What is software modeling?

Designing software applications before coding

What is the Unified Modeling Language?

A standardized graphical language and notation for describing object-oriented models

What is software architecture?

The overall structure of a software system

What is a software design notation?

A graphical or textual description of the software.

What is a software design concept?

A fundamental idea that can be applied to designing a system.

What is a software design strategy?

An overall plan and direction for developing a design.

What is a software design method?

A systematic approach for producing a design

What are software structuring criteria?

Guidelines used to help in structuring a software system into its components.

What is a platform-independent model (PIM)?

A precise model of the software architecture before a commitment is made to a specific platform.

What is a platform-specific model (PSM)?

A precise model of the software architecture mapped to a specific platform?

How is an actor depicted in a use case diagram?

A stick figure

How is a use case depicted on a use case diagram?

An oval

How is a class depicted on a class diagram?

A ox with one, two, or three compartments

How is an association depicted on a class diagram?

A solid line joining two class boxes

How is public visibility depicted for a class element on a class diagram?

+ sign

What are the two kinds of UML interaction diagrams?

Sequence diagram and communication diagram

What does an interaction diagram depict?

Objects and messages

What does a statechart diagram depict?

States and events

What is a UML package?

A grouping of model elements

What does a deployment diagram depict?

The physical configuartion of the system in terms of physical nodes and physical interactions between nodes

Which of the following are object-oriented concepts?

Classes, information hiding, and inheritance

Which of the following is a characteristic of an object?

Groups data and procedures that operate on the data

What is a class?

A collection of objects with the same characteristics.

hat is an operation (also known as method) of a class?

Specification and the implementation of a function or procedure provided by a class

What is the signature of an operation?

The operation's name, parameters, and return value.

What is the interface of a class?

The specification of operations provided by the class

What is an attribute?

A data item held by a class

What is information hiding in software design?

Hiding a design decision that is considered likely to change

What is data abstraction?

Encapsulating data so that its structure is hidden

What is inheritance?

A mechanism for sharing and re-using code between classes.

What is a software life cycle?

A phased approach to developing software

What sit the waterfall life cycle model?

A process model in which each phrase is completed before the next phase is started

Which of the following is a limitation of the waterfall life cycle model?

Software requirements are not properly tested until a working system is available

Which of the following approaches can overcome the limitation in the previous question?

Throwaway prototyping

What is evolutionary prototyping?

Incremental development

What approach does the sprial model emphasize?

Risk-driven development

What is the goal of software validation

Building the right system

What is the goal of software verification?

Building the system right

What is "white box" testing?

Testing with knowledge of the system internals

What is "black box" testing?

Testing without knowledge of the software internals

What is carried out during requirements modeling?

Functional requirements of the system are described in terms of actors and use cases.

What is carried out during analysis modeling?

Developing static and dynamic models.

What is carried out during design modeling?

Developing software architectures.

What is carried out during incremental software construction?

Detailed design, coding, and unit testing of the classes in a subset of the system.

What is carried out during incremental software integration?

Integration testing of the classes in each software increment

What is carried out during system testing?

Black box testing

What is a use case?

A sequence of interactions between the user and the objects in the system

What is an actor in a use case?

An external entity that interacts with the system

What t is a primary actor?

The actor that starts the use case

What is a secondary actor?

An actor that participates in the use case

What is an alternative sequence in a use case?

A sequence that is different from the main sequence

What can an inclusion use case be used for?

To describe functionality that is common to more than one use case

What can an extension use case be used for?

To describe a conditional part of a different use case that is only executed under certain circumstances.

How can a nonfunctional requirement be described in use case model?

In a separate section of the use case description

What is a use case package?

A group of related use cases

What is a class?

A collection of objects with the same characteristics

What is an attribute?

A data value held by an object in a class

What is an association?

A relationship between two classes.

What is meant by the multiplicity of an association?

How many instances of one class relate to a single instance of another class

What is an association class?

A class that models an association between two or more classes.

What is a generalization/specialization hierarchy?

An inheritance relationship

What is a composition hierarchy?

A strong form of a whole/part relationship

What is an aggregation hierarchy?

A weak form of a whole/part relationship

does the system context class diagram define?

The boundary between the system and the external environment

What is an entity class?

A class that stores data

What is a boundary object?

An object that communicates with an external object

What is a control object?

An object that controls other objects

What is a state-dependent control object?

An object that executes a state machine

What is a coordinator object?

A decision-making object

How would you determine a boundary class from the context diagram?

By determining the software classes that communicate with the external classes.

What is a timer object?

An object that is awakened by an external timer.

What do class structuring criteria help with?

Structuring an application into classes.

What is the classification process for application classes analagous to?

Categorizing books in a library

What is the purpose of a stereotype in class structuring?

To label a class according to its class structuring criterion

What is a business logic object?

An object that defines business-specific application logic.

What does an interaction diagram depict?

Software objects and the sequence of their interactions.

How is an actor depicted on an interaction diagram?

An instance of an actor can provide input to or receive output from a boundary object?

What does a sequence diagram depict?

Software objects and the sequence of their interactions

What does a communication diagram depict?

Software objects and the sequence of their interactions

What is the instance form of an interaction diagram?

Depicts one possible sequence of interactions among object instances

What is the generic form of an interaction diagram?

Depicts all possible interactions among objects

During dynamic interaction modeling, use cases are realized as follows:

Determine objects that participate in each use case and the sequence of interactions among them.

Which of the following interactions could happen on an interaction diagram?

An external user sends a message to a user interaction object.

Which of the following interactions is NOT likely to happen on an interaction diagram?

An input object sends a message to a printer object.

What kind of object would be the first object to receive an input from an external object?

A boundary object

What is a state in a state machine?

A recognizable situation that exists over an interval of time

What is an event in a sate machine?

A discrete signal that cuases a change of state

What is an action in a state machine?

A computation that executes as a result of a state transition

What is an entry action in a state machine?

An action that is performed when th tate is entered

What is an exit action in a state machine?

An action that is performed when the state is left

What is a condition used for in a state machine?

A conditional state transition

What is a state transition into a composite state equivalent to?

A transition into only one of the substates

What is a state transition out of a composite state equivalent to?

A transition out of each of the substates

How does a composite state relate to a substate?

A composite state is decomposed into substates.

If two actions are shown on a given state transition, which of the following is true?

The two actions are independent of each other.

What does the software architecture describe?

The overall structure of a software system

Which of the following statements is NOT true for a component?

An operation

is a structural view of a software architecture?

A view in terms of components and connectors

What is a dynamic view of a software architecture?

A view in terms of objects and messages.

What is a deployment view of a software architecture?

A dynamic interaction view in terms of objecs and messages

What is a software architectural pattern?

The structure of the major subsystems of a system

What happens in a Layers of Abstraction pattern?

Each layer uses services in the layer immediately below it.

What happens in a Call/Return pattern?

A calling operation in the calling object invokes an operation (aka method) in the call object

A producer sends a message to a consumer. Which one of the following is asynchronous message communication?

The producer does not wait for a response from the customer.

A producer sends a message to a consumer. Which of the following is synchronous message communication with reply?

The producer waits for a response from the customer.

What is an information hiding object?

A passive object that encapsulates data

What is a class interface?

Specifies the externally visible operations of a class

Which of the following is NOT an object-oriented concept?

Subroutine

Which of the following is a class that realizes an interface?

The class is called by an interface

Which of the following is an entity class?

A data abstraction class

What does a state machine class encapsulate?

A state transition table and the current state of the machine

Which of the following is unlikely to be a graphical user interface class?

A pin

Which of the following is unlikely to be encapsulated in a business logic class?

A dialog box

Which of the following is NOT allowed through inheritance?

Subclass redefines attributes inherited from superclass

Which of the following is true for an abstract class?

It is used as a template for creating subclasses

In object-oriented design, polymorphism means that

Different classes may have the same operation name.

With polymorphism and dynamic binding, an object can:

Invoke an operation of the same name on different objects

Which is correct about class?

A class is an abstract description of a set of objects

In an interaction diagram, boxes on top of the diagram can represent classes, objects, and actors. Which of the following is true?

":Customer" represents a class named "Customer”

Concurrency is described in -> Activity diagram

Which is correct about class diagram.

Describing the classes and their relationship.

Which is correct about state diagram.

Describing the internal behaviour of the system, modeling the dynamic view of the system

Information hiding can also be termed as:

Encapsulation

Which among the following best describes encapsulation?

It is a way of combining various data members and member functions that operate on those data members into a single unit

What is NOT a good software design?

Leads to software products have higher quality attributes

Which of followings are not key components of an architectural style?

Operations

Which of followings refers to the level of independence of the system on software and hardware platforms?

Portability

Public interface of a class consists of the following:

public attributes and public operations

Identify the incorrect statements:

SDD contains a set of rules, constraints, and patterns of how to structure a system into a set of elements and connectors

Asynchronous message invocation can be expressed in sequence diagrams

Sequence diagram

Identify the incorrect statements about Software architecture?

Software architecture also specifies the guidelines for how to writing the source code

The feature in object-oriented piogiamming that allows the same operation -> Polymorphism

Which definition best describes an object? -> Instance of itself

Which of the following are considered as Business attributes? -> All of others

Which of the following attributes are considered as business attributes?-> None of others

Which of the followings are not the key components of an architectural style?-> None of the others

Composition relationship is represented by hollow diamond arrow.-> false

The static and runtime structures are based on the same element types. -> false

There are two aspects of software requtrements -> False

There is a one-to-one -> false

What are NOT the tasks of Software architect?

Guarantee that the software architecture satisfies functional and non-functional requirements

Which definition best describes an object?

Instance of a class

What Is software modeling?