JDBC PART-2

Type - II Driver(JDBC Native API Driver):

Type - II Driver is also called as Partial Java Driver (or) Partly Java-Partly Native Driver

Type - II Drivers are developed in Java language and native languages.

Type - II Driver Class Name for Oracle Database:

oracle.jdbc.driver.OracleDriver

Driver Vendor:

Oracle Corporation

Driver Location:

ojdbc14.jar file in Oracle 10g Express Edition

ojdbc6_g.jar file in Oracle 11g Express Edition

ojdbc8_g.jar file in Oracle 21c Express Edition

URL to access Type-II Driver:

jdbc:oracle:oci8:@service-id

To get service-id, use the following SQL query:

SQL>select * from global_name;

Type - II Driver Functionality:

It converts Java calls into native calls.

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Advantages:

1) It is little bit fast as compared to type - 1 driver

Disadvantages:

1) Separate driver required for every database.

2) All databases are not having type-2 drivers.

3) Database software needs to be installed on same system.

4) It is a platform dependant.

Steps to develop database application:

1) Loading a specific JDBC driver.

2) Establishing a connection.

3) Performing the task.

4) Closing a connection.

JDBC API:

JDBC API is a Java API, that can access any kind of tabular data and data especially stored in RDBMS(Relational DataBase Management System).

1) java.sql package 2) javax.sql package

java.sql package

Classes	Interfaces
1) DriverManager	1) Driver
2) SQLException	2) Connection
3) Types	3) Statement
4) Date	4) PreparedStatement

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5) Time

5) CallableStatement

6) ResultSet

7) ResultSetMetaData

8) DatabaseMetaData

9) Blob

10) Clob

Program to establish the connection between Java application and Oracle Database by using Type-2 Driver:

```
import java.sql.*;
class ConnectionDemo
{
	public static void main(String args[])
	{
		try{
		Class c=Class.forName("oracle.jdbc.driver.OracleDriver");
		Connection con=DriverManager.getConnection(
"jdbc:oracle:oci8:@xe","system","manager");
		System.out.println("Connection Established Successfully");
		}catch(Exception e)
		{
			System.err.println(e);
		}
```

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```
        }
}
```

Type - III Driver (JDBC Network Protocol Driver):

It is also called as JDBC Net Pure Java Driver (or) Middleware Driver.

Type III Drivers are developed in Java language only.

Type - III Driver Functionality:

It passes the java instructions to middleware system.

Advantages:

1) Java calls are database independent from local system to middleware system.

2) It is a platform independent.

3) Database not needed on same system.

Disadvantages:

1) Extra layer added in this architecture.

Type - IV Driver (JDBC 100% Pure Java Driver):

It is also called as JDBC Native Protocol Driver (or) Thin Driver

Type - IV Driver Class Name for Oracle Database:

oracle.jdbc.driver.OracleDriver

URL to access driver:

jdbc:oracle:thin:@domain-name:port-no:service-id

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Type - IV Driver Functionality:

It passes the java instructions directly to a database.

Advantages:

1) It is a highest performance driver as compared to all other drivers.

2) It is a platform independent.

3) Database not needed on same system.

Disadvantages:

1) Separate driver required for every database.

Program to establish a connection between Java application & oracle database by using type-iv driver:

```
import java.sql.*;
class ConnectionDemo
{
	public static void main(String args[])
	{
		try{
		Class.forName("oracle.jdbc.driver.OracleDriver");
		Connection
con=DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:xe","system","manager");
		System.out.println("Connection Established Successfully");
		}catch(Exception e)
```

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```
            {
                System.err.println(e);
            }
        }
}
```

Note: If the application requires more than one database then use Type 3 Driver otherwise use Type 4 Driver.

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