PROJECT 1

Elias Roulette Table Game

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Course CSC 5

Section 46332

7/24/20222

Description:

Player will be able to gamble on a roulette table. They will be six bet options where, the player, gets to select one. The player has the option to bet any amount possible. They will be informed on the winning returns if the bet is successful. There are six bet options:

1. Bet of Spin is Black or Red
2. Bet of the Spin number is ODD
3. Bet of the Spin number is EVEN
4. Bet of the Spin number is between 1-18
5. Bet of the Spin number is between 19-36
6. Bet of the Spin number is guessed correct.

If player wins bet numbers 1 through 5 -player will win 75% on the initial bet. If player hits the jackpot bet number 6-player will win the third power of the initial bet.

Menu:

```
*************************************************************************************************
                        Elias Roulette Table MENU BETS:
      1. Black/Red = 75%
      2. ODD = 75%
      3. EVEN = 75%
      4. 1-18 = 75%
      5. 19-36 = 75%
      6. Number = 3Power
*************************************************************************************************
```

Player will be display with this menu option be inputting the amount of money to be bet. After the input of money, the player will select which bet to play.

Bet 1:

```
Enter Much cash you want to bet: $100

Enter the bet you are placing: 1

What color will you choose Black/Red (B/R)B
The Wining number is: 21
The Color is: Red
You lose :$100.00

Do you want to play again (Y/N)
```

Player will input the amount of money and bet 1. Player will input an option of Black or Red. Displays the wining color, wining number, and the won or lost in the game.

Bet 2:

```
Enter Much cash you want to bet: $100

Enter the bet you are placing: 2

The Wining number is: 15
The Color is: Black
You win :$75.00

Do you want to play again (Y/N)
```

Player will input the amount of money and bet 2. Displays the wining color, wining number, and the won or lost in the game. (The wining number was an ODD).

Bet 3:

```
Enter Much cash you want to bet: $100

Enter the bet you are placing: 3

The Wining number is: 32
The Color is: Red
You win :$75.00

Do you want to play again (Y/N)
```

Player will input the amount of money and bet 3. Displays the wining color, wining number, and the won or lost in the game. (The wining number was an EVEN).

Bet 4:

```
Enter Much cash you want to bet: $100

Enter the bet you are placing: 4

The Wining number is: 3
The Color is: Black
You win :$75.00

Do you want to play again (Y/N)
```

Player will input the amount of money and bet 4. Displays the wining color, wining number, and the won or lost in the game.(The wining number was is between 1-18).

Bet 5:

```
Enter Much cash you want to bet: $100

Enter the bet you are placing: 5

The Wining number is: 31
The Color is: Red
You win :$75.00

Do you want to play again (Y/N)
```

Player will input the amount of money and bet 5. Displays the wining color, wining number, and the won or lost in the game. (The wining number was is between 18-36).

Bet 6:

```
Enter Much cash you want to bet: $100

Enter the bet you are placing: 6

What number do you choose: 20
The Wining number is: 34
The Color is: Black
You lose :$100.00

Do you want to play again (Y/N)
```

Player will input the amount of money and bet 6. Displays the wining color, wining number, and the won or lost in the game. (The wining number was 34, guess was 20).

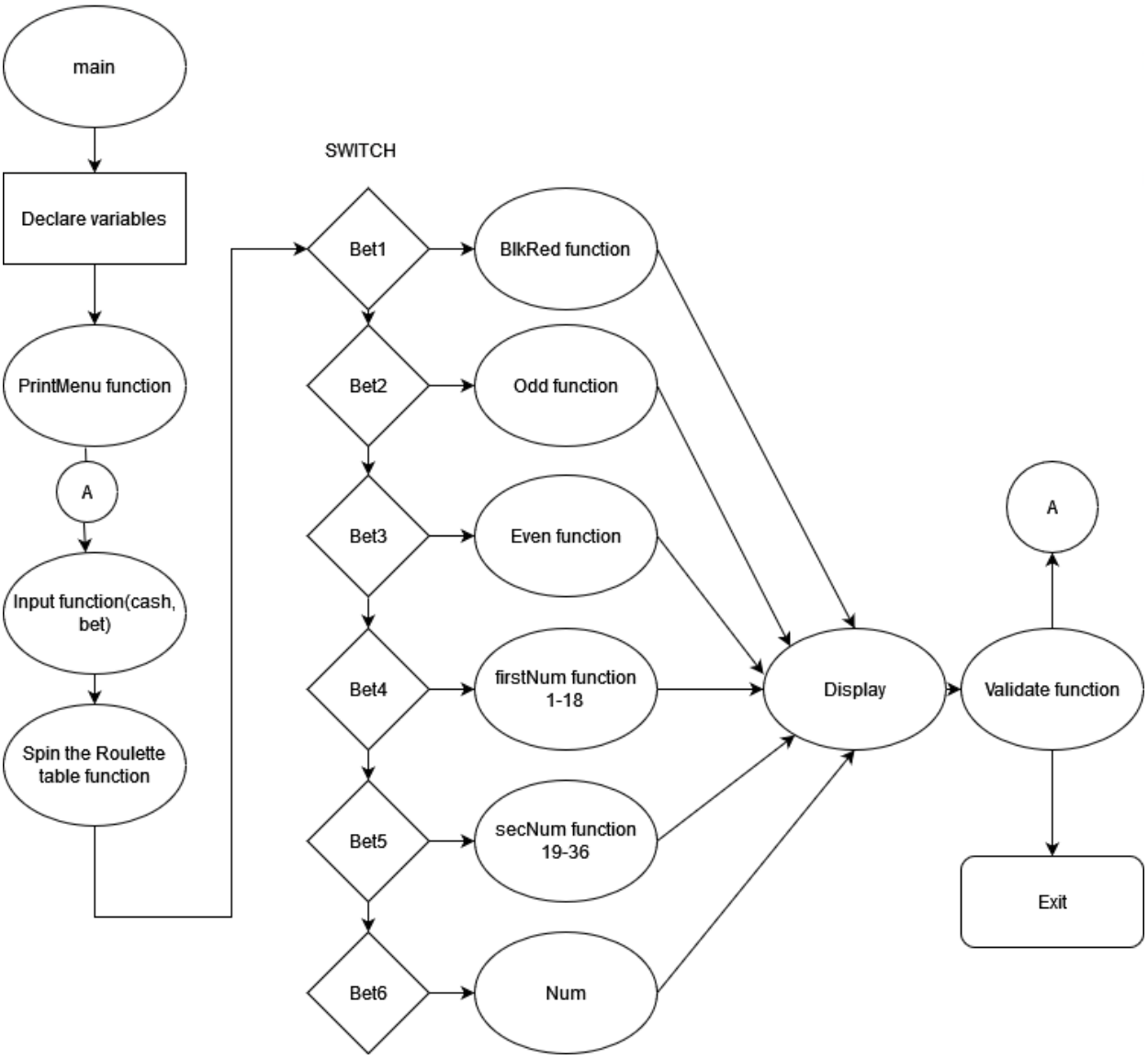
Cross Reference:

Chapter	Section	Topic	Where Line #"s	Pts	Notes
2	2	cout			
	3	libraries	18-Dec	8	iostream, iomanip, cmath, cstdlib, fstream, string, ctime
	4	variables/literals			No variables in global area, failed project!
	5	Identifiers			
	6	Integers	269	3	
	7	Characters		3	
	8	Strings	271	3	
	9	Floats No Doubles	270	3	Using doubles will fail the project, floats OK!
	10	Bools	242	4	
	11	Sizeof *****			
	12	Variables 7 characters or less			All variables <= 7 characters
	13	Scope ***** No Global Variables			
	14	Arithmetic operators			
	15	Comments 20%+	269-299	5	Model as pseudo code
	16	Named Constants			All Local, only Conversions/Physics/Math in Global area
	17	Programming Style ***** Emulate			Emulate style in book/in class repositiory
3	1	cin			
	2	Math Expression			
	3	Mixing data types ****			
	4	Overflow/Underflow ****			
	5	Type Casting	98	4	
	6	Multiple assignment *****			
	7	Formatting output	29-48	4	
	8	Strings	271	3	
	9	Math Library	234	4	All libraries included have to be used
	10	Hand tracing ******			
4	1	Relational Operators			
	2	if	59	4	Independent if
	4	If-else	94-96	4	
	5	Nesting	170-175	4	

	6	If-else-if	165-168	4	
	7	Flags *****			
	8	Logical operators	165	4	
	11	Validating user input	178-183	4	
	13	Conditional Operator	202	4	
	14	Switch	280	4	
5	1	Increment/Decrement	33	4	
	2	While	116	4	
	5	Do-while	275-297	4	
	6	For loop	33	4	
	11	Files input/output both	104-130	8	
	12	No breaks in loops ******			Failed Project if included
****** Not required to show			Total	100	

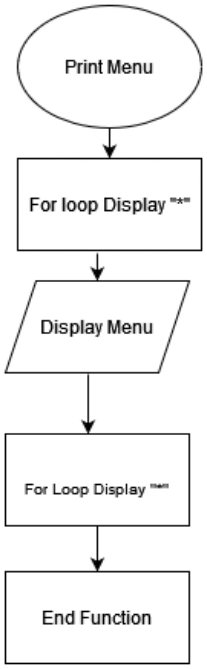
Flow Chart:

MAIN

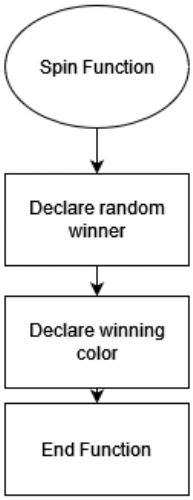

main
Declare variables
PrintMenu function
A
Input function(cash, bet)
Spin the Roulette table function
SWITCH
Bet1
Bet2
Bet3
Bet4
Bet5
Bet6
BlkRed function
Odd function
Even function
firstNum function 1-18
secNum function 19-36
Num
Display
Validate function
A
Exit

Functions

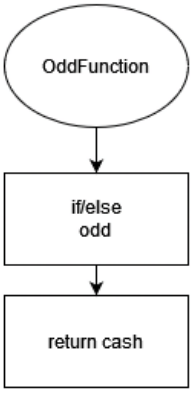
Print Menu Function



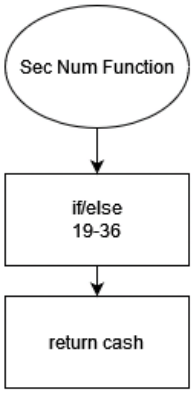
Spin Function



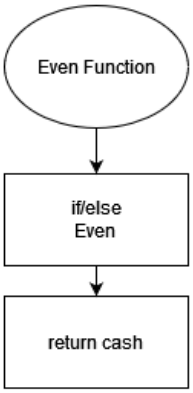
Odd Function



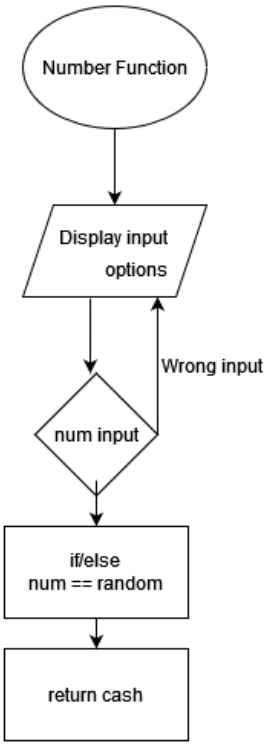
Sec Num Function



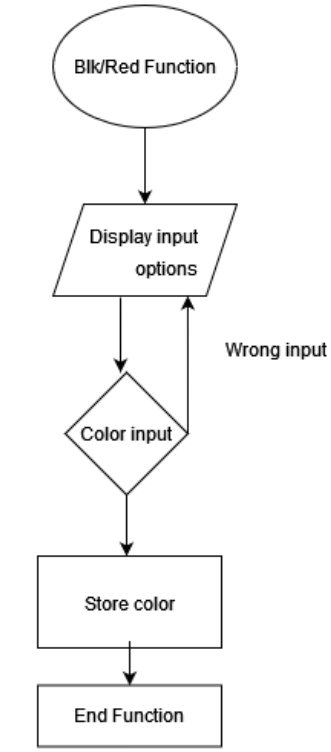
Even Function



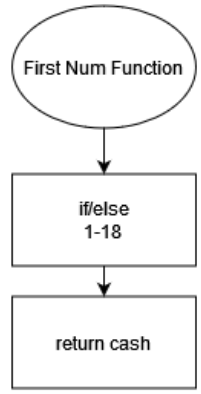
Num Function



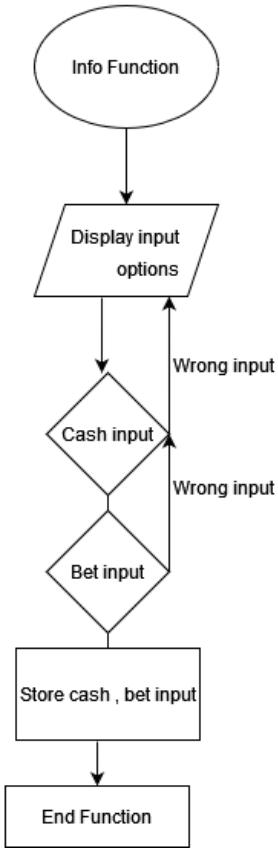
Black or Red Input Function



FirstNum Function

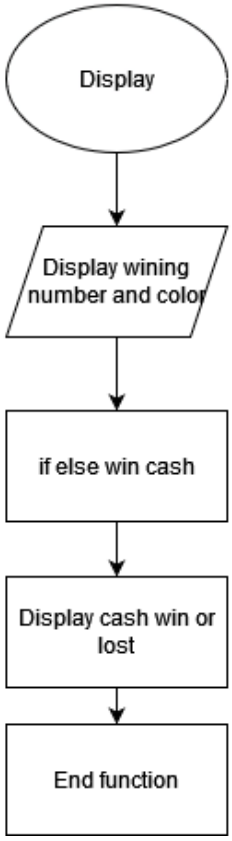


Get Input Function

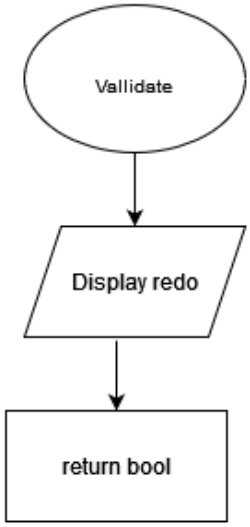


Functions

Display Function



Validate Function



Code:

```
 * File:   main.cpp
 * Author: Elias Silva
 * Purpose: C++ Template To be used in all future Assignments
 *
 * Created on June 23, 2022, 8:28 PM
 */

//System Libraries
#include <iostream>
#include <stdlib.h>
#include <cstring>
#include <time.h>
#include <cmath>
#include <iomanip>
using namespace std;

//Global Constants


//Mathematical/Physics/Conversions, Higher dimensioned arrays

//Function Prototypes

void printMenu()
{
    cout << endl;
    cout << endl;
    cout  << "           ";
    for( int i = 0; i < 100; i++)
        cout << "*";
    cout << endl;
    cout  << "           ";
        cout  << "                         ";

     cout << "Elias Roulette Table MENU BETS:" << endl;
     cout << "                  " << "1. Black/Red = 75%" <<  endl;;
     cout << "                  " << "2. ODD = 75%" << endl;
     cout << "                  " << "3. EVEN = 75%" <<  endl;
     cout << "                  " << "4. 1-18 = 75%" << endl;
     cout << "                  " << "5. 19-36 = 75%" << endl;
     cout << "                  " << "6. Number = 3Power" << endl;
    cout  << "           ";
```

Source | History

```
42        cout << "                    " << "4. 1-18 = 75%" << endl;
43        cout << "                    " << "5. 19-36 = 75%" << endl;
44        cout << "                    " << "6. Number = 3Power" << endl;
45       cout  << "           ";
46        for( int i = 0; i < 100; i++)
47           cout << "*";
48   };
49
50   void Info(float& cash , int& bet)
51   {
52       cout << endl;
53        bool validate = false;
54       do {
55        validate = false;
56       cout << "Enter Much cash you want to bet: $";
57       cin >> cash;
58       if( cash < 0 )
59       {
60           cout << "Wrong input try again " << endl;
61           cout << endl;
62           validate = true;
63       }
64
65       }while(validate);
66
67       cout << endl;
68
69       do
70       {
71            cout  << "Enter the bet you are placing: ";
72          cin >> bet;
73          cout << endl;
74           validate = false;
75
76       if( bet < 0 || bet > 6 )
77       {
78           cout << "Wrong input try again " << endl;
79           cout << endl;
80           validate = true;
81       }
82       }while(validate);
83
```

```
71       {
72            cout  << "Enter the bet you are placing: ";
73          cin >> bet;
74          cout << endl;
75           validate = false;
76
77       if( bet < 0 || bet > 6 )
78       {
79           cout << "Wrong input try again " << endl;
80           cout << endl;
81           validate = true;
82       }
83       }while(validate);
84
85   }
86   void spin(int& num, string& color)
87   {
88       srand (time(NULL));
89       num = rand() % 36+1;
90
91       srand (time(NULL));
92       int temp = rand()%2;
93
94       if (temp == 1)
95           color = "Black";
96       else color = "Red";
97   };
98   void Display(float cash, string color, int random)
99   {
```

```
};
void Display(float cash, string color, int random)
{
    string a = "The Wining number is: ";

   string  b  = "The Color is: ";

    ofstream rfile("rtext.txt");

    rfile << a;
    rfile << random;
    rfile << endl;
    rfile.close();
    string txt;
    cout << endl;


    ifstream readfile("rtext.txt");

    while(getline(readfile, txt)) cout << txt;
    cout << endl;

    readfile.close();

    ofstream cfile("ctext.txt");
    cfile << b;
    cfile << color;

    cfile.close();
     ifstream creadfile("ctext.txt");
    while(getline(creadfile, txt)) cout << txt;
    cout << endl;

    creadfile.close();


    cout  << fixed <<  setprecision(2);

```

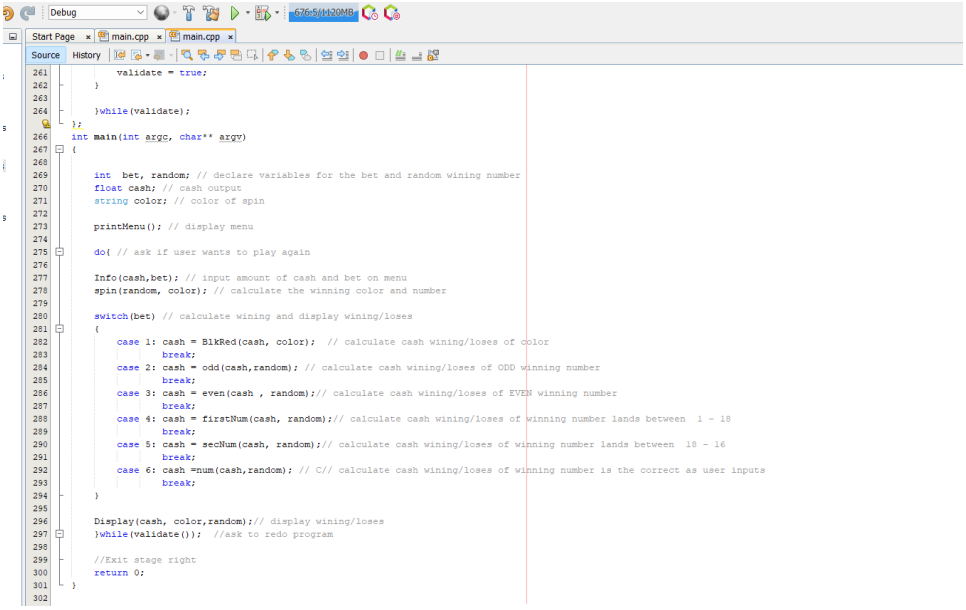
```
135         float temp = cash;
136         while(temp > 0)
137         {
138             cout << "You win :$" << temp  << endl;
139             temp*=-1;
140         };
141
142         float temp2 = cash;
143
144         if(temp2 < 0)
145         {
146             temp2 *= -1;
147
148             cout << "You lose :$" << temp2 << endl;
149         };
150
151     };
152     float BlkRed(float cash, string color)
153     {
154            char temp;
155            string temp1="a";
156            bool validate;
157
158            do
159         {
160          validate = false;
161          cout << "What color will you choose Black/Red (B/R)" ;
162         cin >> temp;
163         temp1= "error";
164
165         if(temp == 'B' || temp == 'b')
166             temp1 = "Black";
167         else if(temp == 'R' || temp == 'r' )
168             temp1 = "Red";
169
170         if( temp1 == "Black" || temp1 == "Red")
171         {
```

```
    if( templ == "Black" || templ == "Red")
    {
         if (color == templ)
            return cash*.75;
        else
            return -1*cash;
    }else
    {
        cout <<endl;
        cout << "Wrong input try again " << endl;
        cout << endl;
        validate = true;
    }
    }while(validate);

};
float odd(float cash , int num)
{
   if ( num%2 != 0)
        return cash*.75;
    else
        return -1*cash;
};
float even(float cash, int num)
{
     if ( num%2 == 0)
        return cash*.75;
    else
        return -1 *cash;
};
float  firstNum(float cash, int num)
{
    if (num < 19 )
        return cash*.75;
    else
        return -1*cash;
```

```
204         else
205             return -1*cash;
206     };
207     float  secNum(float cash, int num)
208     {
209         if (num > 19 )
210             return cash*.75;
211         else
212             return -1*cash;
213     };
214     float num(float cash, int random)
215     {
216         int num;
217         bool validate;
218         do
219         {
220         cout << "What number do you choose: ";
221         cin >> num;
222 
223         validate = false;
224         if(num <1 || num > 36)
225         {
226             cout <<endl;
227             cout << "Wrong input try again " << endl;
228             cout << endl;
229             validate = true;
230         }
231         }while(validate);
232 
233         if(num == random)
234             return pow(cash,3);
235         else
236             return -1*cash;
237 
238     };
```

```
238     };
239     bool validate()
240     {
241         char ans;
242         bool validate;
243 
244         do
245         {
246         validate = false;
247 
248         cout << endl;
249         cout << "Do you want to play again (Y/N) ";
250         cin >> ans;
251 
252         if ( ans == 'Y' || ans =='y' || ans == 'N' || ans == 'n')
253         {
254             if ( ans == 'Y' || ans == 'y')
255                 return true;
256             else if ( ans == 'N' || ans == 'n')
257                 return false;
258         }else
259         {
260             cout << "Wrong input try again" << endl;
261             validate = true;
262         }
263 
264         }while(validate);
265     };
266     int main(int argc, char** argv)
267     {
268 
269         int  bet, random; // declare variables for the bet and random wining number
270         float cash; // cash output
271         string color; // color of spin
```




```
261             validate = true;
262         }
263
264         }while(validate);
265     };
266     int main(int argc, char** argv)
267     {
268
269         int  bet, random; // declare variables for the bet and random wining number
270         float cash; // cash output
271         string color; // color of spin
272
273         printMenu(); // display menu
274
275         do{ // ask if user wants to play again
276
277         Info(cash,bet); // input amount of cash and bet on menu
278         spin(random, color); // calculate the winning color and number
279
280         switch(bet) // calculate wining and display wining/loses
281         {
282             case 1: cash = BlkRed(cash, color);  // calculate cash wining/loses of color
283                     break;
284             case 2: cash = odd(cash,random); // calculate cash wining/loses of ODD winning number
285                     break;
286             case 3: cash = even(cash , random);// calculate cash wining/loses of EVEN winning number
287                     break;
288             case 4: cash = firstNum(cash, random);// calculate cash wining/loses of winning number lands between  1 - 18
289                     break;
290             case 5: cash = secNum(cash, random);// calculate cash wining/loses of winning number lands between  18 - 16
291                     break;
292             case 6: cash =num(cash,random); // C// calculate cash wining/loses of winning number is the correct as user inputs
293                     break;
294         }
295
296         Display(cash, color,random);// display wining/loses
297         }while(validate());  //ask to redo program
298
299         //Exit stage right
300         return 0;
301     }
302
```