Basic MySQL Interview Questions

1. What is MySQL?
2. Explain the difference between MySQL and SQL.
3. How do you start and stop MySQL server?
4. How do you connect to MySQL server from command line?
5. What is the default port number for MySQL?
6. How do you create a database in MySQL?
7. How do you select a database to work with in MySQL?
8. What are tables in MySQL? How do you create a table?
9. How do you insert data into a MySQL table?
10. How do you retrieve data from a MySQL table?

MySQL Data Types

11. Explain MySQL data types with examples.
12. What are the differences between CHAR and VARCHAR data types?
13. Explain the differences between INT and BIGINT data types.
14. What is the purpose of ENUM data type in MySQL?
15. How do you handle dates and times in MySQL?

MySQL Queries

16. What is a SQL query? Give an example.
17. How do you write a basic SELECT statement in MySQL?
18. Explain the WHERE clause in MySQL queries.
19. How do you use ORDER BY and LIMIT clauses in MySQL?
20. What is the difference between WHERE and HAVING clauses?

Advanced MySQL Queries

21. How do you join tables in MySQL? Explain different types of joins.

22. What is a subquery? Give an example of how you would use it in MySQL.
23. How do you use GROUP BY and aggregate functions (e.g., SUM, AVG) in MySQL?
24. Explain the difference between INNER JOIN and OUTER JOIN in MySQL.
25. How do you optimize MySQL queries?

MySQL Constraints

26. What are constraints in MySQL? Give examples.
27. Explain PRIMARY KEY and FOREIGN KEY constraints in MySQL.
28. How do you add and drop constraints in MySQL?

MySQL Indexes

29. What is an index in MySQL? Why are they used?
30. Explain different types of indexes in MySQL.
31. How do you create and drop indexes in MySQL?
32. What are the advantages and disadvantages of using indexes?

MySQL Functions

33. What are MySQL functions? Give examples.
34. Explain the difference between MySQL built-in functions and user-defined functions.
35. How do you use string functions (e.g., CONCAT, SUBSTRING) in MySQL?
36. How do you use numeric functions (e.g., ROUND, CEIL) in MySQL?

Stored Procedures and Triggers

37. What are stored procedures in MySQL? How do you create and execute them?

38. How do you pass parameters to a stored procedure in MySQL?
39. What are triggers in MySQL? How do you create and use them?

Transactions and Locking

40. What is a transaction in MySQL? Explain ACID properties.
41. How do you start and end a transaction in MySQL?
42. What is locking in MySQL? Explain different types of locks.

Views and Indexes

43. What is a view in MySQL? How do you create and use it?
44. How do you update or delete data through a view in MySQL?

Backup and Restore

45. How do you backup and restore a MySQL database?
46. What are the different methods of MySQL database backup?

MySQL Security

47. How do you grant and revoke privileges in MySQL?
48. What is SQL injection? How can you prevent it in MySQL?
49. How do you secure MySQL server configurations?

MySQL Administration

50. How do you check MySQL server status and performance?
51. What are the different types of MySQL server logs?
52. How do you optimize MySQL server settings for performance?

MySQL Replication and Clustering

53. What is MySQL replication? How does it work?
54. How do you set up and configure MySQL replication?

55. What is MySQL clustering? Explain its benefits.

MySQL Tools and Utilities

56. What are some popular MySQL client tools? Explain their functionalities.
57. How do you import and export data in MySQL?
58. What is MySQL Workbench? How do you use it for database management?

MySQL Performance Optimization

59. How do you identify and optimize slow queries in MySQL?
60. What are the best practices for MySQL performance tuning?

MySQL High Availability and Scaling

61. How do you achieve high availability in MySQL?
62. Explain MySQL sharding and partitioning.

MySQL Backup and Recovery

63. How do you perform point-in-time recovery in MySQL?

MySQL Troubleshooting

64. How do you troubleshoot common MySQL errors?
65. What are some tools and techniques for MySQL troubleshooting?

MySQL Best Practices

66. What are some best practices for MySQL database design?
67. How do you handle large datasets in MySQL?

MySQL and PHP Integration

68. How do you connect MySQL with PHP applications?

69. What are some common methods for executing MySQL queries in PHP?

MySQL and NoSQL

70. What are the differences between MySQL and NoSQL databases?
71. How do you choose between MySQL and NoSQL for a project?

MySQL and Cloud Platforms

72. How do you deploy MySQL databases on cloud platforms like AWS or Azure?
73. What are some considerations for MySQL database management in the cloud?

MySQL and Security Compliance

74. How do you ensure GDPR compliance for MySQL databases?

MySQL and DevOps

75. How do you automate MySQL database deployments using CI/CD pipelines?
76. What are some DevOps practices specific to MySQL?

MySQL and Docker

77. How do you containerize MySQL databases using Docker?

MySQL Monitoring and Alerts

78. How do you monitor MySQL database performance and set up alerts?

MySQL and Business Intelligence

79. How do you integrate MySQL with BI tools like Tableau or Power BI?

MySQL and Big Data

80. How does MySQL integrate with Big Data platforms like Hadoop or Spark?

MySQL and Machine Learning

81. How can MySQL be used in machine learning workflows?

MySQL and Microservices

82. How do you use MySQL in a microservices architecture?

MySQL and GraphQL

83. How do you implement GraphQL APIs with MySQL?

MySQL and E-commerce

84. How do you design MySQL databases for e-commerce platforms?

MySQL and Real-Time Applications

85. How do you optimize MySQL for real-time data processing?

MySQL and IoT

86. How do you manage IoT data in MySQL databases?

MySQL and Blockchain

87. How can MySQL be used in blockchain applications?

MySQL and Multimedia

88. How do you store and retrieve multimedia data (images, videos) in MySQL?

MySQL and Regulatory Compliance

89. How do you ensure MySQL databases comply with regulatory requirements?

MySQL and Distributed Systems

90. How do you manage distributed MySQL databases?

MySQL and RESTful APIs

91. How do you expose MySQL data through RESTful APIs?

MySQL and Mobile Applications

92. How do you synchronize MySQL data with mobile applications?

MySQL and CI/CD

93. How do you automate MySQL database testing and deployment in CI/CD pipelines?

MySQL and Virtualization

94. How do you optimize MySQL performance in virtualized environments?

MySQL and Geographic Information Systems (GIS)

95. How do you manage spatial data in MySQL databases?

MySQL and Natural Language Processing (NLP)

96. How can MySQL be used in NLP applications?

MySQL and Data Warehousing

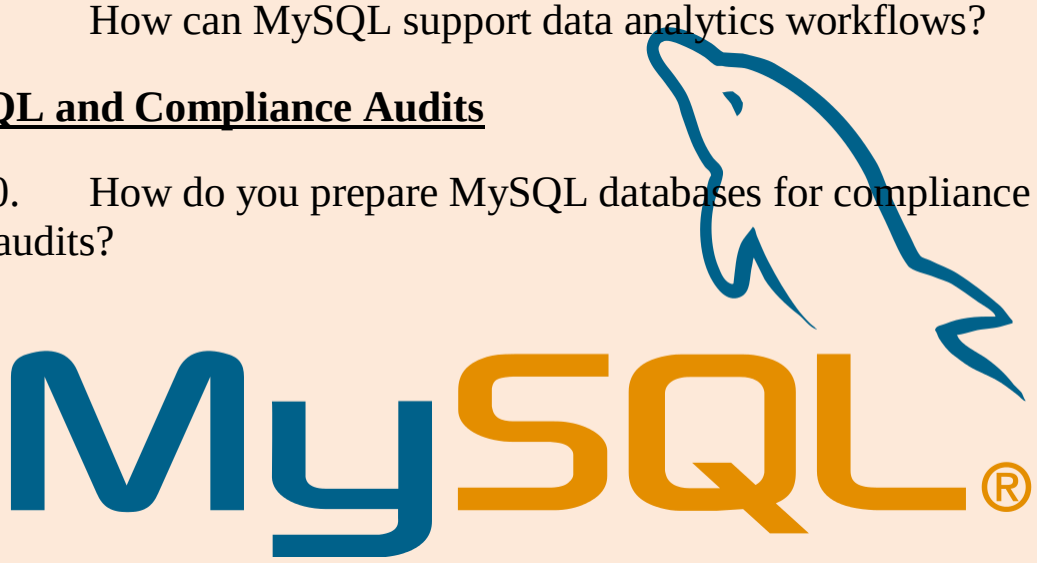
97. How do you design MySQL databases for data warehousing?

MySQL and Cloud-Native Applications

98. How do you use MySQL in cloud-native application architectures?

MySQL and Data Analytics

99. How can MySQL support data analytics workflows?

MySQL and Compliance Audits

100. How do you prepare MySQL databases for compliance audits?