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***89. What is JDBC?***

***Ans: JDBC stands for Java Database Connectivity. It is a Java database connectivity technology from Oracle Corporation. This technology is an API for the Java programming language that defines how a client may access a database. It provides methods for querying and updating data in a database.***

***90. What is ODBC?***

***Ans: Open Database Connectivity (ODBC) is an open standard application programming interface (API) for accessing a database. By using ODBC statements in a program, you can access files in a number of different databases, including Access, dBase, DB2, Excel, and Text.***

***91. What is the difference between JDBC and ODBC?***

***Ans:***

|  |  |
| --- | --- |
| ***JDBC*** | ***ODBC*** |
| ***1. It can be used by only Java Application.*** | ***1. It can be used by any application.*** |
| ***2. It is a Data API developed for Java programming language.*** | ***2. It is a middleware between an application and a database.*** |

***92. What is database engine?***

***Ans: A database engine (or storage engine) is the underlying software component that uses a database management system (DBMS) to create, read, update and delete (CRUD) data from a database.***

***93. Write some example that you might access by JAVA API?***

***Ans: i) A remote relational database on a server- e.g. SQL Server.***

***ii) A local relational database on your computer- e.g. Personal Oracle or Ms Access. iii) A text file on your computer iv) A spreadsheet***

***94. Define attribute, field and tuple.***

***Ans: Attribute: A value in a table cell is called attribute.***

***Field: A column of a table is called field.***

***Tuple: A row in a table is called tuple.***

***95. What is datadictionary?***

***Ans: A datadictionary is nothing but a metadata of a database. It contains all information about the database.***

***96. What is catalog?***

***Ans: a catalog is a directory of information about data sets, files, or a database . A catalog usually describes where a data set, file or database entity is located and may also include other information.***

***[For MCQ]***

***Ans:***

|  |  |
| --- | --- |
| ***SQL Data*** | ***Type Description*** |
| ***CHAR*** | ***Fixed-length string of characters*** |
| ***VARCHAR*** | ***Variable-length string of characters*** |
| ***BOOLEAN*** | ***Logical value—true or false*** |
| ***SMALLINT*** | ***Small integer value, from -127 to +127*** |
| ***INTEGER*** | ***Larger integer value, from -32767 to +32767*** |
| ***NUMERIC*** | ***A numeric value with a given precision—which is the number of decimal digits in the number—and a given scale—which is the number of digits after the decimal point. For example, the value 234567.89 has a precision of 8 and a scale of 2*** |
| ***FLOAT*** | ***Floating-point value*** |
| ***CURRENCY*** | ***Stores monetary values*** |
| ***DOUBLE*** | ***Higher precision floating-point value*** |
| ***DATE*** | ***Date*** |
| ***TIME*** | ***Time*** |
| ***DATETIME*** | ***Date and time*** |
| ***RAW*** | ***Raw binary data (can be used to store objects in a streamed binary format)*** |

***97. What is the difference between char and varchar?***

***Ans: char is a fixed length variable datatype whereas varchar is a variable length variable datatype.***

***98. What is intersection table?***

***Ans: The table which links between two or more tables is called intersection table.***

***100. What is JDBC driver?***

***Ans: A JDBC driver is a*** [***software***](https://en.wikipedia.org/wiki/Software) ***component that enables a*** [***Java***](https://en.wikipedia.org/wiki/Java_%28programming_language%29) ***application to interact with a*** [***database***](https://en.wikipedia.org/wiki/Database)***. It translates API calls into operations for a specific data source.***

***101. What is Driver Manager?***

***Ans: DriverManager is a software component that loads database drivers and manages the connection between the application and the driver.***

***102. What is JTable?***

***Ans: JTable is a component provides an easy and convenient way to display the result of database queries.***

***103. What is table model?***

***Ans: A table model is an object of a class that implements the TableModel interface. It can provide the data to be displayed by a JTable component.***

***104. What is ResultSet?***

***Ans: ResultSet is a logical set of columns and rows of data returned by executing a statement.***

***105. Write the sequence of writing a JDBC program.***

***Ans: i) Import the necessary classes ii) Load the JDBC driver iii) Identify the data source iv) Allocate a Connection object. v) Allocate a Statement***

***vi) Execute a query using the statement object viii) Retrieving data from the returned ResultSet object ix) Close the resultSet x) Close the Statement Object xi) Close the connection Object***

***106. How many flavour driver implementation come in?***

***Ans: Driver implementations come in four flavours:***

***i) JDBC-ODBC Bridge driver ii) Nativ***

***e API/ partly java iii) Net protocol all-java-client iv) Native protocol all-java.***

***107. What is JDBC-ODBC Driver?***

***Ans: The JDBC-ODBC Bridge allows a Java application to use the JDBC API with many existing ODBC drivers. The Bridge is itself a driver based on JDBC technology ("JDBC driver") that is defined in the class sun.jdbc.odbc.JdbcOdbcDriver.***

***108. What is Native API/Partly Java Driver?***

***Ans: Native API/partly java driver is quite similar to JDBC-ODBC driver. It consists of java code that access data through native methods typically calls to a particular vendor library.***

***110. What is Net Protocol All-Java Client Driver?***

***Ans :This class of driver is implemented as “middleware” with the client driver completely implemented in java. This client driver communicates with a separate middleware component (usually through TCP/IP) which translate JDBC request into database access calls.***

***111. What is Native Protocol all-java driver?***

***Ans: This class of driver communicates directly to the database server using the server’s native protocol. There is no translation step that converts the java-initiated request into some other form.***

***112. Write the difference between three java statements.***

***Ans: Statement: It is used to implement simple SQL statements with no parameters.***

***PreparedStatement: It is used for pre-compiling SQL statements that might contain input parameters. See*** [***Using Prepared Statements***](https://docs.oracle.com/javase/tutorial/jdbc/basics/prepared.html) ***for more information.***

***CallableStatement: It is used to execute stored procedures that may contain both input and output parameters. See*** [***Stored Procedures***](https://docs.oracle.com/javase/tutorial/jdbc/basics/storedprocedures.html) ***for more information.***

***113. Write the methods of ResultSet?***

***Ans: i) getAsciiStream() ii) getBoolean() iii) getDate()***

***iv) getInt() v) getShort iv) getShort() v) getTimestamp() vi) getTime()***

***114. Write the methods of ResultSetMetaData Interface.***

***Ans: i) getTableName() ii) getColumnLabel iii) getPrecision() iv) getScale() v) isSigned() vi) isCurrency vii) isNullable() viii) isWritable()***

***115. Write the fundamental classes of JDBC.***

***Ans: i) DriverManager ii) Connection iii) Statement iv) ResultSet***

***146. What is relational database?***

***Ans: Relational Database means a database where tables are related among each other with a relational integrity. It is a way of handling data from one table to another table.***

***117. How many ways are there to connect to a database?***

***Ans: There are three overloaded (ways) getConnection() methods to connect to JDBC(database). They are:***

***i) Connection databaseConnection=DriverManager.getConnection(source);***

***ii) Connection databaseConnection=DriverManager.getConnection(source URL, myUserName, myPassword);***

***iii) Connection databaseConnection=DriverManager.getConnection(source URL);***

***118. How can we implement the table model interface?***

***Ans:***

***We can implement the table model interface extending the AbstractTableModel which includes the last six method among the 9 methods and defining of the first three methods.***

***JTable table=new JTable(model)***

***119. Write down the six methods of Abstract table model.***

***i) getColumnClass(int column) ii) getColumnName(int column)***

***iii) getValueAt(Object value, int row, int column)***

***iv) isCelEditable(int row, int column)***

***v) addTableModelLIstener(TAbleModelListener tml)***

***vi) removeTableModelListener(TableModelListener tml)***

***120. Which three model of interface must be defined to implement interfaceTableModel?***

***Ans: i) getColumnCount() ii) getRowCount()***

***iii) getValueAt(int row, int column)***

***121. Write the names of different conceptual components relating JDBC to ODBC?***

***Ans: i) Driver Manager ii) Driver iii) Connection iv) Statement***

***v) Metadata vi) Result***

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***122. What is the difference between execute query and update query?***

|  |  |
| --- | --- |
| ***executeQuery*** | ***executeUpdate*** |
| ***1. It expects only an SQL statement that generate results.*** | ***1. It is to execute statements that change the contents of the database rather than return results.*** |
| ***2. It returns the resultSet.*** | ***2. It returns the number of rows affected by the operations.*** |

***123. What is placeholder?***

***Ans: Placeholder are tokens that appear in the SQL statement and replaced by actual values before the SQL statement is executed.***

***124. What do you mean by error handling?***

***Ans: Error handling means to handle error throwing exception or try-catch***

***block so that the program will not come out of the system. We need to take some extra steps in our JDBC application to handle condition that generates warnings or errors.***

***125. Draw the chain of sqlException?***

***Ans: A chain of SQL exception objects can be linked together.We can access successive object in the chain by calling the getNextException() for each SQLException Object in the chain.***

Detail

SQLState

VendorCode

Next Object

Detail Message

SQLState

VendorCode

Next Object

***Message***

Detail Message

SQLState

VendorCode

Next Object

***null***

***126. What is JTree Component?***

***Ans: The JTree class defines a component that displays data organized in a***

***tree-like structure.***

***127. What is node and root ?***

***Ans: Each element in a JTree is called node. The base node of a tree is referred as***

***root node.***

***128. What s leaf node?***

***Ans: Leaf node is such a node which has no child.***

***129. Write the methods of Tree Nodes.***

***Ans: i) getParent() ii) getChildCount() iii) getChildAt(int index) iv) children()***

***iv) getIndex(TreeNode node) v) getAllowsChildren() vi) isLeaf()***

***130. What is TreeNode?***

***Ans: TreeNode is an interface provided for navigating JTree by its methods.***

***131. What is TreeModel?***

***Ans: Like a JTable component the JTree component works with an underlying model object that supplies the data that is to be displayed in the tree.***

***132. What is calling Procedures?***

***Ans: We can obtain a CallableStatement reference corresponding to a stored procedures are called by prepareCall() method for a connection object. This procedure is referred to calling procedures.***

***133. How do you deal with the problem to mapping objects to relational data models?(Draw the level SQL-to –Simple Object Mapping Diagram).***

***Ans: The mapping task consists simply of matching the data types of the database with those of Java.***

***Call JDBC method to specify***

***SQL SELECT statement***

***ResultSet Object***

**Table** Object

Application

***SQL SELECT***

Database

Table

***Table Data***

JDBC