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50 TOP Real Time JDBC Interview Questions and Answers pdf download

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JDBC Interview Questions and Answers List

1. What is JDBC?
JDBC is a layer of abstraction that allows users to choose between databases. It allows you to change to a different database engine and to write to a single API. JDBC allows you to

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write database applications in Java without having to concern yourself with the underlying details of a particular database.

2. What are the two major components of JDBC?
One implementation interface for database manufacturers, the other implementation interface for application and applet writers.

3. What is JDBC Driver interface?
The JDBC Driver interface provides vendor-specific implementations of the abstract classes provided by the JDBC API. Each vendors driver must provide implementations of the java.sql.Connection,Statement,PreparedStatement, CallableStatement, ResultSet and Driver.

4. What are the common tasks of JDBC?
1.Create an instance of a JDBC driver or load JDBC drivers through jdbc.drivers;
2. Register a driver;
3. Specify a database;
4. Open a database connection;
5. Submit a query;
6. Receive results.

5. What packages are used by JDBC?
There are 8 packages: java.sql.Driver, Connection,Statement, PreparedStatement, CallableStatement, ResultSet, ResultSetMetaData, DatabaseMetaData.

6. What are the flow statements of JDBC?
A URL string
–>getConnection
–>DriverManager
–>Driver
–>Connection
–>Statement
–>executeQuery
–>ResultSet.

7. What are the steps involved in establishing a connection using JDBC in JAVA?
This involves two steps:
(1) loading the driver and
(2) making the connection.

8. How can you load the drivers in JDBC?
Loading the driver or drivers you want to use is very simple and involves just one line of code. If, for example, you want to use the JDBC-ODBC Bridge driver, the following code will load it:
Eg.
Class.forName("sun.jdbc.odbc.JdbcOdbcDriver");
Your driver documentation will give you the class name to use. For instance, if the class name is jdbc.DriverXYZ , you would load the driver with the following line of code:
E.g.
Class.forName("jdbc.DriverXYZ");

9. What Class.forName will do while loading drivers of JDBC?
It is used to create an instance of a driver and register it with the DriverManager. When you have loaded a driver, it is available for making a connection with a DBMS.

10. How can you make the connection using JDBC?
In establishing a connection is to have the appropriate driver connect to the DBMS. The following line of code illustrates the general idea:
E.g.
String url = "jdbc:odbc:Fred";
Connection con = DriverManager.getConnection(url, "Fernanda", "J8");

11. How can you create JDBC statements?
A Statement object is what sends your SQL statement to the DBMS. You simply create a Statement object and then execute it, supplying the appropriate execute method with the SQL statement you want to send. For a SELECT statement, the method to use is executeQuery. For statements that create or modify tables, the method to use is executeUpdate. E.g. It takes an instance of an active connection to create a Statement object.

In the following example, we use our Connection object con to create the Statement object stmt :

Statement stmt = con.createStatement();

12. How can you retrieve data from the ResultSet using JDBC?

First JDBC returns results in a ResultSet object, so we need to declare an instance of the class ResultSet to hold our results. The following code demonstrates declaring the ResultSet object rs.

E.g.

ResultSet rs = stmt.executeQuery("SELECT COF_NAME, PRICE FROM COFFEES");

Second:

String s = rs.getString("COF_NAME");

The method getString is invoked on the ResultSet object rs , so getString will retrieve (get) the value stored in the column COF_NAME in the current row of rs

13. What are the different types of Statements in JDBC?

1.Statement (use createStatement method)

2. Prepared Statement (Use prepareStatement method) and

3. Callable Statement (Use prepareCall)

14. How can you use PreparedStatement in JDBC?

This special type of statement is derived from the more general class, Statement. If you want to execute a Statement object many times, it will normally reduce execution time to use a PreparedStatement object instead. The advantage to this is that in most cases, this SQL statement will be sent to the DBMS right away, where it will be compiled. As a result, the PreparedStatement object contains not just an SQL statement, but an SQL statement that has been precompiled. This means that when the PreparedStatement is executed, the DBMS can just run the PreparedStatement 's SQL statement without having to compile it first.

E.g.

PreparedStatement updateSales = con.prepareStatement("UPDATE COFFEES SET SALES = ? WHERE COF_NAME LIKE ?");

15. How to call a Stored Procedure from JDBC?

The first step is to create a CallableStatement object. As with Statement an and PreparedStatement objects, this is done with an open Connection object. A CallableStatement object contains a call to a stored procedure;

E.g.

```
CallableStatement cs = con.prepareCall("{call
SHOW_SUPPLIERS}");
ResultSet rs = cs.executeQuery();
```

16. How to Retrieve Warnings in JDBC?

SQLWarning objects are a subclass of SQLException that deal with database access warnings. Warnings do not stop the execution of an application, as exceptions do; they simply alert the user that something did not happen as planned. A warning can be reported on a Connection object, a Statement object (including PreparedStatement and CallableStatement objects), or a ResultSet object. Each of these classes has a getWarnings method, which you must invoke in order to see the first warning reported on the calling object

E.g.

```
SQLWarning warning = stmt.getWarnings();
if (warning != null) {
while (warning != null) {
System.out.println("Message: " + warning.getMessage());
System.out.println("SQLState: " + warning.getSQLState());
System.out.print("Vendor error code: ");
System.out.println(warning.getErrorCode());
warning = warning.getNextWarning();
}
}
```

17. How to Make Updates to Updatable Result Sets in JDBC?

Another new feature in the JDBC 2.0 API is the ability to update rows in a result set using methods in the Java programming language rather than having to send an SQL command. But before you can take advantage of this capability, you need to create a ResultSet object that is updatable. In order to do this, you supply the ResultSet constant CONCUR_UPDATABLE to the createStatement method.

E.g.
Connection con = DriverManager.getConnection("jdbc:mySubprotocol:mySubName");
Statement stmt = con.createStatement(ResultSet.TYPE_SCROLL_SENSITIVE, ResultSet.CONCUR_UPDATABLE);
ResultSet uprs = ("SELECT COF_NAME, PRICE FROM COFFEES");

18. What is Serialization and deserialization in JAVA Programming?
Serialization is the process of writing the state of an object to a byte stream.
Deserialization is the process of restoring these objects.

19. How you restrict a user to cut and paste from the html page using JAVA Programing?
Using JavaScript to lock keyboard keys. It is one of easiest solutions.

20. Difference between SQL Date and java.util.Date in Java
This is one of JDBC Questions which I like to ask, because knowing how to correctly store and retrieve date in a database is often confusing for new developers and its very critical for any application. Main difference between SQL data i.e. java.sql.Date and util date i.e. java.util.Date is that SQL Date only contains date part and not time part but util date contains both date and time part. See SQL Date vs Util Date in Java for more differences between them.

21. What is benefit of using PreparedStatement in Java
Another wonderful JDBC interview question which is very popular on telephonic as well as on early round of Java Interviews. There are several benefits of using PreparedStatement while querying database from Java program e.g. better performance and prevents from SQL Injection. I suggest to read Why use PreparedStatement in Java for more benefits and details on JDBC PreparedStatement.

22. What is JDBC database Connection Pool? How to setup in Java?

I have always seen at least one question related to database connection pool in JDBC Interview e.g. benefit of using JDBC Connection pool. Well JDBC connection pool maintains pool of JDBC connection which is used by application to query database. Since JDBC connection are expensive it take time to create them which can slow response time of server if created during request time. Creating them on application start-up and reusing them result in better performance. See How to setup JDBC Connection Pool in Java using Spring for more details on JDBC connection pool and benefits it offer.

23. What is difference between type 2 and type 4 JDBC drivers in Java
This JDBC Interview question is as old as Vector vs ArrayList or Hashtable vs HashMap. I remember questions about JDBC ODBC drivers asked during almost every fresher level interview. Key difference between type 2 and type 4 JDBC driver is that you just need to include JAR file of JDBC driver in your classpath to connect database. See this link for more difference between type 2 and type 4 JDBC drivers.

24. What is difference between java.sql.Time and java.sql.TimeStamp in Java
This JDBC questions is similar to earlier JDBC interview question java.sql.Date vs java.util.Date. Main difference is that java.sql.Time class doesn't contain any date information on it while java.sql.TimeStamp contains date information. See 4 difference between Time and Timestamp in Java JDBC for more differences.

25. What happens if we call resultSet.getInt(0) when Select query result just have one column of integer type?
This is one of the tricky Java question which comes from JDBC. you may think that it will return first column as integer from Query result set but unfortunately it doesn't. It throws InvalidColumnIndexException in JDBC because index for getXXX() or setXXX() in JDBC starts with 1. See How to fix InvalidColumnIndexException in JDBC for more details on this JDBC interview question.

26. What is difference between RowSet and ResultSet in JDBC?
One of the popular JDBC interview question now days. RowSet extends ResultSet and add support for JDBC API to Java bean component model. Main difference of ResultSet and RowSet is RowSet being connected and disconnected, which is another follow-up JDBC question. RowSet makes it easy to use ResultSet but as I said you only like to use it to get benefit of disconnected and connected RowSet.

27. What is use of setAutoCommit(false) in JDBC ?
This is one of the JDBC Interview question I touched on Top 10 JDBC best practices for Java programmer. making setAutoCommit(false) saves a lot of performance as it doesn't commit transaction automatically after each query and we do batch update. It allows you to handle it using commit() and rollback(). This has result in impressive performance gain in DAO layer.

28. How to call stored procedure from JDBC in Java?
This JDBC Interview question is another one you can add on any frequently asked list and just can't afford not to prepare. Mostly asked to Java developers with 2 to 4 years experience. In its simplicity you can just say that CallableStatement is used to call stored procedure, which may lead questions like how do you pass parameters to stored procedure from Java or difference between IN and OUT parameters in JDBC etc. It's worth to prepare this JDBC question in detail. By the way IN parameter is used to pass input to stored procedure and OUT parameter is used to store output return from stored procedure. IF your stored procedure return multiple values than you can also use ResultSet to traverse all results.

29. What is difference between Connected and disconnected RowSet in JDBC?
I have seen this JDBC question asked as a follow-up question of previous JDBC interview question RowSet vs ResultSet. Main difference between connected and disconnected RowSet in JDBC is that disconnected RowSet doesn't require JDBC Connection while it's on disconnected state. This makes disconnected RowSet light and ideal to use in thin clients, while

connected RowSet is just a wrapper around ResultSet. JDBCRowSet and WebRowSet are two examples of connected RowSet while a CachedRowSet is an example of disconnected RowSet which caches data in memory. Ideal for small data set and thin Java clients with small memory foot print.

30. What is difference between Statement, PreparedStatement and CallableStatement in Java?
One of the classical JDBC interview question. Main difference between Statement and PreparedSatement is performance and avoiding SQL Injection as we have seen in Benefits of using PreparedStatement in Java. While CallableStatement has very specific use in JDBC and used to call stored procedure from Java program.

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