

What is data?
information with
no context.

What is database?
Organized collection
of data

What is RDBMS?
data stored in form
of rows & columns.

SQL Introduction

↳ Structured query
language

Introduction to MySQL

fast & easy way to create
tables

It is open source & free

Named after Monty
Widenius's daughter: My
It is a Relational
database management
system.

Important MySQL Queries

Create Database

create database <name of database>;

Create Table

create table <name of table> (c1 dt1 , c2 dt2
c3 dt3 PRIMARY KEY(c1));

Select query

select * from <database> . <table name>;

Insert query

insert into <database> . <table name> values
(v1 , v2 , v3 , ...);

delete query

delete from <database> <tablename>

where <conditions>

can only be on the
PRIMARY KEY

for instance if "id" is
the pkey then

~~Where id = 2 ;~~

won't work as name
is not the
primary
key

where name = "Ram";

update Query

update <tablename>

Set colname = Value

where <conditions>;

drop database

drop database <database name>;

Introduction to JDBC

Only
understands
Java
application

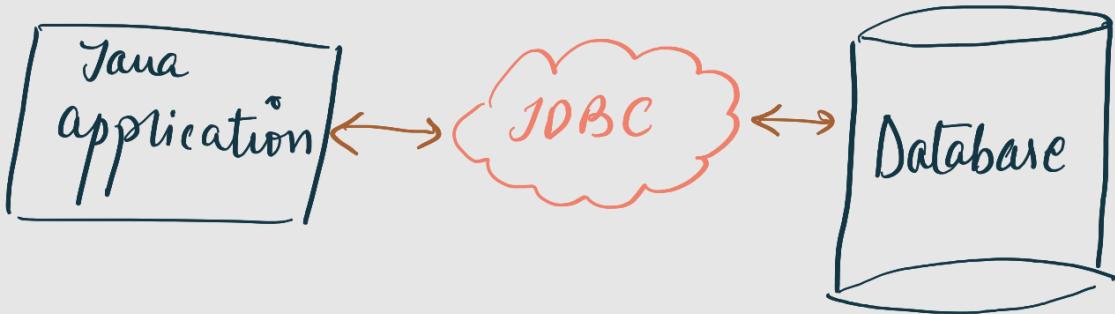
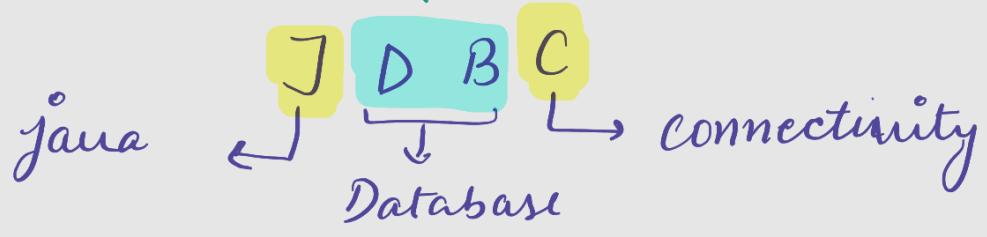
only understands
SQL language



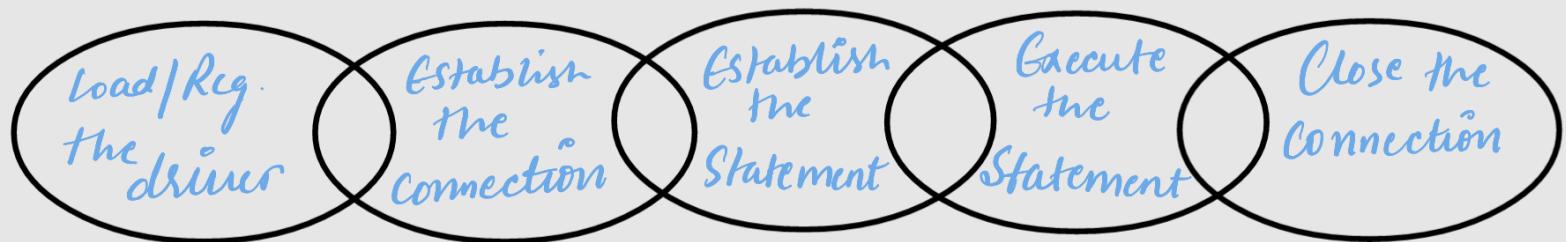
To make this communication
possible

Both database
and Java
app uses a
single API

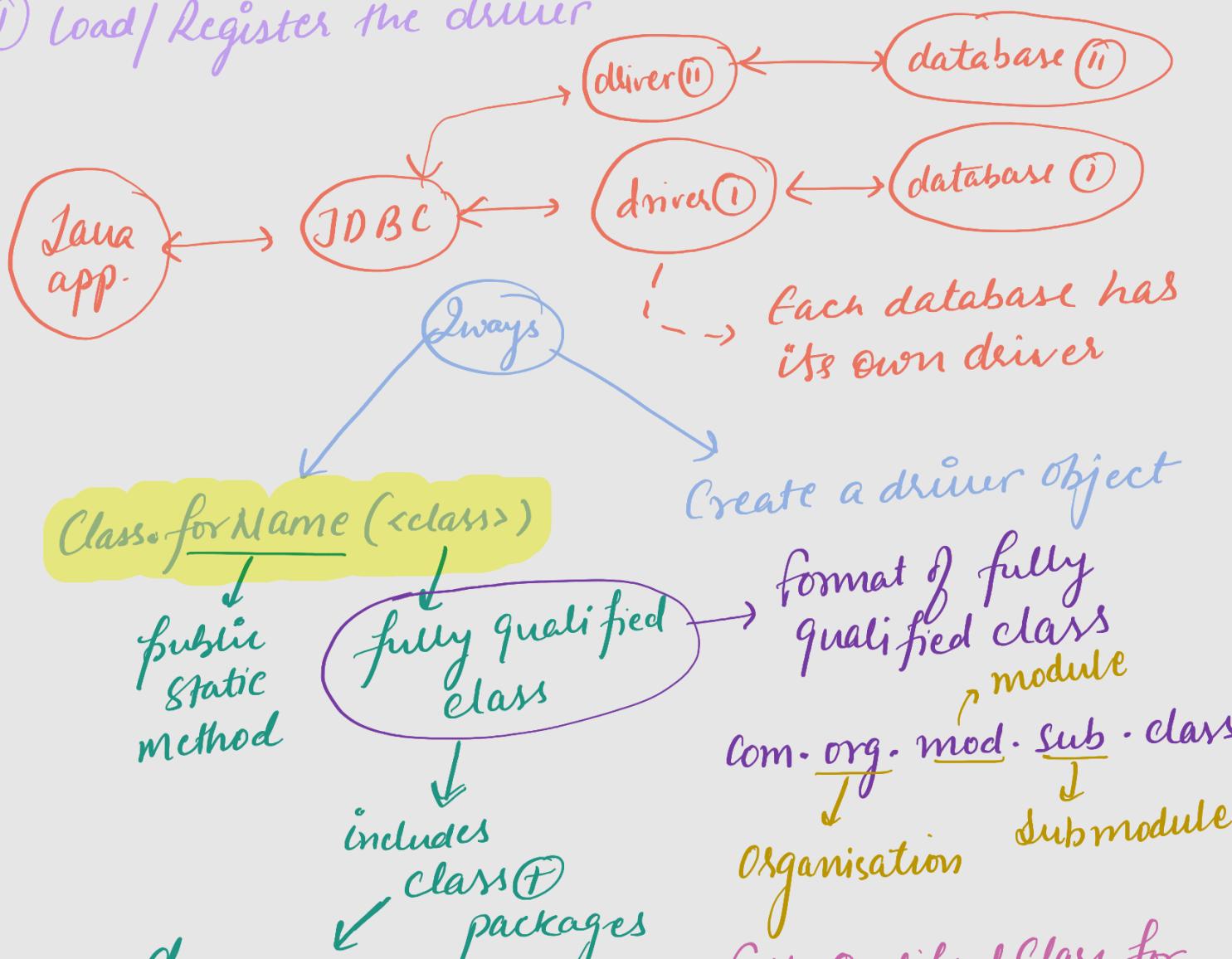
JDBC



The five steps to connect Database with JDBC



① Load/ Register the driver



Dependent
on database

fully Qualified Class Name
MySQL

Create a new Driver object

com.mysql.ej.jdbc.Driver

Driver driver = new Driver();

DriverManager.registerDriver(driver);

↳ class present in
java.sql pkg.

After loading of driver both JDBC & Driver attach to



the Java program but JDBC has no connection to Driver and is unknown of the Driver's location.

To establish the connection we will go through the next step



Establish a connection b/w
Driver & JDBC.

② Establish the connection b/w Driver & JDBC

DriverManager.getConnection(url, user, pass);

DriverManager.getConnection(url, properties file);

DriverManager.getConnection(query);

↳ includes url, query and password.

All the methods

↳ has user and pass.

return
"connection interface"

When the connection is established we need to move on to establishing a statement / query

③ Establish a statement

Statement
base interface
static query
no placeholder needed
slow performance

type of Statement
So child interface
prepared statement
child interface
dynamic query
placeholder used
(delimiter, ?)
fast performance

connection.createStatement();

connection.prepareStatement();

④ Execute the statement

execute();
Return type → boolean
Statement.execute();
PreparedStatement.execute();

executeUpdate();
Return type → int
Statement.executeUpdate();
PreparedStatement.executeUpdate();

Non Select Query
↳ update
delete etc.

executeQuery();
Return type → ResultSet

Select Query

⑤ Close the connection

connection.close();

Short Notes on Implementation

① Create a Maven Project

Group id \Rightarrow package name \Rightarrow com.ty

Artifact id \Rightarrow project name

② Go to pom.xml file

add <dependencies> </dependencies>

Choose mysql Connector \leftarrow Go to maven repository and search for mysql

Choose the version \rightarrow copy-paste the acc. to the usage code given

```
String url = "jdbc:mysql://localhost:3306";
```

```
String user = "username";
```

```
String password = "password";
```

// Step 1 - Load the driver

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

// Step 2 - Establish a connection

```
Connection connection = DriverManager.getConnection  
(url, user, password);
```

// Step 3 - Establish the statement

```
Statement statement = connection.createStatement();
```

// Step 4 - Execute the statement

```
statement.executeUpdate("query");
```

statement, execute update

//step 5 - Close the connection

connection.close();

Batch Execution

> Execute bunch of queries together

//Step 1

//Step 2

//Step 3

addBatch();

→ //Step 3 →

addBatch();

//Step 4

executeBatch();

com.ty.dto

All
private

data
transfer
object

com.ty.dao

data
access
object

com.ty.util

Helper
class

com.ty.controller

White Box Testing
Testing purposes

