Lab report no: 03

Name of the lab report: Sequence diagram.

Group members:

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Objectives:

- Learn basic about Sequence diagram
- Learn Sequence diagram notations
- Learn how to draw an Sequence diagram.

Theory:

What is an Sequence diagram?

Sequence diagrams describe interactions among classes in terms of an exchange of messages over time. They're also called event diagrams. A sequence diagram is a good way to visualize and validate various runtime scenarios. These can help to predict how a system will behave and to discover responsibilities a class may need to have in the process of modeling a new system.

Sequence Diagram Symbols

UML has specified a set of symbols and rules for drawing activity diagrams. Following are the commonly used activity diagram symbols with explanations.

Class Roles or Participants

Class roles describe the way an object will behave in context. Use the UML object symbol to illustrate class roles, but don't list object attributes

Activation or Execution Occurrence

Activation boxes represent the time an object needs to complete a task. When an object is busy executing a process or waiting for a reply message, use a thin gray rectangle placed vertically on its lifeline.

Messages

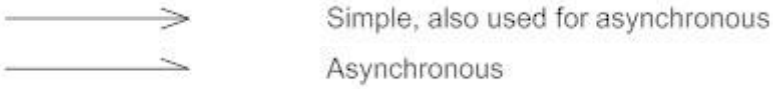
Messages are arrows that represent communication between objects. Use half-arrowed lines to represent asynchronous messages. Asynchronous messages are sent from an object that will not wait for a response from the receiver before continuing its tasks.

Synchronous Message

A synchronous message requires a response before the interaction can continue. It's usually drawn using a line with a solid arrowhead pointing from one object to another.

Asynchronous Message

Asynchronous messages don't need a reply for interaction to continue. Like synchronous messages, they are drawn with an arrow connecting two lifelines; however, the arrowhead is usually open and there's no return message depicted.



Lifelines

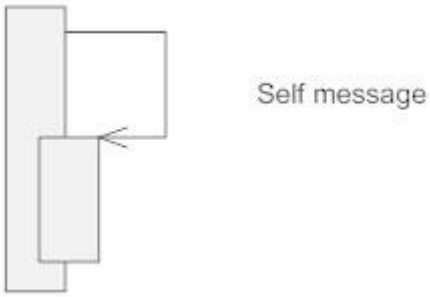
Lifelines are vertical dashed lines that indicate the object's presence over time.

Reply or Return Message

A reply message is drawn with a dotted line and an open arrowhead pointing back to the original lifeline.

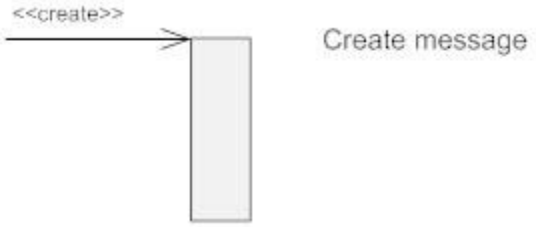
Self Message

A message an object sends to itself, usually shown as a U shaped arrow pointing back to itself.



Create Message

This is a message that creates a new object. Similar to a return message, it's depicted with a dashed line and an open arrowhead that points to the rectangle representing the object created.



Delete Message

This is a message that destroys an object. It can be shown by an arrow with an x at the end.

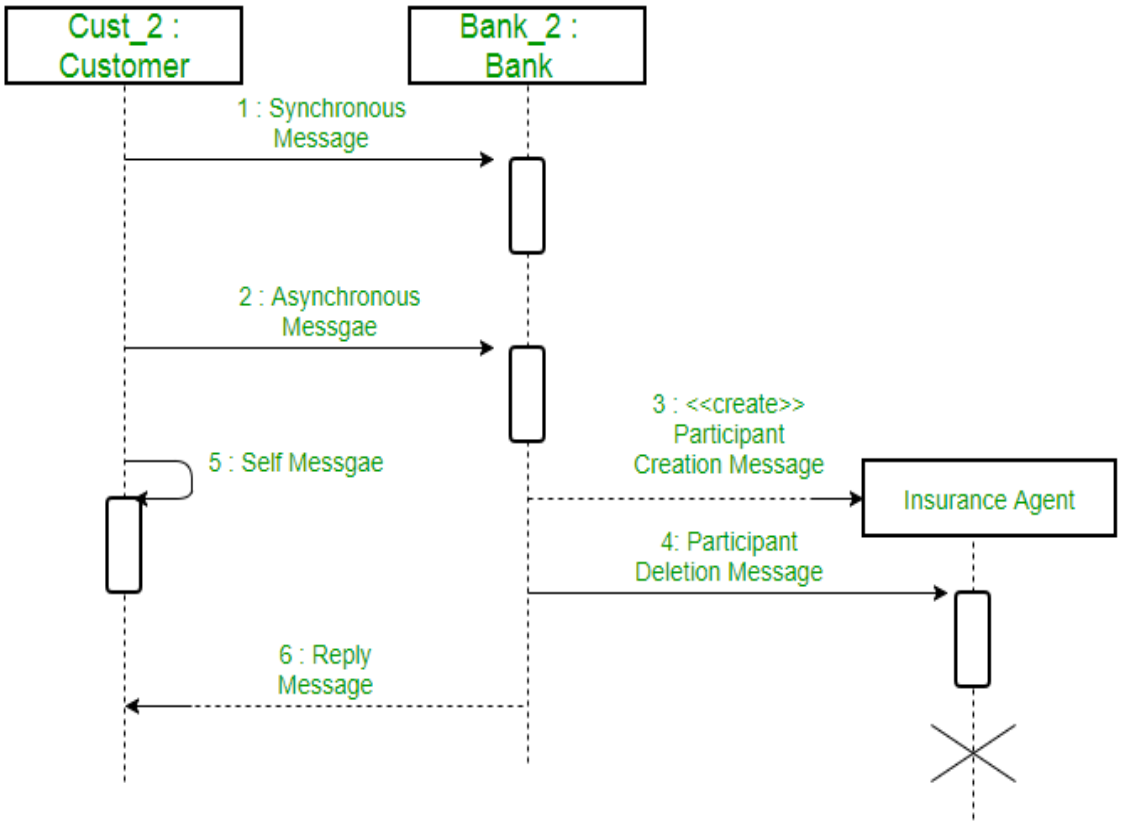
Found Message

A message sent from an unknown recipient, shown by an arrow from an endpoint to a lifeline.

Lost Message

A message sent to an unknown recipient. It's shown by an arrow going from a lifeline to an endpoint, a filled circle or an x.

Example of Sequence Diagram:



Our group story:

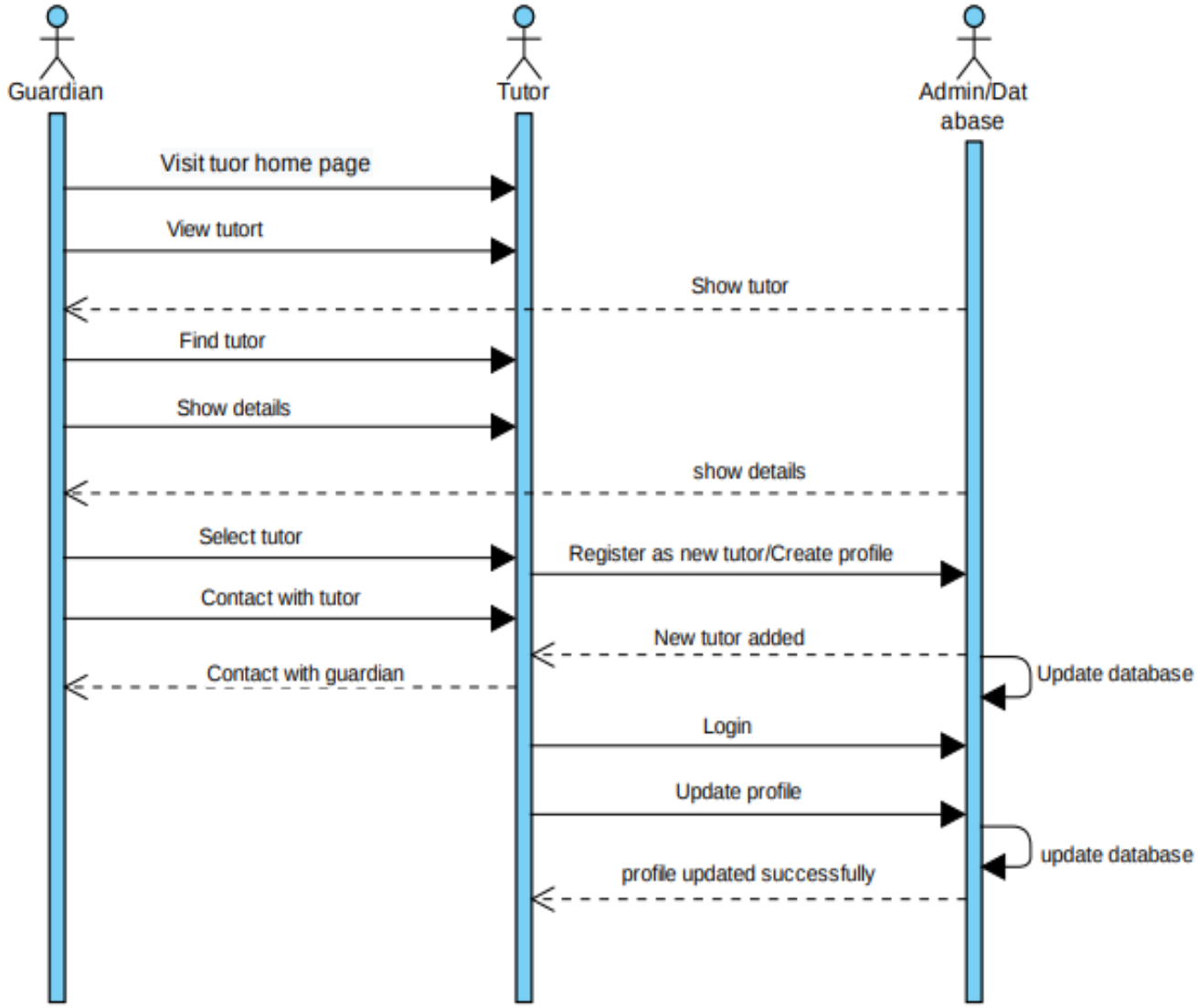
X is a student of Y university. He belongs to a middle class family. When he at first came to university, he faces a lot of trouble specifically financial problems. So he collects tuition from his varsity's senior brother. After getting the tuition somehow he maintains his cost. But he thinks that the problem doesn't over. He notices that when students at first came to university they are also facing the same problems who are also belonging to middle class family, they are also facing a lot of financial problems. So try to do something about this problem. At third year second semester his teacher teaches them a course about software engineering. In this course he learns laraval software development framework and decides to develop a software on tuition management system using laravel framework. To develop such a system he first want to draw the following diagram of the system.

- Activity diagram.
- Use Case diagram.

- Sequence diagram.
- Class diagram.

In this lab we will draw a Sequence diagram based on that story

Sequence diagram of our group story:



Conclusion:

This was an interesting lab. I learned many things from this lab. I don't know nothing about sequence diagram before this lab work but now I know about sequence diagram, the main components of sequence diagram and finally how to draw sequence diagram.