In a gaming table layout of a related art, as disclosed in http://gamingconceptsgroup.com/2013/baccarat-table-sale/, there are bet areas of TIE, PLAYER PAIR, and BANKER PAIR called a side bet before a dealer, and when a game participant desires to bet on the side bet, the game participant has to ask dealer to place or receive a game token. Further, in a system of a related art, a system of photographing a game token on a gaming table with a camera device or the like installed in the gaming table and recognizing a type of game token and the number of game tokens has been proposed.

[0005]

In game places such as casinos, a baccarat game or the like in which betting is performed in accordance with a gaming table layout or the like is performed, a game token on a gaming table is photographed with a camera device installed in the gaming table, and a type of game token and the number of game tokens are recognized. However, the gaming table layout of the related art is not a layout considered to bet on the side bet easily. When the game participant desires to bet on the side bet, the game participant has to ask the dealer, and thus there is a problem in that time and efforts to go through the dealer's hand are taken, and it is difficult to bet. Further, in the system of the related art, a difference in a bet amount on each of the PLAYER, the BANKER, the TIE, the PLAYER PAIR, and the BANKER PAIR in each gaming table layout is not detected.

[0006]

Embodiments of the present disclosure seek to provide a gaming table layout which is excellent and capable of evaluating whether or not a gaming table layout is excellent by photographing a game token with a camera device, recognizing a type of game token and the number of game tokens, and further calculating a ratio of an amount of money bet on a side bet.

[0006a]

According to an aspect, there is provided a management system comprising a gaming table which has one of a plurality of types of gaming table layouts for baccarat, wherein each of the plurality of types of gaming table layouts has a respective set of a plurality of bet areas for each of a plurality of game participants, the respective set including, as respective bet targets, a PLAYER bet area, a BANKER bet area, a TIE bet area, a PLAYER PAIR bet area, and a BANKER PAIR bet area; an image capturing device, wherein the image capturing device is configured to generate, from above at an angle, an image of the gaming table layout with gaming chips placed on one or more of the bet areas of the gaming table layout in order to participate in betting; and at least one processor, wherein the at least one processor is configured to: determine the bet targets on which the gaming chips are placed, a type of the gaming chips, and a number of the gaming chips, at least one of the bet targets, types, or the number is determined using deep learning structured artificial intelligence for images of each of the plurality of types of gaming table layouts generated by the image capturing device; and record in a database the determined bet target, type, and

number.

[0006b]

According to another aspect, there is provided a management system for a table game played on a gaming table having a gaming table layout for baccarat, wherein the gaming table layout has a respective set of a plurality of betting areas for each of a plurality of player positions that are for a plurality of game participants to participate in the table game, each of the sets includes at least one side bet area and at least one non-side bet area, the system comprising: at least one processor, wherein the at least one processor is configured to: for each of a plurality of bets placed, over time, by a respective placement of gaming chips on the gaming table for participating in the table game: determine which of the betting areas is a bet target of the respective bet, one or more types of the placed gaming chips of the respective bet, and one or more numbers of the placed gaming chips of the respective bet; and record in a database a respective record of the bet target, the one or more types, and the one or more numbers of the gaming chips; and calculate, based on the records in the database, for multiple table games associated with a predetermined time period or a predetermined number of games: (a) a bet amount and/or revenue amount of the side bet area summed up for each table game of the multiple table games; and (b) either: (1) a bet amount and/or revenue amount of the non-side bet area summed up for each table game of the multiple table games; or (2) a total bet amount and/or total revenue amount of the side bet area and the non-side bet area summed up for each table game of the multiple table games.

[0007]

There is also disclosed a table game management system including a gaming table having a baccarat gaming table layout, a chip determining device capable of determining a type of game token placed on the gaming table to participate in a bet and the number of game tokens, and a control device that records the type of game token and the number of game tokens determined by the chip determining device in a database, in which the gaming table layout includes a portion on which a chip float storing the game token is placed, a portion on which a card chute device storing a playing card is placed, a card area in which the playing card withdrawn from the card chute device is placed, and a bet area in which a game participant places the game token to participate in a bet, further, as the bet area, a bet area for PLAYER, a bet area for BANKER, a bet area for TIE, a bet area for PLAYER PAIR, and a bet area for BANKER PAIR are set in a plurality of rows for each position radially centering on a dealer, and the control device is configured to detect transition of an amount of the game token bet on each of the PLAYER, the BANKER, the TIE, the PLAYER PAIR, and the

[0026]

There is also disclosed a table game management system including a gaming table having a baccarat gaming table layout, a chip determining device capable of determining a type of game token placed on the gaming table to participate in a bet and the number of game tokens, and a control device that records the type of game token and the number of game tokens determined by the chip determining device in a database, and the gaming table layout includes a portion on which a chip float storing the game token is placed, a portion on which a card chute device storing a playing card is placed, a card area in which the playing card withdrawn from the card chute device is placed, and a bet area in which a game participant places the game token to participate in a bet, in which the control device is configured to detect transition of an amount of the game token bet on each of the PLAYER, the BANKER, the TIE, the PLAYER PAIR, and the BANKER PAIR independently for each player position on the basis of a record of the database.

[0027]

Further, the control device may be configured to detect transition of an amount of the game token bet on the PLAYER, the BANKER, the TIE, the PLAYER PAIR, and the BANKER PAIR for a plurality of gaming tables.

[0028]

Further, the control device may be configured to detect transition of an amount of the game token bet on the PLAYER, the BANKER, the TIE, the PLAYER PAIR, and the BANKER PAIR for

win-loss result determining device that determines a win-loss result of a game, and the control device may be configured to detect a balance for each player position on the basis of the win-loss result of the game determined by the win-loss result determining device.

[0037]

The table game management system may further include a player specifying unit that specifies a player participating in a game at each player position by a face authentication system or a membership card.

[0038]

The control device may record a membership ID of each player specified by the player specifying unit and a bet amount of each player position in the database in association with each other.

[0039]

The control device may be configured to detect an amount of the bet game token and a balance for each player.

[0040]

The chip determining device may be configured to separately detect a plurality of game token stacks within each bet area of each player position.

[0041]

There is also disclosed a baccarat gaming table layout including a portion on which a chip float storing a game token is placed, a portion on which a card chute device storing a playing card is placed, a card

Further, in the gaming table layout, a game token including a feature color specifying a type and a common color used in common to a plurality of types of game tokens may be a use target as the game token to be used, and the bet area may be colored with a color other than the common color.

[0046]

Further, the gaming table layout may include a game token check area.

[0047]

Further, a gaming table may include the gaming table layout set on a top surface thereof.

[0048]

According to the present disclosure, it is possible to correctly recognize a game token without confusion with a layout pattern when a game token is recognized using an image captured by a camera device and thereby improve accuracy of scanning a game token with a camera device through a table game management system including a gaming table having a baccarat gaming table layout, a chip determining device capable of determining a type of game token placed on the gaming table to participate in a bet and the number of game tokens, and a control device that records the type of game token and the number of game tokens determined by the chip determining device in a database, in which the gaming table layout includes a portion on which a chip float storing the game token is placed, a portion on which a card chute device storing a playing card is placed, a card area in which the playing card withdrawn from the card chute device

CLAIMS

1. A management system comprising:

a gaming table which has one of a plurality of types of gaming table layouts for baccarat, wherein each of the plurality of types of gaming table layouts has a respective set of a plurality of bet areas for each of a plurality of game participants, the respective set including, as respective bet targets, a PLAYER bet area, a BANKER bet area, a TIE bet area, a PLAYER PAIR bet area, and a BANKER PAIR bet area;

an image capturing device, wherein the image capturing device is configured to generate, from above at an angle, an image of the gaming table layout with gaming chips placed on one or more of the bet areas of the gaming table layout in order to participate in betting; and

at least one processor, wherein the at least one processor is configured to:

determine the bet targets on which the gaming chips are placed, a type of the gaming chips, and a number of the gaming chips, at least one of the bet targets, types, or the number is determined using deep learning structured artificial intelligence for images of each of the plurality of types of gaming table layouts generated by the image capturing device; and

record in a database the determined bet target, type, and number.

2. The management system according to claim 1, wherein the bet areas do not have border lines and are distinguished from a background of the gaming table layout by a color or a color density.

3. The management system according to claim 1, wherein:

the gaming chips each includes a respective characteristic color that corresponds to a respective type of the respective gaming chip and a common color that is commonly used for a plurality of different types of the gaming chips; and

the bet areas are each colored in a color other than the common color.

4. The management system according to claim 1, wherein the plurality of types of gaming table layouts are different from one another with respect to placement, size, or color of the bet areas.

5. The management system according to claim 1, wherein, in the gaming table layout of the gaming table, the plurality of bet areas are arranged in a radial pattern around a dealer position.

6. The management system according to claim 1, wherein the types is determined using deep learning structured artificial intelligence.

7. The management system according to claim 1, wherein the bet targets, types, and the number is determined using deep learning structured artificial intelligence.

8. A management system for a table game played on a gaming table having a gaming table layout for baccarat, wherein the gaming table layout has a respective set of a plurality of betting areas for each of a plurality of player positions that are for a plurality of game participants to

participate in the table game, each of the sets includes at least one side bet area and at least one non-side bet area, the system comprising:

at least one processor, wherein the at least one processor is configured to:

for each of a plurality of bets placed, over time, by a respective placement of gaming chips on the gaming table for participating in the table game:

determine which of the betting areas is a bet target of the respective bet, one or more types of the placed gaming chips of the respective bet, and one or more numbers of the placed gaming chips of the respective bet; and

record in a database a respective record of the bet target, the one or more types, and the one or more numbers of the gaming chips; and

calculate, based on the records in the database, for multiple table games associated with a predetermined time period or a predetermined number of games:

(a) a bet amount and/or revenue amount of the side bet area summed up for each table game of the multiple table games; and

(b) either:

(1) a bet amount and/or revenue amount of the non-side bet area summed up for each table game of the multiple table games; or

(2) a total bet amount and/or total revenue amount of the side bet area and the non-side bet area summed up for each table game of the multiple table games.

9. The management system according to claim 8, wherein the gaming table layout has a gaming chip check area.

10. The management system according to claim 8, wherein the at least one processor is configured to calculate, for the predetermined time period or the predetermined number of games:

(a) an earning rate of the side bet area; and

(b) either:

(1) an earning rate of the non-side bet area; or

(2) a total earning rate of the side bet area and the non-side bet area.

11. The management system according to claim 10, wherein the at least one processor is configured to calculate a ratio of the earning rate of the side bet area to the earning rate of the non-side bet area.

12. The management system according to claim 11, wherein the gaming table is one of a plurality of gaming tables, and the at least one processor calculates the ratio for each of the plurality of the gaming tables.

13. The management system according to claim 8, wherein the at least one processor is configured to calculate a ratio of the revenue amount of the side bet area to the revenue amount of the non-side bet area.

14. The management system according to claim 13, wherein the gaming table is one of a plurality of gaming tables, and the at least one processor is configured to calculate the ratio respectively for each of the plurality of the

gaming tables.

15. The management system according to claim 8, wherein the gaming table is one of a plurality of gaming tables, and the at least one processor is configured to calculate the bet amount and/or the revenue amount respectively for each of the plurality of the gaming tables.

16. The management system according to claim 8, wherein:

the at least one non-side bet area includes a PLAYER betting area and a BANKER betting area;

the at least one side bet area includes a TIE betting area, a PLAYER PAIR betting area, and a BANKER PAIR betting area; and

each of the sets of the plurality of betting areas is arranged to be within reach of a respective game participant that is at the respective one of the plurality of player positions to which the respective set corresponds.

17. The management system according to claim 8, wherein:

respective distances from a first exterior edge of the gaming table at which a dealer can be positioned to each of the betting areas of the gaming table are each no more than one meter; and

for each of the player positions, which are at a second exterior edge of the gaming table, respective distances from the respective player position to each of the betting areas of the respective set of the player position are each no more than one meter.

18. The management system according to claim 8, wherein for each of the sets of the plurality of betting areas:

the at least one non-side bet area includes a PLAYER betting area and a BANKER betting area;

the at least one side bet area includes a TIE betting area, a PLAYER PAIR betting area, and a BANKER PAIR betting area; and

the PLAYER betting area, the BANKER betting area, the TIE betting area, the PLAYER PAIR betting area, and the BANKER PAIR betting area are lined up as respective rows of a single column.

19. The management system according to claim 8, wherein the at least one processor is configured to, for each of the sets:

calculate, based on the records in the database, for the multiple table games associated with the predetermined time period or the predetermined number of games:

for the player position of the plurality of player positions:

(a) the bet amount and the revenue amount of the side bet area; and

(b) either:

(1) the bet amount and the revenue amount of the non-side bet area; or

(2) the total bet amount and the total revenue amount of the side bet area and the non-side bet area.

20. The management system according to claim 8, wherein the at least one processor is configured to, for the gaming table:

calculate, based on the records in the database, for the multiple table games associated with the predetermined time period or the predetermined number of games:

for the player position of the plurality of player positions:

(a) the bet amount and the revenue amount of the side bet areas; and

the bet amount and the revenue amount of the non-side bet areas.

21. The management system according to claim 8, wherein the at least one processor is configured to, for the gaming table:

calculate, based on the records in the database, for the multiple table games associated with the predetermined time period or the predetermined number of games:

for the player position of the plurality of player positions:

(a) the bet amount and the revenue amount of the side bet areas; and

the total bet amount and the total revenue amount of the side bet areas and the non-side bet areas.

22. The management system according to claim 8, wherein the bet amount and/or revenue amount of the side bet area is a total bet amount or a total revenue amount of the side bet area for the multiple games.