Experiment 7: Sketch Sequence and Collaboration diagram for the project

Learning Objective: Students will able to draw Sequence and Collaboration diagram for the project

Tools: Dia, StarUML

Theory:

A sequence diagram shows, as parallel vertical lines (*lifelines*), different processes or objects that live simultaneously, and, as horizontal arrows, the messages exchanged between them, in the order in which they occur. This allows the specification of simple runtime scenarios in a graphical manner.

Sequence Diagram representation

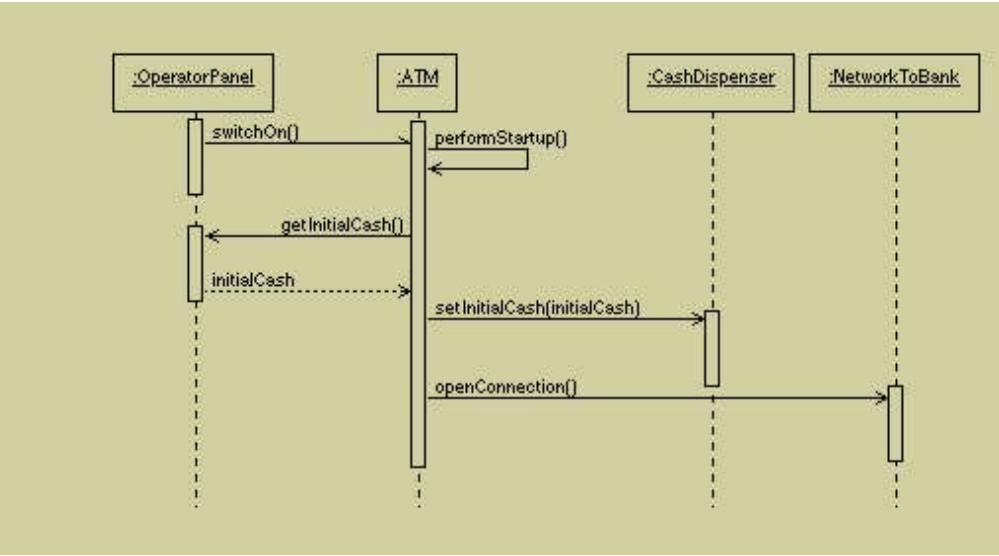
Call Message: A message defines a particular communication between Lifelines of an Interaction.

Destroy Message: Destroy message is a kind of message that represents the request of destroying the lifecycle of target lifeline.

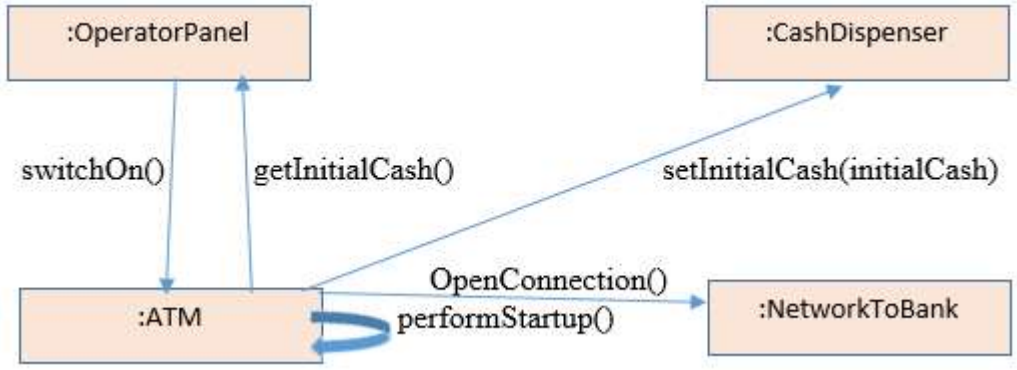
LifeLine: A lifeline represents an individual participant in the Interaction.

Recursive Message: Recursive message is a kind of message that represents the invocation of message of the same lifeline. It's target points to an activation on top of the activation where the message was invoked from.

Sequence Diagram:Example for ATM System startup



Collaboration diagram for ATM System startup



It is clear that sequence charts have a number of very powerful advantages. They clearly depict the sequence of events, show when objects are created and destroyed, are excellent at depicting concurrent operations, and are invaluable for hunting down race conditions. However, with all their advantages, they are not perfect tools. They take up a lot of space, and do not present the interrelationships between the collaborating objects very well.

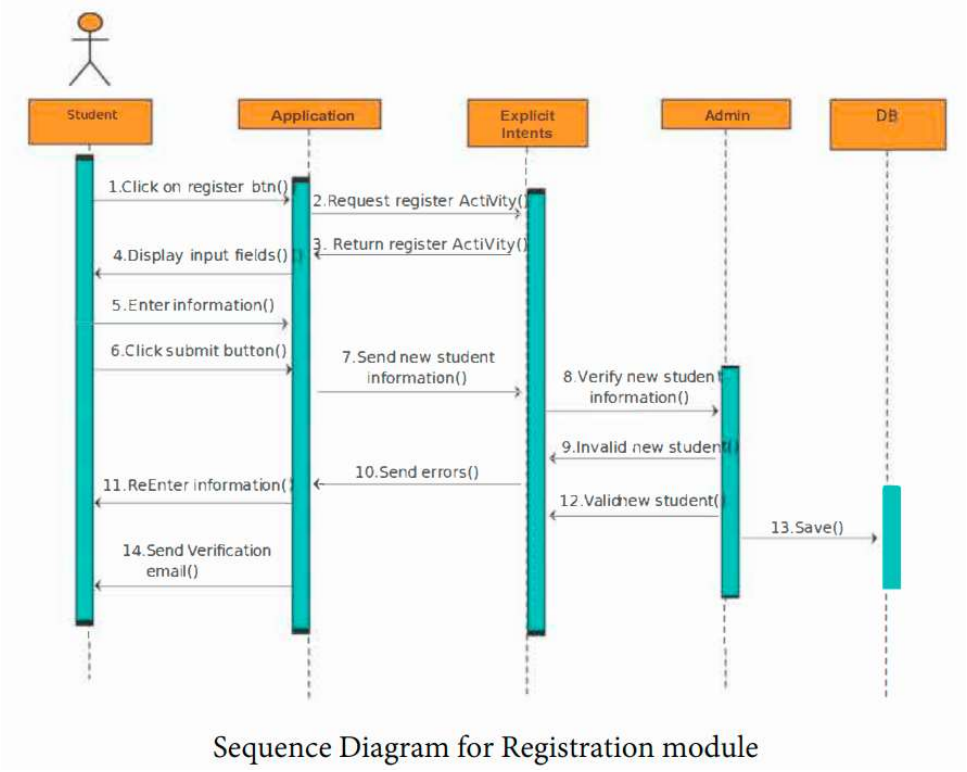
A collaboration diagram, also known as a communication diagram, depicts the relationships and interactions among software objects in the UML diagrams. Collaboration diagrams are best suited to the portrayal of simple interactions among relatively small numbers of objects.
Collaboration diagrams are used to visualize the structural organization of objects and their interactions. Sequence diagrams, focus on the order of messages that flow between objects.

Learning Outcomes: Students should have the ability to

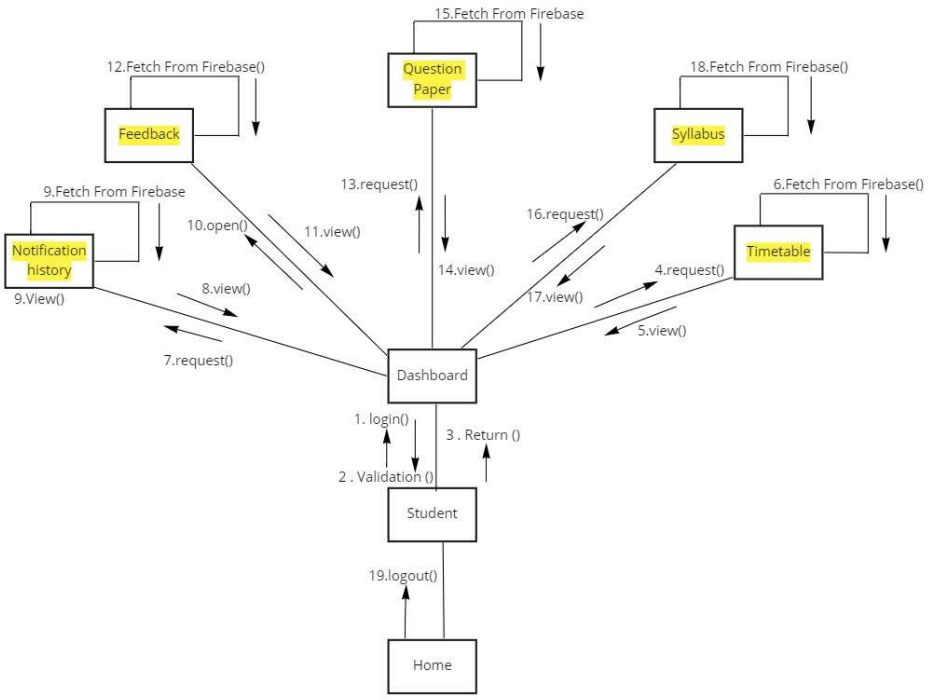
LO1: Identify the classes and objects.
LO2: Identify the interactions between the objects
LO3: Develop a sequence diagram for different scenarios
LO4: generate the collaboration diagram

Outcomes: Upon completion of the course students will be able to draw the sequence and collaboration diagram for the project.

Output:



Sequence Diagram for Registration module



Collaboration Diagram

Conclusion:

Created Sequence diagram for Registration Module of our Student Resource Management Application and also created the collaboration diagram to depict the relationships between various components/modules in our project. Thus, students have understood and successfully drawn Sequence and collaboration diagrams.

Viva Questions:

1. **What is a sequence diagram**
2. **Difference between sequence and collaboration diagram?**
3. **What are entities in sequence diagram?**
4. **Explain its relation with the class diagram?**

For Faculty Use

Correction Parameters	**Formative Assessment [40%]**	**Timely completion of Practical [40%]**	**Attendance / Learning Attitude [20%]**	
Marks Obtained				