

UML & Design Patterns Lab

(Textbook no.2 i.e. Object-Oriented Analysis & Design with the Unified Process by Satzinger, Jackson & Burd Cengage Learning will be the primary source for finding templates for developing different artifacts / diagrams)

Take three case studies:

- **Customer Support System (in the** Object-Oriented Analysis & Design with the Unified Process by Satzinger, Jackson & Burd Cengage Learning)
- **Point-Of-Sale Terminal (in Larman textbook)**
- **Library Management System (in the reference book no. 2 i.e. UML toolkit)**

Week 1:

Familiarization with Rational Rose or Umbrello

For each case study:

Week 2, 3 & 4:

For each case study:

- Identify and analyze events
- Identify Use cases
- Develop event table
- Identify & analyze domain classes
- Represent use cases and a domain class diagram using Rational Rose
- Develop CRUD matrix to represent relationships between use cases and problem domain classes

Week 5 & 6:

For each case study:

- Develop Use case diagrams
- Develop elaborate Use case descriptions & scenarios
- Develop prototypes (without functionality)
- Develop system sequence diagrams

Week 7, 8, 9 & 10:

For each case study:

- Develop high-level sequence diagrams for each use case
- Identify MVC classes / objects for each use case
- Develop Detailed Sequence Diagrams / Communication diagrams for each use case showing interactions among all the three-layer objects
- Develop detailed design class model (use GRASP patterns for responsibility assignment)
- Develop three-layer package diagrams for each case study

Week 11 & 12:

For each case study:

- Develop Use case Packages
- Develop component diagrams
- Identify relationships between use cases and represent them
- Refine domain class model by showing all the associations among classes

Week 13 onwards:

For each case study:

- Develop sample diagrams for other UML diagrams - state chart diagrams, activity diagrams and deployment diagrams