**CSC 1101 – Problem Solving and Programming Laboratory**

**Lab 3 – Omar Faruk**

**25 points – Due September 15, end of lab**

**a)** Save this document with your name and the lab assignment number somewhere in the file name.

**b)** Type/paste your answers into the document.

**c)** Submit this document to the Canvas item where you downloaded this document.

You are hired by the Physics Department of Wayne State University to develop a C++ console application which can calculate the distance travelling by a fallen object from a limited height. Assume the initial velocity is zero. They use the following formula to find the distance,

h= 0.5\*g\*t2

Where, h= distance (in meters), acceleration due to gravity, g= 9.8 (ms-2) ,and t= total time (in seconds). You are given Lab03.cpp file to edit the code. You should do the followings:

1. Declare two double variable h and g, an integer variable t.
2. Assign, g=9.8
3. Write header comments
4. Write body comments

**Sample Input:**

Enter the value of time traveled by the fallen object: 2.8

**Sample Output:**

Enter the distance covered by the fallen object:(meters): 19.6

Run the program three times with different values for **times**. What are the results?

|  |  |  |
| --- | --- | --- |
| Run | Time (seconds) | Distance (meters) |
| 1 | 3 | 44.1 |
| 2 | 12 | 705.6 |
| 3 | 17 | 1416.1 |

*[your program code here]\**

//==========================================================

//

// Title: <Lab 03>

// Course: CSC 1101

// Lab Number: <Lab 03>

// Author: <Omar Faruk>

// Date: <09/15/2020>

// Description:

// In this lab, we are adding the header, body, and declaring variable

// for distance, time, and gravity.

//

//==========================================================

#include <cstdlib> // For several general-purpose functions

#include <fstream> // For file handling

#include <iomanip> // For formatted output

#include <iostream> // For cin, cout, and system

#include <string> // For string data type

using namespace std; // So "std::cout" may be abbreviated to "cout"

int main()

{

//Declare variables

double h; // Distance (meters)

double g = 9.8; // Gravity (ms^-2)

int t; // Time (seconds)

//User input for time

cout<<"Enter the value of time traveled by the fallen object: ";

cin>>t;

//User input for distance

h= (double)(0.5\*g\*t\*t);

cout<<"Enter the distance covered by the fallen object:(meters): "<<h<<endl;

//End of program

return 0;

}

*[your program output here]\*\**





