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/*
File:   main.cpp
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Created in 2017
Purpose: Pseudo code for roulette game
*/

//System Libraries
//Input Output library
//Random numbers
//Time to set the Seed
//String Functioning
//Math Library
//Precision library
//Read Write Library
//File stream library
//Format Library
//Vector Library

//Namespace std of system libraries

//User Libraries
//Global Constants
//Such as PI, Vc, -> Math/Science values
//as well as conversions from system of units to another
//Percentage Conversion

//Function Prototypes

//Main -> Executable code begins here!!!
```

```
//Declare Variables and Initialize


    //int for guesses, floats for ratios //char
    and string for choices
    //Set Constants for limits, Set size
    //Counters/indicators initialize for wins, loss, and $
    //Intialize arrays and set arrays for valid accounts
    and names


//Intro
   //Instantiate and Open files for header
   //Retrieve and Display Header
   //Close file
   //Input Account Number
   //Linear Search function
   //Input name
   //Binary Search Function

//Bank and Choice
      //Enter Bank Amount
      //Call Bonus Function
      //Choose game

//Play By Color
   //Ask User to Bet on Black or Red
   //Validate Input
   //Play by Do While Looping
      //Call Random Function
      //Compare Choice
      //If Win
         //Display Winning Message
         //Add Bet to Bank
         //Add 1 to Win Tally
```

```
            //Add 1 to Games Tally
            //Display Bank Total
         //Else Lose
            //Display Losing Message
            //Subtract Bet From Bank
           //Add 1 to Loss Tally
           //Add 1 to Games Tally
           //Display Bank Total
           //If Money < 0
            //Display Bankrupt Message
            //Break! End Game
         //Play Another Game.
         //Validate Input
         //Do While Loop Ends Game With -1

//Play By Number
   //Ask User to How Many Plays on This Spin
   //Validate Input
   //Play by Do While Looping
      //Ask for Number of Plays on This Spin
      /Validate Input
      //Call Random Number Function.
      //Add random number to vector
      //Initiate For Loop for Number Guess
         //Choose Number
         //Validate Input
         //Compare Choice To Random Number
         //If Win
            //Display Win Message
            //Bet*40 is win. Add to Bank
            //Add $40 to Bank
            //Add 1 to Play Tally
            //Add 1 to Win
```

```
         //Display Bank Total
      //Else Lose
         //Display Loss Message
         //Subtract Bet from Bank
         //Add 1 To Loss Tally
         //Add 1 to Play Tally
         //If Money < 0
           //Display Bankrupt Message
           //Break! End Game
         //Display Winning Number
         //Do While Loop Ends With -1 Entry

//Ratios
   //Algebraic and Static Expressions for Answer


//Output Data
   //Set Precision for floats
   //Display Win Total
   //Display Loss Total
   //Ask For Ratio Display
   //Switch Menu for Ratio Display
      //W Displays Win vs Plays
      //L Displays Loss vs Plays
      //O Displays Win Over Loss
      //T Displays All Three
   //Display Ending Bank Balance

//Member List
      //Ask if they want to see member list
      //If Yes
            //Call Member List Function
            //Display Member List
      //If No
            //Alright Meesage

//Winner List
      //Ask if they want to see winning number list
      //If yes
            //Open Output File
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            //For Loop While Index is < plays
                  //Display Vector showWinner[index]
                  //Output number to output file
                  //Index++
            //Close outputFile
      //If No
            //Alright Message


//Table
      //Ask if they want to create a table
      //If Yes
            //Call table Function
            //Display Data
      //If No
            //Alright Message


//Write File

   //Open Output File

   //Output Win Total In Output File

   //Output Loss Total In Output File

   //Output Win Ratio In Output File

   //Output Loss Ratio In Output File

   //Output Win/Loss In Output File

   //Output End Balance In Output File

   //Close File


//Exit!!!



//Functions

//Random Number for Colors Function
      //Set Seed
      //Randomize Between Black (1) and Red (2)
      //Return Results

//Random Number for Numbers Function
      //Set Seed
      //Randomize Numbers Between 0 and 37
      //Return Results

//Linear Search for Account Numbers
      //Pull Valid Account Array, Size, And Account Inputed
      //Declare Variables
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```
      //Search Array and Compare to Input
      //Return Results

//Sort Names Function
      //Pull Names Array and Size
      //Declare Values
      //Sort Names
      //Return Array

//Bank Bonus Function
      //Pull Bank
      //Add 5
      //Return Value

//Show List Parallel Function
      //Declare Array Size
      //Declare Names Array and Account Number Array
      //Display List

//2d Array To Create Table
      //Declare rows, colums for size
      //Initiate Array for Table
      //Input Id, Starting Amount, Bonus, End Total
      //Calculate Missing Parts
      //Create Table
```