



Lab 001

Software Development Models

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a) A simple data processing project.

- **Model :** Waterfall
- **Reason :** In this simple data processing project I'll use waterfall model because we priory knows all of the requirements that are there in this project and requirements are fixed so there will not be any further changes required. So, Waterfall model is therefore the most appropriate approach to use.

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
- **Reason :** In this project I'll use prototype model as user want nice UI/UX facility because they are not familiar with this type of functionalities. So, Prototype model is therefore the most appropriate approach to use.

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

- **Model :** Waterfall
- **Reason :** In this project I'll use waterfall model as spreadsheet system is implementing basic features and waterfall model is suited for this kind of small requirements project. So, Waterfall model is therefore the most appropriate approach to use.

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
- **Reason :** In this project I'll use Agile Model as the user requirements are changing too fast and when user requirements are changing fast then agile model is more suitable for this type of functionalities. In agile model user is involved at every development stage to deliver 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
- **Reason :** In this project I'll use Scrum Model as the new features to be done very frequently so we divide our project in different sprints and each new sprint starts immediately after completion of previous sprint. So, the release with new features to be done very frequently.

f) Anti-lock braking system.

- **Model :** Waterfall
- **Reason :** In this project I'll use waterfall model as this is the safety control model so we need to identify all sets of required features carefully before implementing features. So, Waterfall model is therefore the most appropriate approach to use.

g) A virtual reality system to support software maintenance.

- **Model :** Agile
- **Reason :** In this project I'll use Agile model as virtual reality system should be having nice user interface and incremental development is also required as requirements can be changed. So, I think Agile model is most suitable for this kind of system.

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

- **Model :** Waterflow
- **Reason :** In this project I'll use Waterflow model as we need to create an existing system so we are very much familiar with the functionalities and requirements of the system. As we priorly familiar with the requirement we can use waterflow model because there will not be any further increments in existing model and requirements are also frozen. So that Waterfall model is most suitable for this kind of system.

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

- **Model :** Incremental
- **Reason :** In this project I'll use Incremental model as that is not need to release software with full functionalities. In initial stage we identify that basic functionalities are of just find train times of terminals so we can first release the software with this functionality only which is the main objective of the software and as time flows, we identify more and more functionalities and release newer version. So that Incremental model is most suitable for this kind of system.

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

- **Model :** Spiral
- **Reason :** In this project I'll be using the Spiral Model as it is a very big project, and some of its functionalities are critical like time so we can't take any risk therefore Spiral model needs to be used. Also target in different scenarios may change means requirements are also changing. So that Spiral model is most suitable for this kind of system.

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
- **Reason :** In this project I'll be using the Spiral Model because it is suitable for making emergency changes to systems as it allows for risk management, iterative development, prototyping, customer involvement, flexibility, and thorough verification and validation, ensuring that the requirements documents and the system implementation also remain consistent during the emergency change process.

l) Software ECG Machine.

- **Model :** Iterative incremental
- **Reason :** In this project I'll be using the Iterative and Incremental Development Model because it enables continuous improvement, early delivery of core functionality, user feedback incorporation, risk management and ensuring a reliable and effective medical device.

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

- **Model :** Waterflow
- **Reason :** In this project I'll be using Waterflow model of software engineering as there will no changes in the requirements means requirements are frozen and it is a small scale project. This all are things are part of waterflow model. So that Waterflow model is most suitable for this kind of system.