**Institute of Technology Tralee**

**BSc. in Computing with Specialism (Group B) - Year 1**

**Continuous Assessment #1**

**Date: 20/10/11**

**Time: 3 – 5 p.m.**

**Introduction to Programming**

**Instructions:** Attempt the following question. You should use the Just BASIC IDE for coding. When you are finished you must print out your code for correction.

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**Q1.**

A person entering a parking lot receives a ticket from a machine and when they leave the parking lot the machine takes the ticket, determines the amount of time spent parking and calculates the amount the customer must pay. It uses the following table of values in its calculations:

|  |  |
| --- | --- |
| **Time Spent Parking** | **Cost** |
| Up to and including 1 hour | 60c per hour |
| Next two hours | 50c per hour |
| Anything more | 40c per hour |

So, for example, if a person spends 1.5 hours in the parking lot, they must pay 60c for the 1st hour and 25c for the remaining half hour for a total of 85c.

The program should ensure that the time value entered is valid (greater than or equal to zero). If it is invalid, then an appropriate error message should be displayed and the program immediately terminates (without doing any calculations whatsoever).

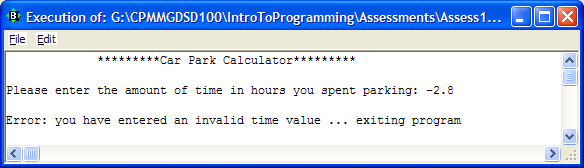
Provided that the time value is valid, your program should display the total cost correct to **2 decimal places** while allowing for **at least 3 digits to be displayed before the decimal point** without incurring a logical error.

Using the test values as indicated in the sample screen shots below, the program should give you **exactly** the following output when it runs, including banners, blank lines, units etc.

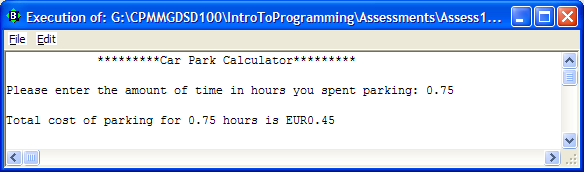
Also note that there will be a few marks awarded for the use of **meaningful variable names**, having a **meaningful comment at the top of the program** and for **proper indentation** in the coding of the program. Also, some marks will be awarded for **efficient** coding and for ensuring that the program is terminated correctly to ensure that all resources used by the program are returned to the system upon its completion.

**Sample Screen Shots**

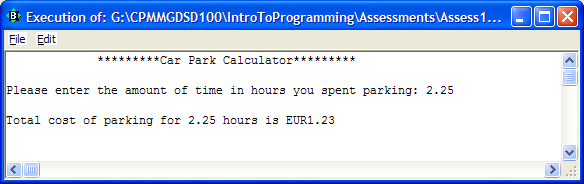
**In this run the time value is invalid:**



**In this run the time value is valid and is under 1 hour:**



**In this run the time value is valid and is between 1 and 3 hours:**



**In this run the time value is valid and is over 3 hours:**

