

IT314 – Software Engineering

[Lab Session I]

☼ Choosing Software Process Models :-

a) A simple data processing project.

- For simple data processing project, **Waterfall Model** would be appropriate because simple data processing is a well understood and requirements are not changing so we can follow the sequence process of activities.

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

- For the given system, **Prototyping Model** would be appropriate because the system has novice users as they have not used computer before and in this system UI(User Interface) is very important.

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

- For a spreadsheet system, **Incremental Model** is suitable because for this system there are some basic features and other desirable features can be added to the system with basic features.

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.

- As requirements are changing fast for given system and an in-house development team is available for all aspects of the project, **Iterative Model** would be suitable. Also it allows continuity or flexibility between workers and clients.

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.

- As this website has a desired features initially that it wants to add and frequently it wants to add a new release with new features and as it gives regular deliveries or frequent releases, so **Agile Model** would be appropriate.

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

- For this system, **Waterfall Model** would be appropriate as it follows sequential approach and requirements are not changing so easy to be understood.

g) A virtual reality system to support software maintenance

- For this system, **Spiral Model** would be suitable because for virtual reality there would be rapidly emerging technologies and it follows each phase by evaluation then planning of next phase and it goes for iterative development.

h) A university accounting system that replaces an existing system

- The suitable model for the system is **Waterfall Model** because the system requirements are likely to be known or predictable so it would be simple to be understood.

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

- For this system, **Iterative Model** would be suitable because they enable ongoing user feedback and iterative modifications to make sure the system satisfies the needs of the passengers.

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

- For this system, **Spiral Model** would be suitable because the model accurately reflects the iterative nature of software development on projects with unclear requirements and it is going for continuous iteration to minimise the risk and to ensure system's accuracy.

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.

- As emergency changes have to be made to the system **Iterative Model** would be suitable. So it will go for interactive process for making emergency modifications that ensures that the requirements

documents and the system implementation do not become inconsistent.

l) Software for ECG machine.

- For this kind of medical equipments, **Incremental Model** would be efficient because this kind of machines require continuous testing to make sure its accuracy and safe to use.

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

- As no changes in requirement will be there once decided and itself is a well understood project, the appropriate model would be **Waterfall Model**.