Information Systems Analysis & Design (M8748)

Tutorial 3 Answer

1. What are the advantages of the traditional waterfall life cycle?

   Advantages of the traditional waterfall life cycle include:

   - Teams with specialized skills can be assigned to tasks in particular phases
   - Progress can be evaluated at the end of each phase
   - Attendant risk can be controlled and managed

2. What are the disadvantages of the traditional waterfall life cycle?

   Disadvantages of the traditional waterfall life cycle include:

   - Real projects rarely follow a simple sequential life cycle
   - Iterations are almost inevitable
   - The lapsed time between inception and delivery is frequently too long
   - It is unresponsive to changes in the technology or requirements.

3. How are some of the disadvantages of the traditional waterfall life cycle to overcome?

   These disadvantages can be overcome by adopting some or all of the following:

   - Overlapping phases, for example, design could start before analysis is completed
   - Focusing on an incremental style of development
   - A more constrained end product can be delivered more quickly
   - Introducing some elements of iteration and increasing user involvement.

4. What is prototyping?

   Prototyping is building a system, that may be partially complete, to explore some aspect of the system requirements.

5. How does prototyping differ from incremental development?

   Prototyping is not necessarily concerned with delivering a working system whereas an incremental approach delivers a working system in successive increments. Note that in the Unified Software Development Process an increment may be any life cycle product.

6. What are the different ways of involving users in the system development activity? What are potential problems with each of these?

Role	Problems
Full team member	Can lose sight of the user perspective but this can be overcome by rotating the team membership.

Consultative and Review	No direct influence on the design of the new system.
Participant in fact finding as interviewee only	Lacks sense of ownership for the new system.

7. How do “Syntactic”, “Consistency” and “Completeness” differs from each other?
   Syntactic correctness is concerned with using the notation (e.g. UML) correctly, consistency relates to producing a set of models or diagrams that are consistent with each other and completeness refers to producing models that are completely defined.

8. What does requirements traceability mean?
   The term requirements traceability refers to the capability of tracking each requirement to all the systems development deliverables, from analysis models to program code, that relate to it.

9. Why is it not enough for a diagram to be syntactically correct, consistent and complete?
   A diagram may be syntactically correct, consistent with other diagrams and models, and complete but it may not relate accurately or completely to the user requirements, the most important criterion for any diagram or model.

10. What is the purpose of a repository?
    A repository should hold the descriptions and specifications of all models and modeling elements including classes, attributes and operations.