The University of Melbourne
SWEN90006: Software & Security Testing

PeerWise Assignment

Second Semester, 2019

Part A Due Date: 18:00pm, Wednesday 18 September, 2019
Part B Due Date: 18:00pm, Wednesday 23 October, 2019

Objectives

To encourage reflection and develop better understanding of the learning outcomes of the subject. To improve communication and evaluation skills. To create a drill-and-practice learning repository that can be used all the way up to the exam. To increase the amount of timely feedback in the subject.

Drill and practise with PeerWise

PeerWise is a system written at the University of Auckland that allows the building and displaying of multiple-choice questions submitted by members of a subject. The participants are anonymous, but their identities are known to the subject staff. This mini-assignment, broken into two parts, involves you submitting and answering multiple-choice questions in PeerWise.

There are many reasons that PeerWise is used in this subject, but the two most important are:

- Designing high quality exam questions is a useful activity. To write an exam question for a topic, you need to know the topic better than you do if you just want to answer that question. Coming up with your own exam questions is a great way to strengthen your knowledge of the course material.
- The class will collectively create a set of questions (with answers) that can be used during revision.

In addition to the above, there is an additional reason why completing this assignment is beneficial to students: *there will be one question on the exam that is based on the best (in the opinion of the subject staff) submitted question!* So if you submit a quality question and answer, you may end up seeing your question on the exam.

Before you start, you are encouraged to read the PeerWise user guide, which is accessible from the LMS.

Part A – Due 18:00pm, Wednesday 18 September, 2019

Task 1

Go to the PeerWise website:

`http://peerwise.cs.auckland.ac.nz/register/?melb_au`

and register using your University of Melbourne username (the same one you use to log into the LMS) as the identifier.

The **course ID** is 19895.

A brief comment on information privacy. Your username is used to uniquely identify you to the PeerWise system. This is the only information that is stored on the PeerWise server. You will be asked to choose a PeerWise username. Neither your Unimelb username nor the username that you choose will be displayed on the PeerWise system for other users to see.

Now, go to the PeerWise main page (also linked from the LMS):

`http://peerwise.cs.auckland.ac.nz/at/?melb_au`

and log on. You will be greeted by your home page. From here, you can provide your email address to the system, which can be used to retrieve your password should you forget it.

From here, you will see that you are a member of the course "SWEN90006 (Semester 2, 2019)". Click on the link, and this will take you to the course page.

Task 2

Answer enough questions to achieve an 'answer score' of at least 50.

although you are encouraged to answer as many as possible. If you are one of the lucky first people to log in, there will not yet be five questions to answer. You will have to return to this question later.

You are able to rate questions, as well as give them a difficulty level. You are encouraged to do both of these for any questions that you answer. If everyone in the class does this, it will be a useful guide for you during revision.

You are also able to add feedback for the question and answer. For example, you may note that there are other answers that the original contributor did not discuss, and you can add your own discussion about them, or simply provide feedback on what you thought of the question and answer.

Rating and feedback are anonymous, however, please be fair with your ratings and your feedback. Remember that one of the aims of this exercise is for us to build, collaboratively, a useful learning tool. If you do give a low rating for a question, consider providing *constructive* feedback on the question as well. Please do not make your feedback offensive. The feedback may be anonymous to PeerWise users, however, not to the the subject staff.

Task 3

Add a question and answer on one of the following topics:

- Input/equivalence partitioning
- Boundary-value analysis
- Control-flow analysis
- Data-flow analysis
- Mutation testing
- Test oracles
- Testing modules & OO programs

As part of this task, you will need to provide the following:

- a high quality question that is clear, unambiguous, and challenging;
- answer enough questions to get an 'answer score' of 50;

- a clear, unambiguous, and correct explanation for your answer; and
- a tag for the question from at least one of the above topics (if the topic does not exist in PeerWise yet, please create it).

You are able to delete questions if you decide to change them. You will only be assessed on questions that remain after the due date.

Feel free to add more than one question. The more questions each person contributes, the more questions there will be to use for exam revision. We will assess you based on the question that we feel is the best of all of your submissions. However, please do not take this as an indication that you should submit several low-quality questions on the hope that one gets you high marks. As always, your aim should be to demonstrate an understanding of the subject material, and the "thousand monkeys at a thousand typewriters" approach demonstrates the exact opposite.

Part B – Due 18:00pm, Wednesday 23 October, 2019

Task 4

Answer five questions that you did not answer in Part A (PeerWise tracks which questions you have already answered).

Task 5

Add a question and answer on one of the following topics:

- Security vulnerabilities
- Fuzzing
- Reliability measurement
- Reliability block diagrams
- Markov models
- Reliability growth modelling
- Symbolic execution and dynamic symbolic execution

The same criteria apply to this task as to Task 3.

Criteria

Each part is worth 2.5% of your final grade (5% total). The marks breakdown will be as follows:

Task	Marks
Submit a high quality question	1
Provide a correct answer for that question and a high quality explanation of that answer	1
Achieve an answer score of 50	0.5

What is a high quality question and answer?

As masters students, you should have ample experience in reading exam questions, so you should know how exam questions are worded, and the level of difficulty that exam questions present. Use this experience to think of quality questions that you think will present a small challenge to other people.

A high quality question and answer should have high learning value. Perhaps it flushes out some common misconception or clarifies some important concept in the subject. The question should be challenging, although this does not mean a person answering the question would require a long time to answer the question. The answer should be a clear explanation of how you answered the question. Asking for a definition is NOT a challenging question, and the answer is also unlikely to enlighten other class members.

Using PeerWise for exam preparation

The user guide provided on the link above explains some nice features that are useful for exam preparation, such as how to identify the highly-rated questions and how to follow authors that are contributing questions and answers that you find suitable for revision.

Academic Misconduct

The University misconduct policy[1] applies. Students are encouraged to discuss good ideas for questions and how to set out answers & explanations, but all submitted work must be original and represent the individual's understanding of the topic.

The subject staff take academic misconduct very seriously. In this subject in the past, we have successfully prosecuted several students that have breached the university policy. Often this results in receiving 0 marks for the assessment, and in some cases, has resulted in failure of the subject.

[1] See `https://academichonesty.unimelb.edu.au/`