

Java Programming

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Java Database Connectivity(JDBC)

JDBC stands for **Java Database Connectivity**, which is a standard Java API for database-independent connectivity between the Java programming language and a wide range of databases.

The JDBC library includes APIs for each of the tasks mentioned below that are commonly associated with database usage.

1. Making a connection to a database.
2. Creating SQL or MySQL statements.
3. Executing SQL or MySQL queries in the database.
4. Viewing & Modifying the resulting records.

Steps to Connect with Database

1. Register the Driver Class – Use **forName()** method of class **Class** to register the driver. Syntax of the forName method is – **public static void forName(String className) throws ClassNotFoundException**, eg:
 - `Class.forName("oracle.jdbc.driver.OracleDriver");`
2. Create the Connection Object - **getConnection()** method of **DriverManager** class is used, eg:
 - `Connection con=DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:xe","name","password");`
3. Create the Statement Object - **createStatement()** method of **Connection** interface is used, eg:
 - `Statement stmt=con.createStatement();`

Steps to Connect with Database

4. Execute the Query - `executeQuery()` method of `Statement` interface is used. The method returns the object of `ResultSet` that is used to get all the records of the table, eg:

```
ResultSet rs=stmt.executeQuery("select * from emp");  
while(rs.next())  
{  
    System.out.println(rs.getInt(1)+" "+rs.getString(2));  
}
```

5. Close the Connection Object - `con.close();`

Insert Statement

Use the following in the Code:

```
"String str = "insert into <table-name>(col1,  
col2) values(val1, val2);
```

```
Statement sm = conn.createStatement();  
sm.execute(str);"
```

Prepared Statement

```
PreparedStatement pstmt =  
conn.prepareStatement("insert into emp  
values(?,?)");  
pstmt.setInt(1,5);  
Pstmt.setString(2, "Hello");
```

CallableStatement

Used to call stored procedure in Database.

Example Code to create procedure in MySQL

```
DELIMITER $$
```

```
CREATE PROCEDURE `addproc` ( IN a INT, IN b INT,  
OUT c INT)
```

```
BEGIN
```

```
SET c = a + b;
```

```
END$$
```