

Lab/Practice: 3 periods/week

Internal assessment: 25 marks
Semester end examination: 50 marks

Course Objectives:

To enable the student to do particular application using OOAD through UML

Learning outcome:

After completion of the course, Students are made familiar with designing UML diagrams (use case ,sequence, class, collaboration, state, activity, component and deployment) for real time applications.

ANY FOUR FROM PART- I & ANY ONE FROM PART-II

PART –I

Week 1:

Use Visual Source Safe (VSS) tool to manage your documents for the following Tasks

- Create a project and add some java files to it (at least 3 files).
- Label the existing files.
- Check out all the files and modify one of them.
- Check the edited file back in.
- View the revision history of the edited file and show the differences between the old and the new versions.
- Search for any unchecked in files.

Week 2:

Use MS Project 2002 to create a series of tasks leading to completion of a project of your choice. For your project, you need to:

- Set start or ending dates.
- Develop a list of tasks that need to be completed.
- Establish any sub tasks and create links.
- Create any links between major tasks.
- Assign a specific amount time for each task.
- Assign resources for each task.
- Create task information for each item you put into the list.

Week 3:

Read carefully the following problem statement

We are after a system that controls a recycling machine for returnable bottles and cans. The machine will allow a customer to return bottles or cans on the same occasion.

When the customer returns an item, the system will check what type has been returned. The system will register how many items each customer returns and, when the customer asks for a receipt, the system will print out what he deposited, the value of the returned items and the total return sum that will be paid to the customer.

The system is also be used by an operator. The operator wants to know how many items of each type have been returned during the day. At the end of the day, the operator asks for a printout of the total number of items that have been deposited in the machine on that particular day. The operator should also be able to change information in the system, such as the deposit values of the items. If something is amiss, for example if a can gets stuck or if the receipt roll is finished, the operator will be called by a special alarm signal.

After reading the above problem statement, find:

1. **Actors**
2. **Use cases** with each actor
3. Find **extended** or **uses** use cases (if applicable)
4. Finally : draw the main use case diagram.

Week 4:

- a. Create an Entity Relationship Diagram (ERD) for an airline reservation system.
- b. Create a DFD for:
 - i. Student Registration System.
 - ii. $(a + b) * (c + a * d)$

Week 5:

1. Take two of the use cases from recycling machine problem (Lab 5) and write flow of events for those. You should work in groups of three to solve this problem.
2. Practice activity diagram from the example in PPT (Lab 7) for course catalog creation.

Week 6:

Consider the following requirements for the Video Store system. Identify the candidate classes: The video store keeps in stock an extensive library of current and popular movie titles. A particular movie may be held on video tape or disk.

Video tapes are in either "Beta" or "VHS" format. Video disks are in DVD format. Each movie has a particular rental period (expressed in days), with a rental charge to that period. The video store must

be able to immediately answer any inquiries about a movie's stock availability and how many tapes and/or disks are available for rental. The current condition of each tape and disk must be known and recorded.

The rental charge differs depending on video medium: tape or disk (but it is the same for the two categories of tapes: Beta and VHS).

The system should accommodate future video storage formats in addition to VHS tapes, Beta tapes and DVD disks. The employees frequently use a movie code, instead of movie title, to identify the movie. The same movie title may have more than one release by different directors.

Week 7:

We all have used an elevator. The following steps describe the scenario of what happens at the elevator door from outside.

1. The passenger presses the button of either up or down depending on where he wants to go.
2. Then he will see that the button he pressed is illuminated.
3. The elevator is now moving to his floor.
4. When the elevator reached his floor it stops.
5. Now the button which was illuminated now off.
6. The door opens and the passenger enters.
7. The door closes.

PART-II

1. The student should take up the case study of Unified Library application which is mentioned in the theory, and Model it in different views i.e Use case view, logical view, component view, Deployment view, Database design, forward and Reverse Engineering, and Generation of documentation of the project.
2. Student has to take up another case study of his/her own interest and do the same what ever mentioned in first problem. Some of the ideas regarding case studies are given in reference books which were mentioned in theory syllabus can be referred for some idea.

NOTE: The analysis, design, coding, documentation, database design of mini project which will be carried out in 4th year should be done in object-oriented approach using UML and by using appropriate software which supports UML.