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ITMD 511: Application Development Methodologies

Professor Peisong Huang

Midterm: Part 2

3-5-18

**Please write an essay to compare the two SW development models: Waterfall model vs Incremental model.**

**Please give at least 3 advantages and disadvantages for each development model. Your arguments need to be consistent, precise and concise.  
  
You should write the essay in a word or PDF document. When you finish writing, please send your essay to phuang9@iit.edu by 7.05pm. 5 minutes extra time is given for composing and sending email.  No submission will be accepted after 7.05pm deadline.**

Both the waterfall model and incremental model have advantages and disadvantages to using them for a project, and deciding on the type of model to use depends on what type of project you are doing and what you require for the project. The waterfall model is mostly used on projects that do not focus on changing the requirements. The advantages of using the waterfall model is that it is easy to explain to users and structures the approach, each of the stages and activities are well defined which helps to plan and schedule the project, and there is verification at each stage which ensures early detection of any errors or misunderstanding in the project. Some of the disadvantages of using the waterfall model is that it assumes that the requirements of a system can be frozen which makes it very difficult to go back to any stage after it is finished, a little flexibility and adjusting to the scope is difficult and expensive, and it can be costly and requires more time in addition to the detailed plan.

The incremental model also has many advantages and disadvantages and is used mostly in shrink-wrap applications and large systems that are built in small phases or segments. It can also be used in a system that has separated components. Some of the advantages to using the incremental model are that it produces business value early in the development lifecycle which makes better use of scarce resources through proper increment definition, it can accommodate some change requests between increments (unlike the waterfall model), and it is more focused on customer value than the linear approaches which also allows for problems to be detected earlier. The disadvantages to using the incremental model are that it requires heavy documentation and follows a defined set of processes, it defined increments based on the function and feature dependencies which requires more customer involvement than the linear approaches, and partitioning the functions and features might be problematic which can make the integration between iterations an issue if this is not considered during the development process.