



**PUNE INSTITUTE OF COMPUTER TECHNOLOGY, PUNE -43**

**Department of Electronics and Telecommunication Engineering**

**ASSESSMENT YEAR: - 2021-22**

**CLASS: - TE- V**

**Subject: - Advanced Java Programming**

**Expt. No: 11**

**LAB Ref: ETC/2021-22/**

**ROLL NO:32147**

**SUBMISSION DATE:**

**Title: -** Insert and retrieve the data from the database using JDBC.

**Problem Statement: -** Write a program to insert and retrieve the data from the database using JDBC.

**Objectives: -**

**1.To learn the concept of inserting and retrieving data from the database using JDBC.**

**2. Understand the internal working of JDBC, types of JDBC drivers and working of JDBC API's.**

**Theory (Write Theory of the new concept demonstrated in this Assignment)**

Java DataBase Connectivity (JDBC) is a set of standard Java API's that allows programmers to access the database management system from java code. The JDBC API defines the JAVA interfaces and classes that are programmers friendly, these can be used to connect to databases and send and execute queries.

JDBC API's comes under the package java.sql.

A JDBC driver is a core software component of JDBC API that enables Java application to interact with Database. Different databases have different JDBC drivers like Oracle, MYSQL have their own drivers.

JDBC consists of 7 elements that are known as connection steps. They are listed below:

**1.Import the package.**

**2.Load and register the driver.**

**3.Establish the connection.**

**4.Create the statement.**

**5.Execute the statement.**

**6.Process the result.**

**7.Close and Terminate.**

The syntax for importing package to deal with JDBC operations:

```
import java.sql.* ;
```

The syntax for registering drivers after loading the driver class:

```
forName(com.mysql.jdbc.xyz) ;
```

### **1. Type 1 Driver-JDBC-ODBC Bridge Driver**

The Type 1 driver translates query obtained by JDBC into corresponding ODBC query, which is then Handled by the ODBC driver. ODBC is a generic API. It is recommended only for experimental use or When no other alternative is available.

**Advantages:**

1. Easy to Connect.
2. The JDBC-ODBC Bridge allows access to almost any database.

**Disadvantages:**

1. They are the slowest of all driver types.
2. The client system requires the ODBC Installation to use the driver.

Example: sun.jdbc.odbc.JdbcOdbcDriver

**2.Type 2 Driver- Native-API partial Java Driver**

The JDBC type 2 driver, also known as the Native-API driver, is a database driver implementation. It converts

JDBC calls into database specific calls.

**Advantages:**

1. Better Performance than type 1 because these drivers uses native API calls which are database specific.

**Disadvantages:**

- 1.The vendor client library needs to be installed on the client machines.
- 2.The driver is platform dependent.

**3.Type 3 Driver -Java Network-Protocol Driver**

The type 3 database requests are passed through the network to the middle-tier server.

**Advantages:**

- 1.Type 3 driver is fully written in java and hence portable

**4.Type 4 Driver-Native-Protocol Driver**

The type 4 uses java networking libraries to communicate directly with the database server also called as Thin Driver.

**Advantages:**

- 1.It is most suitable for the web based application.

**Disadvantages:**

1. These drivers are database dependent.

**Diagram: -**

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<b>Learning Outcomes: -</b>		
	1	Learned the concept of JDBC.
	2	Learned to insert and retrieve the data from the database using JDBC.

Continuous Assessment			
RPP (out of 5)	SPO (out of 5)	Total (Out of 10)	Sign
			Date: -

#(RPP – Regularity, Punctuality, Performance), (SPO – Submission, Presentation, Oral)

<b>Important Questions: -</b>
1. What is JDBC? Explain with real life analogy.
2. What are the steps required to access database using JDBC?
3. How is JDBC accessed in nutshell?
4. What are the statements in JDBC?