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Question Paper Code : 70444

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2023.

Fifth/Sixth Semester

Computer Science and Engineering

CS 8592 – OBJECT ORIENTED ANALYSIS AND DESIGN

(Common to: Computer and Communication Engineering/ Information Technology)

(Regulations 2017)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the phases in Rational Unified Process?
2. Compare include and extend relationship between use cases.
3. What is domain model? Give an example.
4. Differentiate conceptual class and description class
5. What is lifeline in sequence diagram?
6. Compare Package diagram and Component diagram.
7. Why is high cohesion and low coupling preferred in software design?
8. What problem does the observer pattern solve?
9. Give the four types of quality assurance.
10. Compare a Test Scenario and a Test case.

11. (a) With example explain the phases involved in Rational Unified Process.

Or

- (b) Draw and explain the Use Case Diagram for an Online Shopping application. Identify the primary and secondary actors. Also utilize extend and include relationships among the use cases wherever valid. List the scenario, post condition and pre condition for all the use Cases.

12. (a) Draw the Class diagram for the system: *Software Bug and Change Management System*.

This system traces bugs that occur in projects. The system should support a hierarchy of users from project manager to programmers. The test team generates bug reports that are sent to the owner of the files (programmers) and his immediate superior. The bug and its status must be traced through different versions of the project. A bug that remains unresolved ascends the priority queue as a result notifications get sent to superiors up the hierarchy. Change requests are raised by customers for modification of the project specifications. The changes travel the hierarchy from top to bottom. Each change request has to be delegated to appropriate people and must be monitored for completion similar to the bug reports.

Or

- (b) Robot Realty is a real estate firm that lists property for sale. The firm has a number of sales offices in several states. They assign each sales office an office number. Each sales office is assigned one or more employees. An employee can only be assigned to one sales office. For each sales office, there is always one employee assigned to manage that office. The employee can only manage the office to which he or she is assigned. The firm lists property for sale. They need to track the property address, and which sales office the property is listed with (it may only be listed with one sales office). A sales office may have any number of properties listed. Each unit of property has one or more owners. Robot needs to track the percent of the property owned by each owner

Model the above problem statement with an appropriate class diagram

PART C — (1 × 15 = 15 marks)

16. (a) For example, imagine that you have two types of objects: Products and Boxes. A Box can contain several Products as well as a number of smaller Boxes. These little Boxes can also hold some Products or even smaller Boxes, and so on. Say you decide to create an ordering system that uses these classes. Orders could contain simple products without any wrapping, as well as boxes stuffed with products, and other boxes. How would you determine the total price of such an order? Model this problem using Factory pattern.

Or

- (b) Draw and explain the package diagram for an E-learning application like Coursera or Udemy.