

**SE (Software Engineering)**

**Assignment # 1**

**Semester**: 3ndSemester

**Section**: C

**Submitted To:**

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**a. Differentiate between Project, Process and Product?**

1. **Project**

* **Project is a temporary endeavor that is designed to produce a unique product, service, or result.**
* **A project has a defined start and end date and is undertaken to achieve specific goals and objectives.**

1. **Process**

* **Process is a set of interrelated activities that transform inputs into outputs.**
* **A process is a series of steps that are followed to achieve a particular outcome.**

1. **Product**

* **Product is an output of a project or process that can be a tangible or intangible object, service, or result.**
* **A product is the output of a project or process that can be sold, used, or consumed.**

**b. Define stakeholders?**

**Stakeholders are individuals or groups who have an interest in the software system being developed. They can be internal (e.g., developers, testers) or external (e.g., customers, users) to the organization. Stakeholders can influence the development process by providing feedback on requirements, design, and testing.**

**c. What is a Software Requirements Specification? Why we need it. Discuss in detail.**

A **Software Requirements Specification (SRS)** is a document that describes the requirements for a software system. It includes functional and non-functional requirements, constraints, and assumptions. We need an SRS to ensure that all stakeholders have a common understanding of the software system being developed and to provide a basis for estimating costs and schedules. An SRS typically includes sections on purpose, scope, definitions, functional requirements, non-functional requirements, constraints, assumptions, and acceptance criteria.

**d. How many types of Software Requirements are there? Describe and state examples.**

There are two types of software requirements:

* Functional Requirements
* Non-functional Requirements.

Functional requirements describe what the software system should do in terms of inputs, processes, and outputs. Non-functional requirements describe how well it should do it in terms of performance, reliability, usability, security, and other quality attributes. Examples of functional requirements include “The system shall allow users to create new accounts” and “The system shall display search results within 5 seconds”. Examples of non-functional requirements include “The system shall be available 99% of the time” and “The system shall be able to handle 1000 concurrent users”.

**e. Describe the software development process briefly.**

The software development process typically consists of the following phases:

* Requirements Gathering
* Design
* Implementation
* Testing
* Maintenance.

During the Requirements Gathering phase, stakeholders’ needs are identified and documented in an SRS. In the Design phase, the architecture and detailed design of the software system are created based on the SRS. In the Implementation phase, the code is written and tested against the design specifications. In the Testing phase, the software system is tested against functional and non-functional requirements to ensure that it meets stakeholder needs. Finally, in the Maintenance phase, defects are fixed, and changes are made to keep the software system up-to-date.