FIT2107
Week 1 Workshop Sheet

Objectives

The objectives of this workshop are:

- To be able to understand and analyse the importance of quality attributes of software systems.
- To get familiar with Python programming language.

Expectation

Participation in these workshops will not be assessed towards final marks, but it should be considered **the absolute bare minimum** required effort to **pass** this unit. Nevertheless, participation is by no means the recommended level of effort if you wish to excel in this unit, your future units, and the workplace.

In a university setting, simply completing assigned work is not sufficient to maximise your learning outcomes, you will need to practice some self-learning as well. This is true in all units and we assist this by providing guidance on where to start your search with suggested readings and video links.

Task 0: Tutor Introduction + Introduce yourself + Ice Breaking Activities (15 mins)

It is important for students to know their tutors as well as their peers (classmates) as we are having group exercises and assignments in this unit. It depends on the tutor how he/she runs this activity; however, we expect you all to at least discuss the following questions during Task 0.

- Your name. What should we call you?
- Your degree (Engineering, IT, Science)?
- Your programming experiences (projects)?
- Anything interesting you have developed or designed or want to develop and design in future?
- Why are you taking this unit?
- What do you expect from this unit?

Task 1: Exercises on the Foundations of SQA (75 mins)

Form groups of four or five people or it will be setup for you by your tutor and, together, attempt to answer the following questions. One person within the group should volunteer to make notes into a Google Doc, and share them with the other group members and your facilitator (if required). After all groups have agreed on answers, your facilitator will lead a discussion about them.

*When we say, "a discussion", we mean it! Most of these questions do not have **single**, **simple right** answers - and talking about them with your classmates will teach you a lot more than simply copying something down. We suggest that you take notes on the discussion and use them in your exam preparation.*

Question 1: Please discuss each quality property, and decide how important that quality property is likely to be for that system for each of the following software systems:

A. The control system for the landing module of an uncrewed scientific space probe to Mars.
B. A program to help assignment markers and project managers in student projects track contributions to a Google Doc over time.
C. An automation system in the factory that measures the consumption of liquid (let's say the fuel) and rings an alarm if there is a danger.

Hint: In the Week 1 course notes, ***eight different quality properties*** were listed. For each property, give an importance rating on a scale from 1 to 5, where 1 is "unimportant" and 5 is "very important", and explain why.

You do not have to give a separate rating on each aspect of the properties listed in the notes, but you should consider them when coming up with your ratings. You might also need to refer to specific aspects in your explanation to make it clear. Your explanation is much more important than the specific ratings.

Potential Answer Form:

System: ……..		
Quality Property	**Importance**	**Justification**
…..	…..	…..

Question 2: Please classify the following types of artifacts created during a software development project as informal, formal, or executable, and briefly explain why:

- Source code.
- A "storyboard" depicting the flow between screens based on user input in a mobile app.
- A properly formed UML state diagram.
- A partial UML class diagram on a whiteboard.
- A build file (e.g., Make, Ant).
- A pseudocode description of the algorithm to be implemented in a method.
- An issue reports.
- Test cases.

Task 2: Python Programming Practice (30 mins)

2.1 Setting up Python on your own machine

- Install Python 3
  - Windows
  - Mac OS X (installed by default)
  - Ubuntu (installed by default)
- Install a Python IDE (e.g., PyCharm or VS Code).
  - Note: you can also use Python from the command line or terminal. Knowing it is an important skill as well. Try it.
  - Please create a new Python file (e.g., user-authen.py), copy & paste the following Python script, and run it via command line (e.g., python3 user-authen.py) or through the IDE.

```
username = input("Login: >> ")

# list of allowed users
user1 = "Jack"
user2 = "Jill"

# control that the user belongs to the list of allowed users
if username == user1:
    print("Access granted")
elif username == user2:
    print("Welcome to FIT2107")
else:
    print("Access denied")
```

- It is a good time to practice working in python and improve your skills to write python programmes (if you do not have prior experience in it). There are many online resources available and you can use any.
- We would recommend the “Improve Python programming skill, e.g., https://www.youtube.com/watch?v=rfscVS0vtbw” as it provides a comprehensive detail about the language with interesting examples.