IT-314 Software Engineering

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Lab Group : 4

Lab : 1

1. **A simple data processing project.**

   Model : Waterfall

   Reason : Here, We know the basic requirements beforehand, and requirements are also fixed. Thus Waterfall model is the best suitable approach to use.

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

   Model : Prototyping

   Reason : Here, The user is a novice. So they desire attractive UI/UX facilities. Thus Prototyping model is the best suitable approach to use.

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

   Model : Incremental

   Reason : Here, We need some desirable feature that uses the primary feature of the spreadsheet system. Thus Incremental model the is best suitable approach to use.

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.**

   Model : Agile

   Reason : Here, requirements are changing too fast, and also development team is available. Thus Agile model is the best suitable approach to use.

5. **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

   Reason : Here, the Client needs to add more desired features and also wants to release it very frequently. So we can divide project into sprints. Thus Agile – Scrum model is the best suitable approach to use.

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

   Model : Waterfall

   Reason : Here, we must carefully define all sets of required features before implementing features as it is a system to control anti-lock braking in a car. Thus Waterfall model is the best suitable approach to use.

7. **A virtual reality system to support software maintenance.**

Model : Incremental

Reason : Here, requirements keep changing in to support the maintenance part. So we need to improve the basic requirements. Thus, Incremental model is best suitable approach to use.

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

Model : Waterfall

Reason : Here, Since we need to replace an existing system and are already familiar with its functions and requirements, We can use waterfall model. There will be no more advancements to the current model or criteria. Thus, Waterfall model is the best suitable approach to use.

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

Model : Incremental

Reason : Here, At first, we only release the software with the basic functionality of finding train times of terminals. This is the software's primary goal. Now as time goes on, we continue to identify new functionalities and release newer versions of the software. Thus Incremental model is the best suitable approach to use.

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

Model : Spiral

Reason : Here, Project is on big scale and has critical functionalities such as time. Also target can be different so requirements are changing. Thus, Spiral model is the best suitable approach to use.

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.

Model : Spiral

Reason : Here, Requirements keep changing and, they need to be modified. Also, the requirements documents and the system implementation are consistent, this is the feature of spiral model. And spiral model provides customer interaction, iterative development. Thus Spiral model is the best suitable approach to use.

12. Software for ECG machine.

Model : Iterative Incremental

Reason : Here, We need a reliable and effective medical device ensured through continual improvement, early delivery of core functionality, incorporation of user feedback, risk management, and user feedback. Thus, Iterative Incremental model is the best suitable approach to use.

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

Model : Waterfall

Reason : Here, Requirements are frozen, and it is a small-scale project. These all are features of Waterfall model. Thus, Waterfall model is the best suitable approach to use.