

JDBC

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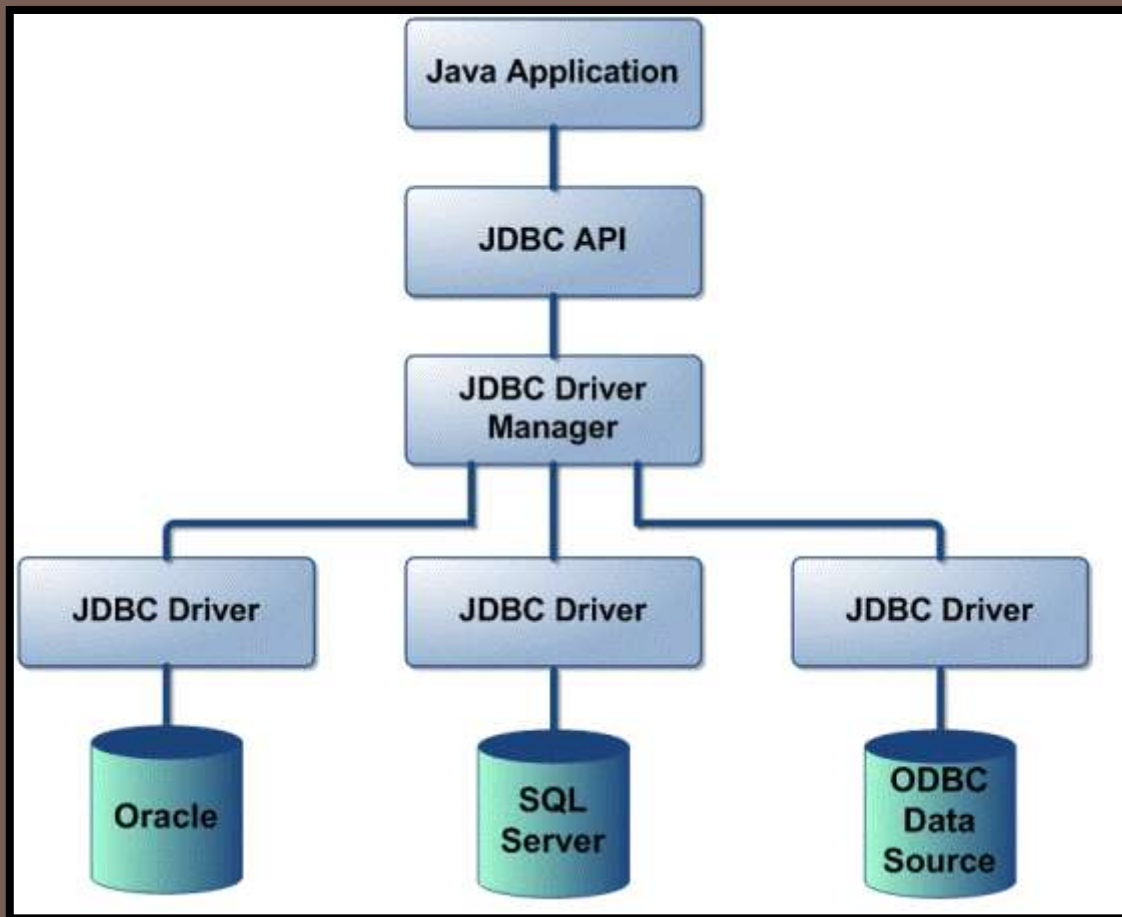
Discussions

- ⦿ What?
- ⦿ Architecture of JDBC.
- ⦿ Types of JDBC driver available.
- ⦿ Steps to connect to DB.
- ⦿ Types of Statement.
- ⦿ JDBC Data Source.

What is JDBC ?

- ⦿ JDBC acronym of java Database connectivity; though Sun Microsystems claims that it is not the full form.
- ⦿ JDBC is a standard java API for independent database connection between a java program and wide range of relational database.
- ⦿ It is present in the “*java.sql*” package

Architecture of JDBC



Types of JDBC driver

- ◎ Type 1; jdbc-odbc bridge driver
- ◎ Type 2; native API partly java driver.
- ◎ Type 3; net protocols all java driver.
- ◎ Type 4; native protocols all java driver.

Steps to connect?

- ⦿ Define the connection URL.
- ⦿ Established the connection.
- ⦿ Create the Statement object.
- ⦿ Execute a query.
- ⦿ Process the results.
- ⦿ Close the connection.

Steps to connect?

- ⦿ Define the connection url :

Class.forName();

- ⦿ For jdbc-odbc bridge driver:-

Class.forName("sun.jdbc.odbc.JdbcOdbcDriver");

- ⦿ For oracle driver:-

Class.forName("oracle.jdbc.driver.OracleDriver");

- ⦿ For My sql driver:-

Class.forName("com.mysql.jdbc.Driver");

Steps to connect?

- ⦿ Established the connection:

Connection con

=DriverManager.getConnection("url","user_name","pass");

Steps to connect?

- ⦿ Create the Statement object:

```
Statement stmt=con.createStatement();
```

Steps to connect?

◎ Execute the query:

➤ For the SELECT query:-

➤ String sql="SELECT * FROM EMP";

➤ *stmt.executeQuery(sql);*

➤ For the INSERT/UPDATE query:-

➤ String sql="INSERT INTO EMP VALUES(47,'TEDDY')";

➤ *stmt.executeUpdate(sql);*

Steps to connect?

⦿ Process the result:-

```
ResultSet rs=stmt.execute Query(sql);  
while(rs.next()) {  
    System.out.println(rs.getInt(id));  
    System.out.print(rs.getString(name));  
}
```

Steps to connect?

- ⦿ Close the connection

release all the resources that the connection is holding.

```
stmt.close();
```

```
con.close();
```

Steps to connect?

- Summarizing the steps for connecting java DB and inserting values in DB, deployed on Net Beans IDE :-

```
Class.forName("org.apache.derby.jdbc.ClientDriver");
```

```
Connection
```

```
con=DriverManager.getConnection("jdbc:derby://localhost:1527/orbacus","teddy","teddy");
```

```
Statement stmt=con.createStatement();
```

```
String sql="INSERT INTO TEDDY(47,'jani')";
```

```
stmt.executeUpdate(sql);
```

```
stmt.close();
```

```
con.close();
```

Types of Statement available

◎ There are three types of Statement available in Statement class:-

- *Statement*
- *PreparedStatement*
- *CallableStatement*

Types of Statement available

◎ Statement

This represent a simple sql/mysql statement.

Statement stmt=con.createStatement();

Types of Statement available

⦿ PreparedStatement

this represent precompiled sql/my sql statement which allows improved performance. It allows to execute the query multiple times and we can set the values according to our need.

```
PreparedStatement psmt=con.prepareStatement();
```


Types of Statement available

- CallableStatement

This allows the access of stored procedures; that are stored on the database.

```
CallableStatement csmt=con.prepareCall();
```

JDBC Data Source

- ◎ The JDBC data source interface is an alternative to DriverManager class and conventional JDBC url. All the database information is present in the Naming service and retrieved using the JNDI API. The Data Source object contains the connection information which will make the actual connection and execute the JDBC commands.

JDBC Data Source:

- ⦿ Each Data Source is assigned a logical name by conventional beginning with jdbc/ .
- ⦿ Advantages:-
 - Makes the code portable and reuse.
 - The application does not have to remember the hardcore driver information.
 - Connection pooling and distributed transaction advantages is facilitate.

JDBC Data Source:

⦿ Syntax:-

```
Context ctx=new InitialContext();
```

```
DataSource
```

```
ds=(DataSource)ctx.lookup("jdbc/teddyDB");
```

```
Connection
```

```
con=ds.getConnection("user_name","pass");
```

Thank You