

Software Engineering [IT-314]

Lab - 01

[Choosing software process models]

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1. A simple data processing project

ANS : Waterfall

WHY : We know all the requirements of the process and that requirements are fixed and are not changed anywhere. Hence, the Waterfall model is used.

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

ANS : Prototype

WHY : Here the office staff is of less experience i.e a novice user so it becomes important for him to become familiar with the UI interface. Hence, a prototype model is used.

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

ANS : Incremental

WHY : Here we are given the basic features and other features are implemented using the same basic features. Hence, an Incremental model is used.

4. 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

WHY : Here we can change the things/code more easily and flexibly. The changes which need to be done can be done faster. Hence, the Agile model is used.

5. 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.

ANS : Agile-Scrum

WHY : Here we can change the things/code more easily and flexibly. The changes which need to be done can be done faster. The only difference is we can divide the features into different sprints and each sprint can be handled differently. Hence, the Agile-Scrum model is used.

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

ANS : Spiral

WHY : Here human life is involved due to which risk should be reduced and it is minimized in the spiral model. Hence, a Spiral model is used.

7. A virtual reality system to support software maintenance.

ANS : Evolutionary

WHY : Here we have to continuously evolve in terms of software development along with the world. Hence it requires the maximum iteration and maximum updates in their software. The Evolutionary model contains both, hence the Evolutionary model is used.

8. A university accounting system that replaces an existing system.

ANS : Waterfall

WHY : Here the university accounting system already exists and hence the functionality is already known. Hence, the Waterfall model is used.

9. An interactive system that allows railway passengers to find train times from terminals installed in stations.

ANS : Prototype and Evolutionary

WHY : Here the users are not aware of the UI initially and hence prototype model should be used. But at the same time, rapid and fast updates i.e newer versions should be released multiple times. Hence, an incremental model is used. Hence, Prototype and Evolutionary models are used.

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

ANS : Spiral

WHY : Here the risk factor in the software should be decreased as this is the matter of life and death. So, the model which decreases the risk factor should be used. Hence, a Spiral model is used.

11. 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 : Agile

WHY : Here the changes in the software requirements should be done faster and immediately when required. Hence, the Agile model is used.

12. Software for ECG machine.

ANS : Spiral

WHY : Here the risk factor in the software should be decreased as this is the matter of life and death. So, the model which decreases the risk factor should be used. Hence, a Spiral model is used.

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

ANS : Waterfall

WHY : Here the project is well understood and requirements are already known. Also it is a small scale project which in future does not require any changes. Hence, the Waterfall model is used.