

CSE6214 Software Engineering Fundamentals

Tutorial 1

Part A: Discussion

Topic (Lecture 1): Introduction to Software Engineering

1. What do you understand about the term “software engineering”? (please refer to Lecture 1) [software - a tools to solve the problem](#)
[find problem, create solutions by making a tools](#)
2. State a few reasons for the need to “engineer” a software.
[be different from users, to improve the standards](#)
3. Describe the following domains of software applications using examples. (you can refer to Chapter 1 of the text book)
 - System Software [vscode \(source code editor to service other programs\)](#)
 - Application Software [foodpanda \(prog that solve problem for users that need to buy food\)](#)
 - Engineering/Scientific Software [programs that satisfy the needs of a scientific or engineering user](#)
 - Embedded Software [to perform enterprise-specific tasks](#)
 - Product-line Software
 - Web/Mobile Applications [html, css, hypertext](#)
 - Artificial Intelligence Software [chatgpt, copilot, face recognition](#)

one point failure -
system down that
effects other system

Discuss the important features of each category and how they affect the development of the software.

4. Describe Polya’s Problem Solving Techniques and how it relates to the software engineering process.
[understand the problem, plan a solution, carry out the plan, examine the result for accuracy](#)
5. Other than good knowledge and skills in computer programming, what are the other abilities that good software engineers should have?
[communication, documentation, problem solving, critical thinking](#)

Part B: Exploration

1. Search the Internet for information on “software crisis”. Discuss how this situation developed the need for software engineering process.
2. Identify a software that you are using together with other students. Answer the following questions:
 - a) Specify the software application domain and category of the software.
 - b) Who are the main users of the software? Specify at least 3 different roles for the software.
 - c) For each role, describe a few main functions provided by the software for the role.

- d) What additional features that you would like to add to the software?
- e) Describe possible factors that would affect the software to be updated to a newer version.

Part C: Project

Objective: To form the project group, initial domain study.

1. Identify members of tutorial to form a project group. You can submit the names to the location specified by the tutorial lecturers to record the group.
2. Discuss the software system for the project, identify the main users and processes in the system. Try to determine the main outputs of the system and how they could be created from the processing in the software.
3. Based on the information, write a short description for the software (about one or two paragraphs).