EEE101 C Programming and Software Engineering 1 – ASSESSMENT 2

Assessment Number	2
Contribution to Overall Marks	10%
Issue Date	12/10/2015
Submission Deadline	22/10/2015 at 0900 (9am)

Assessment Overview

This assessment aims at testing some basic concepts of C programming and initiates the routine of code development using the software development process (**SDP**) presented in Lecture 1, namely the five main steps of the software development process:

1. Problem statement: formulate the problem.
2. Analysis: determine the inputs, outputs, variables, etc
3. Design: define the list of steps (the algorithm) needed to solve the problem.
4. Implementation: the C code has to be submitted as a separate file. Just indicate here the name of the file.
5. Testing: explain how you have tested and verified your C program.

You will need to apply this methodology to each one of the following simple exercises.

EXERCISE 1 (10 POINTS OUT OF 10)

Write a C program to perform the following function of a simple number game. The game should allow two people to enter numbers from 1-100. The two players should then be able to take turns guessing each other's numbers. After each guess the program should tell the person if their guess was too high or too low. When one person guesses the correct number, the computer should output the total number of guesses it took them to get the correct answer. After the game is finished the program should give the option to terminate or start again.

To keep the users numbers secret, you should clear the screen after input. This can be done using the system command system("cls");.

Advice

This may initially appear difficult, it is suggested that you first write down the steps that the program needs to perform and in what order (sequence), if necessary produce a flow chart and then think about how to do each part e.g:

- player 1 enters their number
- the screen is cleared
- player 2 enters their number
- the screen is cleared
- and so on…

What should be submitted?

You should submit the followings:

1) A short report (up to a few pages of text plus C source codes) detailing for each question:

   a) SDP steps 1 to 3 in the report (Report + Specification + Analysis + Algorithm Design) (40%)

   b) SDP step 4 (Implementation + Robustness): your C source code including the comments. (40%)

   c) SDP step 5 in the report (testing): you will explain how you have tested the correctness of your C program and will include some sample runs of your C Programs. (20%).

   Please refer to the file "EEE101 Marking Guidelines Assignments 1-3" on ICE for a detailed marking scheme.

2) The report in Microsoft Word or pdf format and C source code of your implementation for each question should be zipped into a single file, i.e. the zip file will contain 2 files, one document and one source code. (It is a good practice to include comments in your code stating the aim of the program, what are the inputs, what are the outputs, which algorithm is used, who is the author and so on.)

The naming of Report (.doc or .pdf), Source Code (.c) and Compressed file (.zip, or .rar)

- StudentID_LastName_FirstName_AssignmentNumber-QuestionNumber.docx or .pdf
- StudentID_ AssignmentNumber-QuestionNumber.c
- StudentID_LastName_FirstName_AssignmentNumber.zip or .rar

For example

- 10115085_Zhang_Hanqing_2-1.docx
- 10115085_2-1.c

Zipped together into:

- 10115085_Zhang_Hanqing_2.zip

How the work should be submitted?

Should be submitted electronically through ICE so that the marker can run your programs during marking. Feedback and your grade will also be given through ICE.