**Experiment No: 1 Date : 13/02/2025**

**Familiarization of DDL Commands**

Data Definition Language (DDL) - These SQL commands are used for creating, modifying, and dropping the structure of database objects. The commands are CREATE, ALTER, DROP, RENAME, and TRUNCATE.

1. Consider the database for a college. Write SQL commands to implement the following:
   1. Create a database

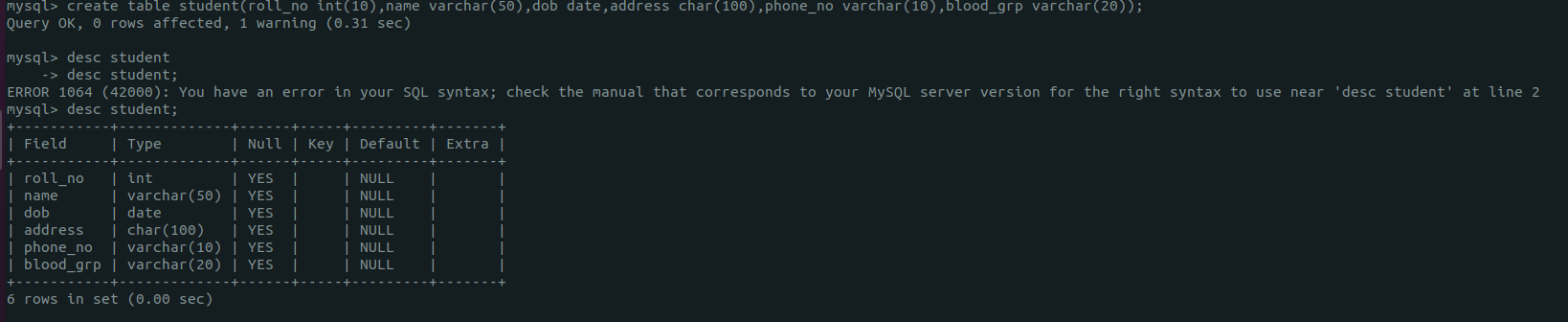
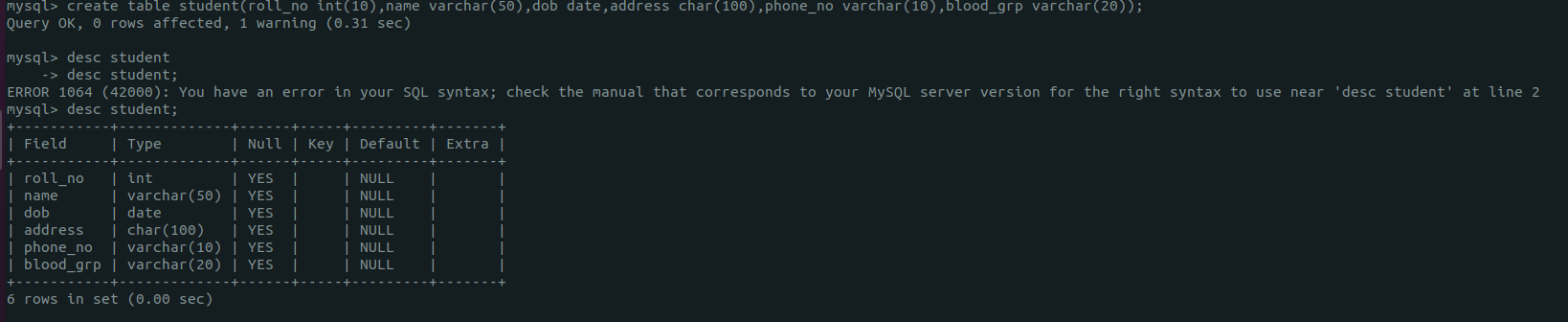
>> create database college;

* 1. Select the current database

>> use college;

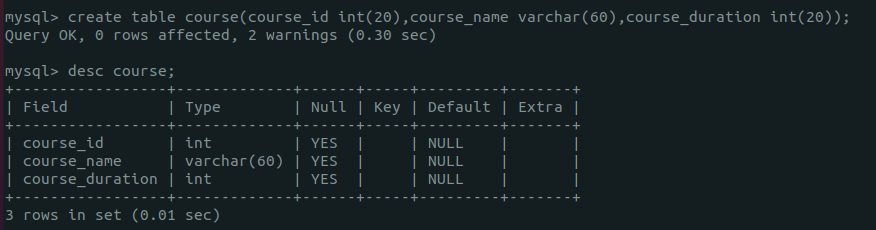
* 1. Create the following tables:
     1. Student (roll\_no integer, name varchar, dob date, address text, phone\_no varchar, blood\_grp varchar)

>> create table student(roll\_no int,name varchar(10),dob date,address varchar(10),phone\_no varchar(10),blood\_grp varchar(10));



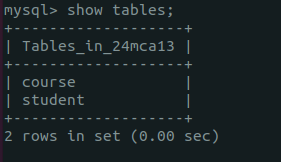
* + 1. Course (Course\_id integer, Course\_name varchar, course\_duration integer)

>> create table course(course\_id int,course\_name varchar(10),course\_duration int);



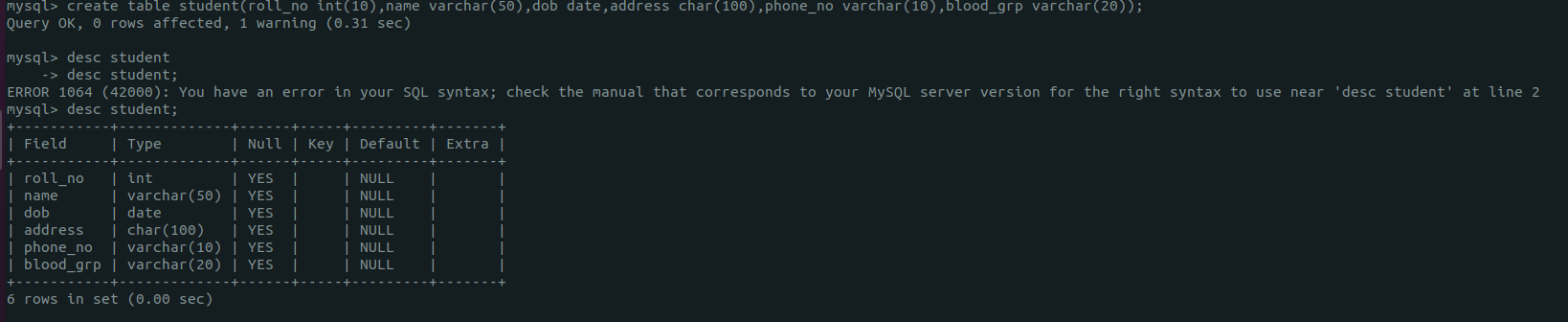
* 1. List all tables in the current database.

>> show tables;



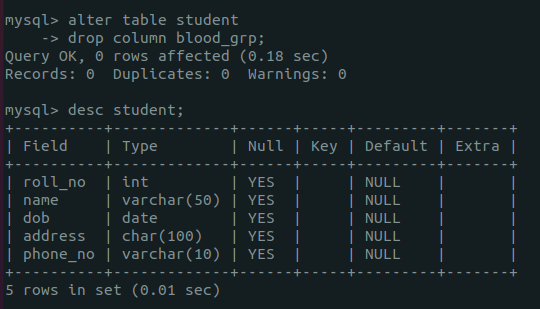
* 1. Display the structure of the Student table.

>> describe student;



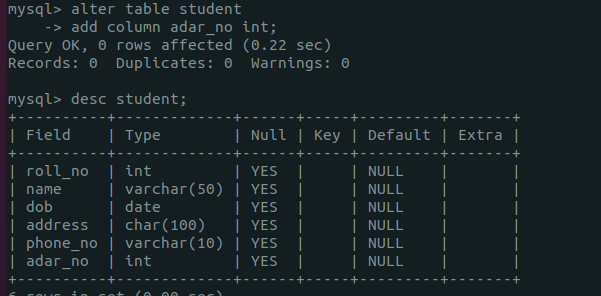
* 1. Drop the column blood\_grp from Student table.

>> alter table student drop column blood\_grp;



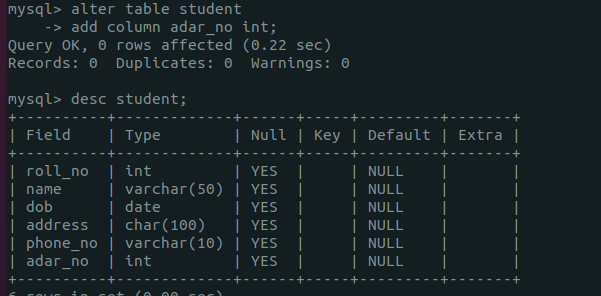
* 1. Add a new column Adar\_no with domain number to the table Student.

>> alter table student add column adar\_no int;



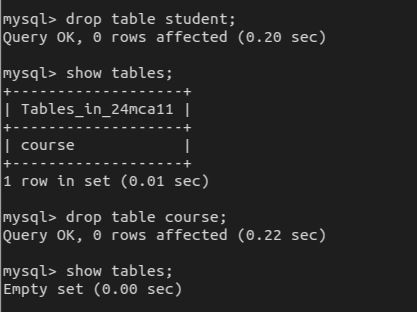
* 1. Change the datatype of phone\_no from varchar to int

>> alter table student modify phone\_no int;



* 1. Drop the tables.

>> drop table student;



1. Consider the database for an organization. Write SQL commands to implement the following:
   1. Create a database

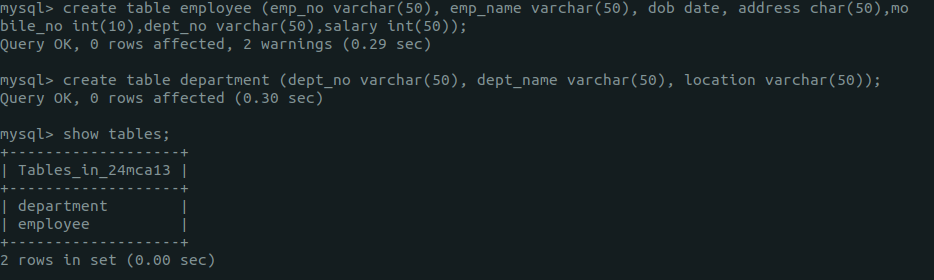
>> create database company;

* 1. Select the current database

>> use company;

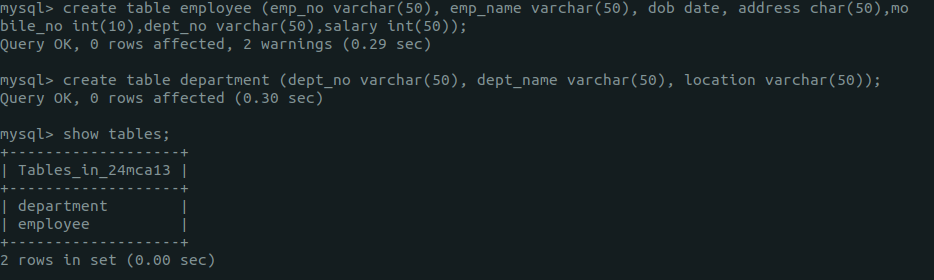
* 1. Create the following tables:
     1. Employee (emp\_no varchar, emp\_name varchar, dob date, address text, mobile\_no integer, dept\_no varchar, salary integer)

>> create table employee(emp\_no varchar(10),emp\_name varchar(10),dob date,address varchar(10),mobile\_no int,dept\_no varchar(10),salary int);

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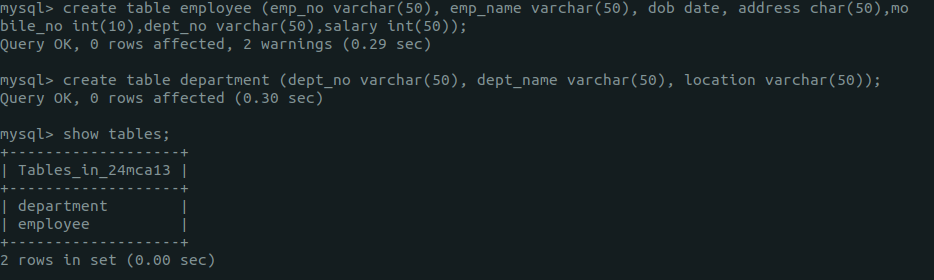
* + 1. Department (dept\_no varchar, dept\_name varchar, location varchar)

>> create table department(dept\_no varchar(10),dept\_name varchar(10),location varchar(10));



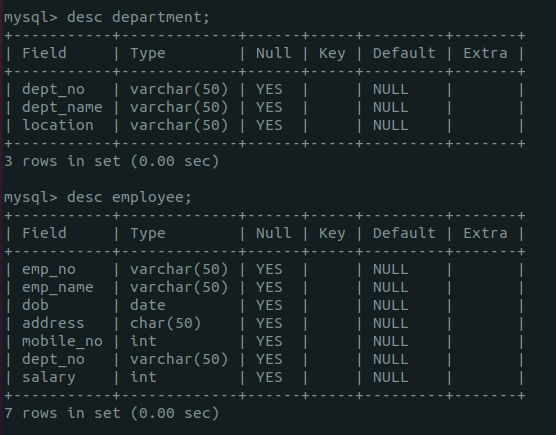
* 1. List all tables in the current database.

>> show tables;

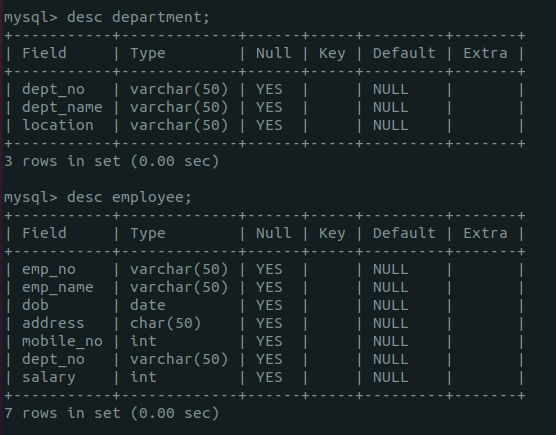


* 1. Display the structure of the Employee table and Department table.

>> describe department;

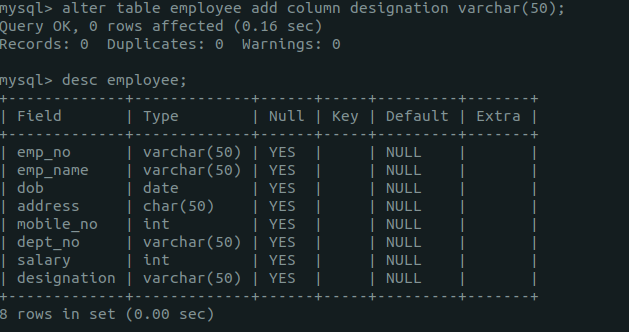


>> describe employee;



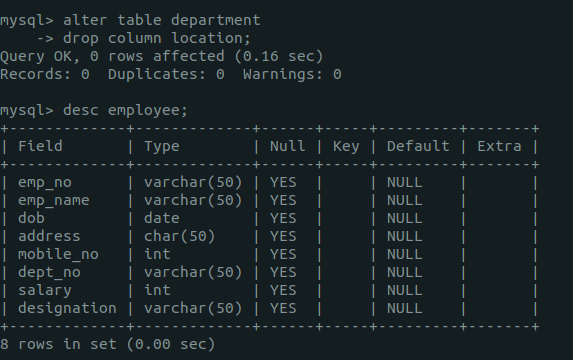
* 1. Add a new column ‘Designation’ to the table Employee.

>> alter table employee add column designation varchar(10);



* 1. Drop the column ‘location’ from Department table.

>> alter table department frop column location;

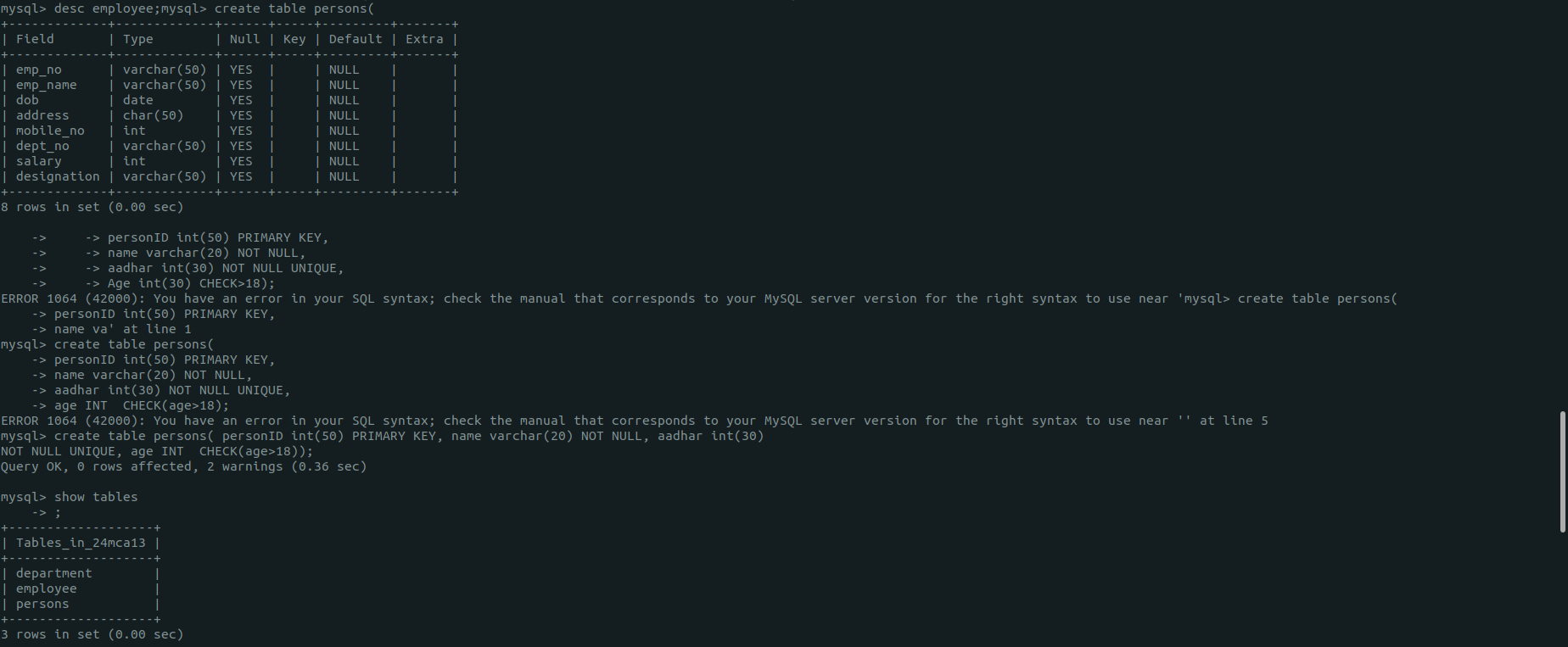


**Experiment No: 2 Date : 13/02/2025**

**Familiarization of SQL Constraints.**

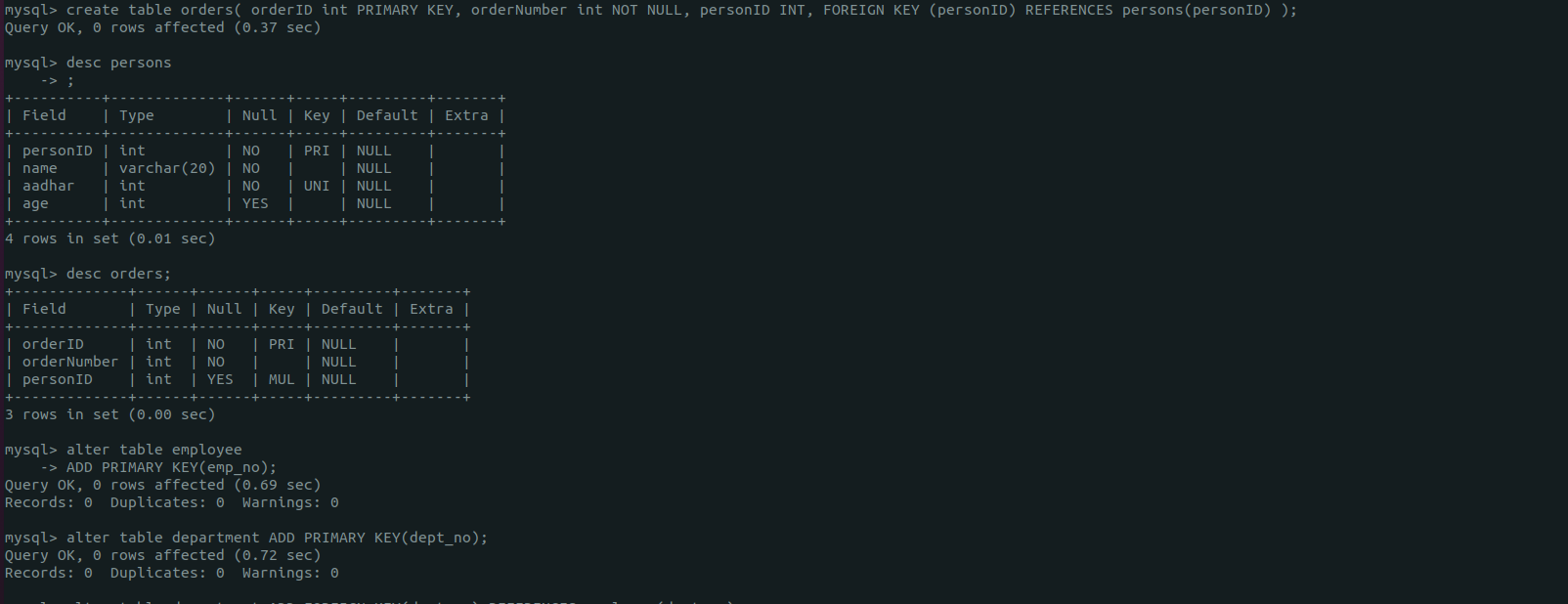
1. Create new table Persons with attributes PersonID (integer, PRIMARY KEY), Name (varchar , NOT NULL), Aadhar (Number, NOT NULL, UNIQUE), Age (integer , CHECK>18).

>> create table persons(person\_id int primary key,name varchar(10) not null,aadhar int not null unique,age int,check(age>=18));



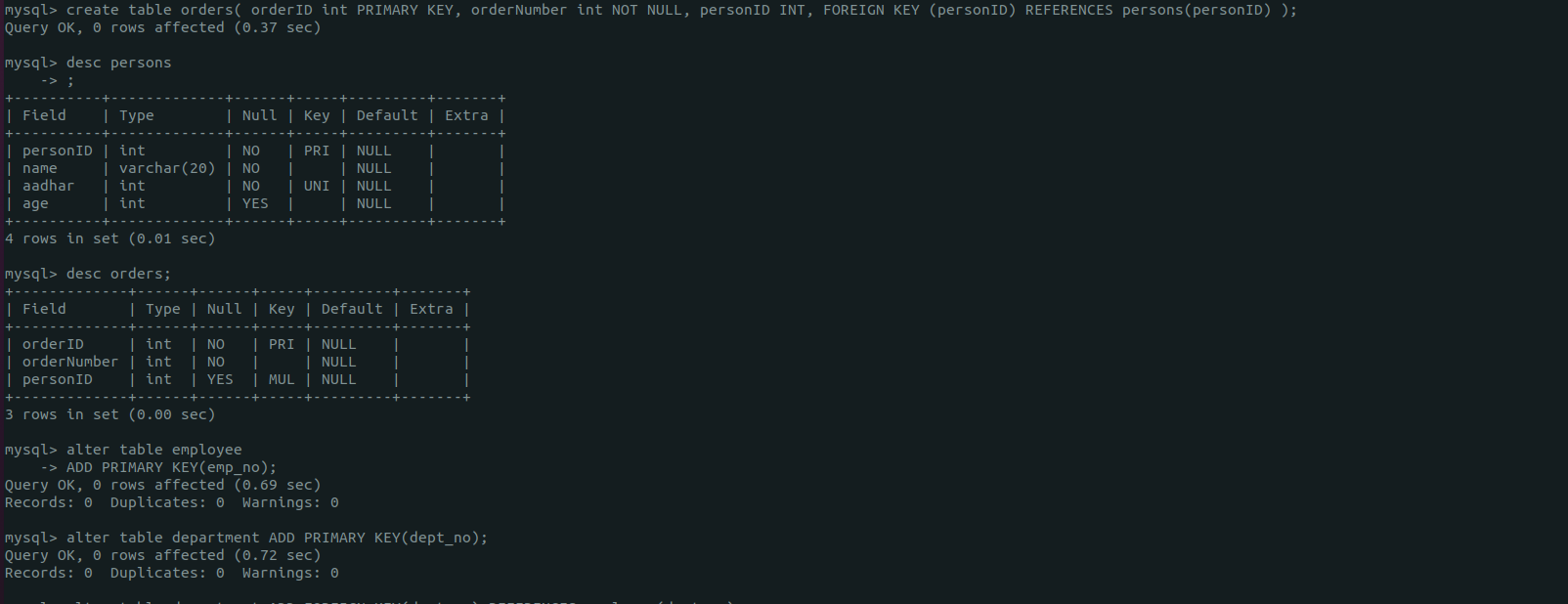
1. CREATE TABLE Orders with attributes OrderID (PRIMARY KEY), OrderNumber(NOT NULL) and PersonID( set FOREIGN KEY on attribute PersonID referencing the column PersonId of Person table)

>> create table orders(order\_id int primary key,order\_no int not null,person\_id int,foreign key(person\_id)references persons(person\_id));



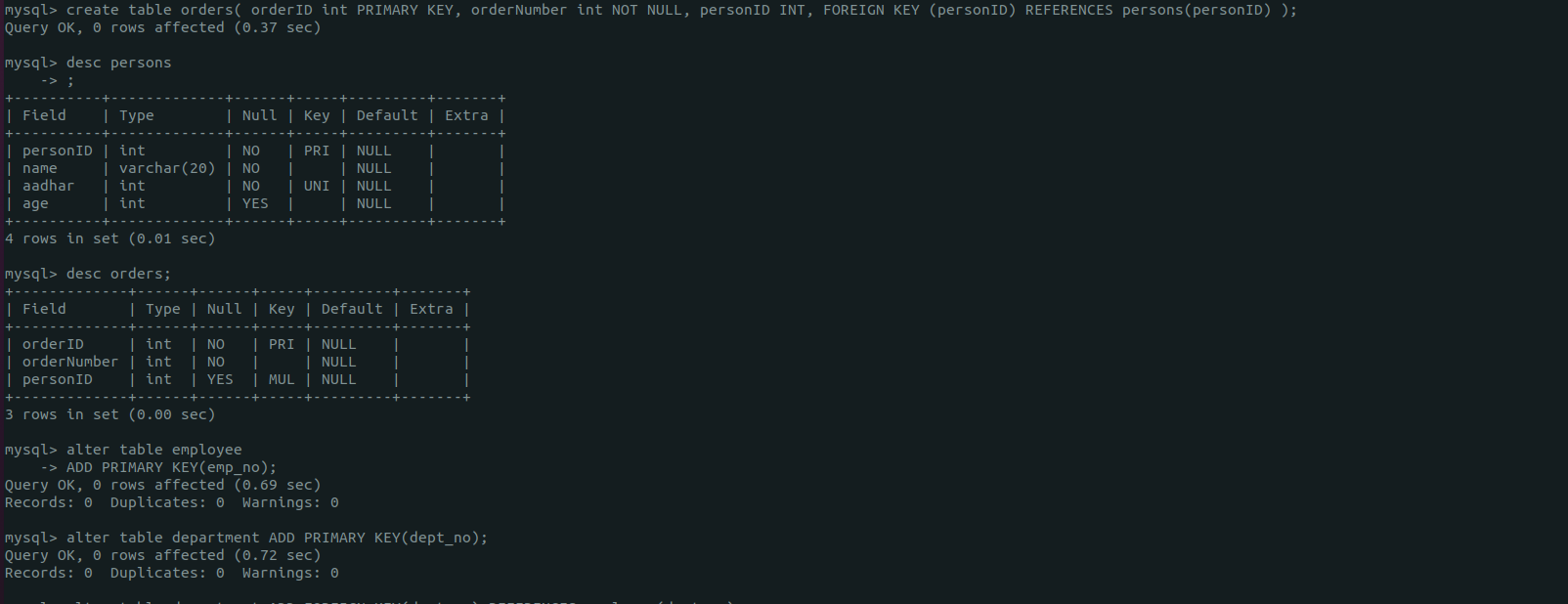
1. Display the structure of Persons tables.

>> describe persons;



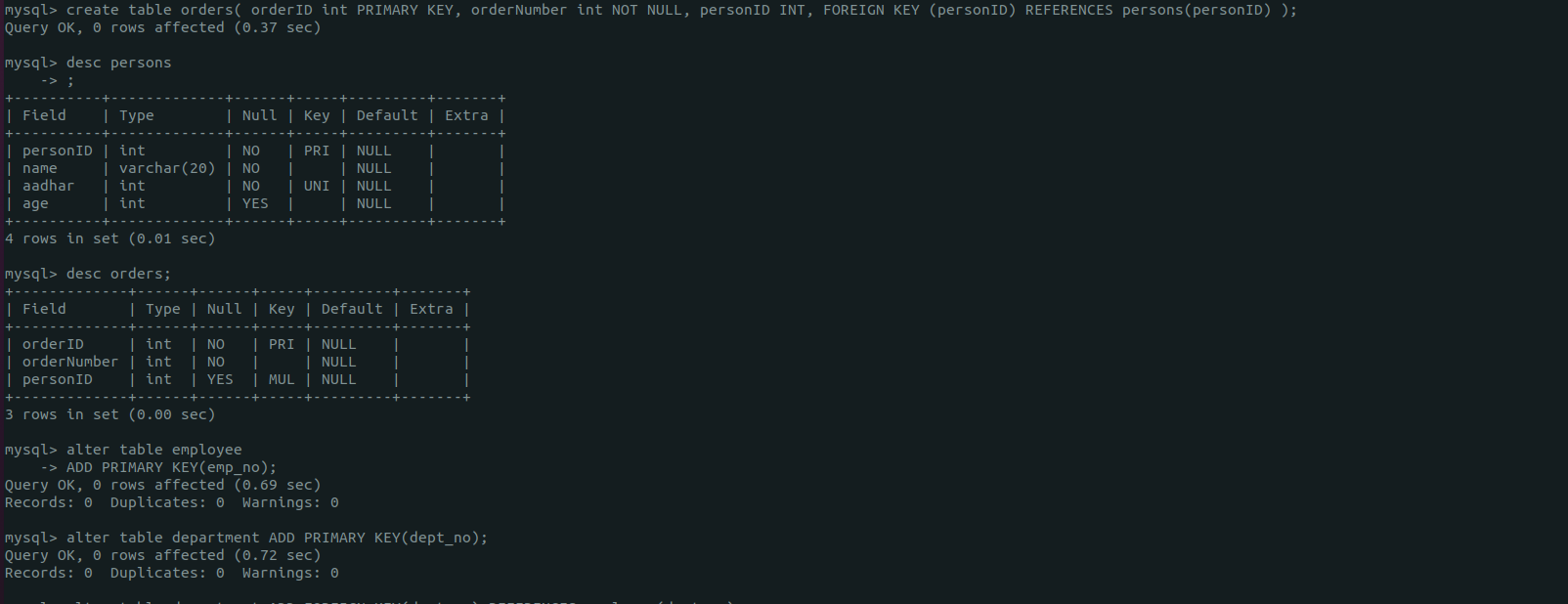
1. Display the structure of Orders tables.

>> describe orders;



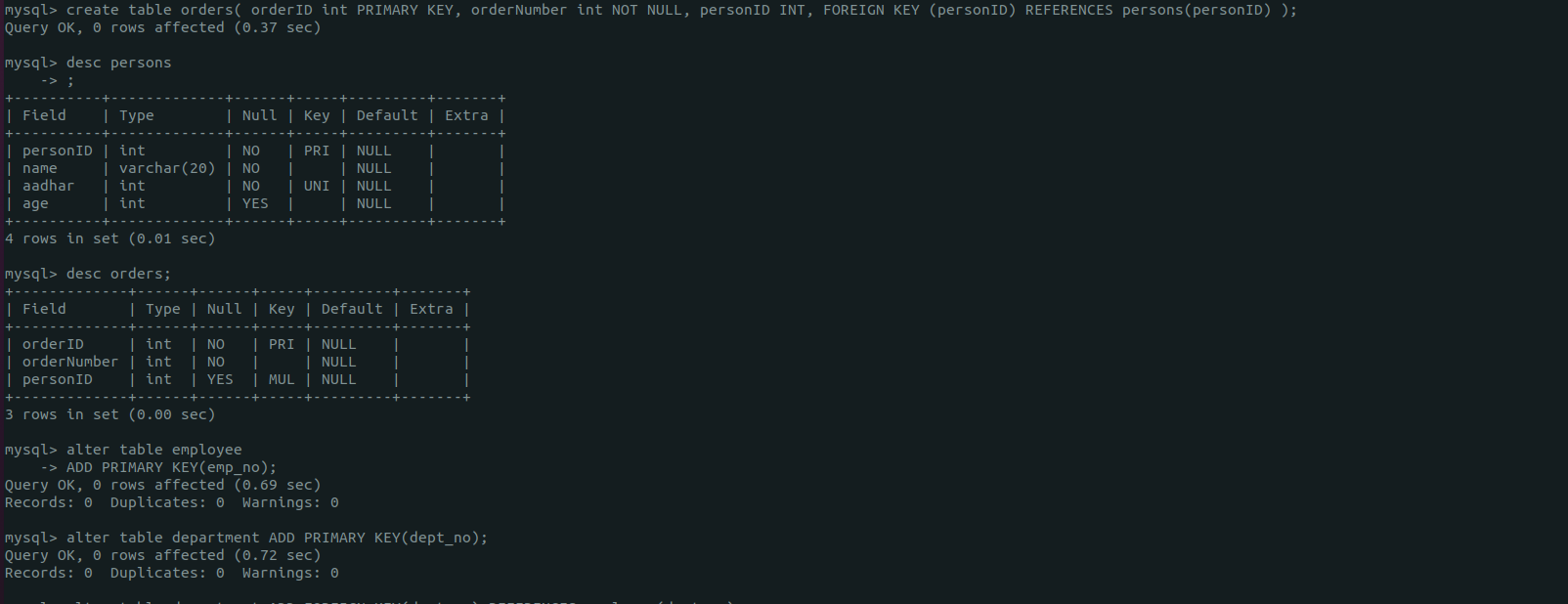
1. Add emp\_no as the primary key of the table Employee.

>> alter table employee add primary key(emp\_no);



1. Add dept\_no as the primary key of the table Department.

>> alter table department add primary key(dept\_no);



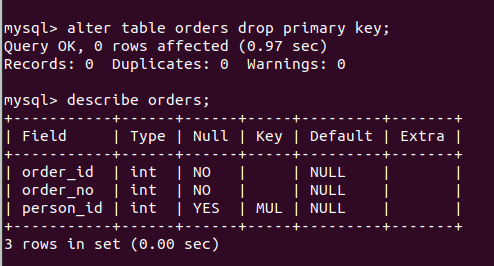
1. Add dept\_no in Employee table as the foreign key reference to the table Department with on delete cascade.

>> alter table employee add constraint fk foreign key(dept\_no)rferences department(dept\_no)on delete cascade;



1. Drop the primary key of the table Orders.

>> alter table orders drop primary key;



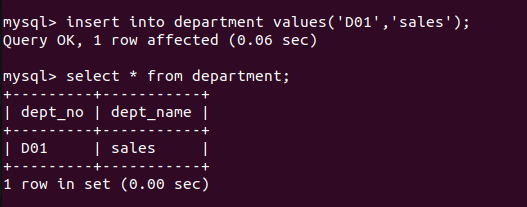
**Experiment No: 3 Date : 20/02/2025**

**Familiarization of DML Commands**

1. Add at least 10 rows into the table Employee and Department.

>> insert into department values('D01','sales'),('D02','finance'),('D03','HR'),('D04','marketing'),('D05','security),

('D06','IT’),('D07','delivary'),('D08','export’),('D09','service'),('D10','purchase');

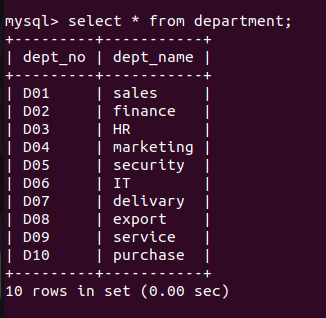


>> insert into employee values('emp1','john','1989- 14','london','8763926489','D01','4000','staff');

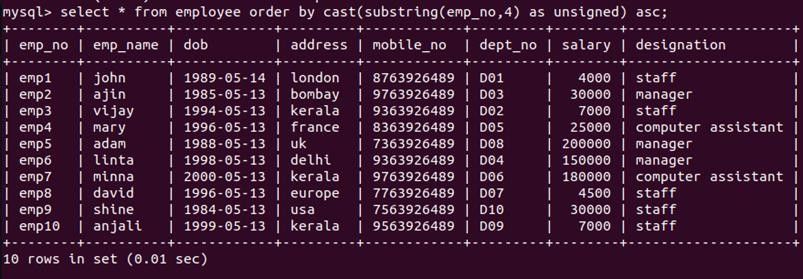


1. Display all the records from the above tables.

>> select \* from department;

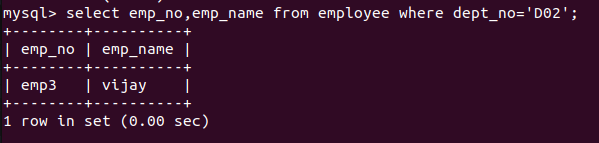


>> select \* from employee;



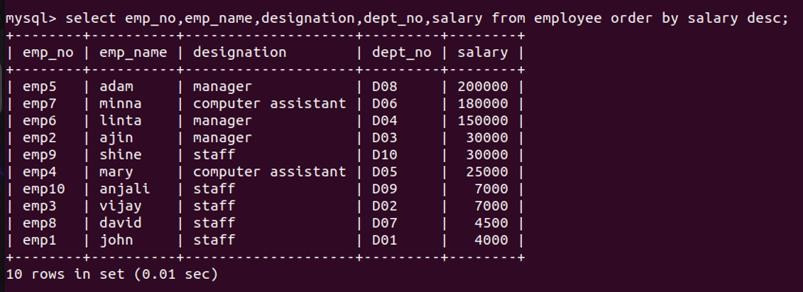
1. Display the emp\_no and name of employees from department no ‘D02’.

>> select emp\_no,emp\_name from employee where dept\_no='D02';



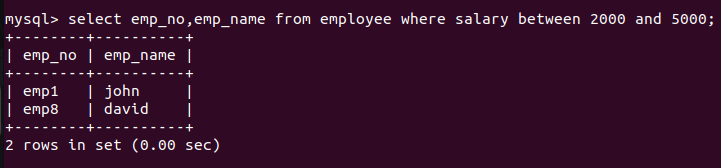
1. Display emp\_no, emp\_name , designation, deptno and salary of employees in the descending order of salary.

>> select emp\_no,emp\_name,designation,dept\_no,salary from employee order by salary desc;



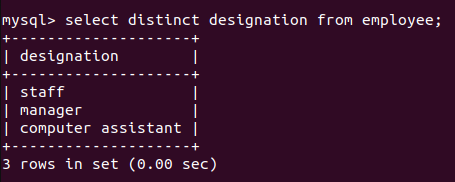
1. Display the emp\_no , name of employees whose salary is between 2000 and 5000

>> select emp\_no,emp\_name from employee where salary between 2000 and 5000;



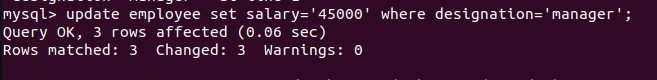
1. Display the designations without duplicate values

>> select distinct designation from employee;

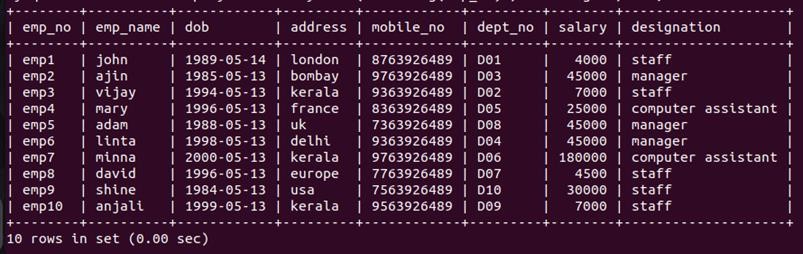


1. Change the salary of employees to 45000 whose designation is 'Manager'

>> update employee set salary='45000' where designation='manager';

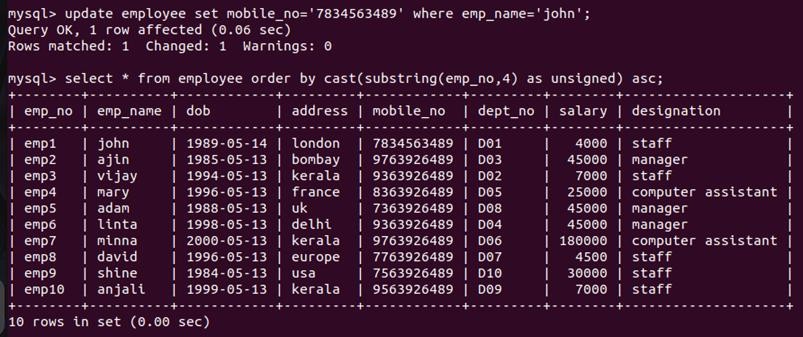


>> describe employee;



1. Change the mobile number of employees named John

>> update employee set mobile\_no='7834563489' where emp\_name='john';



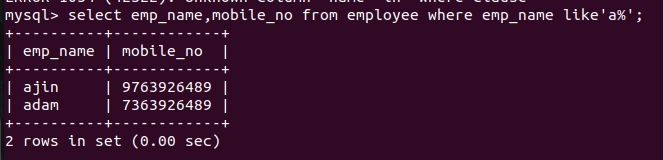
1. Delete all employees whose salary is equal to Rs.7000

>> delete from employee where salary='7000';



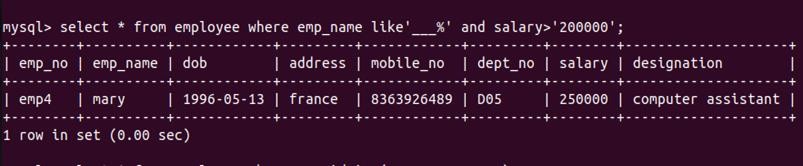
1. Retrieve the name, mobile number of all employees whose name start with “A”.

>> select emp\_name,mobile\_no from employee where emp\_name like'a%';



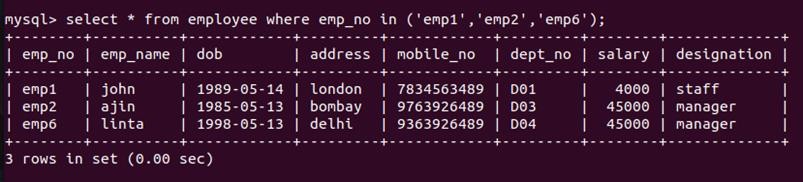
1. Display the details of the employee whose name has at least three characters and salary greater than 20000.

>> select emp\_name,mobile\_no from employee where emp\_name like'a%';



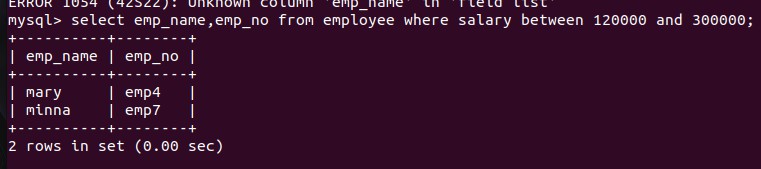
1. Display the details of employees with empid ‘emp1’, ‘emp2’ and ‘emp6’.

>> select \* from employee where emp\_no in('emp1', 'emp2', 'emp6');



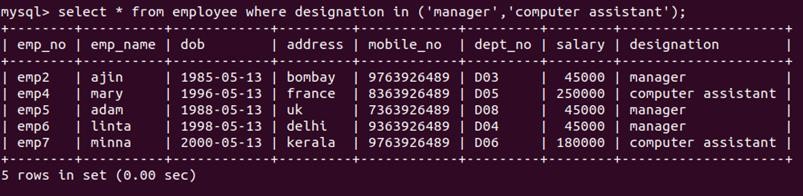
1. Display employee name and employee id of those who have salary between 120000 and 300000.

>> select emp\_name,emp\_no from employee where salary between 120000 and 300000;



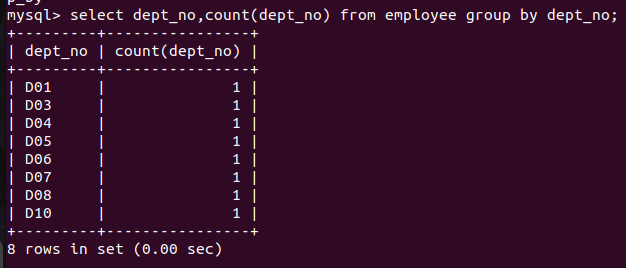
1. Display the details of employees whose designation is ‘Manager’ or ‘Computer Assistant’.

>> select \* from employee where designation in('manager', 'computer assistant');



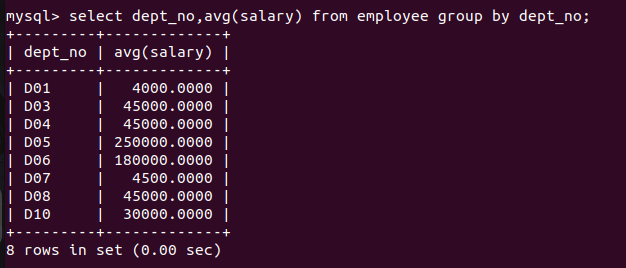
1. Displays how many employees work for each department.

>> select dept\_no,count(dept\_no) from employee group by dept\_no;



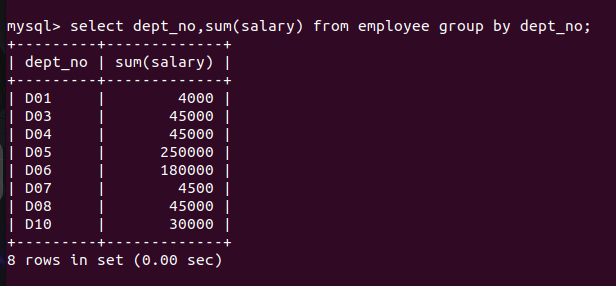
1. Displays average salary of employees in each department.

>> select dept\_no,avg(salary) from employee group by dept\_no;



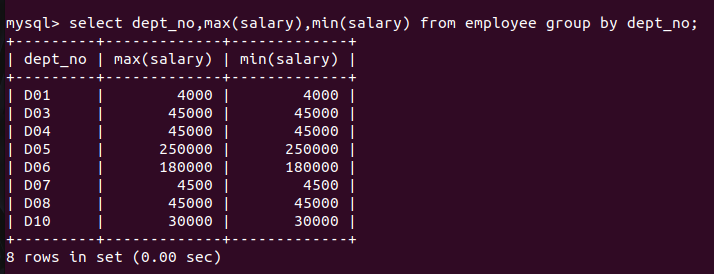
1. Displays total salary of employees in each department.

>> select dept\_no,sum(salary) from employee group by dept\_no;



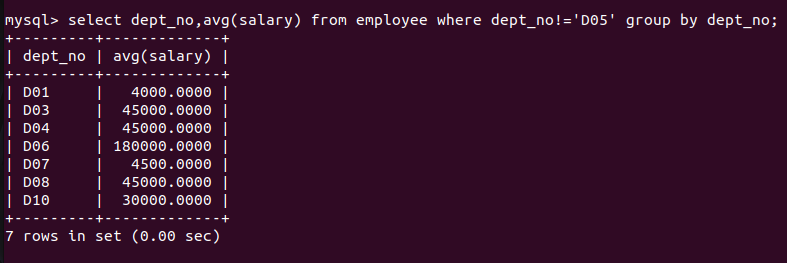
1. Displays top and lower salary of employees in each department.

>> select dept\_no,max(salary),min(salary) from employee group by dept\_no;



1. Displays average salary of employees in all departments except department with department number ‘D05’.

>> select dept\_no,avg(salary) from employee where dept\_no!= 'D05' group by dept\_no;



1. Displays average salary of employees in all departments except department with department number ‘D01’ and average salary greater than 20000 in the ascending order of average salary.

>> select dept\_no,avg(salary) from employee where dept\_no!= 'D01' group by dept\_no having avg(salary)> '20000' order by avg(salary) asc;

