IT-314
Software Engineering

Hardik Mehta
Id:202101506

Lab 1: Choosing Software Process Models

Giving reasons for your answer by taking examples (features, non-functional aspects, domain) based on the type of system being developed, suggest the most appropriate generic software process model that might be used as a basis for managing the development of the following system.

a) A simple data processing project.

Ans:- The requirements for a simple data processing project are well defined and clear and would have minimal or no changes, hence **Waterfall model** will be the most appropriate software model process that might be used as a basis for managing the development of the project.

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

Ans:- For this project the most appropriate process model will be the **Prototype model** as prototyping helps understand the requirements better and can have more flexibility than the waterfall model.

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

Ans:- The model that most appropriately fits the given project is **Incremental model** as in this model as there are some basic functionality can be implemented and further features can be added later.

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:- **Agile model** will be most suitable for this time of project where requirements are changing very fast. The agile model is most suitable for projects where time is of
great importance.

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:- Most suitable model for an on-line store is **Agile mode**. As, this model can be released in less time and then can be updated as and when new features are to be added.

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

Ans:- **Waterfall model** is most suitable model as the requirements for this software are well-defined and would not change in future.

g) A virtual reality system to support software maintenance.

Ans:- Virtual reality system can be implemented using the **Agile model** because it is a relatively new technology and the requirements are not very well defined. Also, consumer satisfaction is more important for the development of this project.Hence, Agile model is most suitable.

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

Ans:- **Waterfall model** is most suitable because the requirements are very well defined and also this is an automation of an existing manual process.

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

Ans:- **Incremental model** is most suitable as the initial software can be released with bare functionalities like displaying train times and further functionalities can be added as and when required.

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

Ans:- The **Spiral Model** is most suitable for missile guidance system as it requires customer feedback and needs to be accurate. It is also a very huge project hence spiral model will most suitable.

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:- The **Spiral Model** is most suitable for this project because emergency changes can be incorporated in the software and also the requirements are well documented in each cycle of the spiral model.

l) Software for ECG machine.

Ans:- **Iterative model** will be the most suitable because the base functionalites can be delivered early and additional features can be added later after risk management and user feedback. Thus providing a reliable and effective medical service.

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

Ans:- **Waterfall model** will be the most effective because the requirements are well understood and there will be no changes in them once decided.