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// Wyatt 163  Dice game -- gambling with random numbers

#include <iostream>
#include <iomanip>
#include <ctime>
#include <string>

// function prototypes
void ClearDisp();
int Random();
int GetCost();
void Init(int&, int&, int&);

using namespace std;

//=====
// Clear display, get cost & loop until user says no more.
// In a loop, roll the dice until user rolls a 7, telling
// the user his winnings on each roll of dice.
//-----
int main( )
{
    int cost; // amount to play, srand seed
    int die1, die2, total, grandtotal, gametotal=0;
    char answer = 'Y'; // play again answer
    int winnings; // win/loss for a game
    string dummy; // holds enter characters

// Clear the display: erase screen & home cursor
ClearDisp();

// Explain the game and get cost they are willing to pay to play
cost = GetCost();

// Loop until user quits playing
while ((answer != 'N') && (answer != 'n'))
{
    Init(winnings, total, grandtotal);
    // Loop and roll dice until you roll a 7
    while (total != 7)
    {
        cout << "Roll! (hit enter)";
        getline (cin,dummy); // this accepts the enter key
        die1 = Random(); // get first die value
        cout << endl << "the first die is "<< die1;
        die2 = Random(); // get second
        cout << ", the second die is "<< die2;
        total = die1 + die2;
        cout << " and the total is => "<< total << endl << endl;
        if (total != 7) // don't add a 7 to the winnings
        {
            grandtotal = grandtotal + total; // but add any other roll
            cout << "This game you are up/down(-): " << grandtotal-cost << endl;
        }
        else
        {
            cout << "GAME OVER: you won/lost(-): " << grandtotal-cost << endl;
        }
        cout << "======" << endl << endl;
    } // end while (total !=7)

// we've rolled a 7, report earnings & see if user wants to play again
winnings = grandtotal - cost; // get the amount won/lost this game
gametotal += winnings; // calculate total win/loss for all games
cout << "Total up/down(-) so far for ALL games is: "
    << gametotal << " Want to try again? (Y/N)";
    cin >> answer;
    ClearDisp();
} // end outer while loop
return 0;
} // end main function

```

Purpose:

This program allows the user to play a dice game where he pays a certain fee to play and can then win money by rolling numbers on the dice and receiving one dollar for every point rolled. This continues until the user rolls a seven.

Design:

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explain game and get $ from user
while the user wants to keep playing
    initialize totals
    while the total is != 7
        roll the dice and total
        if not 7, add to winnings
    end while
    calculate totals
    see if user wants to play again
    clear display
end while

```

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//=====
// This function initializes variables to zero
//-----
void Init(int& x, int& y, int& z)
{
    // by using reference parameters, we can zero any 3 passed params
    x = 0;
    y = 0;
    z = 0;
}

//=====
// This function explains the game and determines the cost
// that the user is willing to pay
//-----
int GetCost()
{
    int amount;
    string dummy;

    // Explain game to user
    cout << "For every number on the dice that you roll " << endl
         << "before rolling a seven, you earn 1 dollar."
         << endl << endl;

    // Get the amount willing to pay - break even around $14
    cout << "Enter how many dollars you are willing to pay to play: ";
    cin >> amount;

    // Echo to user and continue
    cout << endl << "It will cost you $" << amount
         << ".00 to play each game. Press <ENTER> to continue.";
    getline(cin,dummy);
    ClearDisp();
    return amount;
}

//=====
// This function seed once and picks a random number and
// returns it each time.
//-----
int Random ()
{
    int number;
    static int flag = 1; // first time thru ONLY

    // Seed the random number generator - ONCE
    if (flag == 1)
    {
        srand(time(0)); // use clock to get a seed and use it
        flag = 0; // clear flag so we never come in here again
    }
    number = rand()%6 + 1; // get random value 1-6
    return number; // return value to caller
}

//=====
// This clears the screen - determine OS??
//-----
void ClearDisp (void)
{
    // only use in Unix
    system("clear");

    // only use in Windows
    // system("cls");

    return;
}

```

The four functions on this page are all called by the main function.