Hyperion Development

Task: Functions

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Introduction

Overview:

By this point you might have realised that programs can get quite long and complicated. Programs in the Real World can have countless lines of code and require multiple programming teams to code.

For this reason, it is necessary to break the program up into manageable subsections and then recombine the sub-sections at the end once each team has completed their own sections of the program.

Please read the instructions below for more information.

-The Hyperion Team

A note from the Hyperion Team...

Instructions

- Open the Functions.sln file in the folder *Functions* and read its contents. Make sure you read all of the comments and try your best to understand them.

- You may run the project to see the output. The instructions on how to do this are inside the file. Feel free to write and run your own example code before doing the tasks to become more comfortable with C#.

- Instructions on how to complete your compulsory tasks are below.

Compulsory Task 1

Follow these steps:

NOTE: Make a copy of this folder on your computer. Submit the required files when you are done.

Before you go any further, open the **Practice_Tasks** folder in your **Task** folder. Have a look at the four example programs written for you, run them by hitting F5 when opened.

Create a new C# Project called ***StraightLine*** within your **Task** folder and do the following:

1. Write a program that runs through the domain values -50 to 50 with a step of 1 (Hint: these are the x-coordinates).

2. Each number in the domain will be sent to a function that will return the y-coordinate (using the formula below).

3. The value for the gradient must be given by the user (make it an integer for simplicity).

4. The y-intercept will be a globally declared variable with a value of 2 (see *scope.cpp* for help with this).

5. Print out each coordinate set in the domain beneath each other, for example:
   (x(1); y(1))
   (x(2); y(2))

NOTE: The graph of a straight line has the equation **y** = **mx** + **c** where:

- **y** is the the y-coordinate.
- **x** is the x-coordinate.
- **m** is the gradient(or slope) of the graph.
- **c** is the y-intercept(point where the graph "cuts" the y-axis).

Read the file *straight_line.htm* if you have any difficulties.

Compulsory Task 2

Follow these steps:

Create a C# Project called ***TriangleNum*** in your **Task** folder.

Read the attached file *triangle_num.htm* to understand what a triangle number is.
Here is what you should do:

1. Compute all the triangle numbers for n from 0 to 100.
2. The triangle number must be computed in a function.
3. The output must be printed one underneath the other.

Optional Task

Follow these steps:

Open the folder ***Practice_Tasks*** in your **Task** folder.

There are a few Projects which have their own instructions to get some practice with writing functions.

- The file ***Reference*** shows you how to send an array to a function.

- The file ***Scope*** introduces you to different variable scopes.

Still need help?

Just write your queries in your comments.txt file and your tutor will respond. Alternatively you can email us on help@hyperiondev.com.

Task Statistics

Last update to task: 16/02/2016.
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