## **EXERCISE -3: Design Specification**

**Objective:**Perform the user’s view analysis and Develop a Design Specification of the Proposed Solution (Use case diagram, Class diagram, Sequence diagram, State diagram, activity diagram)

**Tools/ Device:** UML tools

1. UMLet: [https://www.umlet.com](https://www.umlet.com/)

**Procedure:**

1. Prepare a standard Software Design Specification document that specifies the System’s functionalities that represents narrative of the design specification with diagram (Use case diagram, Class diagram, Activity diagram, and Sequence diagram, E-R diagram)
2. Identify and analyze various processes, use-cases, actors etc. of the system. And, use processes at various levels to draw the use-case diagram.
3. Identify various elements such as classes, member variables, member functions etc. of the class diagram. And, draw the class diagram as per the norms
4. Identify various elements such as controller class, objects, boundaries, messages etc. of the sequence diagram. And, Draw the sequence diagram as per the norms.
5. Identify various actions and corresponding events of triggering actions. And, draw the activity diagram as per the norms.
6. Identify various elements states and their different transition of the state-chart diagram. And, draw the state-chart diagram as per the norms.

**Evaluation:** Your Design Specification must address the following questions:

1. Does the use case narrative represent the Scenario of the use case diagram? Does the Use Case diagram include the major use cases, actors who perform the use cases and therelationships among the use cases needed to deliver by the system?
2. Does the class narrative represent the Scenario of the class diagram? Does the Classdiagram include the major classes (attributes, operations) and the relationship among the classes needed to deliver by the system?
3. Does the activity narrative represent the Scenario of the activity diagram? Does theActivity diagram include the major activities needed to deliver by the system?
4. Does the sequence narrative represent the Scenario of the sequence diagram? Does theSequence diagram include the sequence of the major activities needed to deliver by thesystem functionalities?