G 6182

M.E. DEGREE EXAMINATION, MAY/JUNE 2007.

Second Semester

Computer Science and Engineering

CS 1654 — OBJECT ORIENTED SYSTEM DESIGN

(Common to M.E. – Computer and Communication)

(Regulation 2005)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

What is an object identifier? Discuss.

Differentiate between early and late binding?

What are the strengths of the Jacobson et al. method?

What are anti patterns? Discuss.

What is an use case diagram? How it is useful in analysis?

Why is identifying class hierarchy important in object oriented analysis?

List the characteristics of a bad design.

List any two applications of Object oriented databases.

What is the importance of developing a test case?

List the metrics that are directly applicable to software testing.

PART B — (5 × 16 = 80 marks)

(a)   (i)   What are the different kinds of programming styles? State the benefits and limitations of each of the programming style.   (8)

       (ii)   Describe component based development in detail.   (8)

Or

(b) (i) What does meant by typing? Describe weak and strong typing with suitable example. (8)

(ii) List and discuss the minor elements of object model. (8)

12. (a) (i) A software system is to be developed to automate a library catalogue. This system will contain information about all the books in a library and will be usable by library staff and by book borrowers and readers. The system should support catalogue browsing, querying, and should provide facilities allowing users to send messages to library staff reserving a book that is on loan. Develop for the above scenario. State any assumptions you make. (10)

(ii) Briefly discuss the macro development process. (6)

Or

(b) (i) A software system is to be developed to record the information about the system components, versions, releases and changes. Some requirements for the systems are as follows:

(1) It should be possible to retrieve all versions or a single identified version of a component or the latest version of a component.

(2) It should be possible to find out which change request have been implemented by a particular version of a system

(3) It should be possible to discover which versions of components are included in a specified version of a system

(4) It should be possible to retrieve a particular release of a system according to either the release date or the customers to which the release was delivered.

Identify the classes and objects and develop a class diagram, for the above scenario. State any assumptions you make. (10)

(ii) What is a pattern? What are the essential components recognizable on reading a pattern? (6)

13. (a) (i) Describe the guidelines for developing effective documentation. (8)

(ii) Explain how to identify classes and object behavior analyzed by sequence/collaboration modeling. (8)

Or

(b) (i) What is an a-part-of structure? List the properties of an a-part-of structure? (6)

(ii) With a relevant example discuss noun-phrase approach for identifying classes and methods. (10)

14. (a) (i) With relevant example discuss how encapsulation, modularization and polymorphism improve reusability? (6)

(ii) Discuss the necessary characteristics a system must satisfy to be considered as an object oriented database. (10)

Or

(b) (i) Explain the process of designing access layer classes. (8)

(ii) Describe the user interface design rules. (8)

15. (a) (i) Explain why finding defects in module or object interfaces is very difficult. (8)

(ii) Describe the transaction mechanism used in client server computing. (8)

Or

(b) (i) Briefly explain the foundation class library requirements. (8)

(ii) Describe the guide lines for developing usability test and user satisfaction test. (8)

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