**Program Code**

// RollDice.cpp : This file contains the 'main' function. Program execution begins and ends there.

//

#include<iostream>

#include <iomanip>

#include<ctime> // for the time() function

#include<cstdlib> // for the srand() and rand() functions

#include "RollDice.h"

using namespace std;

void cntSpots(int[], int, int);

int main()

{

// Initioalize variables that counts number of time each sum occurs, hold subscript for expected array and for total array

const int SIZE = 13;

int expected\_array[SIZE] = { 0, 0, 1, 2, 3, 4, 5, 6, 5, 4, 3, 2, 1 };

int total\_array[SIZE] = {};

double expected;

double actual;

// Prompt user to enter the number of times they wish to roll the dice and display it

int nRolls;

cout << "Enter the number of times you want to roll the dice: ";

cin >> nRolls;

cout << "\nSum" << setw(8) << "Total" << setw(12) << "Expected" << setw(10) << "Actual";

cntSpots(total\_array, SIZE, nRolls);

cout << fixed << showpoint << setprecision(2) << endl;

// Write a for statement that causes the program to loop as long as the user enters the correct number

for (int count = 2; count < SIZE; count++)

{

cout << setw(4) << count << setw(8) << total\_array[count];

expected = expected\_array[count];

// Calculation for the percentage

cout << setw(10) << (expected / 36) \* 100 << "%";

actual = total\_array[count];

cout << setw(10) << ((actual / nRolls) \* 100) << "%";

cout << endl;

}

}

// Void function for array

void cntSpots(int array[], int ne, int nRolls)

{

srand(time(0));

int Die\_1, Die\_2;

int Total = 0;

for (int count = 0; count < nRolls; count++)

{

Die\_1 = 1 + (rand() % 6);

Die\_2 = 1 + (rand() % 6);

int sum = Die\_1 + Die\_2;

Total += sum;

array[Total]++;

Total = 0;

}

}