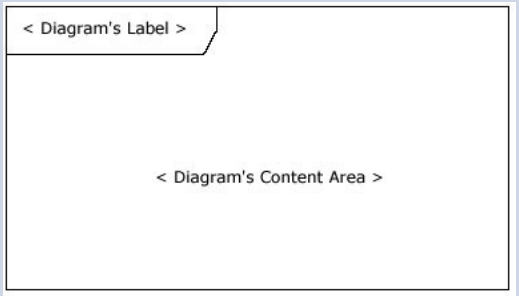
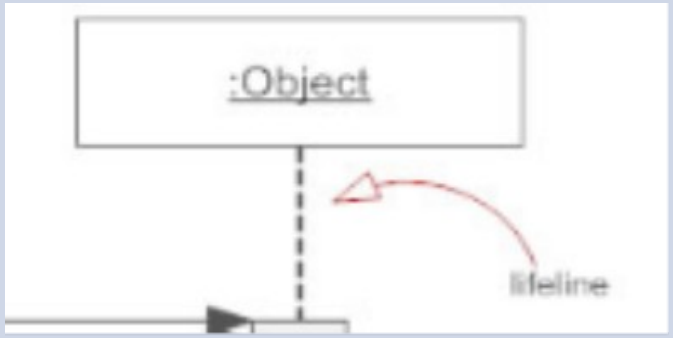
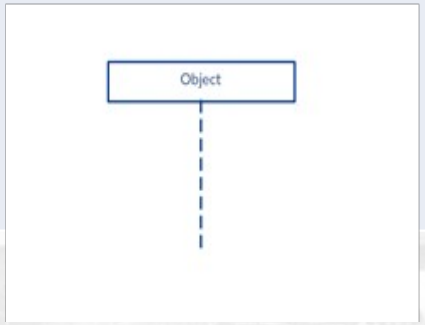
UML Sequence Diagrams

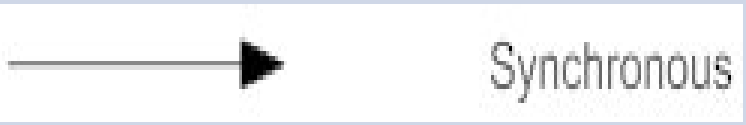
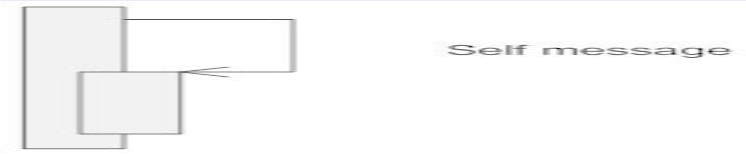
- Sequence diagrams model the dynamic aspects of a software system
- The emphasis is on the “sequence” of messages rather than relationship between objects
- Sequence diagrams provide more detail and show the messages exchanged among a set of objects over time.
- The main purpose of this diagram is to represent how different business object interacts

UML Sequence Diagrams

S.No	Name	Description	Notation
1	Class Roles or Participants	Class roles describe the way an object will behave in context	
2	Activation or Execution Occurrence/ Scope	Activation boxes represent the time an object needs to complete a task.	
3	Diagram Boundry		

S.No	Name	Description	Notation
3	Messages	Messages are arrows that represent communication between objects.	
4	Lifelines	Lifelines represent either roles or object instances that participate in the sequence being modeled.	

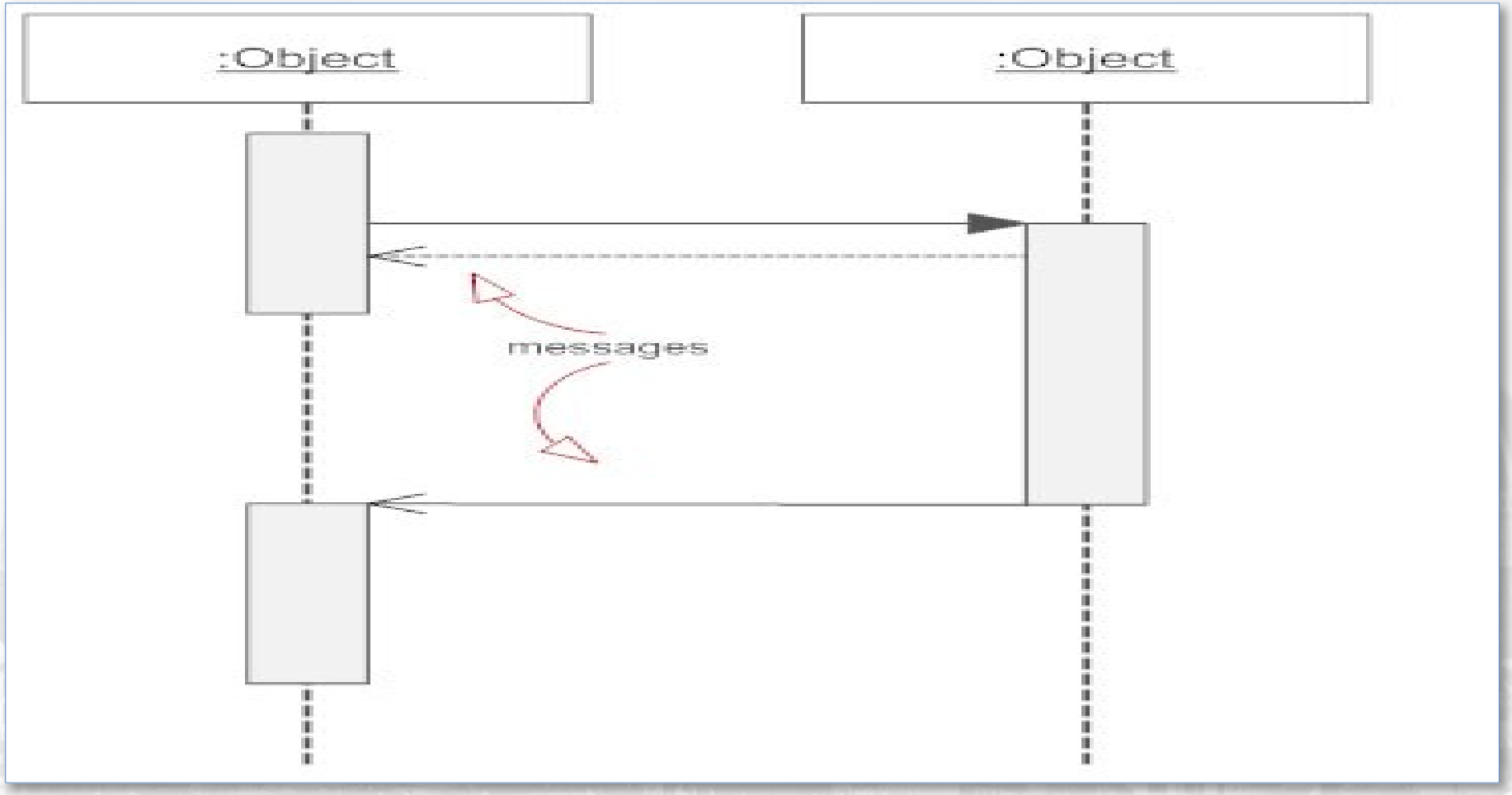
UML Sequence Diagrams- Types of Messages in Sequence Diagrams

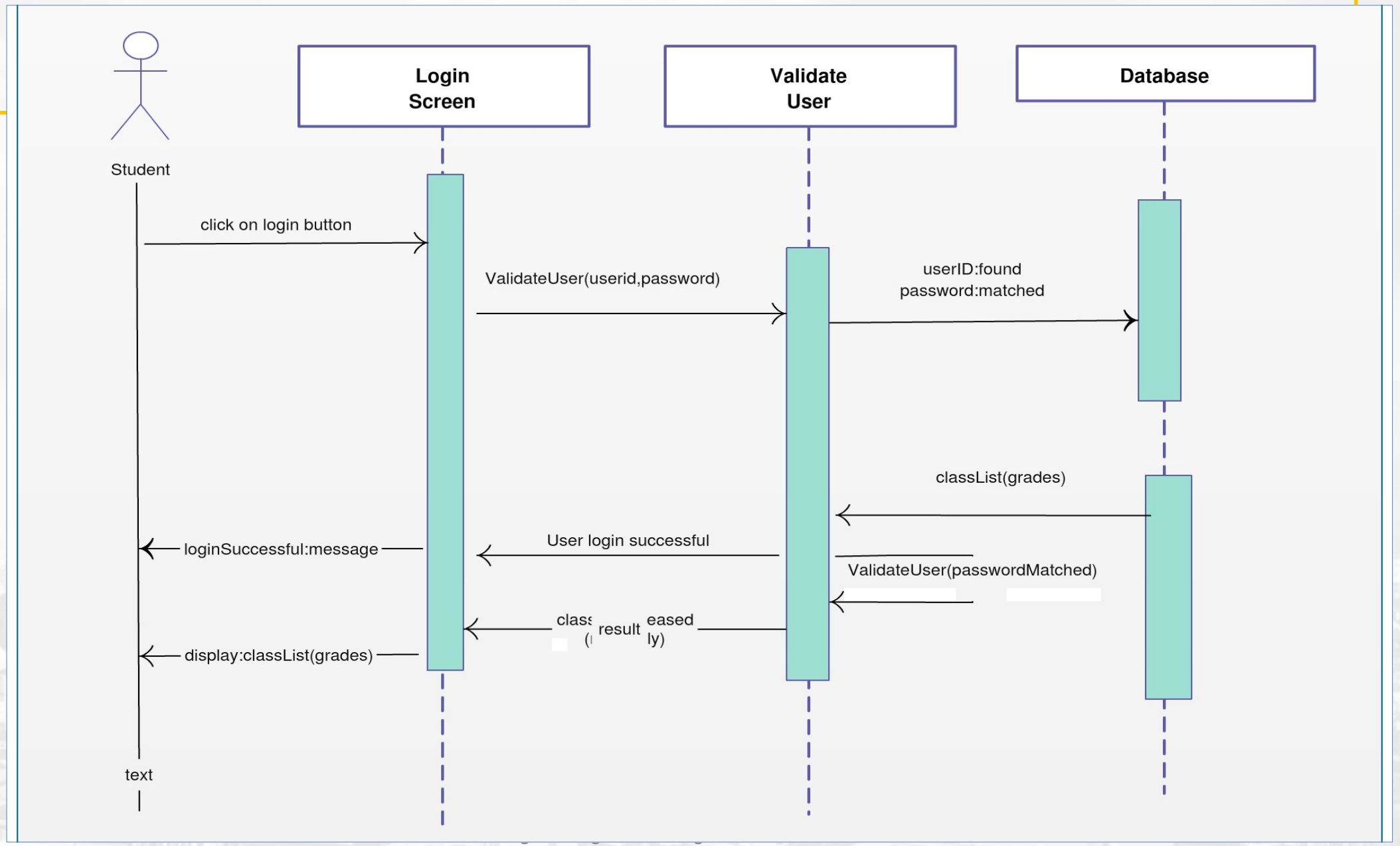
S.No	Name	Description	Notation
1	Synchronous Message	A synchronous message requires a response before the interaction can continue.	
2	Asynchronous Message	Asynchronous messages don't need a reply for interaction to continue.	
3	Reply or Return Message	A reply message is drawn with a dotted line and an open arrowhead pointing back to the original lifeline.	
4	Self Message	A message an object sends to itself, usually shown as a U shaped arrow pointing back to itself.	

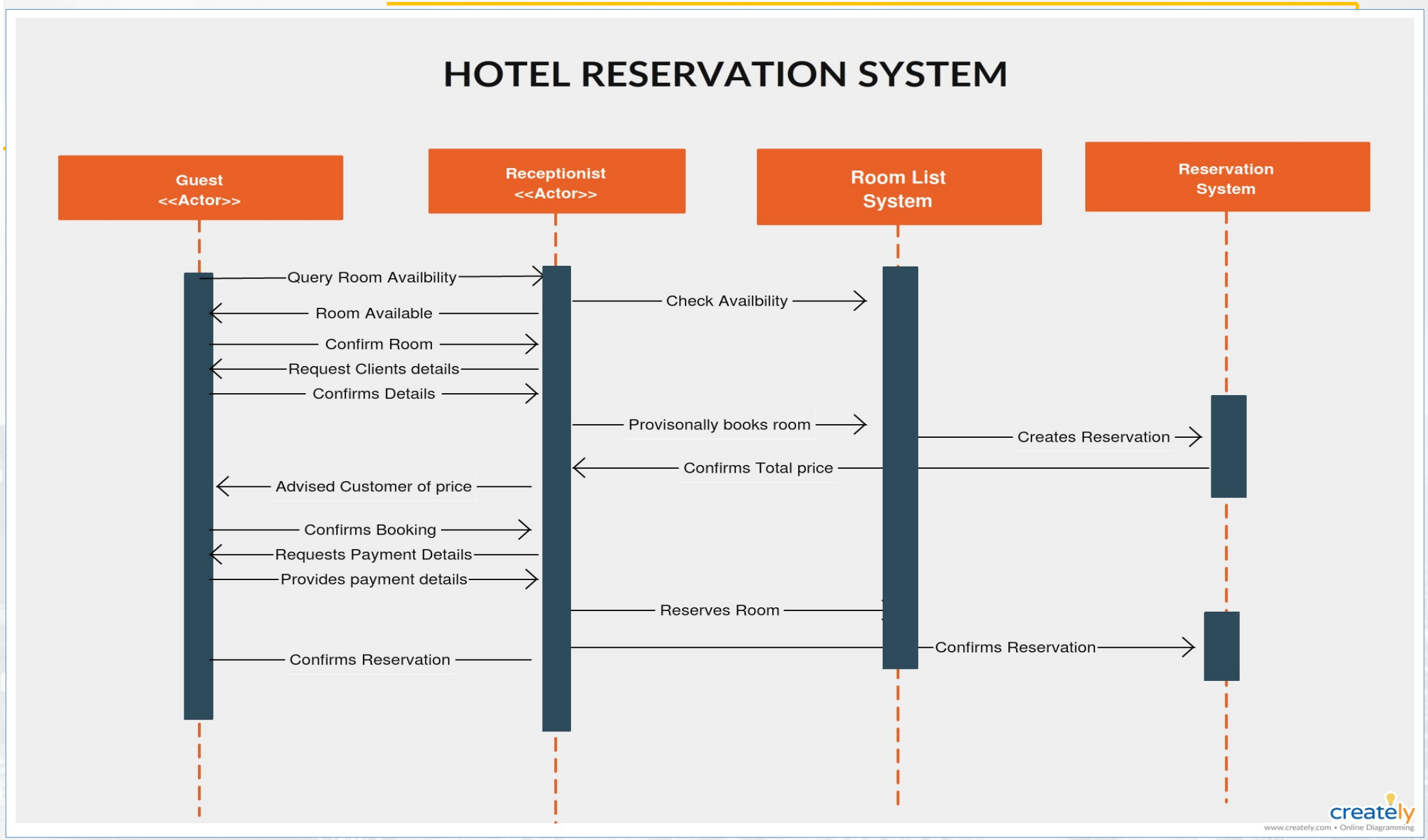
UML Sequence Diagrams

- Used during requirements analysis
  - To refine use case descriptions
  - to find additional objects (“participating objects”)
- Used during system design
  - to refine subsystem interfaces
- **Classes** are represented by columns
- **Messages** are represented by arrows
- **Activations** are represented by narrow rectangles
- **Lifelines** are represented by dashed lines

Drawing a Sequence Diagram




Student
Login Screen
Validate User
Database
click on login button
ValidateUser(userid,password)
userID:found
password:matched
classList(grades)
loginSuccessful:message
User login successful
ValidateUser(passwordMatched)
result
display:classList(grades)
text


HOTEL RESERVATION SYSTEM
Guest <<Actor>>
Receptionist <<Actor>>
Room List System
Reservation System
Query Room Availbility
Room Available
Confirm Room
Request Clients details
Confirms Details
Check Availbility
Provisonally books room
Creates Reservation
Confirms Total price
Advised Customer of price
Confirms Booking
Requests Payment Details
Provides payment details
Reserves Room
Confirms Reservation
Confirms Reservation
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Sequence Diagram

- 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.

Order System