**Phase 2**

4 classes

1st class intro to database using oracle database

2nd class intro to database using mysql database

3rd class into to database mongo db database

4th class into to cloud using AWS.

Database

Program using any language like java, python, php, c or C++ etc

Input

Process

Output

System.out.println(“Welcome”);

If we want to store the data

1 file base system

Limitation of file base system

1. Data redundancy (Duplicate records).
2. Data inconsistency (format of the file).

Type of file

Format of data store in file

Id,name,salary

1,Ravi,12000

1/Ravi/1200

1 Ravi 12000

3. security ( mode of the file may be read or write mode or execute mode)

4. CRUD Operation more complex Create or insert new record, read or view, update and delete

2 database system

Data : raw fact.

Information :processed data or meaningful data etc

Database : storing the data in table format if database is RDBMS etc.

It is a software which help to store the data in table format using row and column

DBMS : Database Management System

StudentTrainerInformation

RDBMS : Relational Database Management System

Student

PK (Primary key): if column is pk that column doesn’t allow duplicate.

That column doesn’t allow null or empty value.

In single table we can make only one single column as pk.

We can combine two column to make primary key.

If we make two column as pk every individual column allow duplicate but combination must be unique.

Database Model

Hierarchical model OS

Network model

Relation model

Student

PK

SID(int/number) Sname(varchar(10)) age(int) FK

1 Reeta 21 100

2 Meeta 22 100

3 Veeta 23 102

4 Keeta 25 null

Trainer

PK

TId TName tech

100 Raj Java

101 Ravi Python

102 Ramesh Angular

FK : Foreign key : if column is FK always refer to PK of same table or different table. If column is FK that column allow only those values which present in PK column. FK can allow null value.

PK

CompanyID ProdK Price

A X 100

B Y 200

A Y 300

B X 400

A X 500 Error

RDBMS database

Database name Company name

Oracle Oracle

MySQL Sun micro system (Oracle )

SQL Server 2022 Micro soft

Db2 IBM

All above Database known as RDBMS databases.

Database internally use file base system to store the data.

SQL : Structured Query Language : English language.

This language provide set of command which help to interact with database using

Console base

Or

GUI base

Mainly divided into 5 sub language.

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

In DRL all command star with Select clause

Select is use to retrieve the records from table using different ways.

DDL Data Definition language

Structure of table

Create, Drop, alter (modify table structure ), truncate (delete the records from table)

DML Data Manipulation language

Data or information storing in table or update or delete

Insert, Delete and update

TCL Transactional control language

Transactional control language etc.

If all DML operation successfully then we need to do commit.

If any query get error we need to do rollback. As well as savepoint

DCL Data control language

Grant : giving the permission to do the task in database with particular table

Like insert, delete, update and retrieve

Revoke : take back the permission etc.

SQL

Oracle

MySQL

Db2

SQL Server

MySQL Vs Oracle

MySQL open source

Oracle not an open source

Username by default root

Password root

show databases; it will show all databases present in your account

use databasename; we can switch from one database to another database.

Create database databaseame; it is use to create new database.

show tables; it will display all table present in your database or existing database.

In Oracle Database login like scott, or admin or oracle

Tiger or admin or welcome or oracle

Database login itself is database consider.

show databases; but in oracle login name itself is one database. In oracle error.

use databasename; error;

Create database databaseame; error

show tables;

No SQL : Mongo Db, HBase, Cassandra,