Backend and Database Development

13 classes

Day 7 : May 7 2024

Java Technologies

Using java we can store the data in file system as well as database system.

File base system :

If we want to store data in file system using java. Java provided one of the package is io

import java.io.\*;

in java we an do io operation using two ways.

Byte wise

Character wise.

Java use stream concept to do input and output operation.

Stream : flow of data or it is an abstraction between source and destination.

Byte wise classes. : one byte at time.

Character wise classes : two byte

System is a pre defined class part of lang package. By default every java program import lang package. This class contains three static and final field ie in, out and err.

In is reference of InputStream class. InputStream always refer to standard input device ie keyboard.

Out and err is reference of PrintStream. PrintStream always refer to standard output device ie console.

If we want to store the primitive data in file like id, name, salary.

Then we need to use the classes as byte wise

DataInputStream, DataOutputStream, FileInputStream and FileOutputStream.

Object serialization : converting our user defined object in byte format or serialized format is known as object serialization.

Which class object we want to do serialization that class must be implements Serializable interface. This interface doesn’t contain any methods. The interface contains zero method or no method is known as marker interface.

Object de-serialization : converting byte format or serialized format object in normal object format.

Database system:

RDBMS : Relational database Management system.

MySQL

Oracle

Db2

Sql server

MySQL or oracle

In Virtual Lab

Open terminal

mysql -u root -p

Password : Simplilearn

MySQL

show databases; show all databases

create database my\_training\_db; to create new database

show databases

use my\_training\_db; switch inside exiting or new database

show tables; show all tables present in your database.

In Oracle database.

Select \* from tab; it show all table present in your account.

Product -🡪

Pid (PK) Pname price

create table product(pid int primary key,pname varchar(25), price float);

insert into product values(100,'TV',56000);

insert into product values(101,'Computer',32000);

select \* from product;

update product set price = 35000 where pid=101;

delete from product where pid = 100;

Jdbc : Java Database Connectivity :

JDBC provide API which help connect any RDBMS using Java technologies to do operation like insert, delete, update and retrieve using java program.

Steps

1. Java provided sql package. Which contains set of classes and interfaces which help to connect the database. Ie import java.sql.\*; or import javax.sql.\*;
2. JDBC throw checked exception so we need to write method ie main method or user defined method with exception handling concept.
3. Load the driver. Driver is a pre defined class provided by vendor whose database we are planning to connect.

Types of driver.

4 types

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 driver or pure driver.

From java 8 onward type 1 driver removed.

We are using type 4 driver. Because vendor provide this type of driver in form of jar file.

Mysql

Oracle

Class.forName(“driverName”);

Class is a pre defined class and name itself is class which contains forName as static method.

1. Establish the connection

Connection con = DriverManager.getConnection(url,username,password);

Connection is a interface and DriverManager is pre defined class which contains getConnection static method which takes 3 parameter 1st is url, 2nd username and 3rd password.