Assignment 3 – Group Assignment

Due date: Monday, 29 November 2021

Expected Learning Outcomes of the Assignment

- describe the essential concepts of object-oriented technology and carry out the object-oriented approach for programming;
- design object-oriented programs using object-oriented modelling techniques;
- create software applications with an object-oriented programming language to solve computer problems;
- implement graphical user interface and event handling in an object-oriented fashion;
- apply object-oriented approach to build computer systems in groups and develop group work;
- cooperate with team members in problem solving responsibly, effectively, and appropriately as an individual and as part of group efforts.

1. Statement of Work

As a maintenance team (about 5 to 6 students in each team), you are required to perform the following tasks.

Part A: GUI Design

- Enhance your ATM prototype (Assignment 2) with appropriate GUI components.

Note: when implementing the GUI components, they should support:

- The ***password*** should be masked.
- The ***operational behavior*** of the ATM services should be consistent with that in the real ATM systems currently used. For example, when performing ***withdrawal service***, the system could simulate the operational sequence as: 'display ATM greeting screen' -> 'user authenticated' -> 'display main menu'- > ' user selects withdraw service' -> 'user enters withdrawal amount' -> 'confirmation' -> 'remind user to take card' -> 'card ejected' -> 'remind user to take cash' -> 'cash dispensed' -> 'display ATM greeting screen'.

Part B: Practical demonstration of the ATM prototype (by video recording)

- The demonstration video is expected to be with duration of around 8~10 minutes.
- The contents of the demonstration should include
  - ***Compiling of the program and show how the program is executed***
  - ***Execution of the test cases***
- The demonstration video should include voice narrative (in English or Chinese) for explanation.

2. Submission Requirements

For Part A – GUI Design, your project team is required to prepare a ***well documented report*** that contains:

- screen captures of the implemented ***GUI of the ATM prototype***;
- any assumptions that you have made in the implementation;
- a ***complete listing of source codes*** (with clear indication of enhanced portions of the source codes);
- ***explanations of the key program statements***;
- appropriate set of ***test cases*** and the corresponding testing results (that can be screenshots of the executions with testing cases).

In Appendix - Description of teamwork

- The division of job duties.
- Timeline of the work done.
- Group learning experience: e.g. describe the problems that have been encountered as a maintenance team by working online, and how you would resolve the problems.

For Part B - Practical demonstration of the ATM prototype (by video recording):

- You may use a screen cast tool for recording the practical demonstration.
  e.g. MS Teams, ZOOM, ScreenCast
- Format of the video clip: mpeg4
- Duration: 8~10 minutes
- Upload the video file to an online storage site (e.g Google Drive) and share the link.
- Specify clearly in the report the link for accessing to your demonstration video file.

Note:

- The **cover page of the report** should be stated with Subject Code, Subject Title, Assignment Title, Student ID and Student Names of all team members, and the ***link*** to access to your demonstration video file.

- The **Group Leader** should submit the following files to Moodle:

  - **source code** (zipped file) with filename:
    SEHH2242_A3_source_*Student Name of Group Leader*.zip

  - **written report** (pdf format) with filename:
    SEHH2242_A3_report_*Student Name of Group Leader*.pdf

- The **Peer Evaluation Form** should be submitted through Moodle by **individual students**.

- Deadline for submission: **29 November 2021, 11:59pm.**

3. Grading Aspects

Your assignment will be graded according to the following criteria:

Group basis (90%)	
GUI design: *use of appropriate GUI components to enhance the system prototype; correct logic and output; checking of invalid inputs; conformance to Java code conventions; program readability; clear explanations*	30%
Test cases design: (for the finalized version of the ATM prototype) *use of appropriate set of test cases, with screen captures, for demonstrating the correctness of the system prototype*	25%
Practical demonstration of the ATM prototype (by video recording): *the demonstration video shows how the program is compiled and how the program is executed; the demonstration video shows how the test cases are executed; the demonstration video contains clear voice narrative for explanations of the steps.*	30%
Teamwork: (timeline of the work done; division of job duties; group learning experience)	5%
Individual basis (10%)	
Self-reflection	5%
Peer Rating	5%

4. Important Points

- **Plagiarism will be penalized severely**. Marks will be deducted for assignments that are plagiarized in whole or in part.
- **Late submission** is liable to a penalty 10 marks for each day delayed.