

Software Engineering COMP433  
Tutorial -3- Software Process Models

1. Which software process model (or models) you would apply for the following scenarios. Justify your Answer.

- a) To develop a secure ATM sub-system to integrate with an existing banking system. The developed ATM sub-system will be deployed across a 1000 ATM machines. It should have an availability rate of 99%, accurate. It should also have a 99.9% accuracy money notes counting dispenser, and three-level security that requires a card, a pin code and a biometric code. *waterfall, Cause critical system and fixed requirements (formal)*
- b) To develop a mobile app to teach children ages 7-10 the basics of Arabic language. The app teaches the basics of Arabic grammar and basic words through well-defined set of exercises. The features of the app are well defined, clear, and understood by the development team. However, the app should be designed carefully to be suitable to children users. *waterfall with prototype*
- c) To develop university student management/registration system that can support 75000 students, and up-to 15000 concurrent students' access, would not need more than 1 hour (student/user) training and need to be delivered in 2 years for operational use. *Incremental development/with prototyping*
- d) To develop a mobile app, that monitors health indicators (e.g. blood pressure, sugar level, pulse) of patients, by collecting readings through special medical sensors, and then provides medical advice based on the collected readings by an external medical decision system, which your system must be connected to it. *waterfall some part save formal good need for prototyping*
- e) To develop a word processing application, that uses existing print, graphic, font styles, spelling check, and grammar check components. The application must be designed to be used by people with dyslexic/learning difficulties. *Reuse - oriented software with prototyping*

MIS  
business  
system

2. If you were a project manager responsible to develop a system for a product-line ordering system for a manufacturer of car parts. The system, should allow telephone and online ordering of car parts, and has a dedicated team to process the orders. The system should keep inventory of existing stock and be accessed by the manufacturer's product-line to manufacture parts according to sales. The users of the system are online users, who should register an account online and store users' information including their credit card details to enable them ordering online within a secure login sub-system. To enable users order online, the system will be required to connect to the respective credit card bank to authorize payment. Other system users also include salesmen who can place orders through telephone calls, and process payment through the system, and inventory users who manage availability of car parts and system administrators who manage the system database. The system should allow 10 concurrent salesmen and 10 inventory men to use the system.

*waterfall critical*

How would you project manage the above scenario? - particularly which software process model (or models) would you apply and use? If you are applying more than one model, indicate for what parts/components of the project and at what stage of its development life cycle. *waterfall → for the Secure login sub-system*

*+ incremental development with agile for the selling part / ordering online.*