

# **IT 314 - Software Engineering**

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Group : 5

## **Lab 01 - Choosing Software Process Models**

a) **A simple data processing project.**

**Ans. Waterfall Model.** The requirements are predetermined ('frozen') and don't require any changes, so the Waterfall Model is best suited.

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

**Ans. Prototyping Models.** UI is important as the users have no experience of computers, that is, they require a user-friendly software. Prototyping models are best suited for this.

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

**Ans. Evolutionary Prototyping Model.** The software requirements need to be added in this case, also the software shouldn't lose its old features, that means it doesn't need to be discarded.

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.**

**Ans. Simple Incremental Model.** The requirements are changing fast and also there is just one team for every aspect of the project, so a simple incremental model should work.

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.**

**Ans. Incremental Waterfall Model.** Multiple features would be released frequently with desired changes, which is best suited for the Incremental Waterfall Model.

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

**Ans. Waterfall Model.** Since the ABS in the car has specific requirements and functionality known beforehand, this is the job of the Waterfall Model.

g) **A virtual reality system to support software maintenance.**

**Ans. Incremental Prototyping Model.** Virtual Reality is a relatively new concept development and user requirements will evolve in future.

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

**Ans. Throw-away Prototyping Model.** The software needs to be completely replaced after the new build, so this model would be best suited.

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

**Ans. Iterative Model.** Time is of vital importance here as it is an interactive system. Quick response is desired for any user query, so an Iterative model should be used.

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

**Ans. Spiral Model.** This is a very critical project and risks are not desirable. Also the type of target may change.

- 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.**

**Ans. Iterative Model.** It requires rapid changes to be done even without being approved. Time is critical here and also the software should not become inconsistent, so the Iterative model is perfect.

- l) **Software for ECG machine.**

**Ans. Waterfall Model.** All the requirements are known beforehand and the functionality is known.

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

**Ans. Waterfall Model.** This is a small scale, well understood project with no requirement changes. Waterfall model would provide a structured approach from start to finish.