**Day 21:**

**JPA**

**Hibernate**

**iBaties**

ORM : Object relation mapping : ORM is a tool which help to improve database logic.

Limitation of JDBC

1. Using JDBC we can’t store as well as can’t retrieve object. we need to convert object into sql query format and vice-versa.
2. JDBC use SQL. SQL is database dependent language.
3. JDBC throw checked exception. The exception hierarchy is database dependent.
4. JDBC doesn’t support is a and has relationship.

Object (Java side) Relation (table – database side)

@Entity -🡪 class level annotation

Class Employee table Employee

@Id 🡪 the column which contains PK

Id,name,salary—fields ID,NAME,SALARY -🡪 column

Mapping

Employee 🡨🡪 EMPLOYEE

Id🡨-> ID

Name🡨-> NAME

Salary🡨> SALARY

With data types and pk

These mapping we were doing in xml file

New version with replace by annotation.

Database configuration we can write in java classes properties file or xml file.

JPA : Java Persistence API : JPA is a technology. JPA is a type of EJB.

Session bean, entity bean, message driven bean etc

Entity bean replace by JPA.

Hibernate :Hibernate is a framework.

JPA is a specification and Hibernate is one of the implementation of JPA.

Core Java Project with Jdbc or JPA or Hibernate

Web Project(Servlet/JSP) with JDBC or JPA or Hibernate

Spring framework with JDBC or JdbcTemplate, JPA or Hibernate or spring JPA Data

Spring boot : JDBC or jdbcTempalte or JPA or Spring JPA Data.

In JPA

This file contains database configuration details hibernate configuration file

**persistence.xml** **hibernate.cfg.xml**

retrieve more than one records using JPQL (Java Persistence Query Language).

Sql retrieve data in string format. SQL is database dependent.

JPQL is retrieve entity or Java bean object. JPQL is database independent.

SQL

Select \* from tableName; \* means all column.

Select \* from product; \* all column and product is table name.

Select pid from product;

Select pname from product;

Select pname,price from product;

JPQL

Select objectName from EntityClassName objectName;

Select p from Product p; p is object name and Product is entity class name and it is a case sensitive.

Select p.pid from Product p;

Select p.pname from Product p;

Select p.pname,p.price from Product p;

ORM Relationship

**One to many relationship**

create table trainer(tid int primary key,tname varchar(30), tech varchar(30));

create table student(sid int primary key,sname varchar(30), age int, tsid int, foreign key(tsid) references trainer(tid));