COMP603: Program Design & Construction – Projects

2016 S1

Introduction

This semester you will complete a project to produce a software product. You can work individually or in groups of 2 students.

You will select a product type from the list below, or come up with your own.

- A virtual pet game.
- Sudoku
- A card game
- A foreign language (vocabulary) learning software
- Chess games
- Board games
- Deal or no deal
- Who wants to be a millionaire
- A RPG game
- A soccer/rugby manager game

Requirements:

- The project contains 2 stages:
  - In the first stage, you will need to develop a **Command-line User Interface (CUI)** version of the product.
  - In the second stage, you will upgrade the product to a **Graphical User Interface (GUI)** version. Meanwhile, you will include **a Database component** to the product, and include necessary **unit tests**.
- The 2 versions (CUI and GUI) of the product will be demonstrated in Week 6 and Week 11's labs. Each demonstration weights 10% of your project grade.
- The source code of the CUI and GUI versions of your products will be submitted in the Friday of Week 12. You can create 2 Java projects for the 2 versions, then compress the 2 project folders into 1 file.
- You need to use Apache Derby DB (also called JavaDB: http://db.apache.org/derby/) as the database management system of your project.
- You need to develop the project by using NetBeans or Eclipse
- You need to have unit tests for testing some important functionalities of the program (for Stage 2 only).
- The program needs to be bug free and have robust error handling.
- The program should be easy to build and run without any configuration.
- You need to have an open mind about the functionality of your game, and try your best to make your program robust, interesting, and easy to use.
- You will be expected to develop your own Java code for the projects. You may use the Java standard library. You may also use other external libraries with my permission.

Important dates:

- Stage 1 demonstration (the CUI version): Week 6's labs
- Stage 2 demonstration (the GUI version): Week 11's labs
- Submission of source code: 11:59pm 3/June/2016 (Friday)

Final code submission:

- The project will be submitted via AUTOnline;
- You need to submit a compressed file which contains:
  - The project folder which contains all the source codes, unit tests, and related files, e.g., image files, text files;
  - The database folder which contains all the database files. (You can put the DB folder inside your project folder.)

Marking Guideline

Requirement	Max mark
Progress demonstrations • Be able to demonstrate a runnable version of your program • The demonstration is bug free • Be able to demonstrate multiple functions	2*10=20
CUI • Clear and well designed interface • The program can handle users' inputs from the CUI properly • The interface is easy for users to interact with	10
GUI • Clear and well designed graphical user interface • The interface is easy for users to interact with	10
Database • The program contains a database element • Can achieve database interactions and operations in the program	15
Software functionality and usability • The program is easy to compile and run without any configurations (e.g., setup DB, import .jar, etc.) • The program can be easily interact without any errors • The complexity of the functionality	15
Software design & implementation • The program can be compiled successfully • Highly readable code • Meaningful and appropriate comments • Executes without runtime errors • Robust error handling • Clear class structure • Complexity and robustness of the functionality	25
Unit testing • Correct tests • Tests cover implemented functionality well • Well-named tests	5
Total	**100**

Note:

- **Minimum pass requirement applied for the project (check the paper descriptor)**
- **Plagiarism will result zero mark in the assignment, and be reported to the Faculty**
- **Late submission penalty will be applied (15% deduction for each day)**
- **You have the responsibility to keep and backup different versions of your programs. Losing of data (code) will not be considered as a valid reason for special consideration!**