**High-Low Card Game:**

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**Introduction**

High-low card Game code prototyping using C++ as the programming language. The objective of the game is to let the player not only guess but also decide whether a card to be drawn next is higher or lower than the current card on the desk. This program involves menu commands, such as game restart, display the rules, and exit the program. This game is focused on the reasons; on how it is operated and on how it must be created. The High-Low Card Game is a straightforward and exciting game in which players directly guess whether a card towered in number or below the one that was previously drawn. To deepen knowledge of basic programming concepts. These include control structures, variable declaration and scoping, functions, loops, and the use of random number generators among other programming implications. The platform's objective has been simplicity and education preparing for new players without any programming knowledge and experienced gamers.

**Purpose**

The major objective of the High-Low Card Game is to be a fun way to learn and practice programming. The program illustrates the application of control structures in the use of loops and conditional statements to control and maintain game flow. It also emphasizes how functions are used to achieve modular programming and how, further still, random number generation finally plays a vital role in simulating the draw of cards.

**Program Structure**

The program begins with the inclusion of header files and defining constants as required by the program. NUM\_CARDS defines the number of cards in the deck, taken as 13 for representation only, NOT considering an actual deck. MAX\_ROUNDS is to make sure the player doesn't play the game more than a maximum of three times, according to the best of three standards.

Show a Card Formatting

A structured Card with two members, value, and suit to represent individual cards. For simplicity, the suit is hardcoded to 'H' meaning Hearts.

Function Prototypes

The source file contains a series of function prototypes, declaring the functions that are in the game. These are:

• displayMenu(): display the main menu options.

• start game (): Begin a game and dictate the game loop.

• displayRules(): This method is used to display.

• drawCard(): Draws a card from the deck randomly.

• playRound(int& player score): Player one round, update player score.

Main Function

The constructor initializes the random number generator with srand(time(0)), but it's only for different results for each new game session. Then the program enters an infinite loop that shows the user a menu and deals with the choice of the user. Depending on the user input, either a new game starts, the rules are presented, or the program terminates.

Game's Features

Display Menu: This display menu function will depict three things on the console: whether the player wants to start, show rules, or quit the game.

Game Start: The control of the game loop is in the hands of the function start game. It initializes the score and number of rounds for the player. After that, it keeps invoking the playground function, and it stops only if the rounds are played to reach the maximum limit or if the player wishes to stop.

Display Rules: The display rules function explains how the game should be played so that the player is aware of the rules of the game.

Draw Card: The Draw Card function generates a random value between 1 and 13 and creates a card with that randomly selected value; the suit is then set to 'H' for convenience. Play Round: The workhorse of the actual gameplay is done in the function playground. It draws the current card, calls up the user to make a guess, draws the next card, and provides feedback to the player on their guess. The player's score is updated based on the accuracy of their guess.

**Conclusion**

The High-Low Card Game program is just one of the examples used to demonstrate the implementation of fundamental programming ideas through C++, which renders it an interesting and exercise-oriented way of learning concepts of control structures, functions, and the use of generating randomly created numbers. By considering taking the user's input, and clear structuring of how this game should look, therefore becomes a better learning tool for beginner programmers. This project brings out the balance that should apply in the development of software up to a certain degree between functionality on one hand and user.