

## **IT314 - Software Engineering: Lab-1(202101428)**

1. A simple data processing project. - Waterfall Model.
  - Since requirements are clear enough from the start ; Waterfall Model works well and helps in building and sequencing the tasks in a synchronised manner which leads to better quality control.
2. A data entry system for office staff who have never used computers before. The user interface and user-friendliness are extremely important. - Prototyping.
  - Since the user interface and friendliness is important and the staff haven't used the computers before; it would be a lot beneficial for novice users if we build an initial prototype and then improve on the product while adjusting to the requirements.
3. A spreadsheet system that has some basic features and many other desirable features that use these basic features. - Prototyping.
  - Since we have to include new features on every iteration, it would be a lot easier to build a prototype with basic features and then evolving the prototype by adding new features.
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 - Agile XP Programming Model.
  - Since the business requirements are changing rapidly and, we have an in-house development team - we can implement pair programming(Feature of XP method) and make the development and testing of the code faster and more accurate.
  - (We can also use spiral incremental methods if the risk involvement in the business and the requirements is more but in my opinion XP is more accurate).
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. - Agile SCRUM model.
  - Since it has to add new releases with every feature Frequently; the web-site can be implemented using sprints in SCRUM Model. In every Sprint Review Session the existing features can be reviewed and new features can be added accordingly.
6. A system to control anti-lock braking in a car. - Waterfall Model.
  - Since the requirements are clear enough from the start , the Waterfall Model will be of most use and feasible.
7. A virtual reality system to support software maintenance - Incremental Model(Evolutionary Prototype).

- Since the requirements are not clearly known from the start and will evolve, as well as we are developing a new concept the Incremental Model will be most suitable due to good adaptability and change management, and will improve user interface as well.
- 8. A university accounting system that replaces an existing system - WaterFall Model.
  - Since we are replacing an existing system , most of the requirements are known before implementing the new system and therefore a few additions of features or changes to the initial system will build the new accounting system(Thus Following Waterfall Method).
- 9. An interactive system that allows railway passenger to find train times from terminals installed in stations. - Evolutionary Prototype - Incremental Method.
  - The purpose of the idea is clear, however due to it being an interactive system using Incremental Method thus will improve the features and requirements in every stages, and since the users are new to the system, prototyping will improve User Interface and User - Friendliness at every new release of the system.
- 10. Company has asked you to develop software for missile guidance system that can identify a target accurately. - Spiral Incremental Model.
  - Since risk involvement is very high in this system, Spiral Model is necessary to minimize the risk and The Spiral Incremental Model will help in developing the most accurate system.
- 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. - Prototype Model.
  - Since we have to make emergency changes to the systems, it would be beneficial to make a Prototype Model which adjusts to the new changes, and since every time the changes are different , to keep the documents consistent a new prototype model will be designed.
- 12. Software for ECG machine - incremental Model.
  - It would be most beneficial to have an incremental model as we will first build the software with basic requirements followed by some advanced software features for which the incremental model helps us the most.
- 13. A small scale well understood project (no changes in requirement will be there once decided). - Waterfall Method.
  - Since the requirements won't change once decided, it would be most beneficial to implement the WaterFall Method.