

Batch: A1 Roll No.: 16010123012**Experiment No.: 05****Grade: AA / AB / BB / BC / CC / CD / DD****Signature of the Staff In-charge with date****Title: To develop UML diagrams for selected project**

Aim: To learn and understand the way of creating various UML diagrams for requirement analysis

CO: Analyse the software requirements and Model the defined problem with the help of UML diagrams.

Books/ Journals/ Websites referred:

1. Roger Pressman, "Software Engineering", sixth edition, Tata McGraw Hill.
2. System Analysis & Design by Satzinger, Jackson and Burd, Cengage Learning, 2007
3. System Analysis and Design Methods by Jeffery I. Whitten, Lonnie D Bentley, McGraw Hill, 7th edition.
4. System Analysis and Design by Alan Dennis, Barbara H. Wixom, Roberta M. Roth, Wiley India 4th edition
5. http://en.wikipedia.org/wiki/Software_requirements_specification
6. http://en.wikipedia.org/wiki/Use_case

Pre Lab/ Prior Concepts:

Activity Diagram:

- An activity diagram represents the workflow or the sequence of activities in a system. It illustrates the dynamic aspects of the system, showing how different activities are connected and the flow of control from one activity to another.
- For your project, the activity diagram helps map out the processes or workflows within the system. It allows you to visualize how the system behaves during different operations, such as how a user might navigate through the system or how different components interact during a process.

Sequence Diagram:

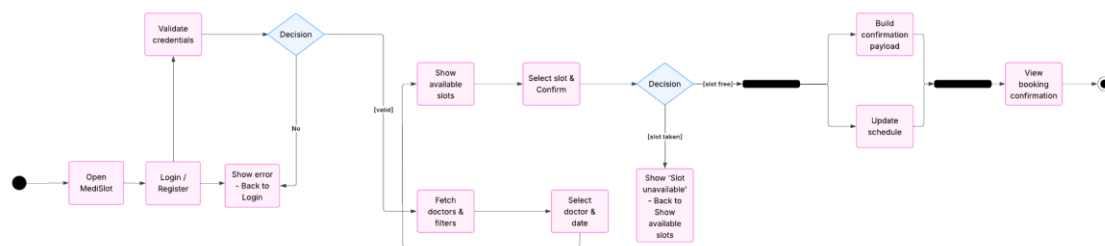
- A sequence diagram focuses on the time-ordering of messages or interactions between objects or components in the system. It shows how objects interact with each other over time to carry out a particular functionality.

- In your project, the sequence diagram is used to detail the interactions between objects for specific use cases. It helps in understanding the flow of messages between objects, the order of operations, and how the system's components work together to achieve a particular outcome.

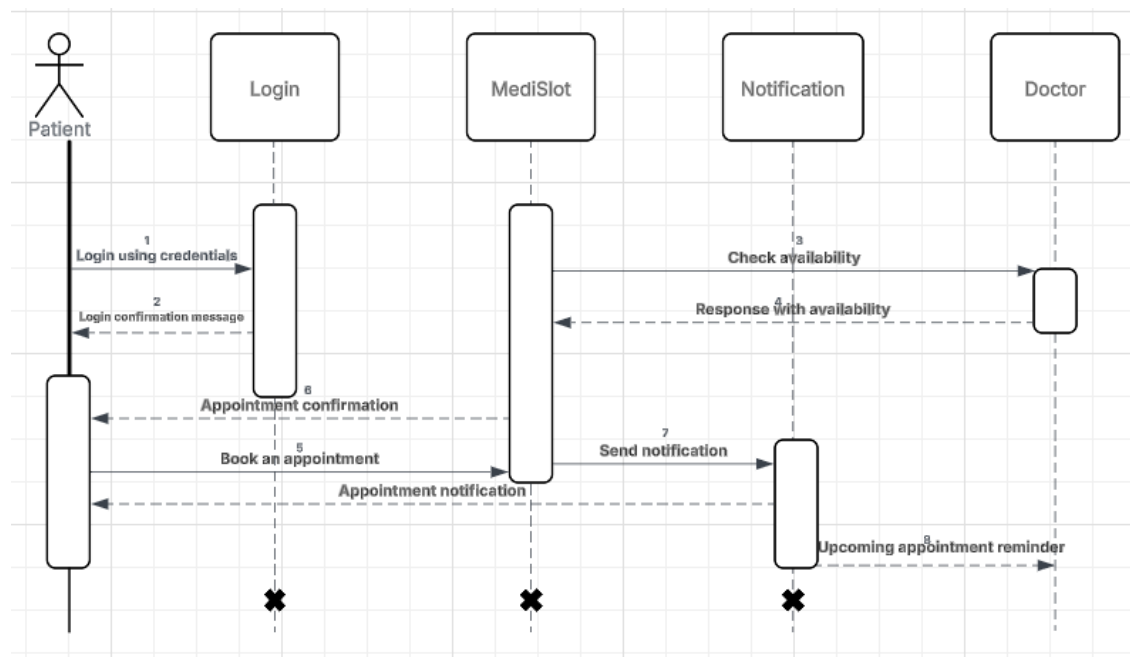
Developing these UML diagrams for your project provides a comprehensive view of both the static and dynamic aspects of the system. They are crucial for the design phase, ensuring that all stakeholders have a clear understanding of the system's architecture and behavior. By creating these diagrams, you lay the foundation for a well-structured, maintainable, and scalable software system.

Diagram for your system:

Activity diagram:



Sequence diagram:



Conclusion:

We made both Sequence Diagrams and Activity Diagrams to help us understand different aspects of the system. Sequence Diagrams are great for focusing on the order of events. They show how messages or actions unfold over time, which is essential for understanding the flow of control and the sequence in which components interact.

Post Lab Descriptive Questions:**1. Compare sequence diagram with collaboration diagram. Explain pros and cons of each.**

Sequence Diagram shows the order of events over time between objects.

Pros:

1. Focuses on the timing and order of interactions.
2. Helps track step-by-step behavior in complex systems.

Cons:

1. Doesn't show object relationships as clearly.
2. Can get crowded with many objects.

Collaboration Diagram focuses on relationships and communication paths between objects.

Pros:

1. Highlights object relationships.
2. Compact view of interactions.

Cons:

1. Lacks time sequencing.
2. Can be hard to follow in complex systems.

2. Explain State chart diagram

A State Chart Diagram (also called a State Machine Diagram) shows the various states an object can be in and the transitions between those states based on specific events or conditions. In simpler terms, it illustrates how an object moves from one state to another during its lifecycle. Each state represents a specific condition or situation, and the transitions between states are triggered by events or actions.