IT314 – Software Engineering

Lab 1 – July 31, 2023

Nishith Parekh – 202101449

Q1. A simple data processing project.
Ans. Waterfall: This project is an existing manual project. So, there would be no changes in the requirements. And thus, a step by step approach would work which is suitable for the waterfall model.

Q2. A data entry system for office staff who have never used computers before. The user interface and user-friendliness are extremely important.
Ans. Prototype: This system requires a strong User Interface, which is suitable for a prototype model.

Q3. A spreadsheet system that has some basic features and many other desirable features that use these basic features.
Ans. Spiral Model: The team needs to incrementally add new features satisfying the requirement of the spreadsheet system. Thus, the spiral model is suitable for iterative development.

Q4. A web-based system for a new business where requirements are changing fast and where an in-house development team is available for all aspects of the project.
Ans. Agile Model: The Agile model ensures adaptive planning and more changes, making it easier to respond to changing business needs and the presence of the development team also supports the model.

Q5. A Web-site for an on-line store which has a long list of desired features it wants to add, and it wants a new release with new features to be done very frequently.
Ans. Iterative Model: The Iterative model involves building the software in small increments, with each increment adding new functionality to the system. Thus

website would be an iterative model which would allow subsequent iterations based on customer feedback.

Q6. A system to control anti-lock braking in a car.
Ans. Spiral Model: The project has fixed requirements with scope of future updates for software improvements. Thus, a spiral model is suitable as it also a combination of waterfall and iterative model.

Q7. A virtual reality system to support software maintenance.
Ans. Iterative Model: The incremental model allows user interaction. Thus, helping in getting user feedback and thus improve the system.

Q8. A university accounting system that replaces an existing system.
Ans. Incremental Model: The incremental model is suited for replacement of an existing system. It ensures the core functionality remains the same even after incrementing the existing features.

Q9. An interactive system that allows railway passenger to find train times from terminals installed in stations.
Ans. Iterative Model: The Iterative model involves developing the software in small, manageable increments. It also allows user feedback at various stages. Thus, the railway system would be iterative system.

Q10. Company has asked you to develop software for missile guidance system that can identify a target accurately.
Ans. Spiral Model: The spiral model ensures risk handling and is favoured for larger projects. The flexibility and user interaction also helps. Thus, the spiral model suits the missile guidance system.

Q11. When emergency changes have to be made to systems, the system software may have to be modified before changes to the requirements have been approved. Choose a process model for making these modifications that ensures that the requirements documents and the system implementation do not become inconsistent.

Ans. Iterative Model: In situations where emergency changes are required, the Iterative model allows for a rapid response. The flexibility in requirements and iterative development also favours the system.

Q12. Software for ECG machine.
Ans. Spiral Model: The risk driven and iterative approach of spiral model facilitates the software. It also allows testing, validation and feedback which can make the ECG machine more efficient for medical use.

Q13. A small scale well understood project (no changes in requirement will be there once decided).
Ans. Waterfall Model: The features of the project, small scale, no changes in requirement once decided are all properties of waterfall model. Thus, the project is a waterfall model.