JDBC

JSR 221 → Included in Java

JSR → Java Specification Request
  ↳ Basically part of Java

JDBC Supports
→ Two Tier Structure → User connected by network
→ Three Tier Structure   ↳ client Server Configuration
  ↳ Client machine (GUI)   User machine as client.
      Server machine (Business logic/middle Tier)
        Database Server.

Data Source   Commands & Sends result back to middle
tier, which then Sends them to User.
→ attractive.

Architecture of JDBC.
┌ JDBC API → Provides application to JDBC Manager
│   Connection
│ JDBC Driver API → Supports JDBC Manager to
└ ↳ Uses Driver Manager &   Driver Connection
        data

─ JDBC Driver Manager Ensures that Correct driver
Is used to access Each data Source.
↳ Provided by Various JDBC Vendor

Driver Manager
  ┌ ↳ Basic Service for managing a set of JDBC driver
  ├ ↳ get Connection |method
  │   getDrivers |
  └ ↳ No need to load JDBC Drivers Explicitly.
  ↳ App using Class.forName() will work without
  modification
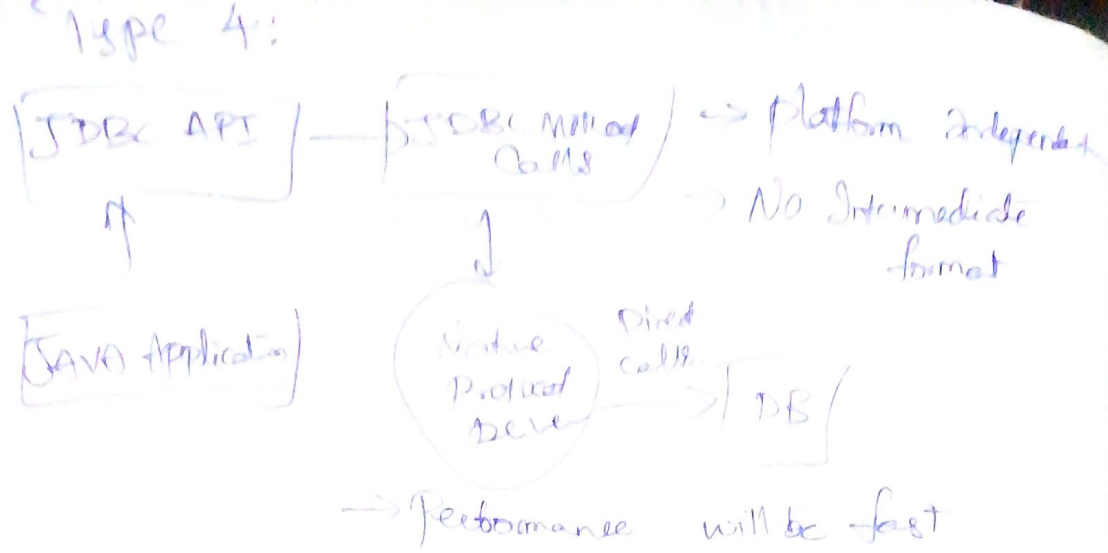 ↳ get Connection() → locate Suitable Driver

Types of JDBC Drivers:
i) JDBC-ODBC bridge
ii) Native API driver
iii) Network-Protocol Driver (Middleware driver)
iv) Database-Protocol Driver (Pure Java driver)

Type 4:

JDBC API ———— JDBC Method → Platform Independent
                   Calls
                              → No Intermediate
                                        format

Java Application   Native   Direct
                        Protocol   Calls
                        Driver   ——→ DB

                   → Performance will be fast

Connection con = null;
try{
    con = DriverManager. get get Connection
              (dbUrl, Username, Password)
    S.O.P ("Connection Established");
}

JDBC methods throws SQLException
  SQL Exception extended from Exception
                                        class
      getMessage()
      getLocalized Message()
        iterator()

Statement Interface:
→ ResultSet executeQuery (String SQL) → SELECT
→ int executeUpdate (String SQL) → Insert, Update & Delete
                                        Create
→ boolean Execute (String SQL)
                    ⌐ only in unusal way.

ResultSet Types:

1. Type - Forward - Only
2. Type - Scroll - Insensitive
3. Type - Scroll - Sensitive

ResultSet Concurrency Types:

Concur - Read - Only
         Updatable

Prepared Statement:
⮡ Improves Performance of Application

↑

Callable Statements:
Type of Parameters:
   i) Input (Default)
   ii) Output
   iii) Input Output

CLOB (Character Large Object)
⮡ Collection of character data
Stored as Single Entity in database

BLOB (Binary Large Object)
JDBC Connection Pool
⮡ factory ⟶ Consists of readily available JDBC
Connection objects
Types of JDBC Connection Poly
⟶ JDBC Driver Managed / Standalone JDBC Connection
⟶ WebServer / Application Server Managed
      JDBC Connection.