CSC1023: The Software Engineering Professional Testing and Debugging Assessment

Introduction

This assignment requires you to use the testing and debugging strategies discussed in CSC1023, along with the programming experience obtained in CSC1021/CSC1022. In industry, code is often produced by one person or team and then tested by another person or team. This assessment requires you to test some Java classes as defined by a software specification. Specifically you are looking for faults in the code and other non-functional aspects such as examples of what you would consider bad software engineering practice. You are then required to write a short report listing the quality problems and explaining the strategy you used to find them.

Aim

To improve the engineered quality of some pre-written Java code.

Learning Outcomes

This coursework will enable you to practice the following skills:

- An understanding of the testing and debugging phase of the software engineering cycle
- Further knowledge of techniques and tools for developing software
- More experience of programming environments

Scenario

The code you will be investigating is about a Java card game. It contains classes to represent cards and players. There is also a class to aid user interaction. Finally, there are two sample test classes you can use if you wish to do so.

The original specification of the code is available for you to view on Blackboard (under Assessment Information > Testing and Debugging > Testing and Debugging Assessment). You will also find a zip file (i.e. ProjectToDebug.zip) containing the associated classes as well as instructions for importing the project into Eclipse.

You should investigate the code using whatever testing and debugging strategies you think are appropriate. You should then produce a report (as a **single** Word document or PDF file only); a template has been provided to you on Blackboard i.e. ReportTemplate.docx. This report should contain the following sections:

1. A list of any faults found in the file Card.java
2. A list of any faults found in the file Player.java
3. A list of any faults found in the file Switch.java
4. A list of any faults found in the file UserInterface.java

5. A list of any faults found in the file Constants.java
6. A brief report (approx. 1-2 pages) of your testing and debugging strategies. The report should indicate the steps you took and the order in which you took them, which fault(s) each step identified and finally your opinion of how successful you feel the strategies were.

You should fix any faults found in the Java files mentioned above. If there are lines of code you feel are incorrect, do not delete them completely, comment them out instead and then add in your corrected solution underneath. Your final submission for this coursework will be a zip file containing the three Java files, any test classes you write and your report document.

Marking Scheme

60% of the mark comes from finding the quality issues with the Java files.

40% of the mark is for the content of the report and the effectiveness of your debugging strategy. There are no marks for the quality of your written work, although marks may be deducted for poor spelling and grammar.

Deliverables

Your coursework must be submitted to the NESS system by the deadline specified. Note that NESS imposes deadlines rigorously, and even work that is a few seconds late (e.g. because of network delays caused by students all submitting at the last moment) will be flagged as late.

You must submit **one file**, a zip file containing the source files Card.java, Player.java, Switch.java, UserInterface.java and Constants.java, any test classes you write (the .java files) and your report. Your report should be in Word (.docx or .doc) format or as a PDF file. To create a .zip file, put all the files you wish to submit into a new folder, right-click on that folder, choose "Send to" and then "Compressed (zip) folder." Do **NOT** include the class files (those ending .class) as these are not readable by humans.