SVKM's NMIMS University
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COURSE: Random Process and Estimation Techniques (B.Tech AI)

Luck Analysis

Algorithm and Program:

Overview: We tried to recreate the original game, taking in consideration the random allocation of cards out of the 52 card deck for a particular player. The game was then ranked according to prize board and process the winner's position, on the basis of which the money allocation of the winners and other loser's money was decided. Then, the luck factor and performance of a particular player was analyzed.

Algorithm Steps:

- Creation of the Teen Patti Game:
    1. Defined the set of 52 cards. Stored the shapes in a dictionary and the numbers in an array.
    2. Created a function to generate 3 random cards (with random shape and number) from the given deck of 52 cards, for a particular person.
    3. Defined all the card cases: color check (i.e. if all the cards generated have same color or not), double, trio, sequence and pure sequence (i.e. satisfying both sequence and color check). Defined functions returning the high card and second high card respectively from the generated random cards.
    4. Generated the game function: This function calculates the score of a particular player by checking the test cases score (if any) and adding them with the particular high card and second high card.
    5. Generated the IO function: This function calls the game function for as many players in the game, stores scores of all in an array and calculates the winner position in the array.
- Creation of the Gamble and analysis:
    1. Created a gamble function for 100 games in which all the players put money in the game. Each time a person puts the money in the game, Rs 10 is deducted from his/her balance. The winner is calculated each time and all the money put goes to the winner for that round.

2. Luck factor: Each time a person wins, his/her luck is incremented by 1. If at the end of all the 100 rounds, a particular person's luck is found to be more than 50%, he/she is considered lucky, otherwise no.
3. Analysis: The user gives input to know the analysis and luck factor of any specific person for the entire game. A graph showing the person's gameplay is plotted and its luck analysis is displayed.

Program-
https://colab.research.google.com/drive/18l_rLsudreIImHStgkxObHOKbc8QsGCJ?usp=sharing

Applications:

On a very random day you can run the program and get an idea of your luck on that particular day, some very superstitious people would believe this to be a very great asset. The game when modified a bit and added a Graphic User interface can serve as a virtual teen Patti game which is highly grossing among the youth of our country .It could also be played with real cash or some virtual currency reviving the hype the game has created in the past years. A proper virtual multiplayer game which could be played in different parts of the country helping the distributed friends and family to reconnect and enjoy the thrill of the game.

Conclusion:

We used various dictionaries and Arrays/Lists to store and rank our data and create a very interesting manner of analyzing a person's luck on a particular though very random day using the methods of probability and random processes.