

CS 480 - Software Engineering, Homework 2

1) In the simple waterfall model of software development, a project is depicted as a sequence of stages with deliverables from each stage being used as input to the following stages.

- (a) Give the names of the stages and their main deliverables. (6 pts)
- (b) Describe ways (if any) in which the simple waterfall model does not reflect the structure of real software development projects. (10 pts)
- (c) Briefly describe an alternative model and compare its strengths and weaknesses with those of the waterfall model. (10 pts)

(2) Agile development methods emerged in the late 1990s whose aim was to radically reduce the delivery time for working software systems

- (a) List 4 questions that should be asked when deciding whether or not to adopt an agile method of software development. (4 pts)
- (b) For what types of system are agile approaches to development particularly likely to be successful? (10 pts)
- (c) Name three important agile techniques that were introduced in extreme programming? (10 pts)

(3) Suppose that you have to develop software for cash dispenser. You should develop software for both cash dispenser, i.e. the part for communication with the customers (delivering money and report the account state), the software for communication and software needed in banks for communicate with the bank transaction systems.

You have a team of 10 people – all of them can play a role of designers, developers, testers and document writers. You have got a contract to implement the first version in 6 months. All hardware and development tools are available.

In the project 5 banks are included that use 2 different transaction systems. The customer wants that you incrementally implement the system – first the cash dispenser software, then the interface to the bank account system, finally the communication. The total system should be delivered after 6 months.

- (a) Identify the roles for different type of activities. (5 pts)
- (b) Define all main requirements on the system. (20 pts)
- (c) Create a low fidelity prototype for the user interface interaction problems exist in the above case study. This low fidelity prototype can either be a scenario or a storyboard (with an accompanying short narrative). This is not a group project, so your ideas for the low fidelity prototype must be your own work. (25 pts)