

Essentials of Visual Modeling w/ UML 2.0 - Instructor Notes

Instructor Notes:

As the instructor, you will need to “shuffle” the slides around in the View/Slide Sorter menu option, if you don’t want your students to remember the order that the questions were asked.

The slides are animated to show the answer on the first mouse-click.

The slide thumbnail features the IBM logo in the top right corner and the text 'IBM Software Group' in the top center. The main title is 'Essentials of Visual Modeling with UML 2.0' followed by 'Module 3a: VM Quiz Show'. Below the title is the 'Rational software' logo. At the bottom of the slide, there is a horizontal bar with several small icons representing different software development concepts.

Essentials of Visual Modeling w/ UML 2.0 - Instructor Notes

Instructor Notes:

The correct answer is A.

B. Object Technology is not a new theory but a well-proven technology used in a large number of projects.

C. Object technology is a powerful and challenging way to develop software. Its development began as early as 1967. Simula was designed and became the first language to use objects and classes.

D. This is only partly true. It is also based on the principles of hierarchy and encapsulation.

Question

Object technology is . . . ?

- A. A set of principles guiding software construction.
- B. A new theory striving to gain acceptance.
- C. A dynamic new language by Grady Booch.
- D. Based on the principles of abstraction and modularity.

Answer: A

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Instructor Notes:

The correct answer is C.

A. Team members may all understand their job but work in isolation. A model allows them to work collaboratively on projects.

B. A model can be either structural or behavioral. It doesn't have to be both.

D. Some may feel this way but a model actually provides the blueprint for a system.

Question

A model . . . ?

- A. Is not necessary when team members understand their job.
- B. Has to be structural AND behavioral.
- C. Is a simplification of reality.
- D. Is an excuse for building an elaborate plan.

Answer: C

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Instructor Notes:

The correct answer is D.

We model for all of the listed reasons.

Question

Why do we model?

- A. Helps to visualize a system
- B. Gives us a template for constructing a system
- C. Documents our decisions
- D. All of the above

Answer: D

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Instructor Notes:

The correct answer is B.

Depending on your bias, someone might argue A or C. The correct answer is that the best models are connected to reality.

Question

The best models are connected to . . . ?

- A. Java-script code
- B. Reality
- C. C ++
- D. Issues that tie it to an object-oriented developer

Answer: B

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Instructor Notes:

The correct answer is B.

As a general rule, modeling becomes more important as the complexity and expense rise.

Question

Which project would be least likely to require a model?

A.



B.



C.



D.



Answer: B

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Instructor Notes:

There are no wrong answers here. All the answers reflect correct modeling principles.

The software systems that we develop today are more complex than the human mind can comprehend. This is why we model systems.

Question

Which principles of modeling are correct?

- A. The model you create, influences how the problem is attacked.
- B. The best kinds of models are those that let you chose your degree of detail.
- C. The best models are connected to reality.
- D. Create models that are built and studied separately.

Answer: A, B, C and D

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Instructor Notes:

The correct answer is D.

A. The use-case view exposes the requirements of the system.

B. The process view models the distribution of the system's processes and threads.

C. The implementation view addresses the physical realization of the system.

Question

Views are "slices" of architecture. Which view focuses on structural issues?

- A. Use case
- B. Process
- C. Implementation
- D. Logical

Answer: D

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Instructor Notes:

The correct answer is C.

A. An iterative approach allows users to be involved in a meaningful way throughout the project life cycle. Since each iteration produces an executable release, users can observe the partially executing system and provide meaningful feedback to their level of satisfaction.

B. Use cases are a recommended method for organizing your requirements. Use cases define the behavior performed by a system.

D. A system's architecture is used as a primary artifact for conceptualizing, constructing, managing, and evolving the system under development.

Question

Which process characteristic is not essential to working with the UML?

- A. Iterative and incremental
- B. Use-case driven
- C. Resilient
- D. Architecture-centric

Answer: C



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Instructor Notes:

The correct answer is C.

A. State is NOT defined by a “state” attribute or set of attributes.

B. The state of an object normally changes over time.

D. The state of an object is one of the possible conditions that an object may exist in.

Question

The state of an object . . . ?

- A. Is defined by a “state” attribute or set of attributes.
- B. Does not normally change over time.
- C. Is defined by an object’s attributes and relationships.
- D. Is the only condition in which an object may exist.

Answer: C

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State of an object is defined by the total of an object’s attributes and links. For example, if Professor Clark’s status changed from tenured to retired, the state of the Professor Clark object changes.

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Instructor Notes:

The correct answer is C.

The visible behavior of an object is modeled by the set of operations it can respond to (operations that the object can perform).

Question

The visible behavior of an object is modeled by its . . . ?

- A. Attributes
- B. Responsibilities
- C. Operations
- D. Methods

Answer: C

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Objects are intended to mirror the concepts that they are modeled after, including behavior.

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Instructor Notes:

The correct answer is B.

A. Data inside the object is only accessible by the object's operations. No other object can reach inside the object and change its attribute values.

C. As a result of encapsulation, maintenance is easier and less expensive.

D. Clients will not be affected by changes in implementation, reducing the 'ripple effect,' where a correction to one operation forces the corresponding correction in a client operation.

Question

Encapsulation . . . ?

- A. Allows direct manipulation of things that have been encapsulated.
- B. Is often referred to as information hiding.
- C. Causes costly and extensive maintenance.
- D. Causes changes to affect clients during implementation.

Answer: B

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Instructor Notes:

The correct answer is A.

B. Though modularity breaks the system into smaller modular blocks, each is independent of the other.

C. This is the opposite of what modularity does. Modularity breaks a system into smaller, more manageable pieces.

D. Pieces of a system can be independently developed as long as their interactions are well understood.

Question

What happens when you incorporate modularity into your plan?

- A. It reduces something complex into manageable pieces.
- B. It builds modules that talk to each other.
- C. Creates systems too large to understand.
- D. Parts of your system cannot be independently developed.

Answer: A

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Instructor Notes:

The correct answer is D.

- A. A class is a description of a set of objects.
- B. A class defines an object.
- C. An object is an instance of a class.

Question

A class . . . ?

- A. Is an encapsulation of an object.
- B. Represents the hierarchy of an object.
- C. Is an instance of an object.
- D. Is an abstract definition of an object.

Answer: D

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A class is a description of a set of objects that share the same attributes, operations, relationships, and semantics.

A class is not an object. It is an abstract definition of an object. It defines the structure and behavior of each object in the class.

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Instructor Notes:

The correct answer is A.

Polymorphism handles the same message in different ways depending on the receiving object.

Question

Polymorphism can be described as?

- A. Hiding many different implementations behind one interface
- B. Inheritance
- C. Information placing
- D. Generalization

Answer: A

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Instructor Notes:

The correct answer is B.

Question

What phrase best represents a generalization relationship?

- A. "Is a part of"
- B. "Is a kind of"
- C. "Is a replica of"
- D. "Is an inheritance of"

Answer: B

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Instructor Notes:

The correct answer is A.

A package is a model element that can contain other model elements. Also, a package can be used to organize a model under development or as a unit of configuration management.

Question

Which of the following would you use to organize elements into groups?

- A. Package
- B. Class
- C. Encapsulation
- D. Generalization

Answer: A

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