Exam Question 2004

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Software Engineering Ia

Describe the spiral model of software development. (8 marks)

Give two examples of software engineering tasks where it is likely to be useful, and two where it is less likely to be. (8 marks)

If you were developing a security-critical system, how would you integrate the security requirements engineering and assurance processes into the model? (4 marks)

Model answer

First two parts are bookwork; refer to the notes or textbooks for description of Boehm's model.

Relevant tasks are those where the requirements cannot be fully determined in advance (eg HCI) or the testing cannot be fully planned without a prototype (eg large accounts system migration); less relevant tasks are those which are completely understood (e.g. porting linux to a new platform, a space mission, Y2k)

Third part: integrate the requirements and assurance with appropriate sectors of the spiral, biasing the former to the core and the latter to the last iteration. (though developing a protection profile is for the previous iteration)