent stage. The method may further include moving each competitor from said initial position to said end position for each stage.

[0009] According to another aspect of this invention there is provided a method of racing a plurality of competitors comprising; providing a plurality of stages for a race; associating an initial position for each competitor for each stage and associating an end position for each competitor for each stage, wherein the respective end positions of the competitors in each stage constitute the respective initial positions of the competitors for the subsequent stage; and moving each competitor from said initial position to said end position for each stage.

[0010] Preferably, the race competitors are simulated and the step of controlling said competitors comprises displaying said competitors.

[0011] Preferably, the method includes providing a final stage for the race. The end position of each competitor in said final stage may constitute the final position of each competitor in the race.

[0012] The method may include providing a finish position in said final stage and the end position of one competitor in said final stage may be said finish position. The race preferably finishes when said one competitor reaches said finish position. Said one competitor is preferably designated the winner of the race.

[0013] The method may further include providing a background for said race to be displayed during said race. The method may include translations said background during said race, preferably in the opposite direction to the direction of movement of said competitors. Preferably, the background is moved at a greater speed across the display means than the speed at which the competitors are moved.

[0014] Preferably, the background is continuously moved across the display means during the race, conveniently at a pre-determined speed. The background may comprise a first plurality of background sections. Each section may comprise a second plurality of sections, wherein the aggregate of the second plurality of sections for all the stages comprises said first plurality. Each stage may comprise the same number of sections as to other stages, or the number of sections of each stage may vary.

[0015] At the start of the race, the plurality of competitors may be arranged in line generally transverse to their direction of movement.

[0016] Preferably, each competitor reaches its respective end position for each stage at the same time as each other competitor.

[0017] According to another aspect of this invention there is provided an apparatus for controlling the racing of a plurality of competitors comprising; control means arranged to provide control signals indicative of the position of each competitor at the end of each one of a plurality of race stages.

[0018] Preferably, the control means is arranged to provide said signals by transmission of said signals to further apparatus. For example the control means may provide said
signals by transmission where a plurality of computers are linked in a network, such as the internet.

Alternatively, the control means may be arranged to provide said signals by generation, for example where the control means is in the form of a processor for a computer or a games apparatus, such as an arcade game application, or where the control means is in the form of a computer readable means such as an optically readable disc. Suitable optically readable discs may be CD roms and DVD roms.

The method may further include selecting simulated conditions for the race, for example weather conditions and firmness of the ground upon which the competitors race.

The method may include providing a plurality of races, and storing the results of each race for each competitor in storage means such as a database. The results for each competitor and the conditions for each race may be collated and said collated results may be displayed to allow a user access information relating to the results for each competitor. Said result may be known as the “form” each competitor. Preferably, said results are accessible prior to a race commencing. Thus, a user can access the results for each competitor to allow the user to estimate the likelihood of a competitor winning a race before the user selects a competitor.

According to another aspect of this invention there is provided an apparatus for racing a plurality of competitors comprising; control means for controlling a plurality of race competitors; a memory for storing data indicative of a start position for each competitor and of a finish position for each competitor, wherein the control means moves each competitor from the start position to the finish position; and the progression of at least one competitor from the start position to the finish position is a non-linear progression.

Preferably, the start position comprises a race-start position and the finish position comprises a race-finish position. Preferably, the control means moves a plurality of competitors in a non-linear progression from the start position to the finish position.

Preferably, the control means provides a plurality of sequential stages for the race by controlling the movement of each competitor during a current stage from a stage-start position corresponding to the position of the competitor at the stage immediately prior to the current stage in the sequence of stages to a stage-finish position corresponding to the position of the competitor at the current stage.

According to another aspect of this invention there is provided an apparatus for racing a plurality of competitors comprising; a memory for storing data indicative of the position of each competitor at each one of a plurality of race stages; control means arranged to provide a plurality of sequential stages of the race by controlling the movement of each competitor during a current stage from a stage-start position corresponding to the position of the competitor at the stage prior to the current stage in the sequence of stages to a stage-end position corresponding to the position of the competitor at the current stage.

Preferably, the stages are simulated stages. The race may be a simulated race.

The data may be provided from a source external to the apparatus, for example a computer network such as the internet. Alternatively, the data may be generated by the control means for example where the control means is in the form of a processor for a games apparatus, such as an arcade game applicator or in the form of a computer readable medium, such as an optically readable disc. Suitable optical readable discs may be CD roms and DVD roms.

The apparatus comprises means for providing a plurality of stages for the race.

The apparatus may further comprise means for determining an initial position for each competitor for each stage; means for designing an end position for each competitor for each stage wherein the respective end positions of the competitor in each stage constitute the respective initial positions of the competitors for the subsequent stage.

According to another aspect of this invention there is provided apparatus for racing a plurality comprising; control means for controlling said plurality of race competitors: display means for displaying said competitors; means for providing a plurality of stages for the race; means for determining an initial position for each competitor for each stage; means for designing an end position for each competitor for each stage, wherein the respective end positions of the competitor in each stage constitutes the respective initial positions of the competitors for the subsequent stage; and means for moving each competitor from said initial position to said end position for each stage.

Preferably, the stage providing means provides a final stage for the race. The apparatus may further include means for providing a finish position in said final stage whereby the end position of one competitor in said final stage may be said finish position. The apparatus may further include means for finishing the race when said one competitor reaches said finish position said one competitor being preferably designated as the winner of the race.

The designation means may designate the end position for each competitor for each stage at the beginning of the respective stage, or may designate the end position for each competitor for each stage at the beginning of the race.

Transmission means may be included to transmit the display means details of the winner or the race on finishing of the race, to display said details on the display means.

The apparatus may further include background providing means for providing a background for said race to be displayed on the display means during said race. The apparatus may include translation means for translating said background across the display means during said race, preferably in the opposite direction to the movement of said competitors. Preferably, the translation means translates the background at a greater speed across the display means than the speed at which the competitors are moved.

Preferably, the translation means moves the background continuously across the display means during the race, conveniently at a predetermined speed.

The background may comprise a first plurality of background sections. A predetermined second plurality of said background sections may be moved across the display means during each of said stages of said race.
Preferably, the aggregate of the second plurality of sections of all the stages comprises said first plurality of sections. The number of sections in each stage may be the same or alternatively, the stages may have a different number of sections.

The apparatus may further include means for selecting simulated conditions for the race, for example weather conditions and firmness of the ground upon which the competitors race.

The apparatus may include means for storing the results of each of a plurality of races thereby storing the results for each competitor. The storage means may collate the results for each competitor and the conditions for each race and may further display the collated result and conditions on the display means to be viewed by a user. Advantageously, said collated results and conditions are displayed prior to the user selecting a competitor.

BRIEF DESCRIPTION OF THE DRAWINGS

An embodiment of the invention will now be described by way of example only, with reference to the accompanying drawings, in which:

FIG. 1 is a cross-sectional diagrammatic side view of apparatus for simulating a race; and

FIG. 2 is a representation of a scene from a race.

DETAILED DESCRIPTION OF AND EMBODIMENT OF THE INVENTION

Referring to FIG. 1, there is shown apparatus 1 for racing a plurality of competitors. The apparatus 1 comprises a housing 2 which houses a central processor 3 and a memory 3A connected to the control processor 3. The central processor 3 is connected to display means in the form of a screen 4.

The central processor 3 is programmed to display on the screen 4 a simulated horse race comprising a simulated race track and a plurality of simulated competitors in the form of horses and their respective jockeys. An example of a race in progress is shown in FIG. 2.

In one embodiment, the apparatus 1 could be coin operated and may include a coin receiving mechanism generally designated 5 to receive and determine coins inserted into the machine.

The apparatus 1 further includes first and second selection buttons 6, 7 for a player to select a horse the player believes will win, and an enter button 8 for the player to enter the selection.

The apparatus 1 further includes payout means comprising a container 10 for holding coins or tokens and a chute 11 for delivering coins or tokens won by the player. The player retrieves any coins or tokens won through an aperture 12 in the front of the housing 1.

In order to play the game, the player inserts appropriate coins or tokens into the coin receiving mechanism 5. In a first embodiment, the central processor 3 then displays on the screen 4 a list of the names of the horses that will take part in the race. The list is presented down the screen 4. The central processor also provides a suitable selector, for example an arrow, on the screen 4. The memory 3A stores the data necessary for running the game.

Initially, the arrow is pointing to the name of the horse listed uppermost on the screen 4. The player then moves the arrow downwards to each of the other horses in turn by individually pressing the second, or lower, button 7. Each time the second button 7 is pressed, the arrow moves down the list by one horse. If the player moves the arrow down past the horse he wishes to select, he can move it up again by pressing the first, or upper, button 6. The arrow moves up the list by one horse each time the first button 6 is pressed.

When the arrow is next to the horse to be chosen by the player, the enter button 8 is pressed. The central processor 3 then begins the race, as explained below. The central processor may select the weather for the race and the firmness (or "going") of the ground.

Alternatively, or in addition to the buttons, the apparatus 1 may include a touch sensitive screen whereby a horse is selected simply by pressing its name on the screen 4.

In a second embodiment, where the game has been played on the apparatus 1 several times before, the central processor 3 creates a database collating the results for each horse. The results for the respective horses to run in the game to be played each respective race are displayed on the screen 4 in the form of a table to allow the player to determine the "Worm" of each horse. The table may provide the results for the horse in the races it has run and the conditions e.g. the weather and the firmness of the ground, often referred to as the "going" of the ground.

The player selects a horse by moving an arrow up and down the list of horses in the table described above in the same manner as for the first embodiment.

Referring to FIG. 2, there is shown a section of a simulated horse race comprising a plurality of competitors displayed on the screen 4. The competitors are in the form of six simulated horses and jockeys 14. Also shown is part of a background 18 depicting a race track. The horses 14 are moved in the direction shown by arrow A across the screen 4 and the background 18 is moved across the screen 4 in the opposite direction, as shown by the arrow B. Generally, the speed of movement of the background 18 is greater than the speed of movement of the horses 14, giving the illusion that the horses 14 are racing at high speed.

The race is divided into a plurality of stages, and each stage is divided into a plurality of sections of the background 16. Each section of the background 16 is the length L of the screen 4 and, in the embodiment shown, each stage comprises the passage of twenty sections of the background 16 across the screen 14.

At the beginning of the race, the horses are arranged in a line across the screen 14. The processor 3 reads from the memory 3A the position of each horse 14 at the start of the first stage and designates a position for each horse 14 at the end of the first stage is then designated. The process of designation is described hereinafter. The processor 3 then beings the race, and the background 16 is moved across the screen 4 in the direction of the arrow B, the horses 14 being moved across the screen 4 in the direction of the arrow A.
After twenty sections of the background 16 have passed across the screen 4, the horses 14 are at their end position for the first stage. The respective positions of the horses 14 at the end of the first stage is then allocated by the processor 3 as the initial position of the horses 14 for the second stage, and the central processor 3 then designates further end positions on the screen 4 for each horse 14 for the second stage. The horses 14 are moved across the screen to their respective end positions for the second stage as the background 16 is moved in the first of the arrow B.

This continues for each stage of the race until the final stage, which includes a finish line, generally marked by a simulation of a finish post. At the beginning of the final stage, the end position of one of the horses 14 is designated as being at the finish line. The end position for each other horse is designated between the finish line and their respective initial position at the beginning of the final stage. The horse 14 which is designated by the processor 3 to reach the finish line is designated as the winning horse, and when the winning horse reaches the finishing line, the race ends. The name of the winning horse is then displayed on the screen.

For each stage in the race, the central processor 3 chooses the end positions for the respective horses. By providing a random or pseudo random selection of the end positions for the horses for each stage except the final stage, an illusion is created of a race in which the respective positions of the horses constantly changes and the outcome is not known until the winning horse 14 reaches the finish line. For the final stage, the processor 3 may select the winning horse in a way which is dependent upon a variety of factors, for example, different odds may be placed on different horses, whereby the processor may be programmed to select a horse with low odds often than a horse with higher odds.

The processor 3 may also provide panels 16, 18 on the screen 4 to provide information as to the players chosen horse 14, the length of the race already run and the position of the players chosen horse 14 in the race.

Various modifications can be made without departing from the scope of invention, for example, the end position of each horse for each stage may be determined either at the beginning of the race, or at the beginning of each stage. Similarly, the winning horse may be designated at the beginning of the race or only at the final stage. A further modification is that the end position for each horse in each stage need not be further across the screen in the direction of the arrow A from the respective initial position in the stage. In some cases the end position for one or more of the horse may be spaced from the respective horses initial position for that stage in the direction of the arrow B. Providing the speed of that horse is less than the speed of movement of the background, there will still be an illusion of the horse moving in the direction of the arrow A. In some cases the end position for a horse for a stage may be the same as its initial position for that stage.

Although the above described invention has been described in relation to a gaming machine, the invention can also be used in other applications. For example, the game could be played via a plurality of machines linked to a large central screen allowing several people to bet on the horses. Alternatively, the game could be played over the internet by a large number of players. In another embodiment, the game could be played on a home computer, whereby, the program for playing the game could be provided on a suitable computer medium for example a CD rom or a DVD rom.

Whilst endeavouring in the foregoing specification to draw attention to those features of the invention believed to be of particular importance it should be understood that the Applicant claims protection in respect of any patentable feature or combination of features hereinbefore referred to and/or shown in the drawings whether or not particular emphasis has been placed thereon.

1. A method of racing a plurality of competitors comprising: controlling a plurality of race competitors; associating a start position with each competitor and associating a finish position with each competitor, moving each competitor from said start position to said finish position; wherein the progression of at least one competitor from the start position to the finish position is a non-linear progression.

2. A method according to claim 1 wherein the start position comprises a race-start position and the finish position comprises a race-finish position.

3. A method according to claims 1 wherein the progression of a plurality of competitors from the start position to the finish position is a non-linear progression.

4. A method according to claim 1 wherein the method comprises providing a plurality of sequential stages for the race; associating a position for each competitor with each of the plurality of stages; moving each competitor during a current stage from a stage-start position corresponding to the position associated with the stage prior to the current stage in the sequence of stages to a stage finish position corresponding to the position associated with the current stage.

5. A method of racing a plurality of competitors comprising: controlling a plurality of race competitors; providing a plurality of sequential stages for the race; associating a position for each competitor with each of the plurality of stages; moving each competitor during a current stage from a stage-end position corresponding to the position associated with the stage prior to the current stage in the sequence of stages to a stage-end position corresponding to the position associated with the current stage.

6. A method according to claim 5 wherein each stage is a simulated stage, and the competitors are simulated competitors.

7. A method according to claim 5 wherein the method includes associating an initial position for each competitor for each stage and associating an end position for each competitor for each stage.

8. A method of racing a plurality of competitors comprising: controlling a plurality of race competitors; providing a plurality of stages for a race; associating an initial position for each competitor for each stage and associating an end position for each competitor for each stage, wherein the respective end positions of the competitors in each stage constitute the respective initial positions of the competitors for the subsequent stage; and moving each competitor from said initial position to said end position for each stage.

9. A method according to claim 8, wherein the race competitors are simulated and the step of controlling said competitors comprises displaying said competitors.

10. A method according to claims 8, wherein the method includes providing a final stage for the race, the end position of each competitor in said final stage constituting the final position of each competitor in the race.
11. A method according to claim 10, wherein the method includes providing a finish position in said final stage and the end position of one competitor in said final stage is said finish position, the race finishing when said one competitor reaches said finish position whereby said one competitor is designated the winner of the race.

12. A method according to claim 8, wherein the method further includes providing a background for said race to be displayed during said race, and translating said background during said race, in the opposite direction to the direction of movement of said competitors.

13. A method according to claim 12, wherein the background is moved at a greater speed across the display means than the speed at which the competitors are moved.

14. A method according to claim 12, wherein the background is continuously moved across the display means during the race at a predetermined speed.

15. A method according to claim 12, wherein the background comprises a first plurality of background sections, each section comprising a second plurality of sections, wherein the aggregate of the second plurality of section for all the stages comprises said first plurality.

16. A method according to claim 15, wherein each stage comprises the same number of section as to other stages.

17. A method according to claim 15, wherein the number of sections of each stage vary from each other.

18. A method according to claim 8, wherein at the start of the race, the plurality of competitors are arranged in line generally transverse to their direction of movement, and each competitor reaches its respective end position for each stage at the same time as each other competitor.

19. Apparatus for racing a plurality of competitors comprising: a control arrangement for controlling a plurality of race competitors; a memory for storing first data indicative of a start position for each competitor and for storing second data indicative of an end position for each competitor, wherein the control arrangement moves each competitor from the start position to the end position; and the progression of at least one competitor from the start position to the end position is a non-linear progression.

20. Apparatus according to claim 19 wherein the first data is indicative of a position for each competitor, and the second data is indicative of a race finish for each competitor.

21. Apparatus according to claim 19 wherein the control arrangement moves a plurality of competitors in a non-linear progression from the start position to the end position.

22. Apparatus according to claim 19 wherein the control arrangement provides a plurality of sequential stages for the race by controlling movement of each competitor during a current stage from a stage-start position corresponding to the position of the competitor at the stage prior to the current stage in the sequence of stages to a stage-end position corresponding to the position of the competitor at the current stage.

23. An apparatus for controlling the racing of a plurality of competitors in a race comprising: control means arranged to provide control signals indicative of the position of each competitor at the end of each one of a plurality of race stages.

24. Apparatus according to claim 23, wherein the control means is arranged to provide said signals by transmission of said signals to further apparatus.

25. Apparatus according to claim 24, wherein the control means provides said signals by transmission where a plurality of computers are linked in a network, such as the internet.

26. Apparatus according to claim 23, wherein the control means is arranged to provide said signals by generation, where the control means is in the form of a processor for a computer or a games apparatus, or where the control means is in the form of a computer readable means, such as an optically readable disc.

27. An apparatus for racing a plurality of competitors comprising: a memory for storing data indicative of the position of each competitor at each one of a plurality of race stages; control means arranged to provide a plurality of sequential stages of the race by controlling the movement of each competitor during a current stage from a stage-start position corresponding to the position of the competitor at the stage prior to the current stage in the sequence of stages to a stage-end position corresponding to the position of the competitor at the current stage.

28. Apparatus according to claim 27, wherein the stages are simulated stages, and the race is a simulated race.

29. Apparatus according to claim 27, wherein the data is provided from a source external to the apparatus, for example a computer network such as the internet.

30. Apparatus according to claim 27, wherein the data is generated by the control means or in the form of a computer readable medium, such as an optically readable disc.

31. Apparatus for racing a plurality comprising: control means for controlling said plurality of race competitors; display means for displaying said competitors; means for providing a plurality of stages for the race; means for designating an end position for each competitor for each stage, wherein the respective positions of the competitor in each stage constitutes the respective initial positions of the competitors for the subsequent stage; and means for moving each competitor from said initial position to said end positions for each stage.

32. Apparatus according to claim 31, wherein the stage providing means provides a final stage for the race, and the apparatus further includes means for providing a finish position in said final stage whereby the end position of one competitor in said final stage is said finish position, and means for finishing the race when said one competitor reaches said finish position, said one competitor being preferably designated as the winner of the race.

33. Apparatus according to claim 13, wherein the designation means designates the end position for each competitor for each stage at the beginning of the respective stage.

34. Apparatus according to claim 13, wherein the designation means designates the end position for each competitor for each stage at the beginning of the race.

35. Apparatus according to claim 31, including transmission means to transmit to the display means details of the winner of the race on finishing of the race, to display said details on the display means.

36. Apparatus according to claim 31, including background providing means for providing a background for said race to be displayed on the display means during said race, and translation means for translating said background across the display means during said race, in the opposite direction to the movement of said competitors.
37. Apparatus according to claim 36, wherein the translation means translating the background at a greater speed across the display means than the speed at which the competitors are moved.

38. Apparatus according to claim 36, wherein the translation means moves the background continuously across the display means during the race at a predetermined speed.

39. Apparatus according to claim 36, wherein the background may comprise a first plurality of background sections, and a predetermined second plurality of background sections are moved across the display means during each of said stages of said race.

40. Apparatus according to claim 39, wherein the aggregate of the second plurality of sections of all the stages comprises said first plurality of sections.

41. Apparatus according to claim 39, wherein the number of sections in each stage are the same.

42. Apparatus according to claim 39, wherein each of the stages has a different number of sections.

43. Apparatus according to claim 31 including means for selecting simulated conditions for the race, for example weather conditions and firmness of the ground upon which the competitors race.

44. Apparatus according to claim 31, including means for storing the results of each of a plurality of races thereby storing the results for each competitor, the storage means collating the results for each competitor and the conditions for each race and further displaying the collated result and conditions on the display means to be viewed by a user.

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