GAME OF CHANCE: A WEBSITE BASED ONLINE GAME

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Abstract : In this paper a complete description of the methodology will be discussed as to how a betting game will be developed using the website development tools like HTML, PHP, CSS, etc , the logic in the algorithm to be used in the background of the game and how the payments will be received from or delivered to the players. Also, a database will be connected to website which will store the information of the players after they sign up for the game. The system will be made in such a process that no one except the system itself will get to decide the result of the bet to make it a fair bet and not a bet in which results are put out according to the wish of the developer. Although this will be easy money making game for both the developer and the players but there will be not any kind of algorithms designed which produce results according to the wish of the developer and loot the money of the players. Basically, the logic in the algorithm is very simple i.e. it will search for a random number and provide a random result based on it and then the players whose bet input matches the random result will win the bet. After that the money will sent to the winners in their online wallet from where they can transfer the money to their own bank accounts through a payment gateway. So at last again the next bet will start.

1. INTRODUCTION

In recent times when almost everyone wants to make easy money, taking this as an advantage many developers are trying hard to acquire more and more users and earn money by developing different online betting games either application based or website based where people can bet using less or more money according their own preference and wish and then get an return on their investment if they win the bet. Now everything is fine here and such kinds of applications or games have helped many people to earn easy money and also sometimes people earn in thousands by winning bets and understanding computer algorithms but a small problem still exists that few developers have also taken this chance to loot money of the users by manipulating the outputs/results. Users could not identify the non-genuine games and end up losing huge amount of money (indirectly looted by the

game developers). So, in this paper we will discuss about the development of an online betting game, in which the logic of the algorithm will be very simple that random numbers will be generated which will provide random outputs which will not be able to control by anyone except the system itself and not even the developer. Every user will be provided an online wallet after they sign up where they can store money to play the bet and when they win the winning amount is sent to the wallet from where they can transfer the money to their respective banks afterwards. We can find different types of betting games like guess the colour, bet in ludo, guess the letter, etc . This paper will discuss the development of "Guess the colour" online betting game.

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2. LITERATURE REVIEW

2.1 "Web-based Game Online." – [1] This paper is basically about the development of website stores with gaming content. Development of the website is based on both the admin view (only the website admin can access) and the consumer/user view which can be accessed by everyone. Basically, this paper discusses about the importance of e-commerce in the improvement of the sales and marketing statistics in the market and also how a large customer base is achieved by the use of e-commerce due to its global access. However, this paper is more focussed on the development of an online store with gaming contents so it would be more useful for the gaming enthusiast. Mainly, the data analysis will be carried out in both the admin view and user view to see how the success of online gaming is affected based on the design of the website. Here in the paper it is mentioned that the purpose of the use of data analysis tools is to translate data into a form that is easier to read and understand in accordance with established research objectives at the outset and then it moves to the flow of the website design. The paper suggests that the flow of the website design will be carried out in the waterfall model which includes –   (1) Analysis (2) Design (3) Verification and (4) Maintenance. After going through the flow of website design it is concluded with design of the system only, which would be then translated into the diagrams, layouts and images of the system that will be used later. The design is done in stages and detailed, with the aim to mature the results later. Here, it is then explained the mechanism of how this online store-based implementation will work, how this   mechanism will make the existing system continue to run optimally so that it will get the right consumer targets and profits with

potential that can be maximized by paying attention periodic renewal due to rapid change of time requires adaptation of rapid system changes, thus the system will continue to evolve and not only develop but also survive in order not to be destroyed by the times.

2.2 "Random Number Generators and their Applications: A Review." -   [2] This paper discusses about the generation of random numbers with reference to cryptography. Here, random number is defined as sequence of numbers placed in such a way that the values present in the sequence should be uniformly distributed and they should be independent from each other . It is shown the different fields in which random numbers are used like gaming sector, cyber security, finance and now it is also starting to get its space in data analytics. Here in this paper basically the properties of random number generators and its two types i.e. true random numbers generator and pseudorandom number generator is discussed. Features of true random number generator is that it is generated by taking seed values from the entropy sources that are present in the physical environment and It is unpredictable; in a sequence each number is independent of other numbers in the sequence. This type of random number can be used in gambling games or security algorithms, etc. Four types of true random numbers generators have been discussed namely Random.org, HotBits, Lasers and Oscillators. Again, the features of pseudorandom number are that it is generated through some mathematical algorithms and it is unpredictable. Also, in case of pseudorandom number seed can be generated from entropy source of any physical environment so it must be secure. It is mainly used for security purposes like in cryptography. The different types of pseudorandom number are Linear Congruential

Generators, Blum BlumShub Generator and Linear Feedback shift Register. A descriptive and comparative study of both the types and its sub-types have been had been carried out in the paper . Basically, the algorithms discussed in the paper are very simple and can be implemented into any kinds of computing devices .

2.3 "A study on efficient OTP generation using stream cipher with random digit."-

[3] This paper focuses on the security of computer networks as in recent times more and more networks connect together to exchange information. Basically to ensure the security of different networks unique ID's and passwords can be used but it might face attacks such as eavesdropping or reply attack so it is better to have a technique which can generate different passwords on different requests which are valid for a short period of time. Now, in this paper most popular type of OTP known as HOTP is used which is based on one-way hash function. Now, in this paper a method would to discuss to generate OTP using Ping Pong-128 stream cipher. It is bit based stream cipher dedicated to hardware and to software and is designed with both security and efficiency in mind to satisfy the need for lightweight algorithm. Also to further enhance the security of the OTP without having to set the digit between server and client, each session variable OTP to generate random digit approach offers. Basically, here all the steps were discussed to design an algorithm for HOTP based on HMAC, R-OTP method and the proposed OTP algorithm using Ping Pong stream cipher with random digit. Also, the security and efficiency analysis test has been carried out of the proposed algorithm. So basically it used the Time-Event method for synchronization between the server and OTP generator, and it was complementing by creating the OTP of a variable the digit to prepare for

increasingly stronger attacks of attackers. Also, we increase to operation efficiency and can be reduce the overall performance of the process generation of OTP with an improved Ping Pong generator.

2.4 "Online payment gateways used to facilitate e-commerce transactions and improve risk management."-

[4] This paper tries to bring into notice the importance of ability to accept payments online as businesses are shifting to online mode and more and more online transactions are being done. The scale in which the customer spending money online is increasing day by day, so it is clear that this graph will surely go up in near future and so a consistent payment option needs to be implemented to improve the taste of online businesses. Some of the benefits provided by online payment systems include improved cash flow efficiency, guaranteed transactions, reduced costs, increased protection of sensitive information, and increased protection of the payment provider. Given that fraud is a prevalent concern with online transactions, secure online payment systems are particularly important. This paper primarily discusses e-credit options and the benefits businesses can receive by using online e-credit payment. So, next the online payment options are categorised into three parts – (1) e-credit (2) e-cash (3) e-check and for each category its advantages and challenges are discussed which gave a clear vision of the identification, confidentiality, authentication, data integrity, non-repudiation, and customer solvency in each method. This paper gave reasons to use online payment system : (1) Increased Protection of Sensitive Information (2) Reduced Costs (3) Guaranteed Transactions (4) Improved Cash Flow Efficiency. The three major types of e-credit mentioned in the paper are : (1) Conventional e-credit processing, payment

gateway comes in this type (2) Third-party e-credit providers and (3) Person-to-person e-credit

3. FLOWCHART AND ALGORITHM

STEP 1: The system generates a random number (here a number is assigned to each colour).

STEP 2: User selects an option (here colour) and a betting amount.

STEP 3: Both the system generated number and user selected colour (indirectly a number) is matched and following conditions are checked –

- If both the numbers matches then move to "Step 4".
- If both the numbers does not match, move to "Step 5".

STEP 4: Send money to user e-wallet.

STEP 5: Display message to user.

4. METHODOLOGY

The main tools which we are going to use during the development of the website based game are mentioned below-
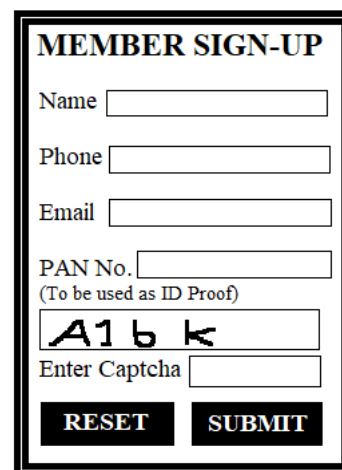
- HTML – To build the basic structure of the website.
- CSS – To design the structure of the website.
- JavaScript – To provide various validations and conditions in the website.
- PHP – To transmit data from the website
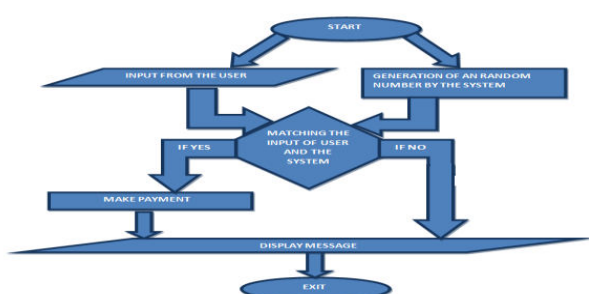
to the database and vice-versa.

The different pages which will be available in the website based game are-

- **Sign-up Page** – Whenever a user wants to start playing the betting game, he/she needs to first register themselves as member in the website. They will be required to provide few information like their name, phone number, PAN number, etc to prove their authenticity. A sample structure is shown below-

- **OTP generation pop-up window** – After the registrations is done and submit button is clicked, it will not be shown successful until and unless the phone number and email which are given are being checked for its authenticity. So, after clicking of submit button in sign-up page, a window will get popped up which will ask for OTPs sent to both the mobile and email. If the OTPs matches and the email and phone number gets verified then a member will get registered successfully and his/her account will get created and their unique ID and default password will be sent to their email ID. So, they are now ready to log in to their

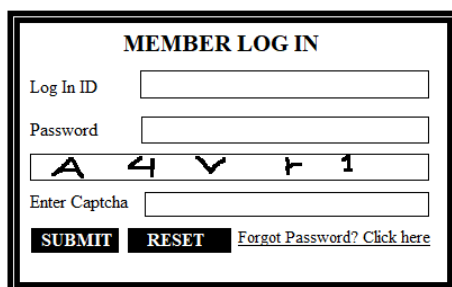account. The window will look somewhat like shown below-

- **Log In Page** – This page will be used as the homepage. Whenever a member wants to play the game, they are required to play through their respective accounts by logging into their account by using credentials given to them in their mails when they successfully gets registered. The log in page will also have an option of resetting their password which they can access by clicking "Forgot Password" option available in the page. This option is kept to help members/users in case they forget their password, which happens frequently. So, the password can be easily reset by sending an OTP in the registered email or phone number. A sample of the structure of the login page is shown below –

Whenever someone clicks on the "Forgot Password? Click here" option, then two OTPs will be sent as mentioned before, one on phone number and one on email and a page will be opened to verify the OTPs and the sample of the page is shown below-
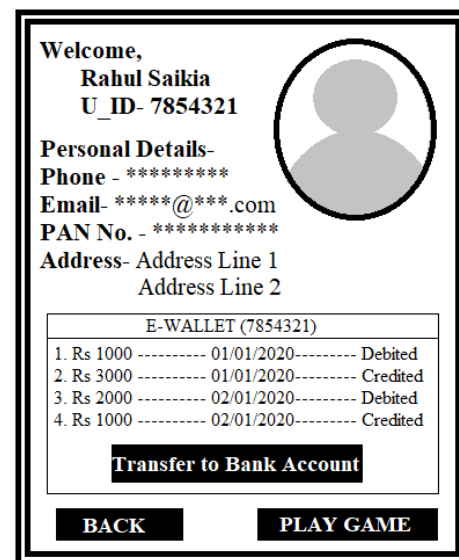

And after submitting the data fresh password will be sent to the given email address.

- **Account/Profile Page** – When a user enters the website and successfully logs in, they he/she gets his/her own profile which includes basic personal information, bank details, photo (optional) and most importantly the user will be provided with an e-wallet where the main transaction of money will take place. Also this page will have the option to move to the page where game will be played. A sample format of the profile page is shown below –
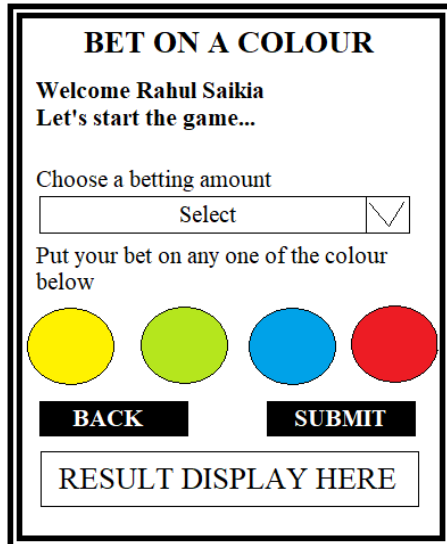
- **Main page/gameplay page** – This is the main page where the actual game will be played. This page can be activated by clicking on an option "Start game" on the account/profile page and will be opened as a new window. This page will consist

mainly of three different parts : (1) Choosing your betting amount (2) Choosing your betting option (3) The result . We can see the sample structure of the page below –

Other tasks (both foreground and background tasks) which will be required for the functioning of the website based game are-

- **Using a payment gateway-** We can use a third party enabled payment mechanism or gateway to send money to the users wallet and also the user will require it to transact money from the bank account to the wallet and vice-versa.

- **Programming the condition of winning the bet-** Whenever a user selects the option and system send the system generated random number, a condition runs which will match both and decide the winners. Now the programming of this condition which generates a random number is very important since the whole game is based on this condition and from the study of the related works in the literature review section I have come

to the conclusion that generation of "True Random Numbers" is preferable to use in my system or the website.

5. CONCLUSION

In this paper, I have tried to give a detailed description of how to design a website based online betting game using different tools like HTML, JavaScript, CSS, PHP, etc. Out of many different types of betting games I have chosen "Bet on a colour" game because it will be simple and easy to understand. So, here I have shown a step by step development process of the complete website by breaking it into individual webpage and giving details about each webpage i.e. how it will look, what is the functionality and what will be its importance in the online game. I have tried to keep the entire game fair by keeping the end result to the machine but if anyone can master the machine's random number algorithm then he/she could master the game. No involvement of the developer is given in the manipulation of the result. The transaction of money will be done through a third party secure payment gateway like razorpay, zestmoney, etc. So, in the module discussed in the paper many might earn money and many might lose money but no one will ever be looted by manipulating the end result since the decision of the result is only upon the system.

6. REFERENCES

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