**JFSD: A-Z of Back-end and Database Development**

**Day 7 : 3 Aug 24**

Collection Framework – Data Structure

Service layer : this class contains pure business logic.

Inside service class don’t use Sytem.out.println();

MySQL Database

Basic query

Connecting mysql using one the topic in java

1. Jdbc

We can store the data

1. In file system

Limitation of file base system

1. File base system allow to store duplicate records ie data redundancy
2. Inconsistency format of the file.
3. Doing CRUD Opeation insert, delete, update and retrieve more complex.
4. Security : read only or read/write file.
5. In database system

In Database we store the data in table format. If database is RDBMS Relational database management system.

MySQL

Oracle

Db2

Sql server

MySQL Database we can connect using

1. Command prompt
2. Using GUI

Please connect VM non window

Open terminal

sudo mysql -u root

password : Simplilearn

show databases; to view all database present in current account.

create database my\_db; this command is use to create new database.

use my\_db; this command is use to switch to new or existing database.

show tables; this command is use to show any table present in new or old database.

Employee --🡪 table name

Id name salary --🡪 column name

Int varchar(25) float

PK (Primary key) primary key column doesn’t allow null as well as duplicate value.

create table tableName(columnName datatype, columnName datatype);

create table employee(id int primary key,name varchar(25), salary float);

desc tableName we can view table structure

table creation is a part of DDL Query (Data Definition language)

insert, Delete and update (These query part of DML ie Data Manipulation language)

insert into tablename values(v1,v2,v3);

insert into employee values(1,’Ravi’,12000);

DRL or DQL (Data Retrieval language or Data Query Language)

Select \* from tableName; \* means all columns

Select \* from employee

Select name,salary from employee

Select \* from employee where id=1;

Select \* from employee where name=’Ravi’;

Select \* from employee where salary > 15000;

Delete record

delete from employee all record deleted

delete from employee where id=1;

delete from employee where name=’ravi’;

delete from employee where salary > 25000;

update record

update employee set salary = 35000 all record updated

update employee set salary = 25000 where id=1;

if we want to remove all record as well as table

drop table tablename

JDBC : Java Database Connectivity :

JDBC provided lot of API (Application programming interface) ie it may be classes and interfaces which hep to connect any database RDMBS or no SQL database using Java technologies.

Steps to connect mysql database using Java with help of JDBC.

1. JDBC provided package is sql which we need to import.

java.sql.\*;

javax.sql.\*;

1. JDBC throw checked exception. We need write main method or user defined method using exception handling concept ie try – catch or throws.
2. Load the Driver : Driver is a pre defined class provided by database vendor which help to connect the database using programming language.

JDBC provided totally 4 types of driver

1. Type 1 or jdbc odbc bridge driver
2. Type 2 or jdbc native api driver
3. Type 3 or jdbc net protocol driver
4. Type 4 or jdbc thin or pure driver

From java 8 onward type 1 driver removed.

Class.forName(“driverName”)

Class is a pre defined class name itself I Class part of lang package and which contains forName static method which hep to load the driver.

Mysql database com.mysql.cj.jdbc.Driver -🡪 MySQL 8.x version

1. Establish the connection

Connection con = DriverManger.getConnection(“jdbc:mysql://localhost:3306/my\_db”,”root”,”root@123”);

1. Now we need to create Statement or PreparedStatement interface reference which provided set of methods which help do some operation on table.

Statement stmt = con.createStatement();

DML Operation (insert, Delete or update)

Insert query

stmt.executeUpdate(“DML Operation ”);

this method return type is int value. If query executed successfully and base upon query how many record get effect that result store in int value.

ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql\_native\_password BY 'root';

FLUSH PRIVILEGES;