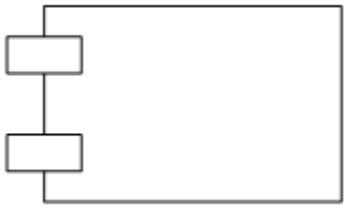
UML Diagrams

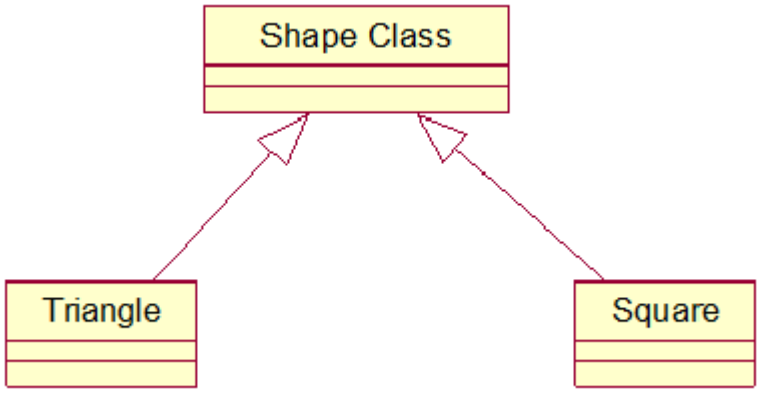
1. Which of the following UML diagrams has a static view?
a) Collaboration
b) Use case
c) State chart
d) Activity
View Answer
2. What type of core-relationship is represented by the symbol in the figure below?

a) Aggregation
b) Dependency
c) Generalization
d) Association
3. Which core element of UML is being shown in the figure?



a) Node
b) Interface
c) Class
d) Component

4. What type of relationship is represented by Shape class and Square ?



a) Realization
b) Generalization
c) Aggregation
d) Dependency

5. Which diagram in UML shows a complete or partial view of the structure of a modeled system at a specific time?
a) Sequence Diagram
b) Collaboration Diagram
c) Class Diagram
d) Object Diagram

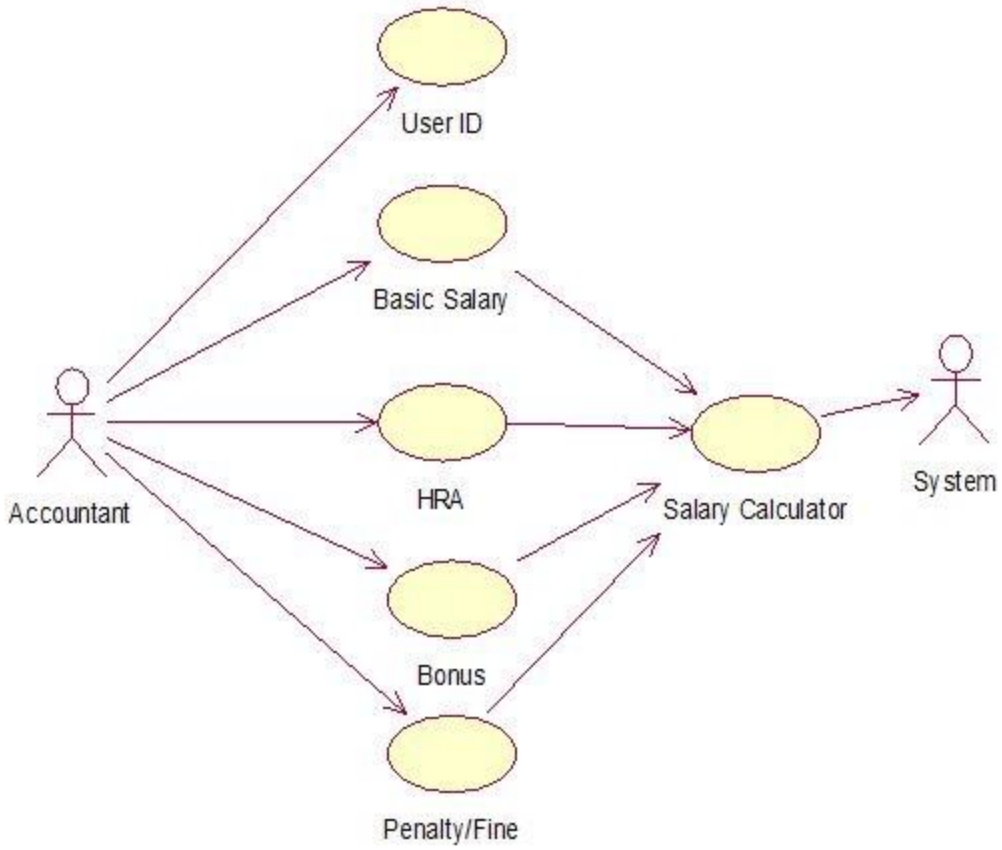
6. Interaction Diagram is a combined term for
a) Sequence Diagram + Collaboration Diagram
b) Activity Diagram + State Chart Diagram
c) Deployment Diagram + Collaboration Diagram
d) None of the mentioned
View Answer

7. Structure diagrams emphasize the things that must be present in the system being modeled.
a) True
b) False

8. Which of the following diagram is time oriented?
a) Collaboration
b) Sequence
c) Activity
d) None of the mentioned

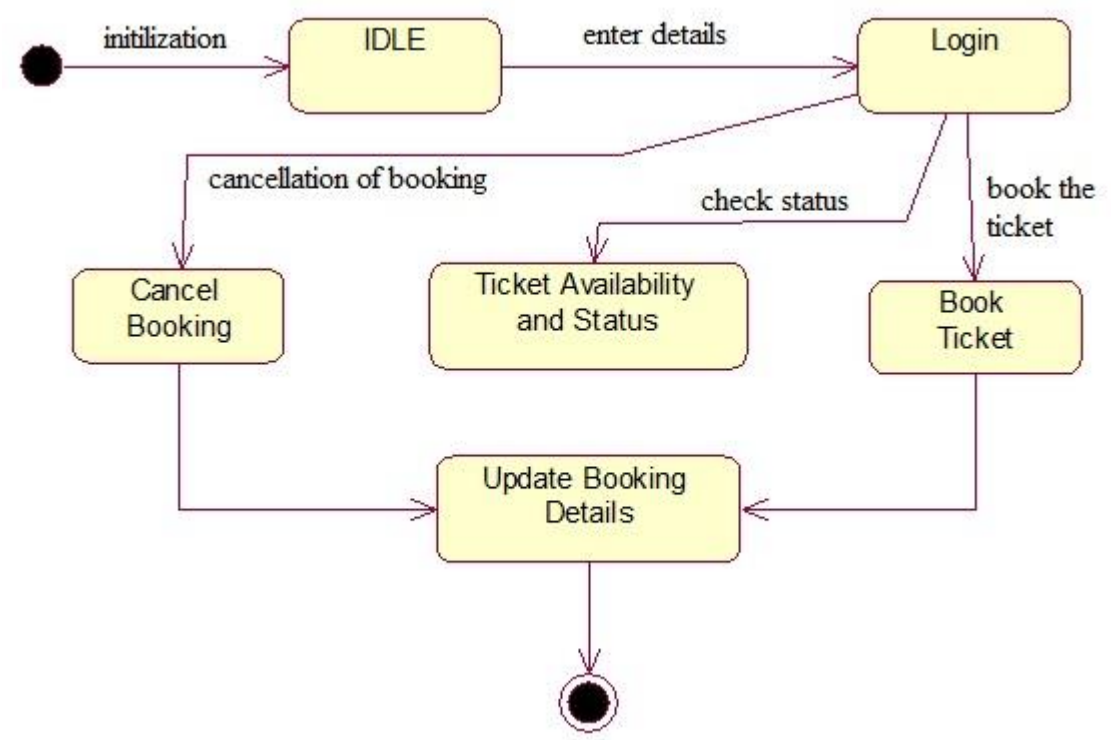
1. How many diagrams are here in Unified Modelling Language?
a) six
b) seven
c) eight
d) nine
View Answer

2. Which UML diagram is shown below?



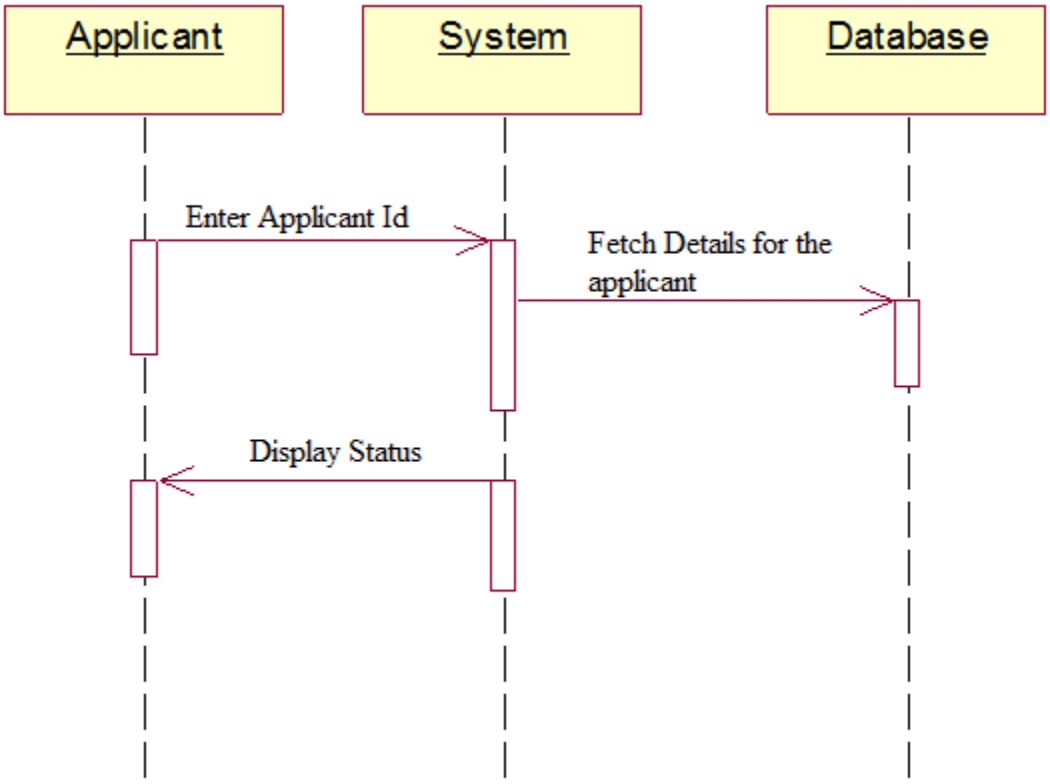
a) Use Case
b) Collaboration Diagram
c) Class Diagram
d) Object Diagram

3. Which UML diagram is shown below?



a) Use Case
b) State Chart
c) Activity
d) Object Diagram

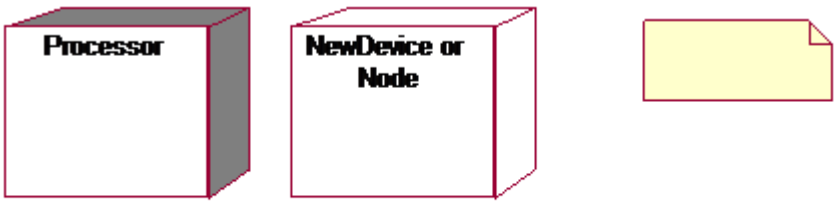
4. Which UML diagram is shown below?



a) Use Case
b) Collaboration Diagram
c) Sequence Diagram
d) Object Diagram

View Answer

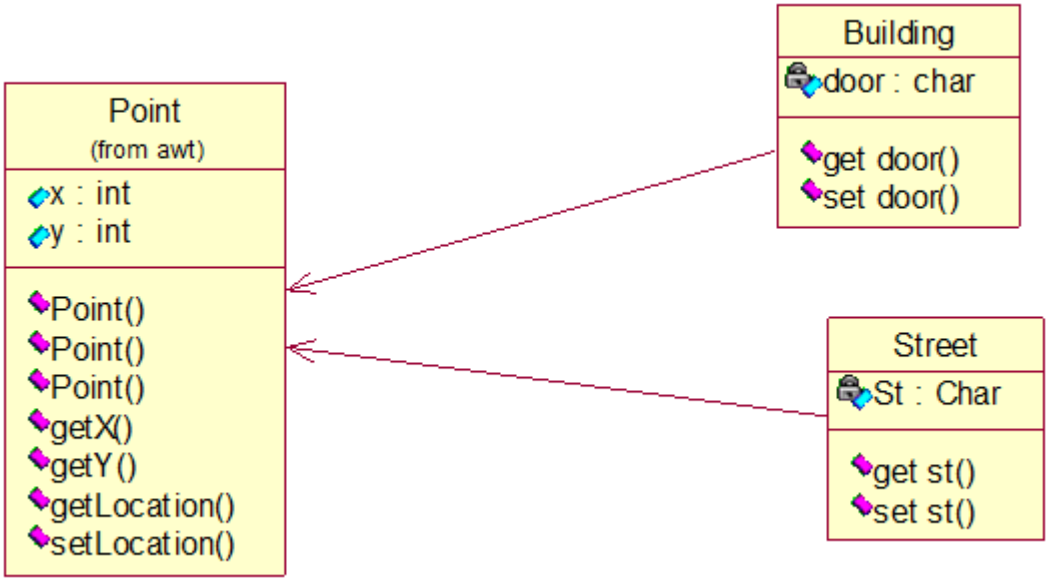
5. Which UML diagram's symbols are shown below?



a) Deployment diagram
b) Collaboration Diagram
c) Component Diagram
d) Object Diagram

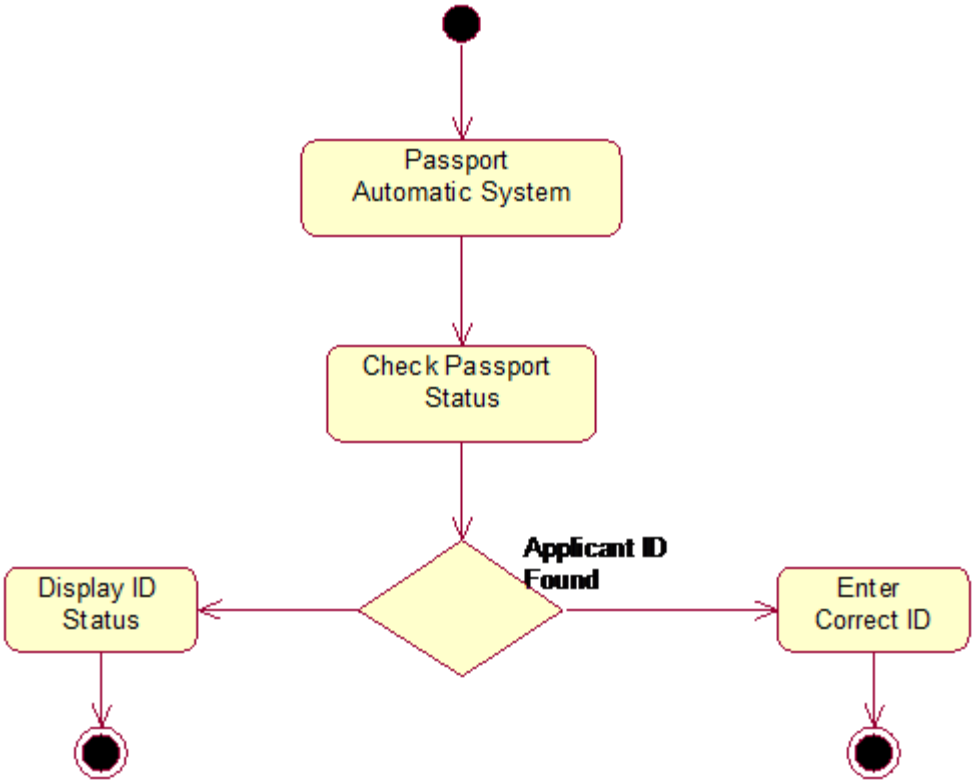
View Answer

6. Which UML diagram is shown below?



a) Deployment diagram
b) Collaboration Diagram
c) Object Diagram
d) Class Diagram
View Answer

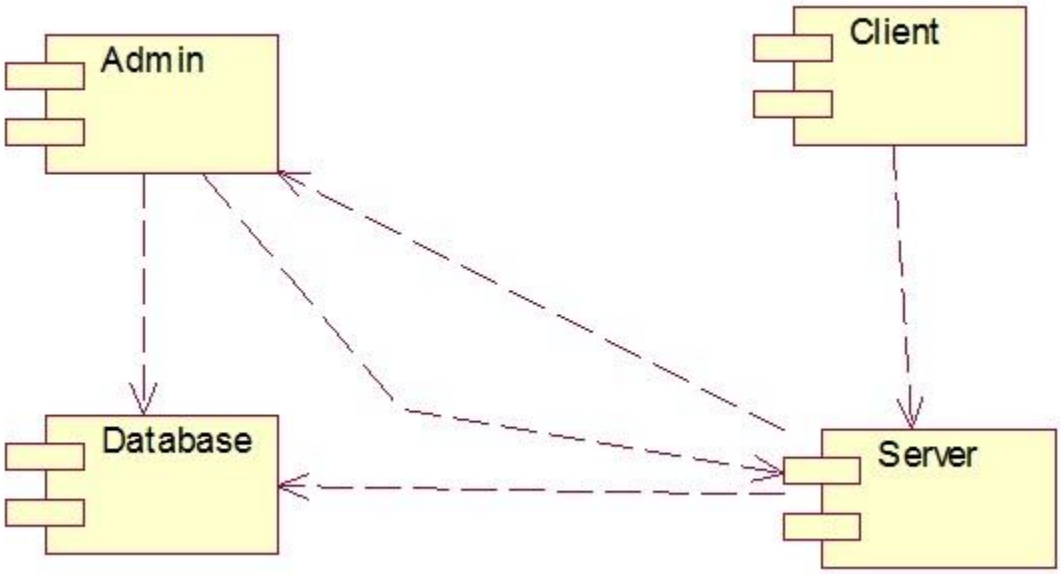
7. Which UML diagram is shown below?



a) Activity
b) State chart
c) Sequence
d) Collaboration

View Answer

8. Which UML diagram is shown below?



a) Component
b) Deployment
c) Use Case
d) DFD

Object Oriented Design using UML

1. Which of the following is not needed to develop a system design from concept to detailed object-oriented design?
a) Designing system architecture
b) Developing design models
c) Specifying interfaces
d) Developing a debugging system
View Answer

2. Which of the following is a dynamic model that shows how the system interacts with its environment as it is used?
a) system context model
b) interaction model
c) environmental model
d) both system context and interaction
View Answer

3. Which of the following is a structural model that demonstrates the other systems in the environment of the system being developed?
a) system context model
b) interaction model
c) environmental model
d) both system context and interaction

4. Which of the following come under system control?
a) Reconfigure

b) Shutdown
c) Powersave
d) All of the mentioned
View Answer
5. We use _____ where various parts of system use are identified and analyzed in turn.
a) tangible entities
b) scenario-based analysis
c) design-based analysis
d) none of the mentioned

6. Which model describes the static structure of the system using object classes and their relationships?
a) Sequence model
b) Subsystem model
c) Dynamic model
d) Structural model
View Answer
7. Which model shows the flow of object interactions?
a) Sequence model
b) Subsystem model
c) Dynamic model
d) Both Sequence and Dynamic model
View Answer
8. If the system state is Shutdown then it can respond to which of the following message?
a) restart()
b) reconfigure()
c) powerSave()
d) all of the mentioned
View Answer
9. Which message is received so that the system moves to the Testing state, then the Transmitting state, before returning to the Running state?
a) signalStatus()
b) remoteControl()
c) reconfigure()
d) reportStatus()
View Answer
10. Open source development involves making the source code of a system publicly available.
a) True
b) False

Top 50 MCQs on Unified Modelling Language

1. Which of the following diagram types is used to represent the static structure of a system?

A. Use case diagram
B. Sequence diagram
C. Class diagram
D. Activity diagram

Answer: C

Explanation: A class diagram is used to represent the static structure of a system, showing the classes, their attributes, and their relationships.

2. Which of the following is not a relationship type in UML?

A. Association
B. Aggregation
C. Composition
D. Inheritance

Answer: D

Explanation: Inheritance is not a relationship type in UML, it is a mechanism for code reuse in object-oriented programming.

3. What is the purpose of a use case diagram?

A. To show the behavior of objects in a system
B. To show the interactions between actors and a system
C. To show the flow of activities in a system
D. To show the structure of classes in a system

Answer: B

Explanation: A use case diagram is used to show the interactions between actors and a system, and the use cases that the system supports.

4. Which of the following diagram types is used to represent the behavior of a system?

A. Use case diagram
B. Sequence diagram
C. Class diagram
D. Activity diagram

Answer: D

Explanation: An activity diagram is used to represent the behavior of a system, showing the flow of activities and decision points.

5. Which of the following is true about an association relationship in UML?

A. It is a type of generalization relationship
B. It is a bidirectional relationship
C. It is a unidirectional relationship
D. It is a type of aggregation relationship

Answer: B

Explanation: An association relationship in UML is a bidirectional relationship, meaning that both classes can have a reference to each other.

6. What is the purpose of a state machine diagram?

A. To show the interactions between actors and a system
B. To show the behavior of objects in a system
C. To show the flow of activities in a system
D. To show the states and transitions of an object or system

Answer: D

Explanation: A state machine diagram is used to show the states and transitions of an object or system, and the events that trigger those transitions.

7. What is the purpose of a package diagram?

A. To show the structure of classes in a system
B. To show the behavior of objects in a system
C. To show the interactions between actors and a system
D. To show the organization of the system into modules

Answer: D

Explanation: A package diagram is used to show the organization of the system into modules or packages, and the dependencies between those packages.

8. What is the difference between aggregation and composition in UML?

A. Aggregation is a stronger form of composition
B. Composition is a stronger form of aggregation
C. Aggregation is a bidirectional relationship, while composition is unidirectional
D. Aggregation represents a part-whole relationship, while composition represents a weaker form of association

Answer: B

Explanation: Composition is a stronger form of aggregation, indicating a strong ownership relationship where the component cannot exist independently of the composite.

9. Which of the following is a stereotype in UML?

A. Aggregation
B. Composition
C. Actor
D. Interface

Answer: C

Explanation: A stereotype in UML is a tag or keyword that provides additional information about a model element, such as an actor representing a user or a subsystem.

10. Which of the following is true about a dependency relationship in UML?

A. It is a stronger form of association than aggregation
B. It is a bidirectional relationship
C. It represents a using relationship between two classes
D. It represents a part-whole relationship between two classes

Answer: C

Explanation: A dependency relationship in UML represents a using relationship between two classes, where a change in one class may affect the other class.

11. What is the purpose of a deployment diagram?

A. To show the interactions between actors and a system
B. To show the behavior of objects in a system
C. To show the flow of activities in a system
D. To show the physical deployment of the system components

Answer: D

Explanation: A deployment diagram is used to show the physical deployment of the system components, such as servers, devices, and networks.

12. Which of the following is true about a generalization relationship in UML?

A. It is a stronger form of association than aggregation
B. It is a bidirectional relationship
C. It represents a specialization relationship between two classes
D. It represents a part-whole relationship between two classes

Answer: C

Explanation: A generalization relationship in UML represents a specialization relationship between two classes, where the subclass inherits the attributes and behaviors of the superclass.

13. Which of the following is a characteristic of a use case in UML?

A. It represents a class in the system
B. It represents a sequence of activities in the system
C. It represents a user or external system interacting with the system
D. It represents a package or module in the system

Answer: C

Explanation: A use case in UML represents a user or external system interacting with the system, and the goal or outcome of that interaction.

14. What is the purpose of a sequence diagram?

A. To show the interactions between actors and a system
B. To show the behavior of objects in a system
C. To show the flow of activities in a system
D. To show the order and timing of interactions between objects

Answer: D

Explanation: A sequence diagram is used to show the order and timing of interactions between objects, and the messages exchanged between them.

15. Which of the following is a characteristic of an interface in UML?

A. It has implementation details
B. It can be instantiated as an object
C. It specifies a contract for a set of operations
D. It represents a physical component of the system

Answer: C

Explanation: An interface in UML specifies a contract for a set of operations that a class or component must implement, without specifying the implementation details.

16. Which of the following is a characteristic of a collaboration diagram in UML?

A. It shows the order and timing of interactions between objects
B. It shows the structure of classes in a system
C. It shows the flow of activities in a system
D. It shows the interactions between actors and a system

Answer: A

Explanation: A collaboration diagram in UML is used to show the order and timing of interactions between objects, and the messages exchanged between them.

17. What is the purpose of a component diagram?

A. To show the interactions between actors and a system
B. To show the behavior of objects in a system
C. To show the structure and dependencies between system components
D. To show the physical deployment of the system components

Answer: C

Explanation: A component diagram is used to show the structure and dependencies between system components, such as libraries, modules, and executables.

18. Which of the following is true about a package in UML?

A. It is a type of class
B. It contains other packages
C. It represents a physical component of the system
D. It can be instantiated as an object

Answer: B

Explanation: A package in UML is used to group related elements, such as classes, interfaces, and other packages, and can contain other packages.

19. Which of the following is a characteristic of a state diagram in UML?

A. It shows the order and timing of interactions between objects
B. It shows the behavior of objects in a system
C. It shows the flow of activities in a system
D. It shows the interactions between actors and a system

Answer: B

Explanation: A state diagram in UML is used to show the behavior of objects in a system, and the transitions between different states of an object.

20. What is the purpose of a communication diagram in UML?

A. To show the interactions between actors and a system
B. To show the behavior of objects in a system
C. To show the flow of activities in a system
D. To show the order and timing of interactions between objects

Answer: D

Explanation: A communication diagram in UML is used to show the order and timing of interactions between objects, and the messages exchanged between them.

21. Which of the following is a characteristic of an actor in UML?

A. It represents a physical component of the system
B. It represents a package or module in the system
C. It represents a user or external system interacting with the system
D. It represents a class in the system

Answer: C

Explanation: An actor in UML represents a user or external system interacting with the system, and can be used to define the roles and responsibilities of different users or systems.

22. Which of the following is true about a composition relationship in UML?

A. It is a weaker form of association than aggregation
B. It is a bidirectional relationship
C. It represents a part-whole relationship between two classes
D. It represents a using relationship between two classes

Answer: C

Explanation: A composition relationship in UML represents a part-whole relationship between two classes, where the composed object cannot exist independently of the composite object.

23. What is the purpose of a class diagram in UML?

A. To show the interactions between actors and a system
B. To show the behavior of objects in a system

C. To show the structure of classes and their relationships in a system
D. To show the physical deployment of the system components

Answer: C

Explanation: A class diagram in UML is used to show the structure of classes and their relationships in a system, such as inheritance, association, and aggregation.

24. Which of the following is a characteristic of an association relationship in UML?

A. It is a weaker form of association than aggregation
B. It is a bidirectional relationship
C. It represents a part-whole relationship between two classes
D. It represents a using relationship between two classes

Answer: B

Explanation: An association relationship in UML represents a bidirectional relationship between two classes, and can have a multiplicity to indicate the number of objects involved in the relationship.

25. Which of the following is true about a realization relationship in UML?

A. It is a weaker form of association than aggregation
B. It is a bidirectional relationship
C. It represents a specialization relationship between a class and an

interface
D. It represents a part-whole relationship between two classes

Answer: C

Explanation: A realization relationship in UML represents a specialization relationship between a class and an interface, where the class implements the operations defined in the interface.

26. What is the purpose of an activity diagram in UML?

A. To show the behavior of objects in a system
B. To show the structure of classes and their relationships in a system
C. To show the order and timing of interactions between objects
D. To show the flow of activities in a system

Answer: D

Explanation: An activity diagram in UML is used to show the flow of activities in a system, such as the steps in a business process or the stages of a software algorithm.

27. Which of the following is a characteristic of a use case diagram in UML?

A. It shows the behavior of objects in a system
B. It shows the structure of classes and their relationships in a system
C. It shows the interactions between actors and a system
D. It shows the flow of activities in a system

Answer: C

Explanation: A use case diagram in UML is used to show the interactions between actors and a system, and can be used to define the functional requirements of a system.

28. Which of the following is a characteristic of a sequence diagram in UML?

A. It shows the behavior of objects in a system
B. It shows the structure of classes and their relationships in a system
C. It shows the order and timing of interactions between objects
D. It shows the flow of activities in a system

Answer: C

Explanation: A sequence diagram in UML is used to show the order and timing of interactions between objects, and the messages exchanged between them.

29. What is the purpose of a component diagram in UML?

A. To show the interactions between actors and a system
B. To show the behavior of objects in a system
C. To show the physical deployment of the system components
D. To show the flow of activities in a system

Answer: C

Explanation: A component diagram in UML is used to show the physical deployment of the system components, such as the software modules and hardware devices.

30. Which of the following is a characteristic of a stereotype in UML?

A. It is a graphical element used to represent a class
B. It is a graphical element used to represent an actor
C. It is a keyword used to extend or specialize a UML element
D. It is a relationship used to define the dependencies between UML elements

Answer: C

Explanation: A stereotype in UML is a keyword used to extend or specialize a UML element, and can be used to add additional properties or behaviors to UML elements.

31. Which of the following is a characteristic of a deployment diagram in UML?

A. It shows the interactions between actors and a system
B. It shows the behavior of objects in a system
C. It shows the physical deployment of the system components
D. It shows the flow of activities in a system

Answer: C

Explanation: A deployment diagram in UML is used to show the physical deployment of the system components, such as the software modules and hardware devices.

32. Which of the following is a characteristic of a package diagram in UML?

A. It shows the behavior of objects in a system
B. It shows the structure of classes and their relationships in a system
C. It shows the physical deployment of the system components
D. It shows the grouping of related

Answer: D

Explanation: A package diagram in UML is used to show the grouping of related UML elements into packages, which can help to organize and manage the complexity of a system.

33. Which of the following is a characteristic of an object diagram in UML?

A. It shows the behavior of objects in a system
B. It shows the structure of classes and their relationships in a system
C. It shows the order and timing of interactions between objects
D. It shows a snapshot of the instances of classes in a system

Answer: D

Explanation: An object diagram in UML is used to show a snapshot of the instances of classes in a system, and the relationships between them.

34. What is the purpose of a state machine diagram in UML?

A. To show the behavior of objects in a system
B. To show the structure of classes and their relationships in a system
C. To show the order and timing of interactions between objects
D. To show the different states and transitions of an object or system

Answer: D

Explanation: A state machine diagram in UML is used to show the different states and transitions of an object or system, and can be used to model complex behavior.

35. Which of the following is a characteristic of a composite structure diagram in UML?

A. It shows the behavior of objects in a system
B. It shows the structure of classes and their relationships in a system
C. It shows the physical deployment of the system components
D. It shows the internal structure of a UML element

Answer: D

Explanation: A composite structure diagram in UML is used to show the internal structure of a UML element, such as a class or component, and the relationships between its parts.

36. Which of the following is a characteristic of a timing diagram in UML?

A. It shows the behavior of objects in a system
B. It shows the structure of classes and their relationships in a system
C. It shows the order and timing of interactions between objects
D. It shows the physical deployment of the system components

Answer: C

Explanation: A timing diagram in UML is used to show the order and timing of interactions between objects, and the duration and frequency of messages exchanged between them.

37. Which of the following is a characteristic of a communication diagram in UML?

A. It shows the behavior of objects in a system
B. It shows the structure of classes and their relationships in a system
C. It shows the order and timing of interactions between objects
D. It shows the flow of activities in a system

Answer: C

Explanation: A communication diagram in UML is used to show the order and timing of interactions between objects, and the messages exchanged between them.

38. What is the purpose of a profile in UML?

A. To define the behavior of a system
B. To define the structure of a system

C. To extend or customize UML for a specific domain or purpose
D. To define the physical deployment of a system

Answer: C

Explanation: A profile in UML is used to extend or customize UML for a specific domain or purpose, and can be used to define additional stereotypes, constraints, and relationships.

39. What is the purpose of a collaboration diagram in UML?

A. To show the behavior of objects in a system
B. To show the structure of classes and their relationships in a system
C. To show the physical deployment of the system components
D. To show the interactions between objects or roles in a system

Answer: D

Explanation: A collaboration diagram in UML is used to show the interactions between objects or roles in a system, and the messages exchanged between them.

40. Which of the following is a characteristic of a component diagram in UML?

A. It shows the behavior of objects in a system
B. It shows the structure of classes and their relationships in a system
C. It shows the physical deployment of the system components
D. It shows the internal structure and dependencies of the system components

Answer: D

Explanation: A component diagram in UML is used to show the internal structure and dependencies of the system components, such as classes, libraries, and modules.

41. What is the purpose of a package diagram in UML?

A. To show the behavior of objects in a system
B. To show the structure of classes and their relationships in a system
C. To show the physical deployment of the system components
D. To show the grouping of related UML elements into packages

Answer: D

Explanation: A package diagram in UML is used to show the grouping of related UML elements into packages, which can help to organize and manage the complexity of a system.

42. Which of the following is a characteristic of a class diagram in UML?

A. It shows the behavior of objects in a system
B. It shows the structure of classes and their relationships in a system
C. Both A and B
D. None

Answer: B

Explanation: A class diagram in UML is used to show the structure of classes and their relationships in a system, and can be used to model the static aspects of a system.

43. What is the purpose of an object diagram in UML?

A. To show the behavior of objects in a system
B. To show the structure of classes and their relationships in a system
C. To show the physical deployment of the system components
D. To show a specific instance of a class and its relationships

Answer: D

Explanation: An object diagram in UML is used to show a specific instance of a class and its relationships, and can be used to model the dynamic aspects of a system.

44. Which of the following is a characteristic of a state machine diagram in UML?

A. It shows the behavior of objects in a system
B. It shows the structure of classes and their relationships in a system
C. It shows the physical deployment of the system components
D. It shows the states and transitions of an object or system

Answer: D

Explanation: A state machine diagram in UML is used to show the states and transitions of an object or system, and can be used to model the behavior of a system over time.

45. What is the purpose of a timing diagram in UML?

A. To show the behavior of objects in a system
B. To show the structure of classes and their relationships in a system
C. To show the physical deployment of the system components
D. To show the timing constraints on message exchanges between objects

Answer: D

Explanation: A timing diagram in UML is used to show the timing constraints on message exchanges between objects, and can be used to model the behavior of a system over time.

46. What is the purpose of a composite structure diagram in UML?

A. To show the behavior of objects in a system
B. To show the structure of classes and their relationships in a system
C. To show the physical deployment of the system components
D. To show the internal structure and relationships of a complex system component

Answer: D

Explanation: A composite structure diagram in UML is used to show the internal structure and relationships of a complex system component, such as a composite structure or subsystem.

47. Which of the following is a characteristic of an interaction overview diagram in UML?

A. It shows the behavior of objects in a system
B. It shows the structure of classes and their relationships in a system
C. It shows the physical deployment of the system components
D. It shows a high-level view of the interactions between objects or roles in a system

Answer: D

Explanation: An interaction overview diagram in UML is used to show a high-level view of the interactions between objects or roles in a system, and can be used to model complex interactions between use cases or scenarios.

48. What is the purpose of a profile diagram in UML?

A. To show the behavior of objects in a system
B. To show the structure of classes and their relationships in a system
C. To show the physical deployment of the system components
D. To define and extend UML modeling concepts and constructs

Answer: D

Explanation: A profile diagram in UML is used to define and extend UML modeling concepts and constructs, and can be used to customize the UML language for specific domains or applications.

49. What is the purpose of a use case diagram in UML?

A. To show the behavior of objects in a system
B. To show the structure of classes and their relationships in a system

C. To show the physical deployment of the system components
D. To describe the system’s functionality from a user’s perspective

Answer: D

Explanation: A use case diagram in UML is used to describe the system’s functionality from a user’s perspective, and can be used to model the interactions between actors and use cases in a system.

50. What is the purpose of a statechart diagram in UML?

A. To show the behavior of objects in a system
B. To show the structure of classes and their relationships in a system
C. To show the physical deployment of the system components
D. To show the states and transitions of an object or system

Answer: D

Explanation: A statechart diagram in UML is used to show the states and transitions of an object or system, and can be used to model the behavior of a system over time.