

**SE (Software Engineering)**

**Assignment # 1**

**Semester**: 3ndSemester

**Section**: C

**Submitted To:**

**Mr. Sajid Hussain**

**Submitted By:**

**Name**: Faisal Khan

**Roll No**: 22-CS-039

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

**Project**: A temporary endeavor undertaken to create a unique product, service, or result.

**Process**: A set of activities that are carried out in order to achieve a particular outcome.

**Product**: The tangible or intangible output of a project or process.

**Examples:**

* Project: Building a new bridge, developing a new software product, launching a new marketing campaign.
* Process: Manufacturing process, software development process, customer service process.
* Product: Software product, bridge, marketing campaign.

**b. Define stakeholders?**

Stakeholders are individuals or groups who have an interest in the outcome of a project or process. They can be internal or external to the organization, and they can have a positive or negative impact on the project.

Examples of stakeholders in a software development project:

* End users
* Customers
* Developers
* Project managers
* Business analysts
* Quality assurance engineers
* Executives

**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 functional and non-functional requirements for a software product. It is used by the development team to understand what needs to be built and by the customer to ensure that the product meets their expectations.

Why we need an SRS:

* To ensure that the software product meets the needs of the customer and the end users.
* To provide a common understanding of the requirements to the development team.
* To serve as a basis for testing the software product.
* To help manage changes to the requirements during the development process.

Contents of an SRS:

The SRS should typically include the following sections:

* Introduction: This section provides an overview of the software product, including its purpose, scope, and audience.
* Requirements: This section describes the functional and non-functional requirements for the software product.
* Use cases: This section describes the different ways in which the software product will be used.
* Priorities: This section prioritizes the requirements, so that the development team can focus on the most important requirements first.
* Glossary: This section defines any terms that are used in the SRS.

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

There are two main types of software requirements: functional and non-functional.

Functional requirements:

* Functional requirements describe what the software product should do. For example, a functional requirement for a web browser might be **"The web browser must be able to display HTML pages."**

Non-functional requirements:

* Non-functional requirements describe how the software product should perform. For example, a non-functional requirement for a web browser might be **"The web browser must be able to load a web page in less than 5 seconds."**

Other types of software requirements include:

* **User requirements:** These requirements describe the needs of the end users.
* **Business requirements:** These requirements describe the needs of the organization.
* **Quality requirements:** These requirements describe the quality standards that the software product must meet.

Here are some examples of software requirements:

* **Functional requirement:** The software product must be able to calculate the total price of a shopping cart.
* **Non-functional requirement:** The software product must be able to handle 100 concurrent users.
* **User requirement:** The software product must be easy to use for people with no technical experience.
* **Business requirement:** The software product must be able to generate reports that can be used to track sales data.
* **Quality requirement:** The software product must be able to run for 24 hours without crashing.

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

The software development process is a set of activities that are carried out to create a software product. The process typically includes the following phases:

1. **Requirements gathering and analysis:** This phase involves identifying and understanding the needs of the customer and the end users.
2. **Design:** This phase involves creating a blueprint for the software product.
3. **Development:** This phase involves writing and testing the software code.
4. **Testing:** This phase involves testing the software product to ensure that it meets the requirements and that it is free of defects.
5. **Deployment:** This phase involves making the software product available to the customer and the end users.
6. **Maintenance:** This phase involves fixing defects and adding new features to the software