

Fundamentals of Software Engineering

(M11322908)

This Tutorial is based on questions from the book Software Engineering 9 by Ian Sommerville and is based on the material covered in chapter 2.

Week 3 Tutorial

Software processes

1. What are the fundamental activities that are common to all software processes?
2. List the 3 generic process models that are used in software engineering?
3. Why are iterations usually limited when the waterfall model is used?
4. What are the three benefits of incremental development, compared to the waterfall model?
5. What are the development stages in reuse-based development?
6. What are the principal requirements engineering activities?
7. Why is it increasingly irrelevant to distinguish between software development and evolution?
8. What are the advantages of using incremental development and delivery?
9. What are the 4 sectors in each loop in Boehm's spiral model?
10. What are the six fundamental best practices in the RUP?
11. Giving reasons for your answer based on the type of system being developed, suggest the most appropriate generic software process model that might be used as a basis for managing the development of the following systems:
 - A system to control anti-lock braking in a car
 - A virtual reality system to support software maintenance
 - A university accounting system that replaces an existing system
 - An interactive travel planning system that helps users plan journeys with the lowest environmental impact
12. Explain why change is inevitable in complex systems and give examples (apart from prototyping and incremental delivery) of software process activities that help predict changes and make the software being developed more resilient to change.