Microservices Design Patterns Quiz

1. How do microservices architectures work?

- A) Monolithic structure

- B) Hierarchical structure

- C) Decentralized structure

- D) Sequential structure

2. What principles are commonly used to design microservice architecture?

- A) Encapsulation, inheritance, polymorphism

- B) Loose coupling, high cohesion, autonomy

- C) Coupling, encapsulation, abstraction

- D) Aggregation, composition, inheritance

3. What is a service aggregator in the context of microservices?

- A) A component that combines multiple microservices into a single API

- B) A component responsible for managing database transactions

- C) A component that handles security and authentication for microservices

- D) A component that ensures fault tolerance and reliability of microservices

4. Question: What is an API gateway in microservices architecture?

- A) A gateway that connects microservices to external systems

- B) A gateway that routes API calls to the appropriate microservice

- C) A gateway that handles inter-process communication between microservices

- D) A gateway that manages the deployment and scaling of microservices

5. What does the term "chained" or "chain of responsibility" refer to in microservices?

- A) A pattern where each microservice is responsible for a specific task in a sequential order

- B) A pattern where microservices are connected in a linear hierarchy

- C) A pattern where multiple microservices collaborate to handle a request in a sequential manner

- D) A pattern where microservices communicate with each other using a chain-based protocol

6. What is asynchronous messaging in microservices architecture?

- A) Communication between microservices that happens in real-time

- B) Communication between microservices that happens with a delay

- C) Communication between microservices using message queues or event-driven systems

- D) Communication between microservices that is handled by a central messaging server

7. In microservices architecture, how is the database or shared data typically handled?

- A) Each microservice has its own dedicated database

- B) Multiple microservices share a common database

- C) Microservices use a distributed database system

- D) Microservices don't interact directly with databases

8. What is event sourcing in microservices architecture?

- A) Storing events in a centralized event log for auditing purposes

- B) Storing events in a distributed cache for performance optimization

- C) Storing events in a message queue for asynchronous processing

- D) Storing events as the primary source of data and rebuilding the current state from the events

9. What does the term "branch" refer to in microservices architecture?

- A) A version control feature for managing code branches in microservices

- B) A separate instance of a microservice for testing or experimental purposes

- C) A component that handles branching logic in the microservices communication flow

- D) A technique for deploying multiple instances of a microservice for scalability

10. What does the acronym CQRS stand for in microservices architecture?

- A) Centralized Query Responsibility Segregation

- B) Command Query Responsibility Segregation

- C) Controlled Query Routing and Segregation

- D) Concurrent Query Routing and Segregation

11. What is a circuit breaker in microservices architecture?

- A) A component that controls the flow

of data between microservices

- B) A component that automatically redirects requests to backup microservices in case of failure

- C) A component that monitors the health of microservices and prevents cascading failures

- D) A component that handles the encryption and decryption of data exchanged between microservices

12. What is decomposition in microservices architecture?

- A) The process of breaking down a monolithic application into smaller, loosely coupled microservices

- B) The process of combining multiple microservices into a single, cohesive application

- C) The process of optimizing the performance of a microservice through parallel processing

- D) The process of partitioning a database into multiple shards for scalability

13. What is containerization in the context of microservices architecture?

- A) The process of encapsulating microservices within virtual machines for deployment

- B) The process of packaging microservices into lightweight, isolated environments for deployment

- C) The process of combining multiple microservices into a single container for simplified management

- D) The process of securing microservices by isolating them within restricted network zones

14. What is the purpose of a service registry in microservices architecture?

- A) To store and manage microservices' source code repositories

- B) To keep track of microservices' runtime dependencies and their locations

- C) To handle load balancing and traffic routing between microservices

- D) To ensure fault tolerance and high availability of microservices

15. What are the benefits of using microservices architecture?

- A) Increased development speed and code reusability

- B) Enhanced scalability and fault isolation

- C) Improved system resilience and flexibility

- D) All of the above

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