IT314-Software Engineering[Lab-1]

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❖ Choosing Software Process Models:-

a) A simple data processing project.

- For this project, I would recommend using the **Waterfall model**. This is because the project is simple and the requirements are likely to be clear and well-defined. The Waterfall model is a linear and sequential approach, which allows for easy planning and execution of the project, making it suitable for simple projects like this.

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

- For this project, I would recommend using the **prototyping model.** This is because the user interface and user-friendliness are extremely important. 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 this spreadsheet system, I would recommend using the **Incremental Model** because in this system, there are some basic features and these features are used by desirable 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.

- For this project, I would recommend using the **Agile Model or Iterative Model**, because requirements are changing fast for given system and an in-house development team is available for all aspects of the project and it also allows 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.

- I would recommend using the **Agile Model or Iterative Model**, because It gives regular deliveries or frequent releases. This website has a desired features that it wants to add initially and then it wants to add a new release with new features frequently.

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

- I would recommend using the **Waterfall model**. The anti-lock braking is a safety-critical system. In the Waterfall Model, the analysis and design requirements must schedule without any flaws before the implementation of the system for the proper functioning of the anti-lock braking system of the car.

g) A virtual reality system to support software maintenance.

• For this system, I would recommend using the **Spiral Model,** because the Spiral model emphasizes risk assessment and iterative development. As the system's maintenance requirements and virtual reality aspects may evolve during development, the Spiral model enables the team to identify and address potential risks early in the process.

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

- For this system, I would recommend using the **Incremental Model,** because the development team can build the new system incrementally, ensuring that each increment replaces a specific part of the existing system while maintaining its functionality. This approach allows for a smoother transition and minimizes disruption.

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

- For this system, I would recommend using the **Iterative Model** 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, I would recommend using the **Spiral Model**, because the model accurately reflects the iterative nature of

software development on projects with unclear requirements and it is going for continuous iteration to minimize 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.

- I would recommend using the **Agile model**, because for emergency changes with limited time for formal documentation, This model accommodate changes quickly and focus on delivering functional software over comprehensive documentation. Regular team collaboration and communication ensure that system implementation stays aligned with requirements, even if they are not fully documented.

l) Software for ECG machine.

- For this machine, I would recommend using the **Incremental model**, because For this kind of medical equipment, this machine 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).

- I would recommend using the **Waterfall model**, because for a small-scale, well-understood project with fixed requirements ,this model offer a structured and systematic approach, which is appropriate when requirements are stable and unlikely to change throughout the development process.