

**SE (Software Engineering)**

**Assignment # 1**

**Semester**: 3ndSemester

**Section**: C

**Submitted To:**

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**1. Answer the following:**

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

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| --- | --- | --- | --- |
| **Characteristic** | **Project** | **Process** | **Product** |
| **Definition** | A temporary endeavor undertaken to create a unique product, service, or result. | A set of activities that are carried out in order to achieve a particular outcome. | The tangible or intangible output of a project or process. |
| **Focus** | On the delivery of a specific outcome. | On the improvement of the way things are done. | On the creation of value for customers or users. |
| **Duration** | Temporary. | Ongoing. | Ongoing. |
| **Examples** | Building a new bridge, developing a new software product, launching a new marketing campaign. | Manufacturing process, software development process, customer service process. | 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 include:

* 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
* Requirements
* Use cases
* Priorities
* Glossary

**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
* Business requirements
* Quality requirements

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
2. Design
3. Development
4. Testing
5. Deployment
6. Maintenance

The software development process can be iterative or incremental. In an iterative process, the software product is developed in small increments, with each increment being tested and deployed before the next increment is developed. In an incremental process, the software product is developed in larger increments, with each increment being a complete version of the product.

The specific software development process that is used will vary depending on the size and complexity of the software product, the needs of the customer, and the preferences of the development team.