My SQL and Python

Day 1 : 08-08-2022

Program : set of instruction to perform a specific task.

C

C++

Python

Java

Etc

Input , Read input a,b

Process, compute sum = a+b

Output ,Write display sum

File system

Database system

Limitation of file base system

Text, doc, pdf etc.

1. Data redundancy : Duplicate records.
2. Data inconsistency :

Format of the file.

Employee.txt

Sid,sname,age

1,Raj,21

Sid SName Age

2 Ramesh 23

1. To Do CRUD Operation Create or Insert, Read, Update and Delete
2. Security : read mode or write mode.

Data : Data is known as raw fact.

Information : meaning full data.

Database : storing the data in a table format.

DBMS : Database management system : it is a software which help to store the data in table format.

Excel sheet is type of DBMS

TrainerStudentDetails

TId TName Tech Sid SName Age

1 Raj Python 100 Seeta 21

1 Raj Python 101 Reeta 22

1 Raj Python 102 Meeta 23

Trainer -🡪 Table

PK

TId TName Tech

1 Raj Python

2 Raj MySQL

3 Raju Java

Student -🡪 Table

PK FK

Sid SName Age TSID

100 Seeta 21 1

101 Meeta 22 1

102 Keeta 23 2

103 Reeta 24 3

RDBMS : Relational Database Management System

MySQL, oracle, Db2, SQL Server etc

Database Company

MySQL Sun micro system / Oracle

Oracle Oracle

Db2 IBM

SQL Server Microsoft

SQL (Structured Query Language). All RDMBS database use SQL query language to store, retrieve, update and delete the data from a database.

In MySQL Database we can run the query or we can interact with database using

1. Command prompt
2. GUI(Graphical User Interface) base

show databases; This command is use to display all databases present in mysql database server

create database databasename;

create database isbmb;

drop database databasename; This command is use to drop the database;

use databasename; This command is use to switch from one database to another database

Table 🡪 Sample

Sid : hold numbers int

Sname : name of type string varchar(10)

Create table tableName(columnName datatype, columnName datatype);

Create table sample(sid int, sname varchar(10));

Day 2 : 09-08-2022

SQL mainly divided into five types

1. DRL or DQL (Data Query Language or Data Retrieval Language)
2. DDL (Data Definition Language)
3. DML (Data Manipulation Language)
4. TCL (Transactional Control Language)
5. DCL (Data Control Language)

DRL or DQL (Data Query/ Retrieval Language)

Select clause

select \* from tableName; This query is use to retrieve all records from a table.

Example : select \* from employee;

Select columnName,columnName,columnName from tableName;

This query is use to retrieve specific column from a table

Example : select first\_name,salary from employee;

Filter the record using where clause

Select \* from tableName where columnName operator value;

Select columnName,columnName from table where columnName operator value;

Relational Operator

>, >=, <, <=, = , != relational operator

Between operator : this operator is use to view the record within a range.

Select \* from tableName where columnname between minValue and maxValue;

Example

Select \* from employee where salary between 5000 and 10000;

In operator : This operator is use to apply more than one specific condition like or operator

Select \* from tableName where columnName in(v1,v2,v3);

Select \* from employee where salary =12000;

Select \* from employee where salary in(10000,8200,6500);

Select \* from college where city =’Bangalore’;

Select \* from college where city in(‘Bangalore’,’Delhi’);

Select first\_name,salary from employee where hire\_date > ‘1990-01-01’;

is null operator

select first\_name,manager\_id from employee where manager\_id is null;

select first\_name,manager\_id from employee where manager\_id is not null;

DDL (Data Definition Language)

Create, rename, drop and truncate etc

Create table

Student

Sid int Pk

SName varchar(25)

Age int

Stream enum(‘BE’,’MBA’)

City varchar(10)

Dob date

create table student(sid int primary key,sname varchar(25), age int, stream enum('BE','MBA'), city varchar(10), dob date);

DML : Data Manipulation Language

Insert, delete, update

Insert query

Insert into tableName values(v1,v2,v3);

Update Query

Update tableName set columnName = value;

Update student set age = 22;

Update with where clause

Update tableName set columnName = value where op value;

Update student set age = 25 where sid =1;

Update student set age = 28 where sname = ‘Raj’;

Delete query

Delete from tableName; all records from table will delete

Delete from student;

Delete from tableName where columnName op value;

Delete from student where sid=1;

Delete from student where stream = ‘MBA’;

Day 3 : 10-08-2022

Drop table tableName;

Example : drop table sample;

Alter table tablename rename column oldName to newName;

Example: Alter table sample rename column name to sname;

Alter table tablename drop column columnname

Example : alter table sample drop column sname;

<https://github.com/Kaleakash/isbmb_training.git>

1. Create database with any name;

Ans : create database mydb;

1. Move inside your own database.

Ans : use mydb;

1. Create table with any name four columns (int, varchar(2),float, date

Ans : create table customer(cid int primary key, cname varchar(2), age float,dob date)

1. Please increase the size of varchar using alter command.

Ans : alter table customer modify cname varchar(10);

1. Insert five records inside as table.

Ans : insert into customer values(1,’Raj’,21,’1990-10-05’);

1. Display only three records using where clause condition.

Ans : select \* from customer where age > 21;

1. Update any two records price using id(PK) property

Ans : update customer set age = 25 where id =1;

1. Change any column name using alter command

Ans : alter table customer rename column age to cage;

1. Change table name

Ans : alter table customer rename customerdetails

1. Drop date column.

Ans : alter table customer drop column dob;

Join : Join is use to retrieve more than one column from more than one table with or without conditions.

1. Cartesian Join
2. Inner Join or Equi-Join
3. Left Outer Join and Right Outer Join

Create table table1(srno int, sname varchar(10), age int);

insert into table1 values(1,’Raj’,21);

insert into table1 values(2,’Ravi’,22);

select \* from table1;

Create table table2(accno int, sname varchar(10), amount int);

insert into table2 values(100,’Raj’,500);

insert into table2 values(101,’Ajay’,1000);

select \* from table2;

select srno,age,accno,amount from table1, table2;

output is m\*n =

select srno,age,sname,accno,amount from table1,table2;

Error in this query

Select srno,age,table1.sname,table2.sname, accno, amount

from table1, table2;

Table alias

Select t1.srno,t1.age,t1.sname,t2.sname,t2.accno,t2.amount from

table1 t1, table2 t2

Equi Join : it will display only those record which is available in both the table.

So we have to compare with common column.

1. Using where clause : Equi Join

select t1.srno,t1.age,t1.sname,t2.sname,t2.accno,t2.amount from

table1 t1, table2 t2 where t1.sname = t2.sname

select emp.first\_name,emp.salary,dept.department\_name from employee emp,department dept where emp.department\_id=dept.department\_id;

select emp.employee\_id,emp.first\_name,job.job\_title from employee emp,

jobs job where emp.job\_id=job.job\_id;

1. Using on clause : Inner Join

select emp.employee\_id,emp.first\_name,job.job\_title from employee emp

inner join jobs job on emp.job\_id=job.job\_id;

<https://github.com/Kaleakash/isbmb_training.git>

Day 4:

**show databases;**

SQL functions

Function is use to write set of instruction to perform specific task.

Function mainly divided into two types.

1. Single row function
2. Multi row function or aggregate function.

Syntax

functionName(parameterList) {

}

If function is single row function it will take 1 or more than one parameter

Return or apply result for every row or records.

Use isbm

Select functionName(columnName) from tableName;

Multi row or aggregate function

Five function

Sum()

Max()

Min()

Avg()

Count()

Aggregate function use to combine more than one column base upon group

Group by clause

Group by clause is use to group more than column value based

upon repeating records

sub query : query within another query in known as sub query

syntax

Outer Query (Inner Query)

First inner query execute and inner query output is input for outer query.

Find employee name whose salary is > those employee’s salary working in

Department 30.

Day 5: 06-09-2022

Python:

Programming language : Programming language help us to develop the application.

Software: software is responsible to run the device.

System software : OS (Operating System). Window, Mac, Unix, Linux, Android etc.

Application Software : Application software : To run any application we require system software. Application software is use do some specific task.

Using application software we can develop any type of application

Ie console base or command base

GUI base (Graphical User Interface)

Web base

Mobile base

Etc

B

BCPL

Fortan

Cobol

C 1970 Era

C++ 1980

Java 1990

Python 1990

.net :C# 2000

JavaScript : 2010

Data Science / AI/ Machine : 2020

Python : Python is an open source interpreter scripting language.

Programming language C, C++ or Java Programming language: This language

We have to compile. After compilation it will convert in another format like byte format, object, or exe format and using that file we have run the program. Complier convert whole code in another format.

Scripting language: interpreter scripting language convert code line by line and get the output.

JavaScript, Python, VBScript, TypeScript, ActionScript etc.

Python Programs

We can write python program lot of ways

1. Command base

Variable : variable is a name which hold the value.

Data type : Data type is a type of data which tells what type of data it can hold.

int a; Valid syntax in C or Java but not in Python

int b=100; valid syntax in C or Java but not in Python

int is a type of data type which hold value without decimal number and a and b are variable.

Python is known loosely type data type.

We can declare the variable with data type and that variable can hold any type of value.

Syntax to declare the variable in python

variableName = value;

name=”Raj”; name hold type of string value.

str(variableName) or str(100) : it convert number to string.

Display Last year marks card details like

Your Name

Your Roll Number

Subject Name

Marks

Total Marks

Avg or Grade