

1. Which software architecture model primarily focuses on the components and their relationships within a system?

- a) Structural model
- b) Framework model
- c) Dynamic model
- d) Process model

Answer: a) Structural model

Explanation: Structural models emphasize the arrangement of components and their interactions within a system, providing insights into the system's architecture.

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2. In which architecture style do components communicate through passing data streams, with each component performing a specific transformation on the data?

- a) Dataflow architecture
- b) Pipes and filters architecture
- c) Call-and-return architecture
- d) Data-centered architecture

Answer: b) Pipes and filters architecture

Explanation: Pipes and filters architecture involves a series of components (filters) connected by channels (pipes), where data flows through the filters for processing.

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3. Which architecture style organizes components into layers, with each layer providing services to the layer above and consuming services from the layer below?

- a) Dataflow architecture
- b) Layered architecture
- c) Agent-based architecture
- d) Microservices architecture

Answer: b) Layered architecture

Explanation: Layered architecture separates components into horizontal layers, each responsible for a specific aspect of functionality, promoting modularity and abstraction.

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4. In which architecture style does the control flow move through a series of procedure calls and returns, with each function invoking another function to achieve a task?

- a) Data-centered architecture
- b) Call-and-return architecture
- c) Pipes and filters architecture
- d) Reactive architecture

Answer: b) Call-and-return architecture

Explanation: Call-and-return architecture involves the sequential execution of functions or

procedures, where each function call leads to another until the task is completed.

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5. Which architectural model primarily focuses on the behavior of the system over time, including interactions between components and system states?

- a) Structural model
- b) Framework model
- c) Dynamic model
- d) Process model

Answer: c) Dynamic model

Explanation: Dynamic models capture the behavior of a system over time, including how components interact and how the system responds to stimuli or events.

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6. Which architecture style emphasizes the distribution of components into small, independently deployable units, each responsible for a specific business function?

- a) Agent-based architecture
- b) Microservices architecture
- c) Reactive architecture
- d) Representational state transfer architecture

Answer: b) Microservices architecture

Explanation: Microservices architecture decomposes applications into small, loosely coupled services, promoting scalability, flexibility, and maintainability.

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7. In which architecture style do components communicate by sharing a common data model, with data serving as the primary means of interaction?

- a) Layered architecture
- b) Data-centered architecture
- c) Reactive architecture
- d) Dataflow architecture

Answer: b) Data-centered architecture

Explanation: Data-centered architecture focuses on a shared data model, with components interacting through data exchange, often centralized around a database or repository.

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8. Which architectural model primarily focuses on the sequencing of tasks and activities within a system, including their dependencies and resource requirements?

- a) Structural model
- b) Framework model
- c) Dynamic model

d) Process model

Answer: d) Process model

Explanation: Process models represent the flow of tasks and activities within a system, detailing their order, dependencies, and resource allocation.

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9. Which architecture style emphasizes responsiveness, resilience, and elasticity in handling asynchronous events and messages?

- a) Reactive architecture
- b) Pipes and filters architecture
- c) Dataflow architecture
- d) Layered architecture

Answer: a) Reactive architecture

Explanation: Reactive architecture focuses on building systems that can react to asynchronous events efficiently, ensuring responsiveness, resilience, and scalability.

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10. Which architecture style organizes components as autonomous agents capable of independent decision-making and communication?

- a) Dataflow architecture

- b) Pipes and filters architecture
- c) Agent-based architecture
- d) Microservices architecture

Answer: c) Agent-based architecture

Explanation: Agent-based architecture models components as autonomous agents that can interact with each other to achieve system goals, often used in complex, distributed systems.

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11. Which architecture style emphasizes the separation of concerns by decomposing the system into loosely coupled, reusable components?

- a) Layered architecture
- b) Call-and-return architecture
- c) Data-centered architecture
- d) Microservices architecture

Answer: d) Microservices architecture

Explanation: Microservices architecture decomposes systems into small, independent services, each responsible for a specific business function, promoting modularity and reusability.

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12. In which architecture style does the control flow depend on the movement of data

packets through a series of processing stages?

- a) Dataflow architecture
- b) Pipes and filters architecture
- c) Reactive architecture
- d) Layered architecture

Answer: a) Dataflow architecture

Explanation: Dataflow architecture focuses on the movement of data packets through processing stages, where each stage performs a specific operation on the data.

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13. Which architectural model primarily focuses on the overall structure of the system, including its components, their relationships, and constraints?

- a) Structural model
- b) Framework model
- c) Dynamic model
- d) Process model

Answer: a) Structural model

Explanation: Structural models provide insights into the overall structure of a system, detailing its components, relationships, and constraints.

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14. Which architecture style emphasizes the exchange of stateless, cacheable representations of resources over a network?

- a) Reactive architecture
- b) Representational state transfer architecture
- c) Data-centered architecture
- d) Call-and-return architecture

Answer: b) Representational state transfer architecture

Explanation: Representational state transfer (REST) architecture promotes stateless, cacheable interactions between clients and servers via standard HTTP methods.

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15. Which architecture style organizes components into a directed graph, where nodes represent processing units and edges represent data channels?

- a) Dataflow architecture
- b) Pipes and filters architecture
- c) Agent-based architecture
- d) Microservices architecture

Answer: a) Dataflow architecture

Explanation: Dataflow architecture organizes components into a directed graph, with nodes



representing processing units and edges representing data channels for flow control.

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16. Which architectural model primarily focuses on the interactions between components and the flow of control within a system?

- a) Structural model
- b) Framework model
- c) Dynamic model
- d) Process model

Answer: c) Dynamic model

Explanation: Dynamic models capture the interactions between components and the flow of control within a system, including behaviors over time.

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17. In which architecture style do components communicate through message passing, with each component behaving as an independent entity?

- a) Pipes and filters architecture
- b) Reactive architecture
- c) Layered architecture
- d) Call-and-return architecture

Answer: b) Reactive architecture

Explanation: Reactive architecture involves components communicating through message passing, enabling them to react to events independently and asynchronously.

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18. Which architecture style organizes components into a series of layers, with each layer providing a specific set of services to the layers above it?

- a) Data-centered architecture
- b) Layered architecture
- c) Agent-based architecture
- d) Reactive architecture

Answer: b) Layered architecture

Explanation: Layered architecture organizes components into horizontal layers, with each layer offering

services to the layers above it and consuming services from the layers below it.

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19. Which architectural model focuses on the flow of data through a series of processing stages, with each stage performing a specific operation on the data?

- a) Structural model

- b) Framework model
- c) Dynamic model
- d) Process model

Answer: d) Process model

Explanation: Process models represent the flow of data through processing stages, detailing the sequence of operations performed on the data.

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20. Which architecture style emphasizes the separation of concerns by organizing components into layers, with each layer responsible for a specific aspect of functionality?

- a) Microservices architecture
- b) Data-centered architecture
- c) Layered architecture
- d) Agent-based architecture

Answer: c) Layered architecture

Explanation: Layered architecture separates components into layers, with each layer dedicated to a specific aspect of functionality, promoting modularity and separation of concerns.

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21. In which architecture style do components communicate through synchronous or

asynchronous message passing, enabling loose coupling and scalability?

- a) Pipes and filters architecture
- b) Microservices architecture
- c) Reactive architecture
- d) Call-and-return architecture

Answer: b) Microservices architecture

Explanation: Microservices architecture enables communication between components through message passing, facilitating loose coupling and scalability.

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22. Which architectural model focuses on the overall design framework of the system, providing guidelines and templates for system development?

- a) Structural model
- b) Framework model
- c) Dynamic model
- d) Process model

Answer: b) Framework model

Explanation: Framework models provide design frameworks and templates for system development, guiding developers in building the system's architecture.

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23. Which architecture style emphasizes the reactive handling of events and messages, with components reacting to changes in the system's state?

- a) Reactive architecture
- b) Pipes and filters architecture
- c) Data-centered architecture
- d) Layered architecture

Answer: a) Reactive architecture

Explanation: Reactive architecture focuses on handling events and messages reactively, with components reacting to changes in the system's state, ensuring responsiveness and scalability.

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24. In which architecture style does the control flow depend on the sequential invocation of functions or procedures?

- a) Data-centered architecture
- b) Call-and-return architecture
- c) Dataflow architecture
- d) Reactive architecture

Answer: b) Call-and-return architecture

Explanation: Call-and-return architecture involves the sequential invocation of functions or procedures, where each function call leads to another until the task is completed.

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25. Which architectural model primarily focuses on the sequencing and coordination of tasks within a system, including concurrency and synchronization?

- a) Structural model
- b) Framework model
- c) Dynamic model
- d) Process model

Answer: d) Process model

Explanation: Process models focus on the sequencing and coordination of tasks within a system, detailing concurrency, synchronization, and task dependencies.

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26. Which architecture style emphasizes the encapsulation of business logic into autonomous components, each providing a specific service?

- a) Layered architecture
- b) Microservices architecture
- c) Data-centered architecture
- d) Pipes and filters architecture

Answer: b) Microservices architecture

Explanation: Microservices architecture encapsulates business logic into autonomous services, each providing a specific functionality, promoting modularity and scalability.

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27. In which architecture style do components communicate through a centralized data model, with data serving as the primary means of interaction?

- a) Pipes and filters architecture
- b) Layered architecture
- c) Data-centered architecture
- d) Reactive architecture

Answer: c) Data-centered architecture

Explanation: Data-centered architecture relies on a centralized data model, with components communicating through shared data, often centralized around a database.

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28. Which architectural model primarily focuses on the components and their relationships within a system, providing insights into the system's structure?

- a) Structural model
- b) Framework model
- c) Dynamic model

d) Process model

Answer: a) Structural model

Explanation: Structural models emphasize the arrangement of components and their relationships within a system, providing insights into the system's structure.

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29. Which architecture style emphasizes the flow of data through a series of interconnected components, with each component performing a specific transformation?

- a) Layered architecture
- b) Pipes and filters architecture
- c) Data-centered architecture
- d) Agent-based architecture

Answer: b) Pipes and filters architecture

Explanation: Pipes and filters architecture focuses on the flow of data through interconnected components, with each component performing a specific transformation on the data.

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30. In which architecture style do components communicate through a set of stateless, cacheable interactions, often using standard HTTP methods?

- a) Reactive architecture



- b) Representational state transfer architecture
- c) Dataflow architecture
- d) Call-and-return architecture

Answer: b) Representational state transfer architecture

Explanation: Representational state transfer (REST) architecture facilitates stateless, cacheable interactions between clients and servers using standard HTTP methods, promoting scalability and simplicity in communication.

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