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Subject: Software Engineering

Group: 6

a) A simple data processing project.

Waterfall model:

-> Here all the requirements are defined beforehand. Also, waterfall is a simple model hence suits best for the given scenario.

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

Prototyping:

-> As here user interface is extremely important, prototyping suits best. Also prototyping helps less experienced users.

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

Prototyping:

-> Here most of features are dependent on some basic features, prototyping model is helpful as it helps in introducing newer features using some basic features.

Incremental prototyping will suit best to be more specific.

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.

Incremental (Spiral) or agile

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-> Spiral model as in this model changes are accommodated fast and model progresses as per requirements. Also, technical expertise is needed in this model hence we can have development team for all aspects.

-> Agile model also works similarly and works for smaller interval. After that it does necessary changes as per requirements and works accordingly.

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.

Incremental or evolutionary prototyping

-> As changes are done very frequently, incremental helps in it. Also, as a new release with new features to be done frequently and for that evolutionary prototyping is useful.

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

Spiral model

-> As here there is high risk involved, spiral model suits best as it analyses risk factor at every step and make some necessary changes before going forward.

g) A virtual reality system to support software maintenance

Incremental (Synchronize and stabilize)

-> In synchronize and stabilize model task is divided in 3-4 groups and hence it is easy to maintain.

h) A university accounting system that replaces an existing system

Waterfall model

-> Here as we have an existing system, all requirements are predefined.

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

Prototype

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-> In the given scenario user interface is extremely important. Also, as the users can be novice prototype helps them in understanding the working of the software.

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

Spiral Model

-> As the missile guided system needs to be much accurate and therefore requirements can change in further proceeding. Also, there is high risk of life and property is involved, technical expertise is much prioritized. Hence spiral model suits best for the given scenario.

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.

Agile or incremental

-> Both models, unlike waterfall model where there is no scope in going backwards and changing requirements, accommodates necessary requirements after short interval of time and it this process repeats before finalizing the software/ product. This saves the whole implementation from becoming inconsistent.

l) Software for ECG machine.

Spiral

-> As risk is involved in the software that deals with ECG machine, spiral model comes to an aid.

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

Waterfall

-> First, as it is well-understood project which does not require further changes waterfall suits best for this task.

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-> Second, project is simple and the waterfall model is also easy to implement.