CITS5501 Software Testing and Quality Assurance
Semester 1, 2018
Workshop 5 – Software reviews

- Document version number: 0.0.2

- Date: 2018-04-12

- Changes:

  - 2018-04-12: Submission deadline extended to Monday 23 April

This workshop is worth 5% of your final grade. It is due on Monday 23 April, 5pm, and should be submitted via `cssubmit`. All assessed work is to be done individually.

You are expected to have read and understood the University's guidelines on academic conduct. In accordance with this policy, you may discuss with other students the general principles required to understand this project, but the work you submit must be the result of your own effort.

You must submit your work before the submission deadline above. The penalties for late submission are described in the University's guidelines on assessment:
For late submissions a penalty of 10% of the total mark allocated to the assessment item must be deducted per day for the first 7 days (including weekends and public holidays). After 7 days the assigned work will not be accepted and will receive a mark of zero (unless an application for mitigation is approved).

Overview

This workshop requires you to conduct reviews of software artifacts (code and documentation). Several activities are to be done in class, and are not assessessed, and several are to be completed in your own time and submitted via `cssubmit`.

Tasks

1. In groups of three or four students, you are to conduct a *walkthrough* of the specification document for Workshop 2. One student should take the role of "author", and present the specification to the group; and one should take the role of "recorder", keeping a note of any defects, decisions or suggestions. First devise a classification of problems you might find with the document. During the course of the walkthrough,

identify any areas which you think might be incorrect, unclear, could be improved, or are simply in poor style. In general, you do not have to come up with solutions, but you may. Collect statistics on the number and type of defects. Are there any major problems? How many? Select a spokesperson to describe your findings to the class.

(0 marks, in-class activity)

2. A portion of Java code will be provided in class, and a code review checklist. Examine the code, and make recommendations on how it could be improved. Additionally, identify any items on the checklist which you think could be checked automatically, rather than by a human reader. If you have time, investigate the capabilities of tools such as checkstyle, spotbugs, and PMD. Could they be used to identify of these items? Where in their documentation could you find out?

   (0 marks, in-class activity)

3. Select a project (or portion of a project) you have written or been involved with, ideally with about 200 lines of code. You should (a) select an appropriate code checklist to apply, noting where you obtained it (b) print out your source code, (c) record on it the details of the checklist being applied, and (d) apply the checklist to the source code, marking up items in the code which should be changed.

   (1 mark)

4. Categorize the errors and deficiencies found, and how many of each category were found. Calculate the number of defects per 1000 lines of code. Detail these on a separate page from the marked-up code.

   (1 mark)

5. Write a short, half-page (approximately 250 words) report on the quality of the project code, on a separate page to the previous tasks.

   You should: discuss details of what errors, and/or types of errors were found; provide an assessment of the code quality; and make recommendations for improved coding practices that could be adopted (possibly including automated checking of code).

   (3 marks)

Submission

You should scan (or otherwise convert) your work to PDF format, and submit a single file, "`workshop05.pdf`", via cssubmit. It is expected that the file should be around half a dozen pages in length – around four pages for the code (if an approx. 10-point font is used), and one page each for the defect-count and report.

Assessment

The submission will be marked out of 5. Tasks will be assessed as follows:

- Task 3: Appropriateness of the checklist chosen, clarity, and thoroughness.

- Task 4: Clarity of presentation.
- Task 5: Clarity, logical structuring of the report, and appropriateness of recommendations.