Subject: Software Engineering

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Lab 01

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Topic: Choosing Software Process Models

a) A simple data processing project.

Software process model : Waterfall model.

Reason : Project requirements are constant and not changed regularly.

Tools and technology used in the project is consistent and is not changing.

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

Software process model : Prototyping model.

Reason : Prototyping model is important as office staff is inexperienced and user interface is very important.

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

Software process model : Evolutionary Prototyping model.

Reason : Spreadsheet systems already had some basic features that may be implemented using the waterfall model. Other features that were subsequently desired will be implemented using the incremental model.

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.

Software process model : Spiral Incremental model.

Reason : In this project requirements are changing fast and where an in-house development team is available for all aspects of the project. So, due to changes in requirements at each phase in SDC we can use this model.

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.

Software process model : Incremental and Prototyping model.

Reason : For an e-commerce website which requires large features for better user experience we need to provide basic framework as a prototype to the user and for adding new features frequently we can use Incremental Model.

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

Software process model : Waterfall model.

Reason : Since the specificity and requirements are consistent and not changed regularly we can use this model.

g) A virtual reality system to support software maintenance.

Software process model : Incremental and Prototyping model.

Reason : This model is the most appropriate because virtual reality is still an innovative concept and user requirements may change in the future.

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

Software process model : Throw-away Prototyping Model.

Reason : The throw-away prototyping technique is ideal since the software must be totally updated.

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

Software process model : Prototyping model.

Reason : In this case first prototype needs to be developed. Then we can update the extra features in the system.

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

Software process model : Spiral model.

Reason : It is a big project and risk should be minimized so spiral model shold be used.

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.

Software process model : Incremental model.

Reason : Since this system have to adapt new functionalities at each iteration, we can use incremental model.

l) Software for ECG machine.

Software process model : Waterfall model.

Reason : Since this software has specified functionality and all the needs are known in advance. The Waterfall model is thus the most appropriate.

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

Software process model : Waterfall model.

Reason : Since the project is on small scale and requirements of this project are well understood the changes in this particular projects after development will be negligible therefore waterfall model is most suitable.