

1. Explain the concept of Object-Oriented Programming (OOP) and provide an example of an object and a class.
2. What is the difference between HTTP and HTTPS? How does SSL/TLS contribute to HTTPS security?
3. Describe the purpose and use cases of RESTful APIs. What are the main HTTP methods used in REST?
4. Explain the difference between synchronous and asynchronous programming. Provide an example of each.
5. Describe the role of a database index. How does indexing improve query performance?
6. What is a design pattern in software engineering? Provide an example of a commonly used design pattern and explain its benefits.
7. Explain the concept of version control and its importance in collaborative software development. Name a popular version control system.
8. Describe the role of a load balancer in a distributed web application architecture. How does it improve scalability and reliability?
9. What is the purpose of a Docker container? How does Docker facilitate the process of deploying and managing applications?
10. Explain the CAP theorem and its implications for distributed database systems.
11. What is a cache? How does caching improve the performance of web applications?
12. Describe the difference between unit testing and integration testing. Why are automated tests important in software development?
13. Explain the concept of virtualization and its benefits in server management and resource utilization.
14. Describe the key differences between SQL and NoSQL databases. Give examples of scenarios where each type might be more suitable.
15. What is a REST API endpoint? How is data typically structured in JSON format for communication between a client and server?