

**IMPROVEMENTS RELATING TO THE OPERATION OF
SYSTEMS FOR GENERATING DETERMINISTIC OUTCOME EVENTS**

TECHNICAL FIELD

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The present invention concerns improvements relating to the operation of systems for generating deterministic outcome events. More particularly, the present invention concerns a method for conducting a "second chance" lottery game based on existing drawn numbers across different primary games and different lottery jurisdictions.

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BACKGROUND

Lottery is a popular game of chance in which a number of players contribute to form a jackpot that is later awarded, wholly or partially, to one or more winners. The participating players pay money or
15 contribute other things of value in exchange for lottery tickets.

Various draw engines are known for use with national or international lottery systems. For example, mechanical systems are known for use with lottery systems where the mechanical system selects a subset of numbers from a predetermined larger set of numbers, known as the state space, and a
20 winner may be determined by a user having a ticket with a matching selection of numbers as the subset. Electronic systems are also known for use with raffle type prize draw systems. Here a predetermined number of winners can be selected from a pool of all of the uniquely identified entries in the draw. There are advantages and disadvantages to the operation of both types of systems.

25 Typically, each lottery ticket bears a combination of numbers or other symbols, and a winning ticket has to at least partially match a randomly generated set of numbers or symbols. In a properly operated lottery game, any one of the outstanding lottery tickets could be selected in a random drawing as a winning ticket, entitling its holder to some or all of the jackpot prize.

30 Lottery games come in different formats. For example, the jackpot of a lottery game may be either a fixed cash amount or a certain percentage of ticket revenue. The combination of numbers on each lottery ticket could be a unique one, or each player may be allowed to select his or her own lucky numbers, making it possible for multiple tickets to share a same combination. Lottery games can be played either online or offline. The most popular lottery games, such as Powerball™, Mega Millions™,

and Euro Millions™, are paper-, web- or app-based, sometimes requiring the purchase of actual tickets. Other lottery games can be played completely online. That is, instead of purchasing a paper ticket and filling in desired numbers with a pencil, an online player can purchase an electronic (or virtual) lottery ticket and select a desired combination via a web interface such as an Internet browser.

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All the existing types of lottery games appear to share a few common characteristics. First, they all have to issue some kind of lottery tickets, whether paper or electronic, full- denomination or proportional. The purposes for issuing lottery tickets are two-fold. The tickets bear numerical combinations or patterns to be compared to the randomly generated winning combination or pattern.

10 The tickets also serve as proof of participation in the lottery games. However, the entire mechanism of generating, drawing, and matching tickets could impose significant overhead costs on the operation of lottery games.

A typical lottery system allows users to choose a plurality of numbers from a predetermined set of
 15 numbers as their draw entry. For example, each user may be required to select six numbers from a number range as their draw entry. The winning numbers making up the winning outcome is randomly selected by a draw engine from the set of all possible combinations of six numbers in the number range, and each draw outcome in the set of all possible combinations has an equal likelihood of selection. For example, if each number can have a value ranging from 1 to 49, the set of all possible
 20 combinations is defined by the equation:

$$C_6^{49} = \frac{49!}{6! (49 - 6)!} = 13,983,816$$

In other words, there are approximately 14 million different outcomes in the set of all possible
 25 combinations (note that in this instance the order of the numbers is not relevant), and the winning draw entry is selected from this set.

In a lottery system, the set of all possible number combinations for draw entries is not directly proportional to the number of entries but is instead proportional to the number of different
 30 combinations of the number sequence making up the draw outcome. In other words, a user's likelihood of winning a lottery is independent of the number of issued tickets.

Users are generally able to select their own desired draw entries in lottery systems and accordingly, there is an inherent risk of duplication of draw entries. This means that two or more users may share

a winning prize, if the users selected the same set of numbers for their draw entry and the numbers matched the draw outcome. In other words, in a lottery it is often not possible to uniquely identify the winner of the draw, namely, a lottery has a non-deterministic outcome. Total winnings are usually equally shared between the users having matched the winning outcome, which dilutes each winning user's earnings. This can act as a disincentive, because the amount of the winning prize for a winning user cannot be guaranteed at the outset and instead is proportional to the number of users who have chosen the winning outcome.

The alternative scenario in which none of the users has selected the winning outcome is also possible in a lottery system. In such circumstances, the winning prize may be combined into a subsequent lottery draw (an event commonly referred to as a "rollover"). The prizes associated with a lottery draw are continuously rolled over, until the winning outcome matches a user-selected draw entry. Unfortunately, this means that a winning prize cannot be guaranteed for each lottery draw as the outcome is non-deterministic, which can often disincentivise user participation in the lottery. In addition, if a rollover event occurs, the likelihood of duplication of identifiers increases as there may be a greater number of entries in the draw. This is because the incentive for entering the lottery draw would increase, leading to a greater number of entries. Alternatively, in some lottery systems, the entries from a draw that have resulted in a rollover event are carried over into a subsequent draw.

In order to decrease the likelihood of duplication, known lottery systems increase the size of the state space from which identifiers are selected. This may be achieved by increasing the size of the set of all possible identifier combinations, for example, by choosing six numbers from a set ranging from 1 to 59, there would be the following number of possible combinations:

$$C_6^{59} = \frac{59!}{6! (59 - 6)!} = 45,057,474$$

However, increasing the size of the state space also increases the likelihood of a rollover event occurring.

Conversely, in order to decrease the likelihood of a rollover event, it is also known for lottery systems to decrease the size of the state space from which identifiers are selected. This may be achieved by decreasing the size of the set of all possible identifier combinations, for example, by choosing six numbers from a set ranging from 1 to 39, there would be the following number of possible combinations:

$$C_6^{39} = \frac{39!}{6!(39-6)!} = 3,262,623$$

However, decreasing the size of the state space also increases the likelihood of duplication of entries
 5 which dilutes the value of prize winnings (as greater numbers of winning entries means more sharing
 of fixed prize amounts).

A known way of mitigating rollover and diluted winnings is to use a deterministic system such as a
 raffle system. A raffle system typically involves registering a plurality of uniquely identifiable entries,
 10 wherein each entry in the set of registered entries has an equal likelihood of being selected as the
 winning selection. A winning selection is made by randomly selecting one entry from the set of
 registered entries. In certain instances, more than one random selection may be made, in which case
 the number of winning selections is equal to the number of selections carried out.

15 In order to avoid duplication and to ensure that each entry in the raffle competition is uniquely
 identifiable, the system assigns a unique identifier for each entry (e.g. each issued raffle ticket
 comprises a unique identifier). The unique identifier is typically automatically generated by an issuing
 terminal, and users are not provided with the opportunity of selecting the draw entry numbers. This
 prevents duplication of identifiers. Further, for large raffle competitions, terminals at which the raffle
 20 competition can be entered may be distributed over a large geographical area, e.g. nationwide. In
 order to maintain the uniqueness of identifiers, each terminal is arranged to communicate with a
 central server, managed by the raffle operator to request a unique identifier for each ticket as the
 ticket is issued. This disadvantageously slows down the ticket issuing procedure.

25 Alternatively, in some systems terminals do not have a permanent data connection to a central server,
 and so the terminals issue unique identifiers from a range of unique identifiers that have been
 allocated to each terminal. However, this disadvantageously limits the number of unique identifiers
 that each terminal can issue and causes a processing burden for the server which then has to manage
 a discontinuous range of issued unique identifiers from the different terminals.

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In a raffle system, the winning raffle entry is selected from the set of all issued unique identifiers. As
 each entry is unique and there is no duplication of issued identifiers, there is always at least one
 winning selection. In other words, the outcome of a raffle system is deterministic. This incentivises
 participation in the raffle competition. However, for many users it is undesirable not to be able to

select their own draw entry numbers. When users are able to select desired draw entry numbers, they can ensure that the selected numbers for their entry into a draw are correct and valid and they also have a simple way of confirming if they have won. This prevents a fraudulent terminal issuing invalid identifiers and generally reduces the opportunities of fraud. Unfortunately, the rigidity of the raffle system means that this higher security option is not made available to use as the unique identifier, otherwise there is a risk of duplication resulting from two different users selecting the same draw entry numbers.

In a lottery, the winning identifier is typically chosen using a mechanism arranged to choose components of the winning identifier at random. Users, or an arbitrator that is independent of the lottery operator, are able to inspect the mechanism to ensure that the selection is truly random and fair. For example, if the winning identifier is a set of six numbers from a number range from 1 to 49, as previously described, a mechanism, for example, may be arranged to pick six balls numbered from 1 to 49 in order to yield approximately 14 million possible unique outcomes. This manner of outcome selection is considered to be very secure because the event of drawing numbered balls from a mechanical draw device can be televised or witnessed to provide some comfort of the impartiality of the draw system.

However, it would be prohibitively impractical for a raffle system to randomly select one winning selection out of 14 million uniquely identifiable entries using such a mechanism. Instead, a computer program is typically provided which is arranged to randomly select one winning selection out of 14 million uniquely identifiable entries in the example raffle competition. The computer program would not be readily inspectable by users and may also be susceptible to fraud. A fraudulent attack on a raffle system computer program may prevent a truly random selection. For example, a malicious attack on a raffle system computer program could force an outcome that is beneficial to the attacker, preventing the system from being fair and random. Such an intrusion would generally be very difficult for the users to detect.

The majority of existing types of lottery games are 'single shot', meaning that each set of numbers has a single chance of winning, and there is no second chance for those numbers to win a prize in a single draw.

In an attempt to increase sales, United States lotteries have adopted "second chance" games where the consumer can enter losing lottery ticket codes on lottery Internet sites to play instant second

chance games or to enter second chance draws. However, for the most part, second chance games usually involve prizes of a minor nature compared to the main lottery games. Thus, by their nature, second chance games are a minor part of overall game design and are not a principal motivator for ticket purchases. Typically, second chance games have been limited to conducting within a single
5 jurisdiction (i.e., a single state or other governmental entity under common jurisdictional laws) and dependent on a single primary game.

Thus, it is highly desirable to provide a process for the operation of prize draw systems capable of handling massive numbers of entries and handling multiple draws on different timescales.
10 Accordingly, it is desirable to provide an improved system for randomly selecting a draw outcome from a set of non-unique identifiers that provides a deterministic outcome.

Particularly, it would be highly desirable to provide an improved means of conducting a second chance game that provides a high degree of flexibility for both the originating primary game and lottery
15 jurisdiction, facilitating multiple jurisdictions participating in a common second chance game.

SUMMARY OF THE INVENTION

According to a first aspect of the present invention, there is provided a method for conducting and
20 playing a lottery game, the method comprising the steps of:

- issuing a ticket to a party, wherein the party chooses a set number of characters, selected from a pool of characters, which are associated with the ticket;
- conducting a primary game, wherein the game provides a chance to win by matching the chosen characters to a set number of consecutively drawn characters selected from the pool
25 of characters,
- providing a result of the primary game;
- when a ticket was unsuccessful, entering the ticket into a secondary game, wherein the game provides a chance to win by matching the chosen characters to a set number of consecutively drawn characters selected from the pool of characters; and
- 30 providing a result of the secondary game,

wherein the party can choose an additional set number of characters, selected from the pool of characters, following the primary game and prior to the secondary game.

The ticket issued may be physical or digital. A physical ticket may comprise a paper slip where the party ticks or circles the desired characters, for example. A digital ticket may comprise an internet-based version of a physical ticket, where the party selects decided characters from a dropdown menu or similar.

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The characters may be selected from numbers, symbols, letters, or any other discernible symbol. In most preferred embodiments, the characters are numbers.

The pool of characters may comprise any suitable number of characters, but may, by way of example, comprise greater than or about 10, greater than or about 15, greater than or about 20, greater than or about 25, greater than or about 30, greater than or about 40, greater than or about 50, greater than or about 75 or greater than or about 100.

In the primary and secondary games, the set number of consecutively drawn characters selected from the pool of characters may be selected from any suitable number, but may, by way of example be selected from about 5, about 6, about 8, about 10, about 12 or about 15.

The set number of consecutively drawn characters may be referred to as winning characters. The set number of consecutively drawn characters in the primary and secondary games may be the same or different, preferably they are different.

Unsuccessful tickets in the primary game may be automatically entered into the secondary game, or they may only be entered if the party chooses to enter them into the secondary game.

Following the primary game, the party can choose an additional set number of characters, selected from the pool of characters to add to their selection, prior to the secondary game. The party may select any suitable number of additional characters, or they may choose to change existing characters.

In some embodiments, if all, or a plurality of, the plurality of party's chosen characters matches all, or a plurality of, the set number of consecutively drawn characters, the party may win a prize.

In one embodiment of the invention according to the first aspect, it may relate to a type of lottery draw that enables a desired number of winners to be guaranteed. In such an embodiment, the method may additionally comprise collecting personal information of parties. The lottery game may use the

party-selected characters in conjunction with personal information of users in order to determine the winner(s). This prevents prize rollover and prize dilution, for example, by ensuring that there is exactly one winner per game. In such an embodiment, the winning characters are randomly selected, then user information e.g. month of birth, is randomly selected in order to narrow the pool of winners

5 down to the desired number. An additional benefit is that the random selections can be carried out using a mechanism rather than a computer program (which could be tampered with). An example application of this type of lottery draw is as a secondary game held every 6 months.

The primary and secondary games may be conducted at the same frequency or a different frequency.

10 The primary games may be held every day, every week, every fortnight, or every month, for example. The same lottery numbers selected by users would be entered into the secondary game, which would be run at less frequent intervals than the primary game. For example, the secondary game may be held monthly, or quarterly.

15 The primary games across the lottery jurisdictions may be the same or different.

The secondary game may be conducted based on a primary game from the same or a different lottery jurisdiction. Therefore, the secondary game is not limited to the jurisdiction of the primary game.

20 A lottery jurisdiction may be a region, such as for example a single city or a US state, or a country, such as for example the United States or the United Kingdom, or a group of countries, such as for example the European Union.

In a preferred embodiment the lottery jurisdictions are different countries. In such an embodiment

25 the second game may be known as a globally available 'Universal Lottery'.

A controlled deterministic number, known as the 'country code' or 'country differentiator', may be created within the second game, to be able to create different prize tiers without predetermined discrimination that is open to fraud.

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The country code is created by assigning a jurisdiction-specific non-variable number, which may be based on international subscriber dialling (ISD) codes, assigned to self-picked or machine picked numbers according to the jurisdiction of purchase. Using ISD codes is advantageous as these codes are defined by the International Telecommunication Union (ITU) in ITU-T standards E.123 and E.164. For

example, all UK purchases would be assigned UK dialling code 44, and all US and Canada purchases would be assigned Zone 1 dialling code, 1.

5 In embodiments where the lottery jurisdictions are the same, the primary game numbers may be adjusted to afford the same chance of winning in the secondary game. For example, when the number of winning characters is the same in the primary and secondary games, adjustment is not required, but when they are different, they will need adjustment.

10 In embodiments where the lottery jurisdictions are different, and parties have different sets and numbers of chosen characters entered into the primary game, for example one picks from 1-100 and another from 1-50, and different numbers of winning characters, for example one picks 5 numbers from 1-100 and another 6 from 1-50, standardisation may be required. Standardisation may be achieved using the country code or country differentiator.

15 By assigning a unique number, the country code enables the set number of consecutively drawn characters selected from the pool of characters for the secondary game to be standardised.

Prior to the secondary game, a jurisdiction draw may be carried out, in which a single country code is selected from the assigned country codes of the primary game. Such a draw means that if the assigned
20 country code is drawn, the associated ticket may proceed to the secondary game. In doing so the predetermined set of numbers chosen by the party, will have an equal chance to win even though one has more numbers in the draw than the other, regardless of whether the number of does not match the set number of consecutively drawn characters selected from the pool of characters for the secondary
25 game.

For example, if the country code in the UK is 44, and this is drawn as well as the maximum number of winning characters, the party will win if each of said number of characters match any of the set number of consecutively drawn characters selected from the pool of characters, even if the latter is larger or
30 smaller than the other.

In preferred embodiments, only a participating country code may be drawn in the jurisdiction draw.

Thus, in preferred embodiments of the invention, the method additionally comprises;

assigning the set number of characters chosen by the party a country code, based on the jurisdiction of the primary game;
conducting a jurisdiction draw, in which a single country code is selected from the assigned country codes of the primary game; and
5 only entering the ticket into a secondary game if the assigned country code is selected in the jurisdiction draw.

Advantageously, employing country code differentiators enables standardisation of the primary draw values across multiple different jurisdictions, which makes it possible to run a universal global lottery
10 where any number of different jurisdictional primary games can be entered into the secondary game, increasing participation whilst also providing the same chance of winning regardless of primary game and jurisdiction.

The method according to the first aspect may be computer-implemented. When computer-
15 implemented, the method may be easily adapted to internet games, networked games, lottery games, and so forth.

According to a second aspect of the present invention, there is provided a system for implementing the method according to the first aspect.
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According to a third aspect of the present invention, there is provided a ticket for use in the system according to the second aspect.

The ticket may be physical or digital. In preferred embodiments the ticket is digital and may be
25 obtained on the internet.

According to a further aspect of the present invention, there is provided a random draw engine that allows duplication of entries into the draw but resolves instances of multiple or no winners (i.e. non-deterministic outcomes) by using an adaptive procedure until a predetermined number of winners is
30 arrived at (i.e. a deterministic outcome). The predetermined number of winners may be one.

A benefit of the present invention is that the size of the state space for the possible identifiers would not have to be increased to prevent duplication or decreased to prevent rollover events. Further, the

random draw and the adaptive procedure may be carried out using a mechanism which is simple and has a high level of security against fraud.

In this manner, the present invention achieves the deterministic outcome of a raffle draw but without the lack of security which is associated with large size raffle draw where the draw has to be carried out in the software database domain. In some respects, embodiments of the present invention can be considered to be equivalent to a raffle draw system that provides users with the ability to select their own draw numbers.

10 DETAILED DESCRIPTION

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

- 15 Figure 1 shows an exemplary ticket distribution and selection system.
- Figure 2 shows modular components of a ticket system.
- Figure 3 shows a user database.
- Figure 4 shows a process of running a prize draw.
- Figure 5 shows a process of running primary draws and a secondary draw.
- 20 Figure 6 shows a process for carrying out a draw.
- Figures 7 and 8 together show a combinatory flow diagram representing procedural protocol for a method of the invention and exemplary parameters.

Referring to Figure 1, there is shown an exemplary ticket distribution and selection system 100 arranged to carry out random selection of numbers according to an embodiment of the present invention. The system 100 comprises a communication network 102 (for example, a LAN, a WAN, or the Internet), a plurality of terminals 104, a ticket system 106 and a draw system 108. The plurality of terminals 104 are each either intermittently connected to the communication network 102 or continuously connected to the communication network 102. The ticket system 106 is operatively connected to the communication network 102, and the draw system 108 is operatively connected to the ticket system 106.

Each terminal 104 is arranged to enable a user to select one or more desired numbers associated with an entry into a random prize draw. Each terminal 104 sends the user-selected numbers of the draw entry to the ticket system 106.

5 The ticket system 106 is arranged to manage prize draws and is arranged to receive a set of winning numbers for a draw, as randomly selected by the draw system 108. The draw system 108 is arranged to randomly select winning numbers for draws which make up a winning outcome, and the draw system typically is realised as a mechanical device that selects numbers for a relatively small range of predefined numbers. This type of draw system is simple and has a high level of security against fraud.

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Referring to Figure 2, there is shown the modular components of the ticket system 106 in greater detail. The ticket system 106 comprises a system controller 120, a communication module 122, a selection module 124, a user database 126 and a registration module 128. The communication module 122, the selection module 124, the user database 126 and the registration module 128 are each
15 connected to the system controller 120. The communication module 122 is configured to send and receive data to and from the communication network 102.

The selection module 124 is arranged to instruct the draw system 108 to run and is also arranged to receive the winning outcome from the draw system 108.

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The registration module 128 is configured to enable users to register their personal details with the ticket system 106. The registration process begins with the ticket system 106 providing a user with an opportunity to carry out registration. If the user elects to proceed with registration, the user submits their personal information, such as name, date of birth, telephone number, national identity reference
25 and address which is placed in a user's personal data record. If the user has previously entered a prize draw, they can provide their ticket numbers associated with the prize draw entry during the registration process. The ticket system 106 then stores the received information in the user's personal data record and assigns the user an identity number. The system then provides the user with a unique registration number (user ID number) which can be used for each subsequent use of the system and which
30 acts as a reference to their personal data record.

The user database 126 is arranged to store information associated with users in personal data records, such as personal information of users who have registered with the ticket system 106. The user database 126 also stores draw entries that have been submitted by registered users. The draw entries

and personal information may be used by the ticket system 106 to carry out the adaptive procedure when the draw system 108 provides a non-deterministic outcome which does not match the desired deterministic outcome.

- 5 Referring to Figure 3, there is shown the user database 126 in greater detail and provides non-limiting example of the database record structure of each personal data record for illustrative purposes only. The user database 126 comprises data associated with users including personal data (i.e. user parameters 150) who have registered with the ticket system 106. Data associated with each user includes a user ID number 152, draw entry numbers 154 selected by the user, a multiplier 155, a name
10 156, a date of birth 158, a telephone number 160 and a national identity reference 162; the latter four of these types of data and the user ID number 152 making up the personal data 150.

- The multiplier 155 relates to the number of instances within a time period that the user has submitted a draw entry with the same selected numbers. If more than one user has draw entry that is randomly
15 selected as a winning outcome, the multiplier 155 may be used to determine prize apportionment. The prize apportionment may be determined by the following equation:

$$User's\ prize\ portion = \frac{total\ value\ of\ prize}{number\ of\ winning\ users} \times user's\ multiplier$$

- 20 Referring to Figure 4, there is shown the steps comprised in a process 298 of running a prize draw in accordance with an embodiment of the invention.

- The process 298 starts with the user selecting, at Step 300, at one of the plurality of terminals 104, one or more desired numbers making up their draw entry to enter into a prize draw. The terminal 104
25 supplies the user with a record of their selected draw entry, the numbers of the draw entry being printed on a ticket including a ticket number. If the user has previously registered their personal user parameters 150 with the ticket system 106, then the user can supply their user ID number 152 when submitting their draw entry in order to automatically associate the chosen draw entry with the user's personal data record in the user database 126. The draw entry is sent from the terminal 104 to the
30 ticket system 106.

The user registers their personal user parameters using the registration module 128 to be eligible for the prize draw. In this embodiment, this process is akin to a Know Your Client (KYC) process. Accordingly, the ticket system checks at Step 304, whether a user record already exists, for example,

if the user provided their user ID number 152 when submitting their prize draw entry. If a user has not yet registered, the user can do so and manually associate their ticket numbers for the primary draw with their provided user parameters in their personal data record. The ticket system then waits, at Step 306, for a predetermined period before returning to Step 304, checking whether a personal user
5 record already exists.

Once the user has registered, at Step 307, their user parameters using the registration module 128, or if the user is already registered (i.e. the check of Step 304 is passed), the ticket system 106 associates, at Step 308, the user's draw entry 154 (e.g. using the ticket number) with the user's personal record
10 in the user database 126.

The random prize draw with the adaptive procedure is then carried out, at Step 310, by the draw system 108 and the ticket system 106, and this is discussed in more detail later with reference to Figure 6.
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Embodiments of the invention are now described with reference to a primary and a secondary draw, wherein the secondary draw is carried out in substantially the same way as the prize draw of Figure 4.

A primary draw is carried out to determine a winning outcome at a predetermined time interval, for example on a weekly basis. Subsequently, a secondary draw is carried out at a less frequent predetermined time interval, for example once every six months. The entries into the secondary draw comprise the draw entries of registered users that were entered for participation into any primary draw occurring within the predetermined time interval. In other embodiments, the primary draw and the secondary draw may occur more or less frequently. For example, a primary draw may occur twice
20 a week, or every two weeks, and a secondary draw may occur every three months, or once per year.
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Considering an example where the winning outcome is a set of six numbers, each number being selected from a number range ranging from 1 to 49, the draw system 108 is a device arranged to pick six balls that are numbered from 1 to 49. In this scenario, there are approximately 14 million possible six-number outcomes that can be selected from only 49 balls. If there are 14 million entries for each primary draw, on average there will be one entry matching the winning outcome per week (though as this is a non-deterministic outcome – there may be more or less than one outcome each time the draw is carried out). However, in the secondary draw, using the same draw method and entering the same
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user-selected identifiers from each week of the six-month period (i.e. 364 million entries) results in an average of 26 entries matching the winning identifier.

Referring to Figure 5, there is shown a process 398 of running primary draws and a secondary draw in accordance with an embodiment of the invention.

The process 398 starts with the user selecting, at Step 400, at one of the plurality of terminals 104, one or more desired numbers as their draw entry to enter into a primary draw. The terminal 104 supplies the user with a record of their chosen draw entry on a ticket which also includes a ticket number. If the user has previously registered their personal user parameters with the ticket system, then the user can supply their user ID number 152 when choosing their desired identifiers 154 in order to associate the draw entry with the user's personal record in the user database 126.

The draw entries are sent from the terminals 104 to the ticket system 106 periodically. To carry out the primary draw at a predetermined time, the draw system 108, at Step 402, randomly selects the winning outcome (made up of one or more drawn numbers in this embodiment).

In order to be eligible for the secondary draw, users register with the ticket system 106 if they have not supplied their user ID number 152 when submitting their draw entries. Accordingly, the ticket system checks at Step 404, whether a personal user record already exists, for example, if the user provided their user ID number 152 when submitting their draw entry for the primary draw. If a user has not yet registered, the user can do so and manually link their issued ticket numbers for the primary draw as part of the registration process described above. The ticket system then waits, at Step 406, for a predetermined period before returning to Step 404, checking whether a personal user record already exists.

Once the user has registered, at Step 407, their user parameters using the registration module 128, or if the user is already registered (i.e. the check of Step 404 is passed), the ticket system associates, at Step 408, the user's draw entry (e.g. using the ticket numbers) with the user's personal data record in the user database 126.

Following this, the ticket system checks at Step 410, whether the next primary draw is due before the next secondary draw. If another primary draw is due to occur before the next secondary draw and the user wishes to enter a subsequent primary draw, the process then loops back to Step 400.

However, if following Step 410, it is determined that a secondary draw is due to occur before the next primary draw or the user does not wish to enter into any subsequent primary draw which is due, then the ticket system 106 and the draw system 108 continue to carry out, at Step 412, the secondary draw at the appropriate time.

Referring to Figure 6, there is shown a process 498 of carrying out a draw of Step 310 or Step 412 in greater detail. The two steps of the process 498 shown in dashed boxes (Steps 502 and 514) are carried out by the draw system 108, with all other steps being carried out by the ticket system 106. The process 498 begins with the selection module 124 receiving, at Step 500, the system-selected number of users, N, who will win the secondary draw. Following this, the identifier selection system 108 randomly selects in a non-deterministic manner, at Step 502, a draw outcome in substantially the same way as the primary draw as carried out in Step 402. For example, picking six balls from a set of balls that are numbered from 1 to 49.

The selection module 124 then determines, at Step 504, using the user database 126 how many users have the exact same draw entry as the randomly-selected draw outcome in Step 502 (e.g. users who have chosen all six numbers from 1 to 49 matching those randomly selected as the draw outcome). These users are termed qualifying users.

If, following Step 504, the number of qualifying users determined to have matched the draw outcome is equal to N, then the secondary draw is complete.

If, following Step 504, the number of qualifying users determined to have matched the draw outcome is less than N, then the selection module 124 relaxes, at Step 506, the requirement to exactly match the draw outcome (e.g. users who have chosen five out of the six randomly-selected balls numbered from 1 to 49). The selection module 124 then determines at Step 508 the number of qualifying users who partially match the draw outcome according to the relaxed criteria.

If, following Step 508, the number of qualifying users determined have matched the draw outcome is equal to N, then the secondary draw is complete.

If, following Step 508, the number of qualifying users determined to have matched the draw outcome is less than N, then the selection module further relaxes at Step 510 the requirement to exactly match

the draw outcome (e.g. users who have chosen four out of the six randomly-selected balls numbered from 1 to 49). The process 498 returns to Step 508, wherein the selection module 124 then determines the number of qualifying users who partially match the draw outcome according to the further relaxed criteria.

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If, following Step 504, the number of qualifying users determined to have matched the draw outcome is greater than N, or if, following Step 508, the number of qualifying users determined to partially match the draw outcome is greater than N, then the selection module 124 determines, at Step 512, a type of user parameter (e.g. user ID 152, name 154, name, 156, birth date 158, telephone number 160, national ID 162 etc.) randomly selected that will be used to further discriminate between the pool of qualifying users, in order to reduce the number of qualifying users satisfying the winning criteria. The type of user parameter may be determined based on the type of user parameter 150 common to all the users. In some embodiments, the selection module 124 may use a portion of the type of user parameter, e.g. month of birth, penultimate digit of telephone number or first character of national ID number. Furthermore, the user parameter can also be the value of a multiplier used for that ticket entry. In this case the number of times the user has picked the winning number over the long-term period can act as a filter to reduce the number of winning entries for the second draw.

The draw system 108 is then instructed to randomly select, at Step 514, a user parameter from the set of types of user parameter available in the user database. For example, the draw system may randomly select one ball from a set of 12 balls each representing a month in a year, one ball from a set of 26 balls each representing a letter in the Roman alphabet or a specifically coloured ball which is linked to a specific user parameter which is now going to be used to resolve the non-deterministic outcome of the mechanical draw into a deterministic result. The result of the random selection is returned to the selection module 124. This manner of mechanically selecting a user parameter is also perceived as being impartial to all users and also as highly secure from fraud.

In an alternative embodiment, the selection module can determine the user parameter from the already drawn ball(s) without needing a separate draw. For example, the user parameter can be selected from the value of the first ball drawn out of the mechanical draw. In this case where there are for example five user parameters available, each user parameter may be associated with a number range (e.g. 0-9, 10-19, 20-29, 30-39, 40-49) and the number range which the first drawn ball lies in determines the user parameter which will be used.

The selection module 124 then determines, at Step 516, using the user database 126 how many qualifying users have chosen exactly the same user parameter as that randomly selected in Step 514 (e.g. users who have a birth month matching the month selected by the draw system).

- 5 If, following Step 516, the number of qualifying users determined to satisfy the selected user parameter is equal to N, then the secondary draw is complete.

If, following Step 516, the number of qualifying users determined to satisfy the selected user parameter is less than N, then the selection module 124 relaxes, at Step 518, the requirement to
10 exactly match the randomly-selected user parameter (e.g. users who have a birth month that is one month either side of the randomly-selected month). The selection module 124 then determines, at Step 520, the number of qualifying users who partially match the randomly selected user parameter according to the relaxed criteria.

- 15 If, following Step 520, the number of qualifying users determined to satisfy the selected user parameter is equal to N, then the secondary draw is complete.

If, following Step 520, the number of qualifying users determined to satisfy the selected user parameter is less than N, then the selection module 124 further relaxes, at Step 522, the requirement
20 to exactly match the randomly-selected identifier (e.g. qualifying users who have a birth month that is two months either side of the randomly-selected month). The process 498 then returns to Step 520, wherein the selection module 124 determines the number of qualifying users who partially match the randomly selected user parameter according to the relaxed criteria.

- 25 If, following Step 516, the number of qualifying users determined to satisfy the selected user parameter is greater than N, or if, following Step 520, the number of qualifying users determined to partially match the selected user parameter is greater than N, then the selection module 124 determines, at Step 524, a further type of user parameter for random selection to reduce the pool of qualifying users. In other words, if following introduction of the discriminating user parameter, the
30 number of qualifying users is still too large, then a further discriminating user parameter may be selected by the selection module 124.

The process then returns to Step 514 whereby the draw system 108 is instructed to randomly select a user parameter from the set of types of user parameter available in the user database. The process 498 continues until a deterministic outcome of N winning users is achieved.

- 5 It is to be appreciated that the above-described system can be used to determine more than one deterministic outcome. For example, where different prizes are awarded for different tiers of winners, the above-described system can be used to deterministically arrive at the correct predetermined number of winners for each tier.
- 10 Many modifications may be made to the above examples without departing from the spirit and scope of the present invention.

CLAIMS

1. A method for conducting and playing a lottery game, the method comprising the steps of:
issuing a ticket to a party, wherein the party chooses a set number of characters,
5 selected from a pool of characters, which are associated with the ticket;
conducting a primary game, wherein the game provides a chance to win by matching
the chosen characters to a set number of consecutively drawn characters selected
from the pool of characters,
providing a result of the primary game;
10 when a ticket was unsuccessful, entering the ticket into a secondary game, wherein
the game provides a chance to win by matching the chosen characters to a set number
of consecutively drawn characters selected from the pool of characters; and
providing a result of the secondary game,
15 wherein the party can choose an additional set number of characters, selected from the pool
of characters, following the primary game and prior to the secondary game.
2. The method according to Claim 1, additionally comprising the steps of:
assigning the set number of characters chosen by the party a country code, based on
the jurisdiction of the primary game;
20 conducting a jurisdiction draw, in which a single country code is selected from the
assigned country codes of the primary game; and
only entering the ticket into the secondary game if the assigned country code is
selected in the jurisdiction draw.
- 25 3. The method according to Claim 1 or Claim 2, wherein the characters may be selected from
numbers, symbols, letters, or any other discernible symbol, optionally wherein the characters
are numbers.
- 30 4. The method according to any one of Claims 1 to 3, wherein the pool of characters comprises
greater than or about 10, greater than or about 15, greater than or about 20, greater than or
about 25, greater than or about 30, greater than or about 40, greater than or about 50, greater
than or about 75 or greater than or about 100 characters.

5. The method according to any one of Claims 1 to 4, wherein in the primary and secondary games, the set number of consecutively drawn characters is about 5, about 6, about 8, about 10, about 12 or about 15.
- 5 6. The method according to any one of Claims 1 to 5, wherein the set number of consecutively drawn characters in the primary and secondary games is the same or different, optionally wherein they are different.
- 10 7. The method according to any one of Claims 1 to 6 wherein if all, or a plurality, of the plurality of party's chosen characters matches all, or a plurality of, the set number of consecutively drawn characters, the party wins a prize.
- 15 8. The method according to any one of Claims 1 to 7 wherein the method is computer-implemented.
9. A system for implementing the method according to any one of Claims 1-8.
10. A ticket for use in the system according to Claim 9.
- 20 11. The ticket according to Claim 10, wherein the ticket is physical or digital, optionally wherein the ticket is digital, optionally wherein the ticket is obtained on the internet.