Roll No:_____ Name:_____

Assignment 1

Weight : 3.33%

Submission Instructions

- **Submission Deadline:** All assignments must be submitted in **hardcopy** form on **Monday**,**16th September** at the **start of class**.
- **Late Submissions:** Any assignments submitted after the class will **not be accepted** and will be marked as **0**.
- **Plagiarism Policy:** Plagiarism of any kind is strictly prohibited. Any assignment found to contain plagiarised content will be given a **0**.
- Ensure that your work is original and properly cited where applicable.

Scenario 1: Developing an E-Commerce Website

A small retail company wants to develop an e-commerce website to sell products online. The requirements are well-understood, and the features are fairly standard: product listings, shopping cart, payment gateway, and order tracking. The company wants a complete solution delivered in a short time frame with minimal changes during development.

- **Which process model would you choose?**
- **Why?**

Answer:
Waterfall model is the most appropriate here. The requirements are well-defined from the start, and the project can proceed in a linear fashion from requirements gathering, to design, coding, testing, and deployment. Since the project scope is clear, this structured approach ensures timely delivery with fewer risks of scope changes.

Scenario 2: Developing a Mission-Critical Space Exploration System

A space agency is developing mission-critical software for controlling a spacecraft. The software must be extremely reliable with no room for errors, and it needs to go through rigorous testing and validation before being deployed. Failure is not an option due to the high stakes.

- **Which process model would you choose?**
- **Why?**

Answer:

The Waterfall model would be the best choice here due to the high reliability and strict validation requirements. The linear nature of Waterfall allows for thorough documentation, validation, and testing at each stage before moving on to the next phase. This ensures that every requirement is met, and the system is thoroughly tested before deployment.

Scenario 3: Developing a National Healthcare Record System

A government health department is planning to create a nationwide healthcare record system. The project will span multiple years, involve various stakeholders (doctors, patients, administrators), and needs to comply with strict data privacy regulations. There is a high degree of risk due to the scale, complexity, and regulatory requirements.

- **Which process model would you choose?**
- **Why?**

Answer:

The Spiral model is ideal here due to the high complexity, involvement of multiple stakeholders, and significant risks. The iterative cycles in Spiral allow for continuous risk analysis, mitigation, and refinement based on feedback from different stakeholders, while ensuring compliance with regulations at each phase.

Scenario 4: Building an Experimental Augmented Reality (AR) Application

A tech company is working on an experimental AR application that integrates with wearable devices. The technology is still in its infancy, and the project involves a lot of research, testing, and uncertainty about the final product. The team expects to pivot based on findings and evolving technology trends.

- **Which process model would you choose?**
- **Why?**

Answer:

The Prototyping model is the best fit here due to the experimental nature of the project. Creating prototypes allows the team to explore different concepts and test their feasibility without committing to a final design. It helps in refining the product based on research and testing, especially when dealing with new and evolving technology

Scenario 5: Developing a Cloud-Based CRM System for a Large Corporation

A large corporation wants to build a cloud-based Customer Relationship Management (CRM) system that can scale with its growing user base. The system needs to integrate with several other internal systems, and the corporation wants to ensure that the system can handle large-scale usage without performance degradation. They expect frequent updates and improvements after launch.

- **Which process model would you choose?**
- **Why?**

Answer:

The **Object-Oriented model** is ideal here due to the need for scalability, integration with other systems, and frequent updates. Object-Oriented design allows for modular development, where different components of the CRM system (e.g., user management, reporting, integration modules) can be reused, tested, and updated independently without affecting the entire system