**Database Lab Take Home Assignment - 3**

**Database Creation**

**First Part**

| **create database 214161008\_03;** |
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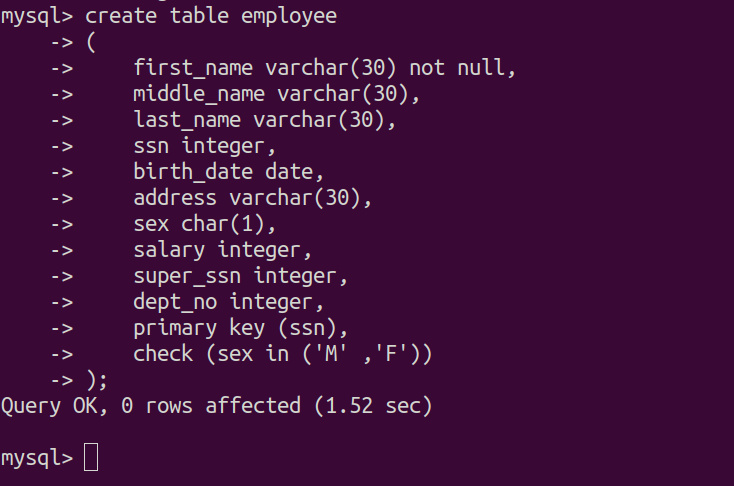
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| **use 214161008\_03;** |
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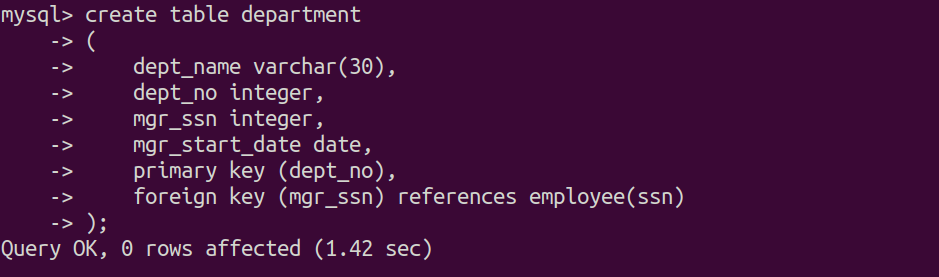
**Employee Table Creation**

| **create table employee (  first\_name varchar(30) not null,  middle\_name varchar(30),  last\_name varchar(30),  ssn integer,  birth\_date date,  address varchar(30),  sex char(1),  salary integer,  super\_ssn integer,  dept\_no integer,  primary key (ssn),  check (sex in ('M' ,'F')) );** |
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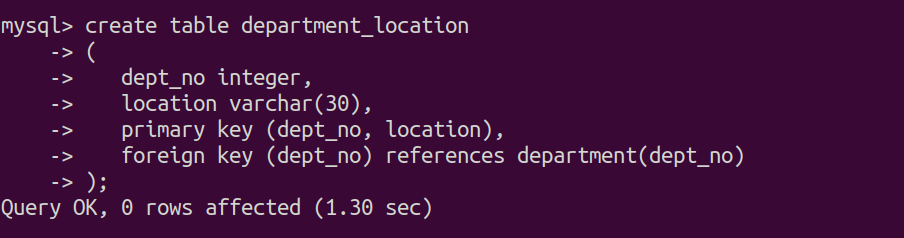
**Department Table Creation**

| **create table department (  dept\_name varchar(30),  dept\_no integer,  mgr\_ssn integer,  mgr\_start\_date date,  primary key (dept\_no),  foreign key (mgr\_ssn) references employee(ssn) );** |
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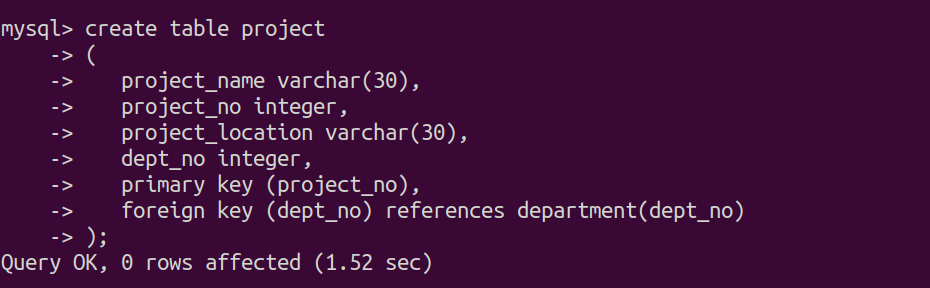
**Department Location Table Creation**

| **create table department\_location (  dept\_no integer,  location varchar(30),  primary key (dept\_no, location),  foreign key (dept\_no) references department(dept\_no) )*;*** |
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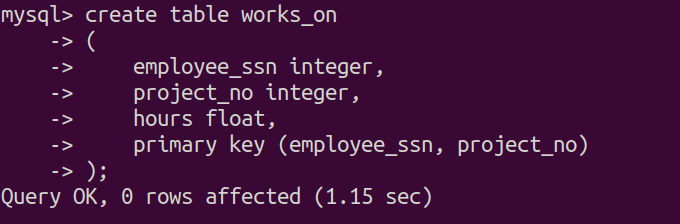
**Project Table Creation**

| **create table project (  project\_name varchar(30),  project\_no integer,  project\_location varchar(30),  dept\_no integer,  primary key (project\_no),  foreign key (dept\_no) references department(dept\_no) );** |
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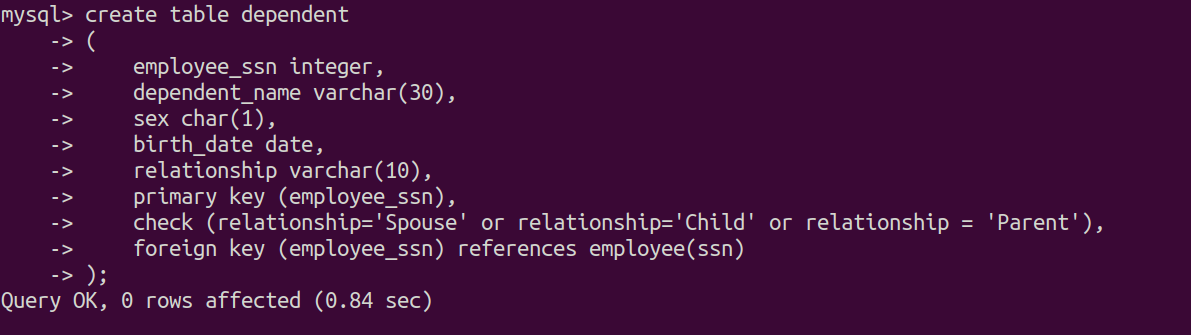
**Works\_on Table Creation**

| **create table works\_on (  employee\_ssn integer,  project\_no integer,  hours float,  primary key (employee\_ssn, project\_no) );** |
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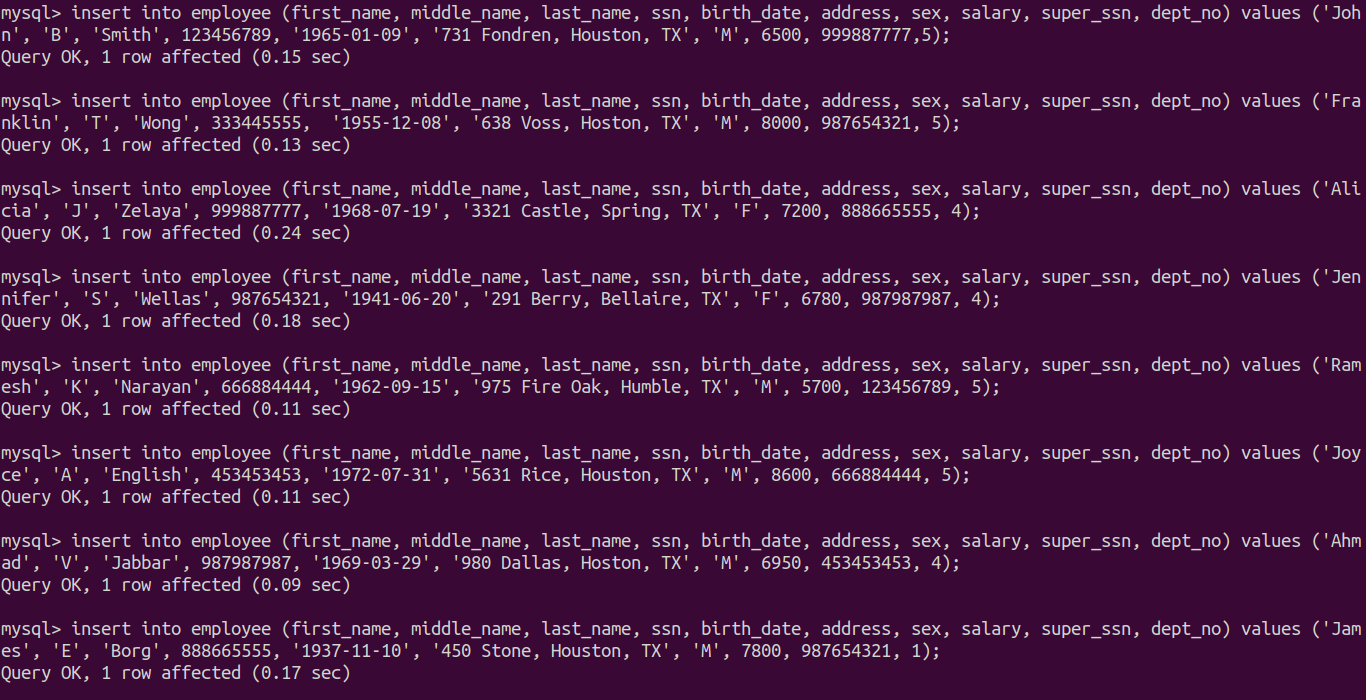
**Dependent Table Creation**

| **create table dependent (  employee\_ssn integer,  dependent\_name varchar(30),  sex char(1),  birth\_date date,  relationship varchar(10),  primary key (employee\_ssn),  check (relationship='Spouse' or relationship='Child' or relationship = 'Parent'),  foreign key (employee\_ssn) references employee(ssn) );** |
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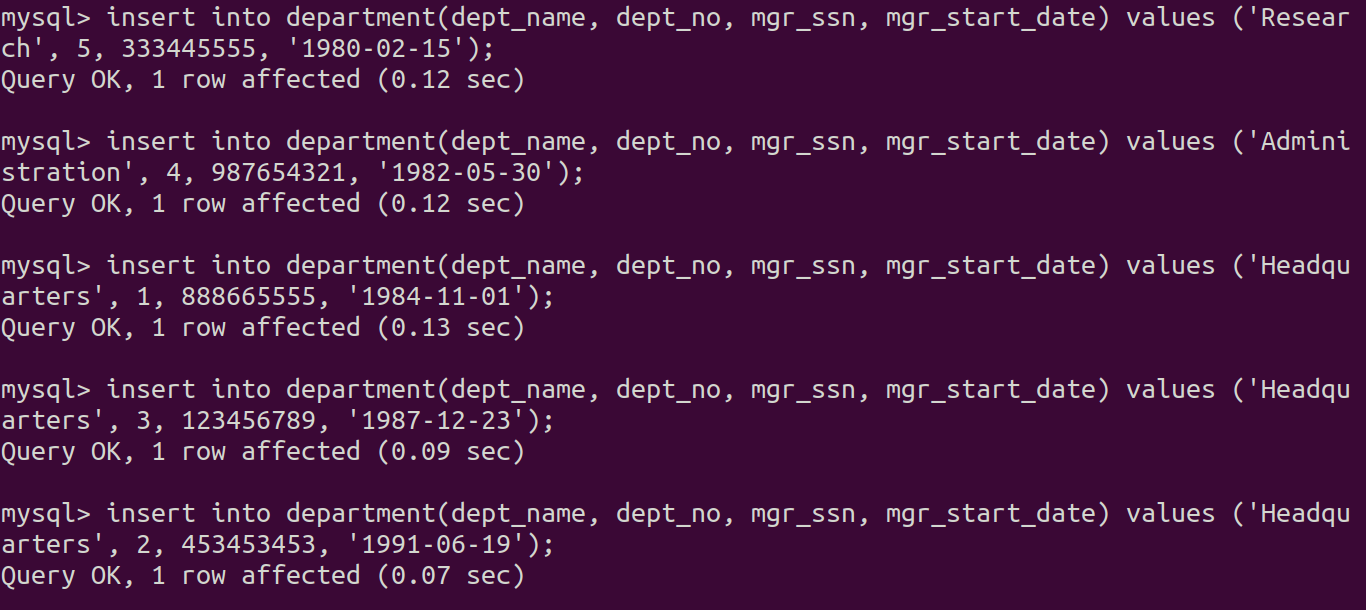
**Insert into Employee Table**

| **insert into employee (first\_name, middle\_name, last\_name, ssn, birth\_date, address, sex, salary, super\_ssn, dept\_no) values ('John', 'B', 'Smith', 123456789, '1965-01-09', '731 Fondren, Houston, TX', 'M', 6500, 999887777,5); insert into employee (first\_name, middle\_name, last\_name, ssn, birth\_date, address, sex, salary, super\_ssn, dept\_no) values ('Franklin', 'T', 'Wong', 333445555, '1955-12-08', '638 Voss, Hoston, TX', 'M', 8000, 987654321, 5); insert into employee (first\_name, middle\_name, last\_name, ssn, birth\_date, address, sex, salary, super\_ssn, dept\_no) values ('Alicia', 'J', 'Zelaya', 999887777, '1968-07-19', '3321 Castle, Spring, TX', 'F', 7200, 888665555, 4); insert into employee (first\_name, middle\_name, last\_name, ssn, birth\_date, address, sex, salary, super\_ssn, dept\_no) values ('Jennifer', 'S', 'Wellas', 987654321, '1941-06-20', '291 Berry, Bellaire, TX', 'F', 6780, 987987987, 4); insert into employee (first\_name, middle\_name, last\_name, ssn, birth\_date, address, sex, salary, super\_ssn, dept\_no) values ('Ramesh', 'K', 'Narayan', 666884444, '1962-09-15', '975 Fire Oak, Humble, TX', 'M', 5700, 123456789, 5); insert into employee (first\_name, middle\_name, last\_name, ssn, birth\_date, address, sex, salary, super\_ssn, dept\_no) values ('Joyce', 'A', 'English', 453453453, '1972-07-31', '5631 Rice, Houston, TX', 'M', 8600, 666884444, 5); insert into employee (first\_name, middle\_name, last\_name, ssn, birth\_date, address, sex, salary, super\_ssn, dept\_no) values ('Ahmad', 'V', 'Jabbar', 987987987, '1969-03-29', '980 Dallas, Hoston, TX', 'M', 6950, 453453453, 4); insert into employee (first\_name, middle\_name, last\_name, ssn, birth\_date, address, sex, salary, super\_ssn, dept\_no) values ('James', 'E', 'Borg', 888665555, '1937-11-10', '450 Stone, Houston, TX', 'M', 7800, 987654321, 1);** |
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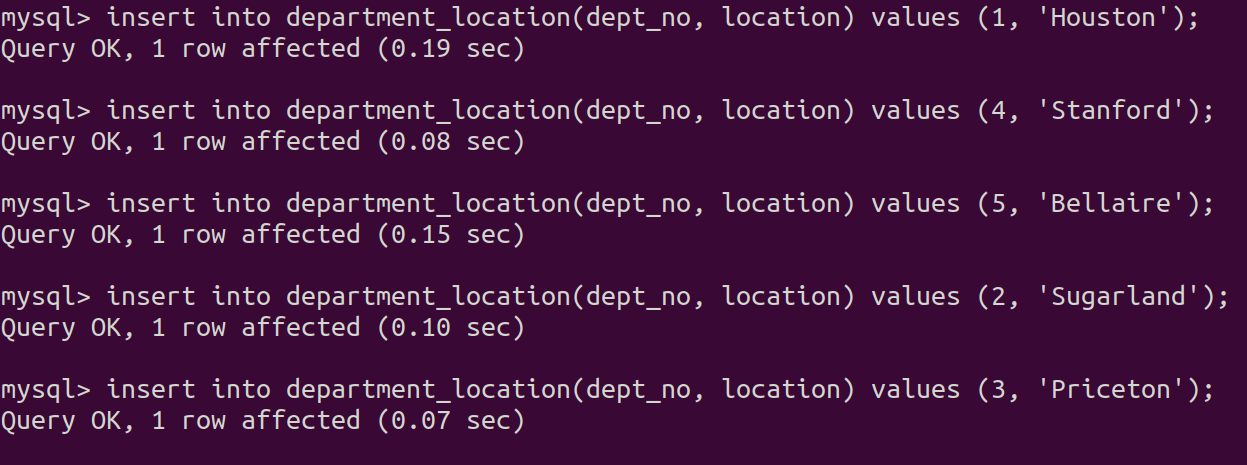
**Insert into Department Table**

| **insert into department(dept\_name, dept\_no, mgr\_ssn, mgr\_start\_date) values ('Research', 5, 333445555, '1980-02-15'); insert into department(dept\_name, dept\_no, mgr\_ssn, mgr\_start\_date) values ('Administration', 4, 987654321, '1982-05-30'); insert into department(dept\_name, dept\_no, mgr\_ssn, mgr\_start\_date) values ('Headquarters', 1, 888665555, '1984-11-01'); insert into department(dept\_name, dept\_no, mgr\_ssn, mgr\_start\_date) values ('Headquarters', 3, 123456789, '1987-12-23'); insert into department(dept\_name, dept\_no, mgr\_ssn, mgr\_start\_date) values ('Headquarters', 2, 453453453, '1991-06-19');** |
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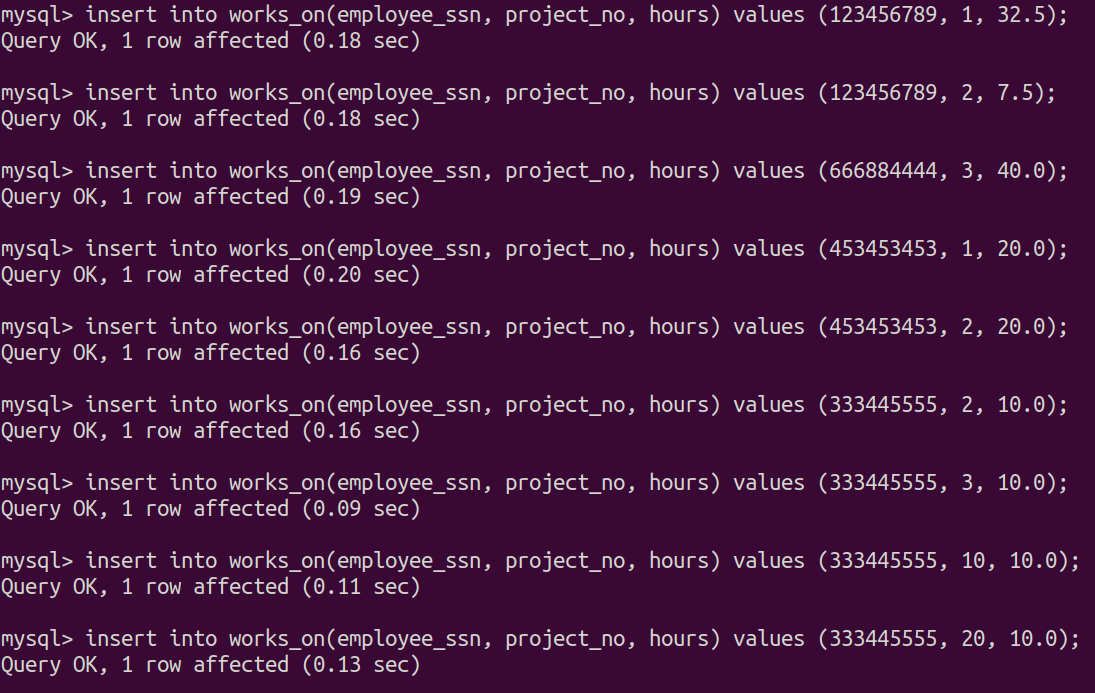
**Insert into Department Location Table**

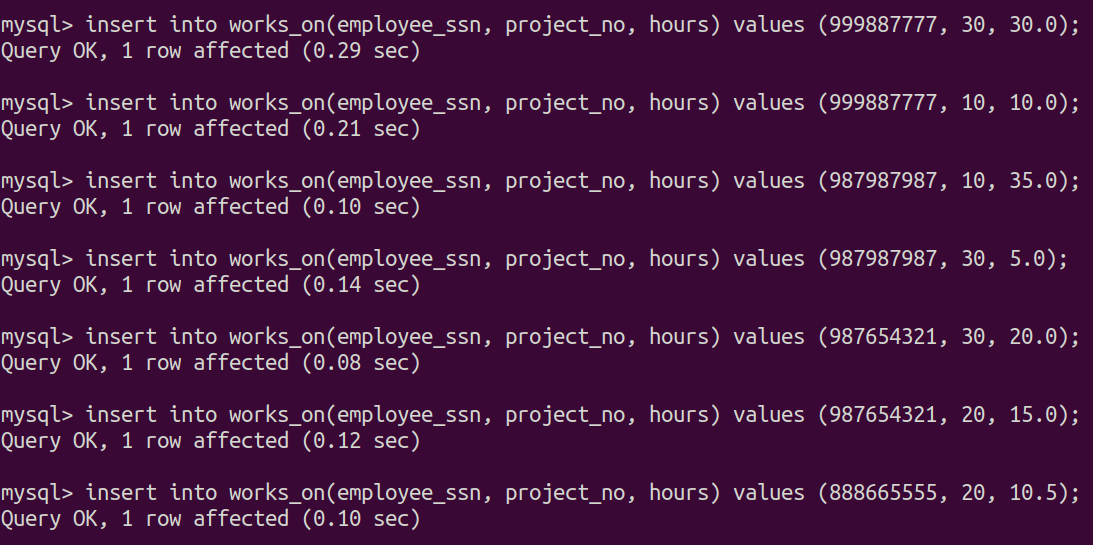
| **insert into department\_location(dept\_no, location) values (1, 'Houston'); insert into department\_location(dept\_no, location) values (4, 'Stanford'); insert into department\_location(dept\_no, location) values (5, 'Bellaire'); insert into department\_location(dept\_no, location) values (2, 'Sugarland'); insert into department\_location(dept\_no, location) values (3, 'Priceton');** |
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**Insert into Works on Table**

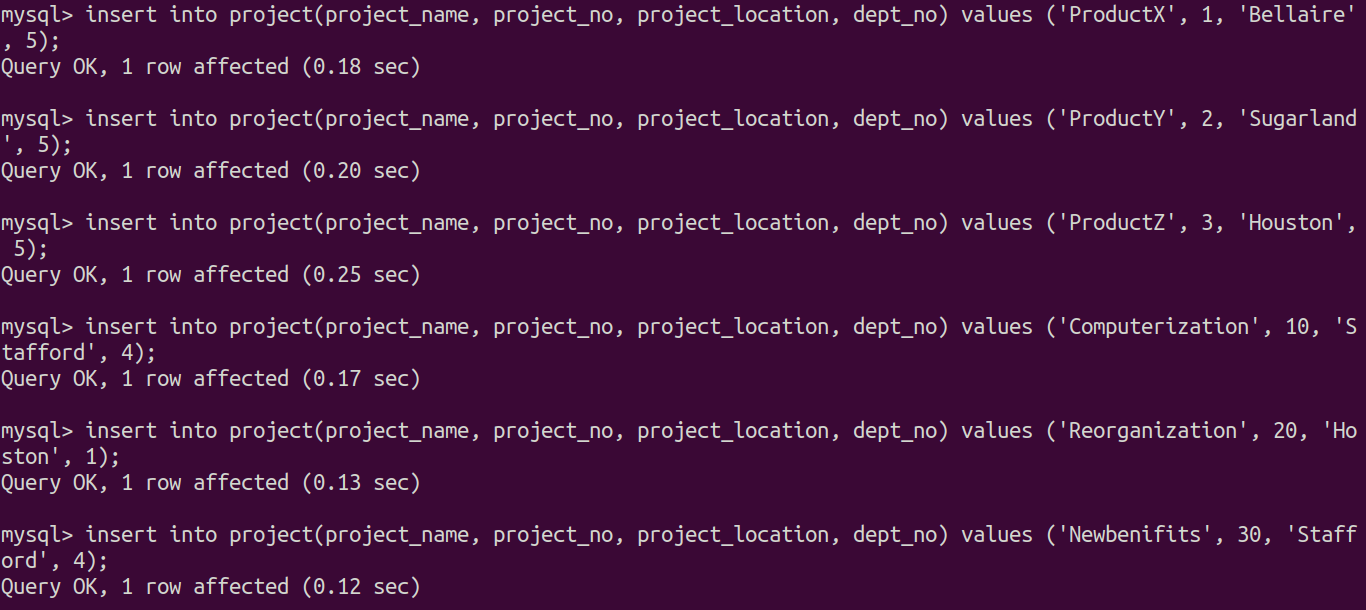
| **insert into works\_on(employee\_ssn, project\_no, hours) values (123456789, 1, 32.5); insert into works\_on(employee\_ssn, project\_no, hours) values (123456789, 2, 7.5); insert into works\_on(employee\_ssn, project\_no, hours) values (666884444, 3, 40.0); insert into works\_on(employee\_ssn, project\_no, hours) values (453453453, 1, 20.0); insert into works\_on(employee\_ssn, project\_no, hours) values (453453453, 2, 20.0); insert into works\_on(employee\_ssn, project\_no, hours) values (333445555, 2, 10.0); insert into works\_on(employee\_ssn, project\_no, hours) values (333445555, 3, 10.0); insert into works\_on(employee\_ssn, project\_no, hours) values (333445555, 10, 10.0); insert into works\_on(employee\_ssn, project\_no, hours) values (333445555, 20, 10.0); insert into works\_on(employee\_ssn, project\_no, hours) values (999887777, 30, 30.0); insert into works\_on(employee\_ssn, project\_no, hours) values (999887777, 10, 10.0); insert into works\_on(employee\_ssn, project\_no, hours) values (987987987, 10, 35.0); insert into works\_on(employee\_ssn, project\_no, hours) values (987987987, 30, 5.0); insert into works\_on(employee\_ssn, project\_no, hours) values (987654321, 30, 20.0); insert into works\_on(employee\_ssn, project\_no, hours) values (987654321, 20, 15.0); insert into works\_on(employee\_ssn, project\_no, hours) values (888665555, 20, 10.5);** |
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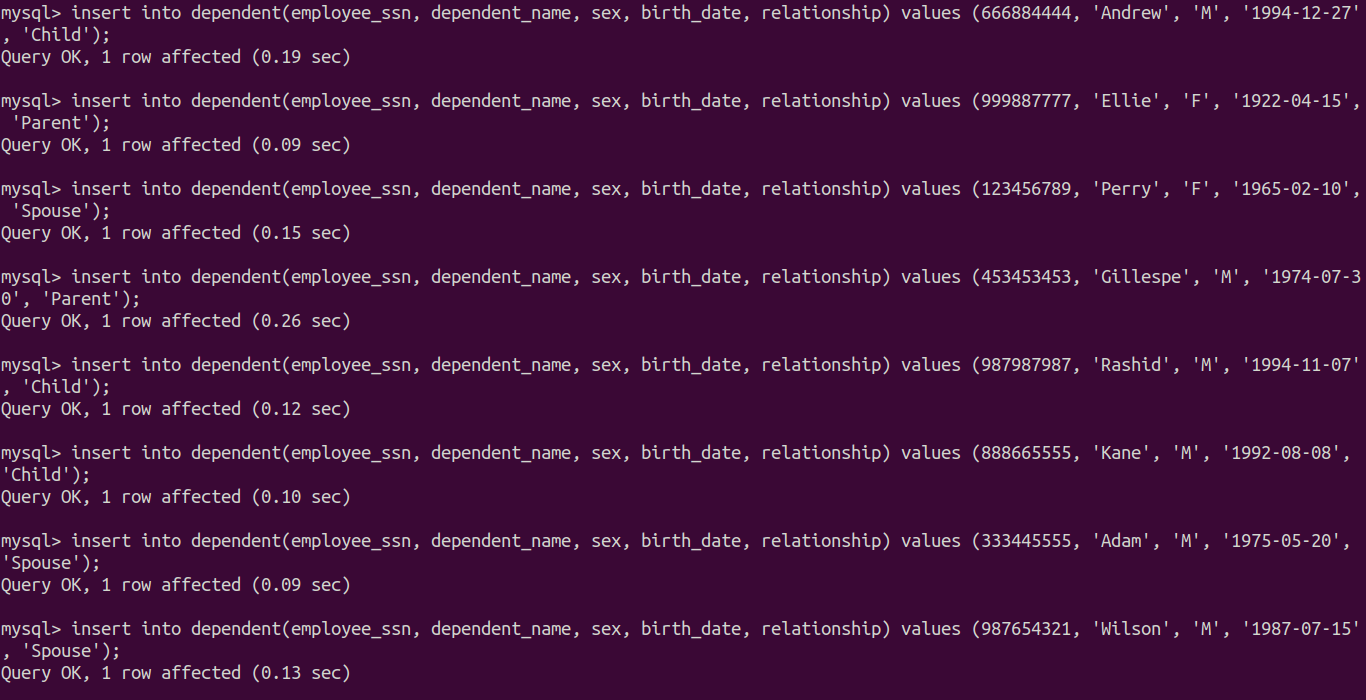
**Insert into Project Table**

| **insert into project(project\_name, project\_no, project\_location, dept\_no) values ('ProductX', 1, 'Bellaire', 5); insert into project(project\_name, project\_no, project\_location, dept\_no) values ('ProductY', 2, 'Sugarland', 5); insert into project(project\_name, project\_no, project\_location, dept\_no) values ('ProductZ', 3, 'Houston', 5); insert into project(project\_name, project\_no, project\_location, dept\_no) values ('Computerization', 10, 'Stafford', 4); insert into project(project\_name, project\_no, project\_location, dept\_no) values ('Reorganization', 20, 'Hoston', 1); insert into project(project\_name, project\_no, project\_location, dept\_no) values ('Newbenifits', 30, 'Stafford', 4);** |
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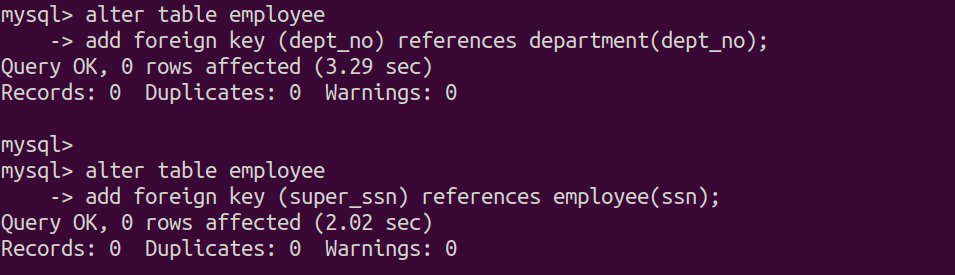
**Insert into Dependent Table**

| **insert into dependent(employee\_ssn, dependent\_name, sex, birth\_date, relationship) values (666884444, 'Andrew', 'M', '1994-12-27', 'Child'); insert into dependent(employee\_ssn, dependent\_name, sex, birth\_date, relationship) values (999887777, 'Ellie', 'F', '1922-04-15', 'Parent'); insert into dependent(employee\_ssn, dependent\_name, sex, birth\_date, relationship) values (123456789, 'Perry', 'F', '1965-02-10', 'Spouse'); insert into dependent(employee\_ssn, dependent\_name, sex, birth\_date, relationship) values (453453453, 'Gillespe', 'M', '1974-07-30', 'Parent'); insert into dependent(employee\_ssn, dependent\_name, sex, birth\_date, relationship) values (987987987, 'Rashid', 'M', '1994-11-07', 'Child'); insert into dependent(employee\_ssn, dependent\_name, sex, birth\_date, relationship) values (888665555, 'Kane', 'M', '1992-08-08', 'Child'); insert into dependent(employee\_ssn, dependent\_name, sex, birth\_date, relationship) values (333445555, 'Adam', 'M', '1975-05-20', 'Spouse'); insert into dependent(employee\_ssn, dependent\_name, sex, birth\_date, relationship) values (987654321, 'Wilson', 'M', '1987-07-15', 'Spouse');** |
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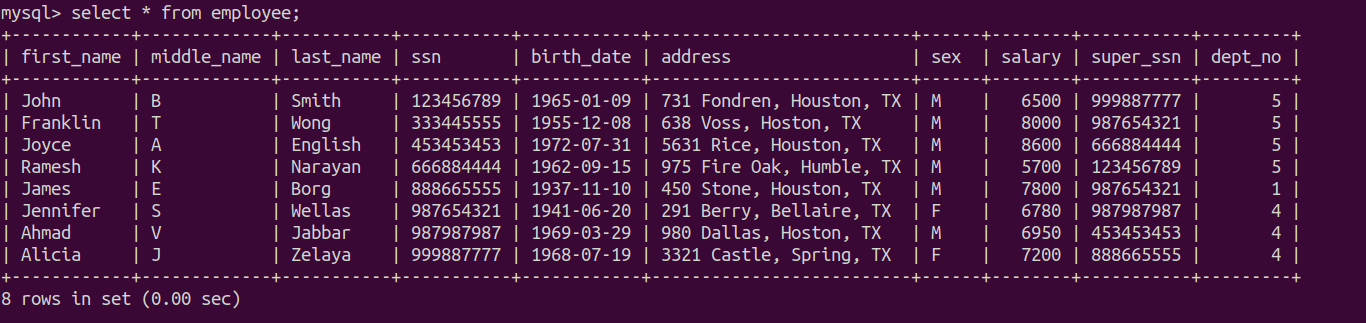
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**Alter Employee table and add foreign keys**

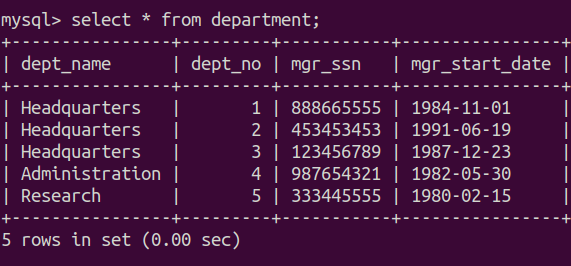
| **alter table employee add foreign key (dept\_no) references department(dept\_no);   alter table employee add foreign key (super\_ssn) references employee(ssn);** |
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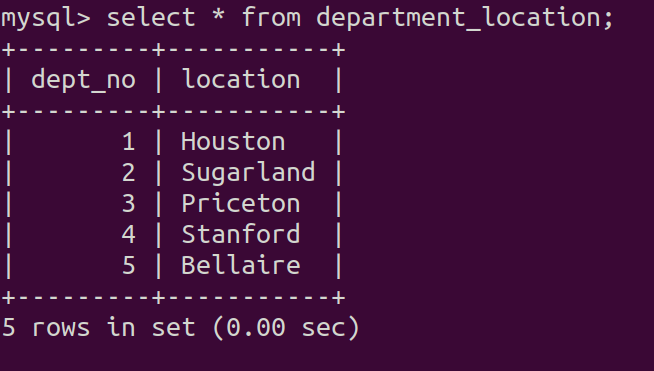
| **select \* from employee;** |
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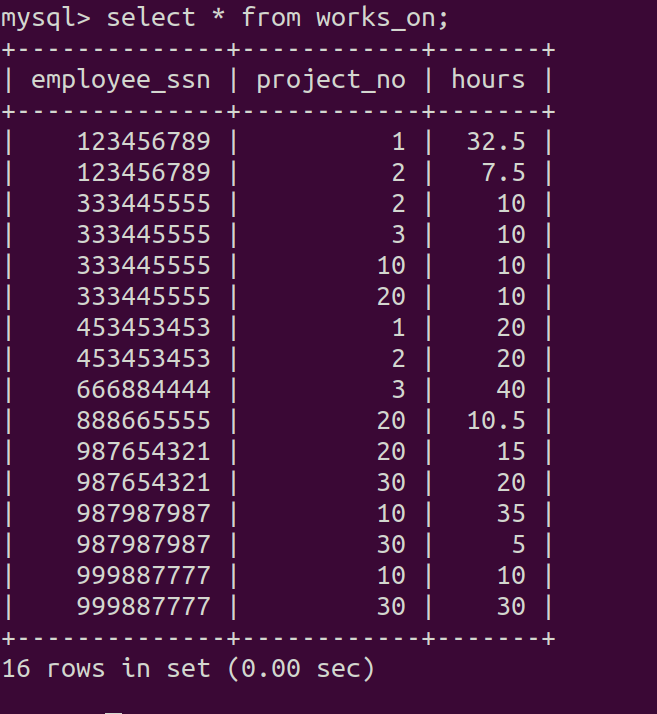
| **select \* from department;** |
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| **select \* from department\_location;** |
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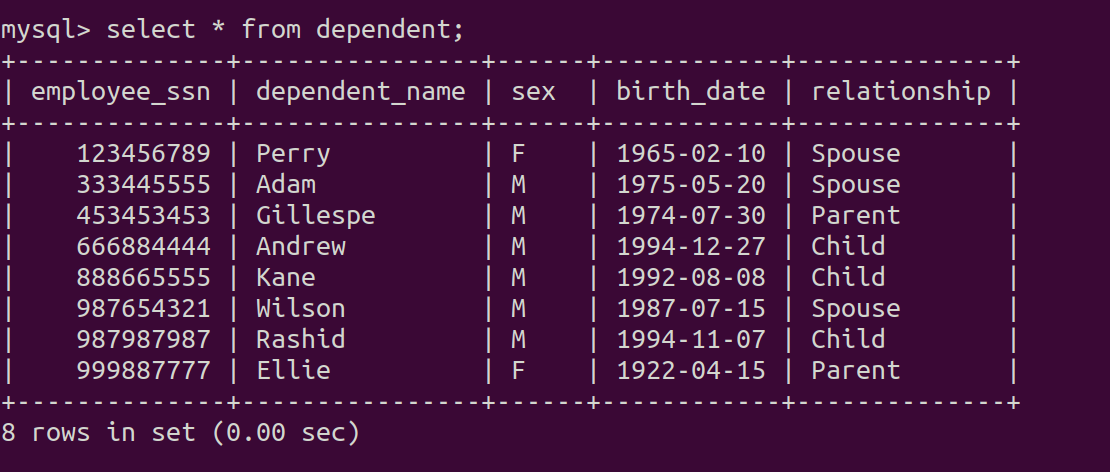
| **select \* from works\_on;** |
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| **select \* from project;** |
| --- |

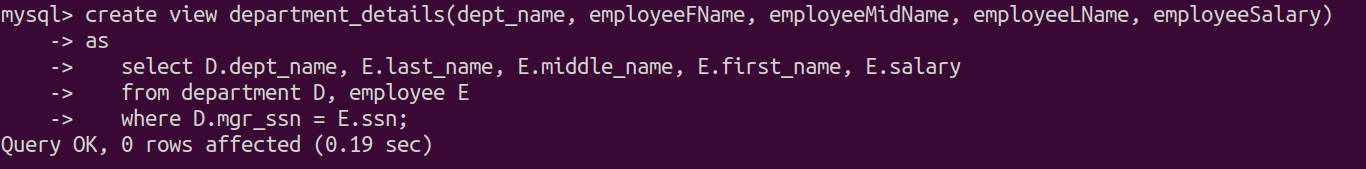
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| **select \* from dependent;** |
| --- |

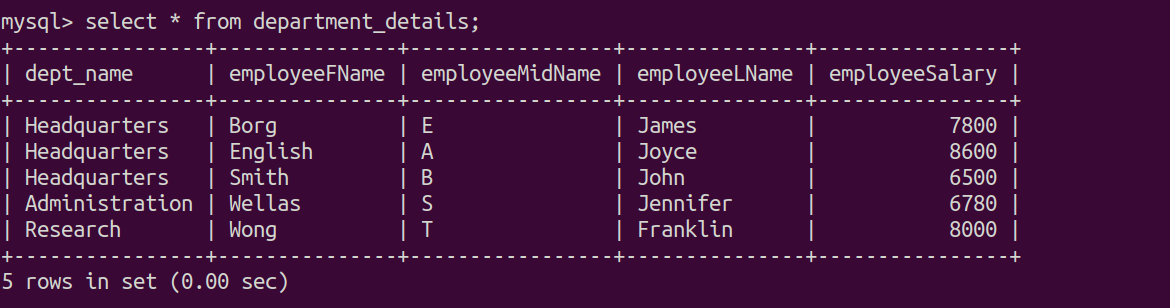
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1. **Create a view that has the department name, manager name, and manager salary for every department**

| **create view department\_details(dept\_name, employeeFName, employeeMidName, employeeLName, employeeSalary) as  select D.dept\_name, E.last\_name, E.middle\_name, E.first\_name, E.salary  from department D, employee E  where D.mgr\_ssn = E.ssn;** |
| --- |

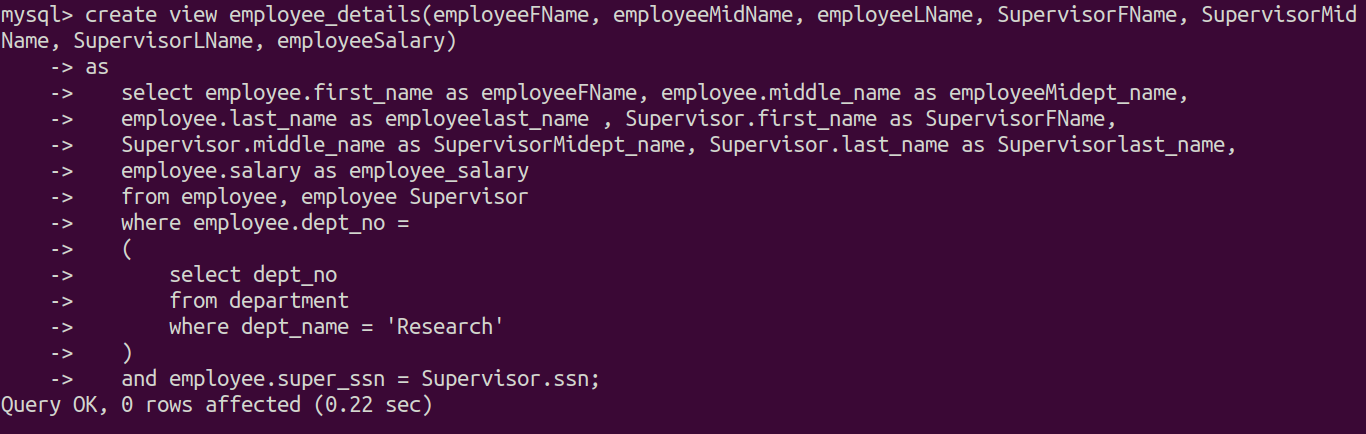
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| **select \* from department\_details;** |
| --- |

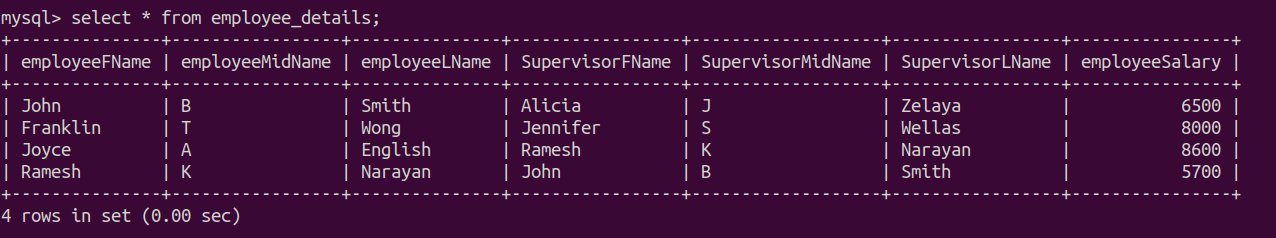
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1. **Create a view that has the Employee Name, Supervisor name and employee salary for each employee who works in the "Research" Department.**

| **create view employee\_details(employeeFName, employeeMidName, employeeLName, SupervisorFName, SupervisorMidName, SupervisorLName, employeeSalary) as  select employee.first\_name as employeeFName, employee.middle\_name as employeeMidept\_name,  employee.last\_name as employeelast\_name , Supervisor.first\_name as SupervisorFName,  Supervisor.middle\_name as SupervisorMidept\_name, Supervisor.last\_name as Supervisorlast\_name,  employee.salary as employee\_salary  from employee, employee Supervisor  where employee.dept\_no =  (  select dept\_no  from department  where dept\_name = 'Research'  )  and employee.super\_ssn = Supervisor.ssn;** |
| --- |

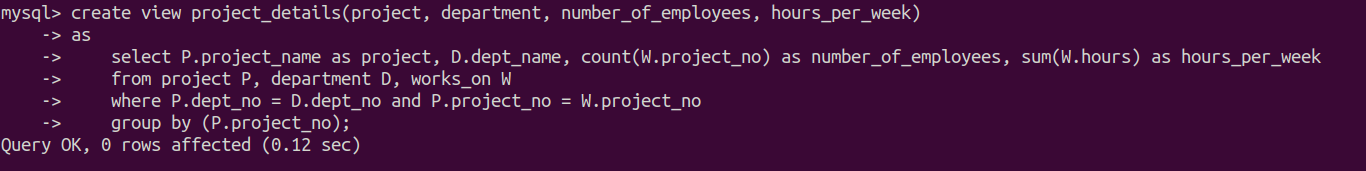
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| **select \* from employee\_details;** |
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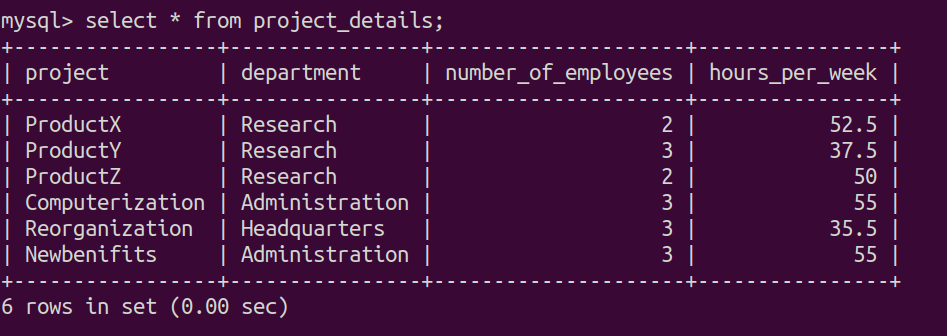
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1. **A view that has the Project name, controlling department name, Number of employees, and total hours worked per week on the project, for each project.**

| **create view project\_details(project, department, number\_of\_employees, hours\_per\_week) as  select P.project\_name as project, D.dept\_name, count(W.project\_no) as number\_of\_employees, sum(W.hours) as hours\_per\_week  from project P, department D, works\_on W  where P.dept\_no = D.dept\_no and P.project\_no = W.project\_no  group by (P.project\_no);** |
| --- |

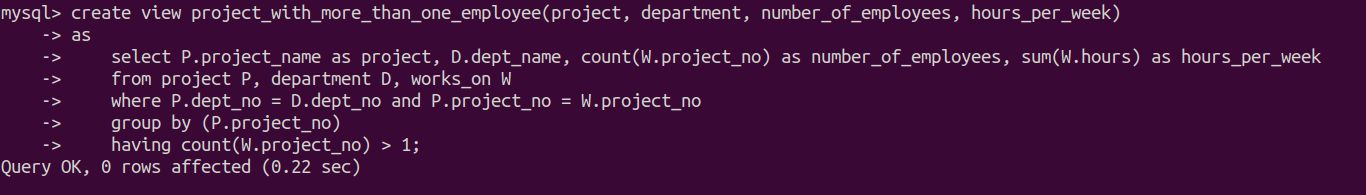
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| **select \* from project\_details;** |
| --- |

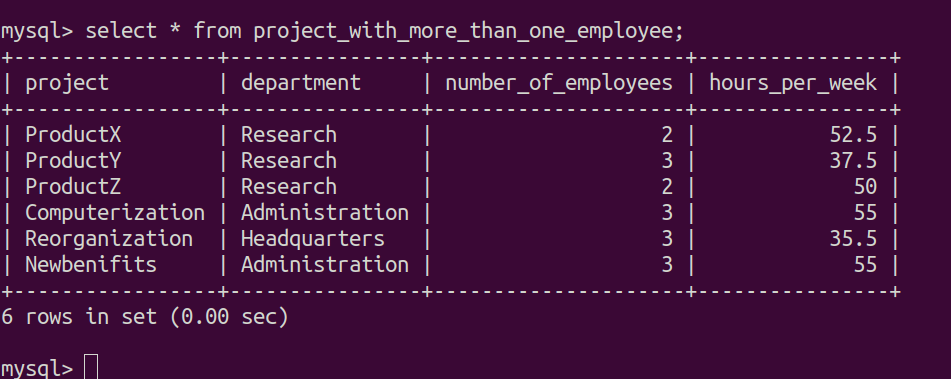
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1. **A view that has the project name, controlling department name, number of employees, and total hours worked per week on the project for each project with more than one employee working on it.**

| **create view project\_with\_more\_than\_one\_employee(project, department, number\_of\_employees, hours\_per\_week) as  select P.project\_name as project, D.dept\_name, count(W.project\_no) as number\_of\_employees, sum(W.hours) as hours\_per\_week  from project P, department D, works\_on W  where P.dept\_no = D.dept\_no and P.project\_no = W.project\_no  group by (P.project\_no)  having count(W.project\_no) > 1;** |
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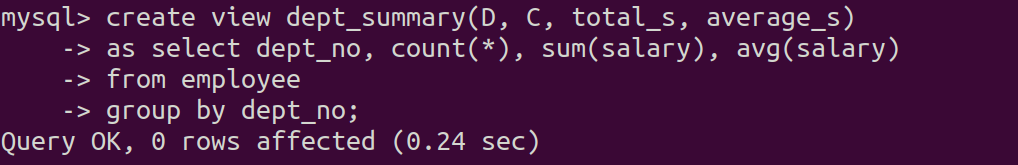
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| **select \* from project\_with\_more\_than\_one\_employee;** |
| --- |

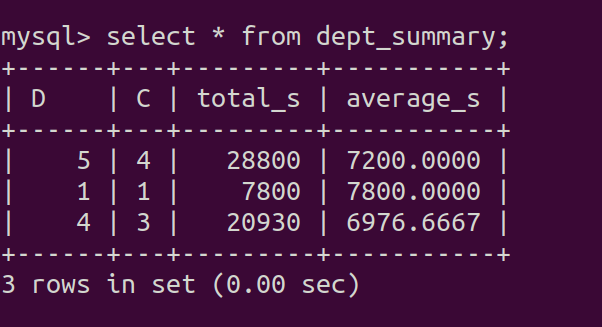
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**Second Part**

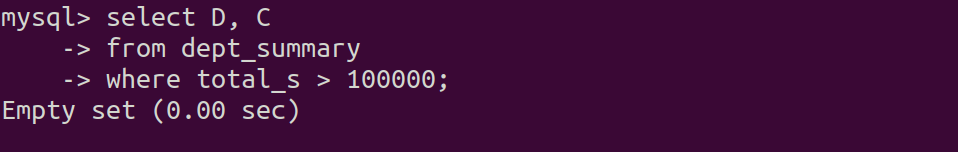
| **create view dept\_summary(D, C, total\_s, average\_s) as select dept\_no, count(\*), sum(salary), avg(salary) from employee group by dept\_no;** |
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| 1. **select \* from dept\_summary;** |
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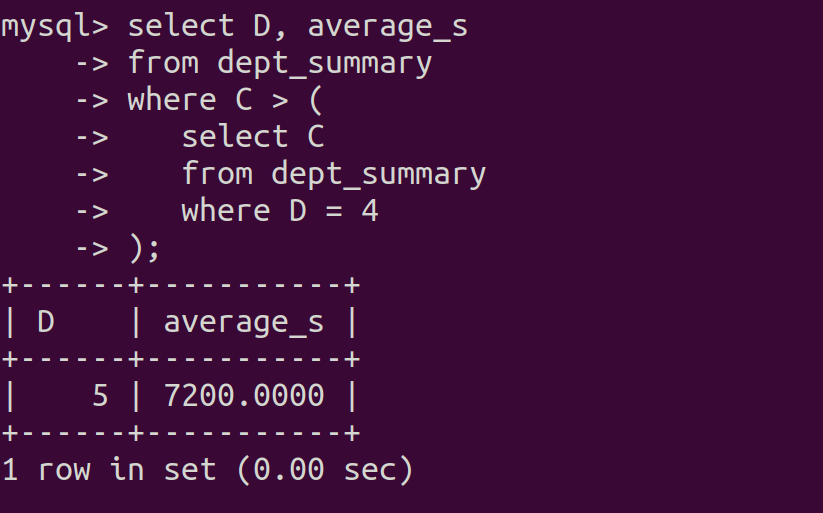
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| 1. **select D, C from dept\_summary where total\_s > 100000** |
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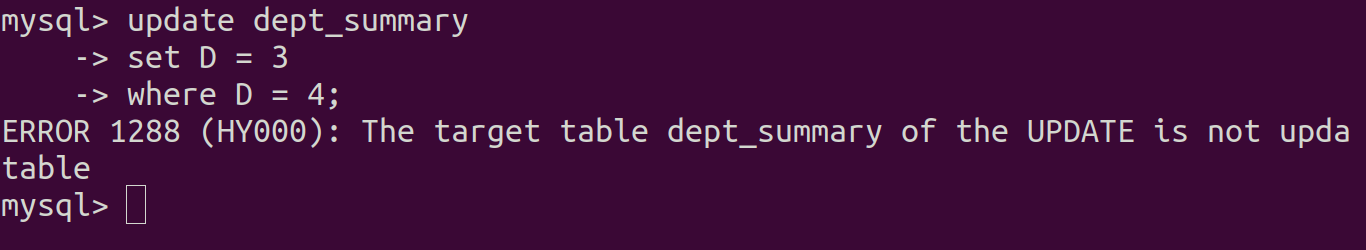
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Since no department is having total salary greater than 100000 hence it will return empty set

| 1. **select D, average\_s from dept\_summary where C > (  select C  from dept\_summary  where D = 4 );** |
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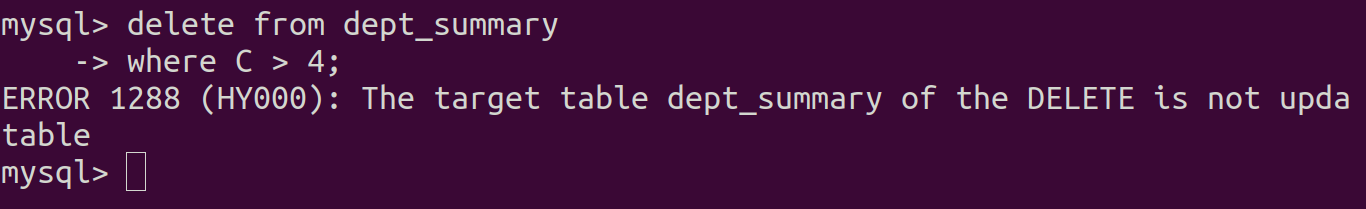
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| 1. **update dept\_summary set D *= 3* where *D = 4*;** |
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The view is not updatable since the view is using aggregate function (group by).

| 1. **delete from dept\_summary where C > 4;** |
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The view is not updatable since the view is using aggregate function (group by).