

It-314 Software Engineering

Name-Harsh Chiragbhai Patel

Student Id-202101183

Lab group-03

Lab-1

a) A simple data processing project.

Model-Waterfall model

Reason-It is well adapted for simple data processing project with precise requirements. It allows systematic approach towards the development ensuring each aspect is covered before going onto the next level. However waterfall model should not be preferable for projects requiring complex functionality because it requires more flexibility and compatibility.

b) A data entry system for office staff who have never used computers before.

The user interface and user-friendliness are extremely important.

Model-Prototype model

Reason-It can be used as office staff is new to using computers. There is room for further change based on the user feedback, risk analysis and security aspects, resulting in a user-friendly and effective system.

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

Model-Incremental model

Reason-A spreadsheet system is a type of system where some modifications happen every now and then. Also this model is flexible and compatible for this type of system.

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.

Model-Agile model

Reason: This is a kind of system which is complex in requirement and everyday users are changing and new users are joining. This agile model is perfect for it in order to produce high quality software.

e) 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.

Model-Agile-Scrum model

Reason-I will use the Agile model as new features will be added so that I can divide it into many parts so that work can be started on them, after that they can be merged into the main software and release the updated software.

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

Model-Incremental model

Reason-As new features will be added subsequently as the research goes on. Thus incremental system is useful as we will upgrade our software gradually in an increasing manner.

g) A virtual reality system to support software maintenance

Model-Prototype model

Reason-The Rapid Prototyping Model enables the efficient development of a Virtual Reality system for software maintenance by rapidly iterating, gathering feedback, and refining the system based on user needs.

h) A university accounting system that replaces an existing system

Model-Incremental model

Reason- Taking an incremental approach minimises the risks associated with a full-scale replacement, making the transition smoother for users. Continuous feedback and testing throughout the process ensure a robust and user-friendly accounting system for the university.

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

Model-Evolutionary model

Reason-As user may not be familiar with user interface. In order to evaluate the system user trials on the prototype for each functionality and reduce the error, we may use this model.

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

Model-Spiral

Reason-This model provide high degree of accuracy,precision which is required by the user as stated in the problem statement.

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 ensures that the requirements documents and the system implementation do not become inconsistent.

Model-Spiral/Agile

Reason-The Spiral Model is an iterative, risk-driven software development model emphasizing constant evaluation and feedback. It allows for flexible development and accommodates changes during development, making it well-suited for emergency changes. It enables continuous evaluation, risk management, and flexible development while ensuring the requirements and system implementation remain consistent.

l)Software for ECG machine.

Model-Spiral

Reason-This problem require high accuracy and great expertise and zero chance of error.Hence spiral is suitable for it where every step is rechecked.

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

Model-Waterfall

Reason-As there will be no modifications in requirements it is ideal for project with clear need to use the waterfall model.