CHAPTER ONE: **Software and software engineering**

In this chapter you will learn:

1. How does software differ from other products?
2. How does software change over time?
3. What do we mean when we talk about high-quality software?
4. How can we define software engineering? Why will following a disciplined

approach to software engineering help us produce successful software

systems?

1. What activities occur in every software project?

**The paragraphs required:**

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|  | **Title of pographs** | **Electronic Page** | **notes** |
| **1.1** | **The nature of software** | **29-30** |  |
|  | **Types of of software & their differences**  | **30-33**  |  |
| **1.2**  | **What is Software engineering**  | **33- 35** |  |
| **1.4**  | **Stakeholders**  | **37-** | **E2** |
| **1.5**  | **Software quality**  | **38-41**  |  |
| **1.7**  | **Activities common to software projects** | **43-47** |  |

***Questions:***

1. what are the factors that make software system differs from mechanical systems or electric system. Justify each one? (p.28-30)

2: Classify types of software? Give example for each one. p(30)

3: solve exercise E1.

4. What is software engineering? Satisfy the important factors in the definition.

Def. *software engineering* is the **process of solving customers’ problems** (1) by the

**systematic development and evolution** (2) of **large, high-quality software systems(3)**

**within cost, time and other constraints** **(4)**.

You have to know the meaning for each of 1,2,3 and 4.

5. Software engineer is not need to be a good negotiator. (T,F) p.34

6. What are the differences between Technology and Technique?

Note: Make search to get the solution.

 7. (Elective ) Is software engineering branch of the engineering or computer science ?

 8. Stakeholder is classified into four major categories. State these categories and the task of each one.

 9. What does the word ‘quality’ really mean?

 10. State the five attributes of software quality? Describe each one abstractly with example.

 11. Solve Exercise E1 and E3.

Summary

Important keywords: Software engineering, custom sw, generic sw, data processing sw, COST sw, real time sw, embedded sw, Software engineering vs chemical engineering, efficiency , usability, reusability, reliability, maintability.