IT314 - Software Engineering

Shivang Kacha
202101488

July 31, 2023

Lab-01 Choosing Software Process Models

(a) A simple data processing project.

Process Model: Waterfall Model
Reason: The project is simple, and requirements are well-defined and of limited complexity.

(b) A data entry system for office staff who have never used computers before. The user interface and user-friendliness are extremely important.

Process Model: Prototype Model
Reason: Less experience teams, System with novice users, Requirements are not clear

(c) A spreadsheet system that has some basic features and many other desirable features that use these basic features.

Process Model: Spiral Model
Reason: Component-Based Development is suitable for a system with a core set of basic features that can be leveraged to build other desirable features. It enables faster development by reusing existing components.

(d) 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.

Process Model: Iterative Model
Reason: Requirements are not clear but will evolve and is a big project.

(e) A website for an online 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.

Process Model: Spiral Model
Reason: Component-Based Development is suitable for a system with a core set of basic features that can be leveraged to build other desirable features. It enables faster development by reusing existing components.

(f) A system to control anti-lock braking in a car.

Process Model: Waterfall Model
Reason: Simple and requirements are well defined.

(g) A virtual reality system to support software maintenance

Process Model: Incremental Model
Reason: The requirements of the system will change and cannot be predicted before the implementation and require complex programming for the software. This software is not a critical system.

(h) A university accounting system that replaces an existing system

Process Model: Waterfall Model
Reason: The requirements of this system can be predicated in advance because of the existing system. This is a mission-critical system, and the requirements are stable and reusable.

(i) An interactive system that allows railway passenger to find train times from terminals installed in stations.

Process Model: Prototype and incremental model
Reason: The user's requirement may likely change and fast delivery must be implemented.

(j) Company has asked you to develop software for missile guidance system that can identify a target accurately.

Process Model: Spiral Model
Reason: Risk is high, requirements are evolving and big project.

(k) 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 ensure that the requirements documents and the system implementation are consistent not become inconsistent.

Process Model: Spiral Model
Reason: The Spiral Model allows for risk assessment and prototyping, making it suitable for situations where emergency changes are required. It enables quick iterations and adjustments to accommodate immediate changes.

(l) Software for ECG machine.

Process Model: Waterfall Model
Reason: The model is simple, and requirements are well-defined in advance.

(m) A small scale well-understood project (no changes in requirement will be there once decided).

Process Model: Waterfall Model
Reason: The model is simple, and requirements are well-defined in advance.