

# Implementation of Online Lottery System

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**Abstract** -In offline lottery systems, people had to stand in long queues to buy a ticket and then they would have to wait for weeks for the results to be announced which would be either published in newspapers or through a television broadcast. In traditional lottery systems, the chances of losing the tickets are high. People need to keep their tickets safely with them. If they lose their tickets then they will not be able to claim their prize. This paper presents the implementation of online lottery systems where people can buy as many tickets as they want without the fear of losing them. Once the date and time of the draw is fixed, neither the organizer nor the players, can manipulate the tickets or the results in any manner. The tickets for each lottery are randomly generated by the system and on the date of the draw, one ticket is randomly selected as the winner. An e-mail is sent to the winner from where they can proceed to claim their prize. Players can also create their own lotteries and participate in them. The random generator function prevents the forging and manipulation of the tickets and the results.

**Key Words:**Online lottery system, random ticket generator, random number generation.

application in order to participate in different lotteries. Lottery prizes and numbers can be decided by the admin and it can vary from one lottery to another. The player needs to create a profile first which should be verified using valid ID proofs. The details provided by the user like passwords are stored securely in the database in encrypted format.

The basic elements of current lottery systems include recording of numbers, amount paid, generating a winning number and claiming the prize. Ideally, prediction of winning numbers is not possible because of the random and independent nature of the drawing procedure. For each draw, the winning probability across numbers should be equal. And if a number is drawn recursively in the previous games, it still does not yield any hint whether that same number will be chosen again in the current game. In this application, every ticket number is generated randomly, which makes it hard for any player to predict the next number. Players have to choose from these random numbers. Some of the lotteries allow the players to choose a number from a given set of numbers while other lotteries choose a number for them. The date and time of the draw is decided and fixed by the admin at the time of creation of the lottery and the result is produced only at that fixed date and time. A huge advantage of online lottery is that people can participate in lottery anytime, anywhere. The traditional lottery systems were time consuming.

## 1. INTRODUCTION (Size 11, Times New roman)

Lottery is one of the most classical game of chance wherein a player chooses a random number from a container and is awarded a prize if they guessed the number correctly. Earlier, lottery games were simple lotto games where people bought tickets which were pre-printed with numbers. They would have to wait for weeks for the drawing to take place to learn whether they have won the lottery or not. Such types of games were called as passive drawing games. The financial lottery is a game where people have to buy a ticket which would either be given by the machine or they would select a group of numbers and if that number matches with the one randomly drawn by the machine, then they would win prizes. The winner is given the choice of accepting annual instalments or the entire payment at once. The total value of the prize are sometimes predetermined or are decided by the amount that is raised by the organizer after taking out their expenses. The lottery web application allows people to participate in different lotteries and claim their prizes while making it easy for the organizer to create and control the lottery system. Different lottery banners can be presented on the application which can be used by the players. The players need to accept the terms and conditions created by the admin in the web

## 2. METHODOLOGY

We have created an online lottery system where people can buy as many tickets as they want by participating in different lotteries. There are two types of users i.e. admin and player. The functionalities are different for each user.

### A. ADMIN

The admin can manage different players by adding and removing them, create lotteries, decide the prize, date and time of the draw. For this, the admin first needs to log into their account. They can create a lottery by entering all the details like name of the lottery, prize, number of tickets for that particular lottery, cost of each ticket, start date, end date and finally the time of the draw. After creating the lottery, it gets added to the existing lottery list which contains all the lotteries that were created. Admin can also create a new player account and if any foul activity is found from any user, the admin can also remove that account.

**B. PLAYER**

In our lottery system, in order to take part in any lottery let it be private or public the player has to create an account. The player creates an account by pressing the Sign-Up tab in the menu bar and creates the account by filling all the necessary valid details and accepting the terms and conditions prior to creating the account which are provided by the application. This information will get stored in the database. After creating an account, the player/user will receive an email on successfully completing their registration. Next time the player uses our website they just have to log into their account by clicking on the Login Tab in the Menu bar. They must enter the same username and password that they had entered while creating their account. The player also has an option of updating his profile. They can do so by using the Update profile tab. In the profile page, all the personal details of that user are displayed. It also contains details about all the lotteries they have participated in, private lotteries that they have created and the lotteries they have won.

The user can participate in public lotteries or can even create a private lottery. In public lottery, the player can participate by purchasing any lottery ticket between the high and the low prize amount.

**Lotteries Created!!**

Lottery Name	Lottery Code	Prize Amount	Draw date	Winning ticket
Cash 4 Life	856065	5000000	2021-04-26	
Gold Rush	870831	20000000	2021-04-25	

**Fig -1:**Private lotteries that are created by the player under the lotteries created tab in My Profile page.

There is no restriction on the number of tickets purchased by a player. But the total number of tickets are fixed at the time of creation of the lottery. The admin cannot add more tickets later. The tickets are randomly generated and the players can choose any number of tickets from the displayed tickets. The tickets that are selected are then stored in the database. On the day of the draw, a number is randomly selected from the list of purchased tickets and it is declared as the winner. The player who has won the lottery will receive a notification from the website through an email. After receiving the email, the player can proceed to claim the prize.

For a private lottery, the player has to first create a lottery by specifying the total number of players, the prize amount, total number of tickets, start and end date of the lottery. After this a unique code will be generated which, the player must share with all the other participants who are taking part in this private lottery. Unlike the public lottery, only a fixed number of players can participate in the private lottery. Players without this unique code cannot participate in private lottery. In both the cases whether it a public or private lottery the user has to wait till the day of result declaration. The winner can claim the winning prize amount after the declaration.



**Fig -2:**The ticket numbers are displayed for each lottery along with the cost of each ticket.

For payment, we have incorporated PayPal Sandbox which mirrors the PayPal production servers. It is a self-contained, virtual testing environment that replicates the live PayPal production environment. For this, first a PayPal account has to be created. Using this account, sandbox accounts have to be created. One for the facilitator or admin account and the other is for the buyer. While purchasing a ticket, the player should be logged in their PayPal account i.e., the Sandbox buyer account. Once they click on the checkout button, a confirmation page is displayed wherein all the details about the purchase is shown. To proceed with the payment, they have to click on the PayPal button which will start a test transaction. If the transaction is completed then the player will be displayed with a payment successful message. All the payment details are also stored in the database. The player can then continue to participate in other lotteries.

**3. EXPERIMENTAL DATA AND RESULTS**

**Algorithm for Random Number Generation**

1. All the tickets numbers that have been generated are stored in a list.
2. Import the random module using which a ticket number is randomly selected from the list.
3. The randomly selected number is then declared as the winner of that particular lottery.

ID	NAME	IS PRIVATE?	PRIZE	TOTAL TICKETS	DRAW DATE	DRAW TIME
1	Jumbo Bucks	0	70000000	5	2021-04-25	15:42:00
2	Super Star	0	1200000	3	2021-04-25	15:50:00
3	Power Ball	0	1000000	5	2021-04-25	20:00:00
4	Mega Lakhs	0	5000000	6	2021-04-25	15:55:00
5	Cash 4 Life	1	5000000	5	2021-04-26	17:00:00
6	Million Day	0	1000000	5	2021-04-25	22:00:00
7	Gold Rush	1	20000000	5	2021-04-25	11:14:00

**Fig-3:** The list of lotteries that have been created till date.

All the ticket numbers are generated using a random number generator and are stored in tickets list as shown in figure 4.

Tickets List				
ID	TICKET NUMBER	PRICE	LOTTERY ID	BOUGHT BY(USER ID)
1	830197	50	1	
2	663082	50	1	1
3	780193	50	1	1
4	674874	50	1	
5	836636	50	1	

Fig-4: Ticket list of a particular lottery.

#### 4. CONCLUSIONS

There is always a chance or doubt of the lottery system being biased or corrupted while selecting a lottery ticket number. This situation can be tackled smartly only by using an impartial and just random number generation process. We are using a random number generator for the generation of lottery ticket numbers so that in future no one can point out fingers at the process of selecting the winning lottery ticket for many lottery tickets. In this way, neither the organizer nor government has any scope of deceiving the user. In this system, the player can also create his/her own private lottery tickets which will also be protected. Finally, the system is verifiable since the player can claim the winning number even if the data in the system is destroyed. Therefore, through this system, the lottery operation can be transparent.

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