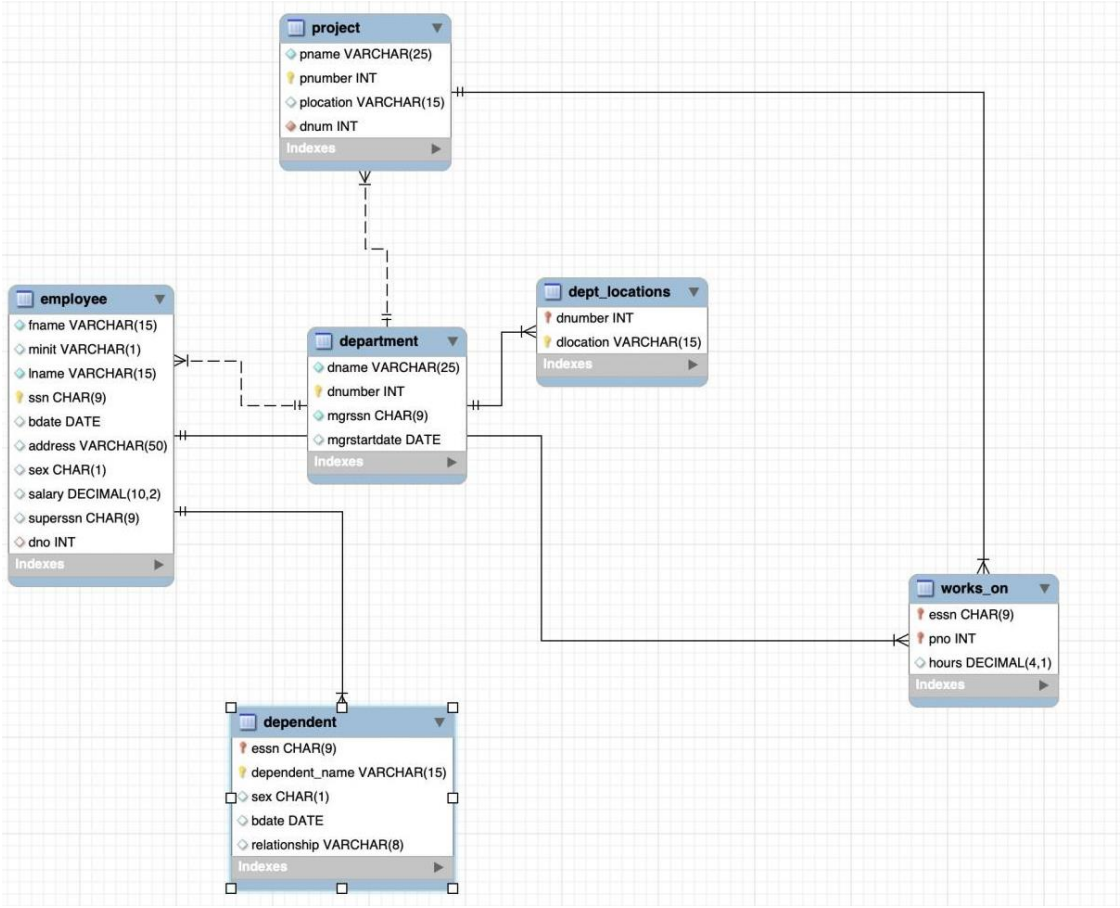
COMP- 8115-M50 Database systems

Quiz – 5

1. **[30 pts] Using the MySQL scripts in the companydb.sql file, generate a new company database.**
   The companydb.sql file can be found on canvas. Put a screenshot of your final database setup.

   ER diagram for the final company database sql file.



It has different tables like Project,employees,department,dep_locations,works_on,dependent.

Every tables has their own attributes and they are connected with each other in different ways.

The attributes of tables can be understood from the table schema so let me mention the schema given in the company sql file

CREATE TABLE department (

dname varchar(25) not null,

dnumber integer(4),

mgrssn char(9) not null,

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  mgrstartdate date,
  primary key (dnumber),
  key (dname)
);

CREATE TABLE employee (
  fname    varchar(15) not null,
  minit    varchar(1),
  lname    varchar(15) not null,
  ssn      char(9),
  bdate    date,
  address  varchar(50),
  sex      char,
  salary   decimal(10,2),
  superssn char(9),
  dno      integer(4),
  primary key (ssn),
  foreign key (dno) references department(dnumber)
);

CREATE TABLE dept_locations (
  dnumber   integer(4),
  dlocation varchar(15),
  primary key (dnumber,dlocation),
  foreign key (dnumber) references department(dnumber)
);

CREATE TABLE project (
  pname      varchar(25) not null,
  pnumber    integer(4),
  plocation  varchar(15),
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  dnum       integer(4) not null,
  primary key (pnumber),
  unique (pname),
  foreign key (dnum) references department(dnumber)
);

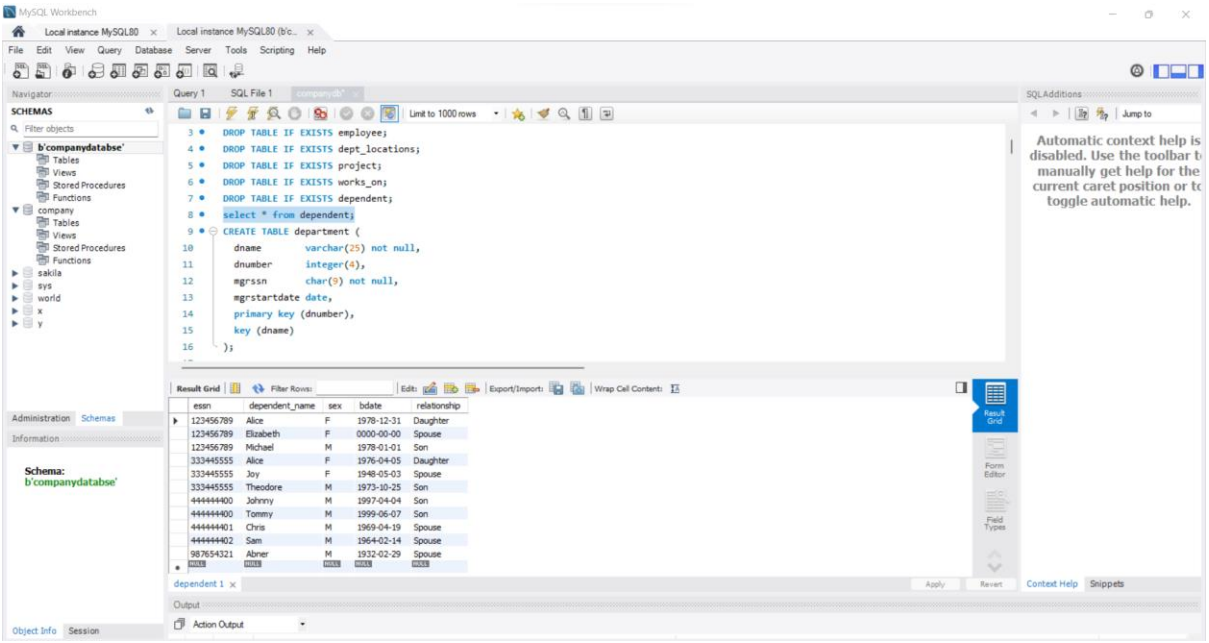
CREATE TABLE works_on (
  essn   char(9),
  pno    integer(4),
  hours  decimal(4,1),
  primary key (essn,pno),
  foreign key (essn) references employee(ssn),
  foreign key (pno) references project(pnumber)
);

CREATE TABLE dependent (
  essn          char(9),
  dependent_name varchar(15),
  sex           char,
  bdate         date,
  relationship   varchar(8),
  primary key (essn,dependent_name),
  foreign key (essn) references employee(ssn)
);
```

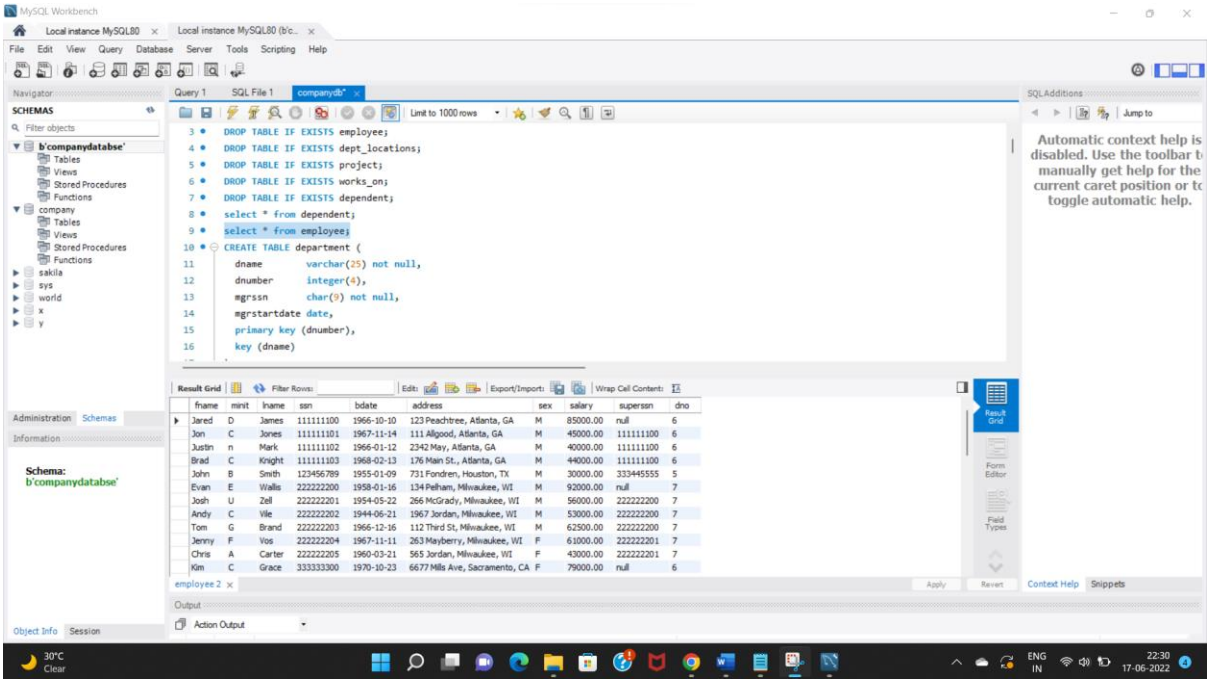
The values to these tables are being inserted through insert statement.

Now, let me show the values in different tables

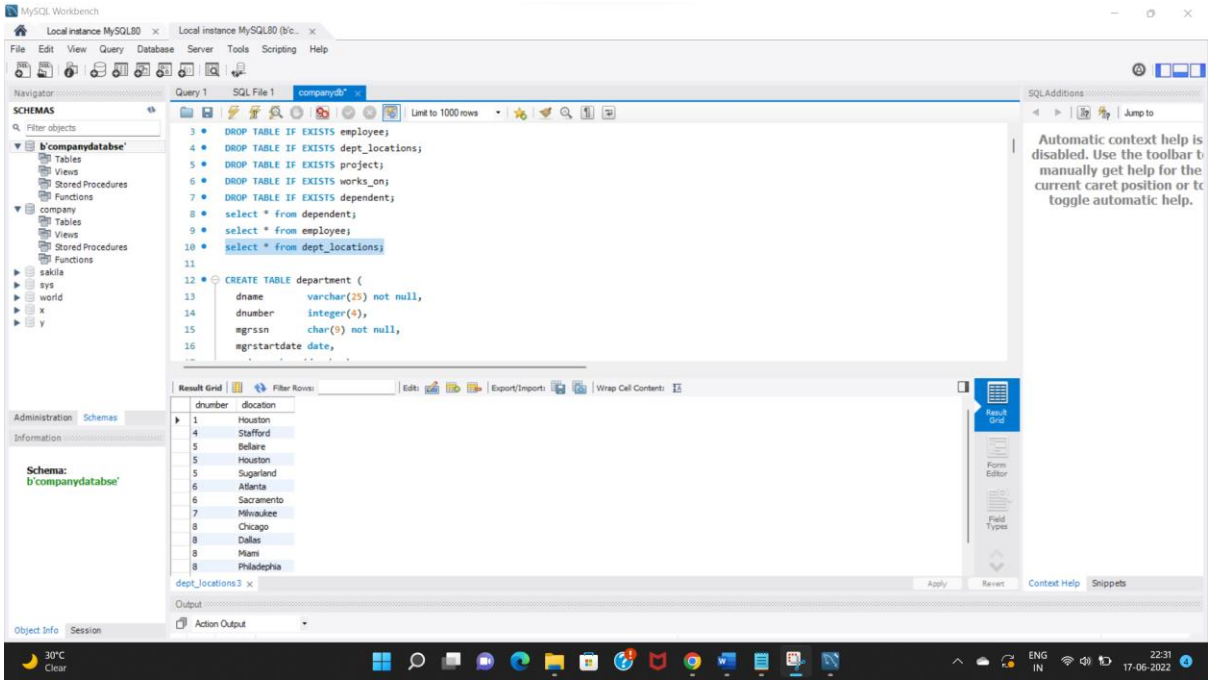
Values for the dependent table



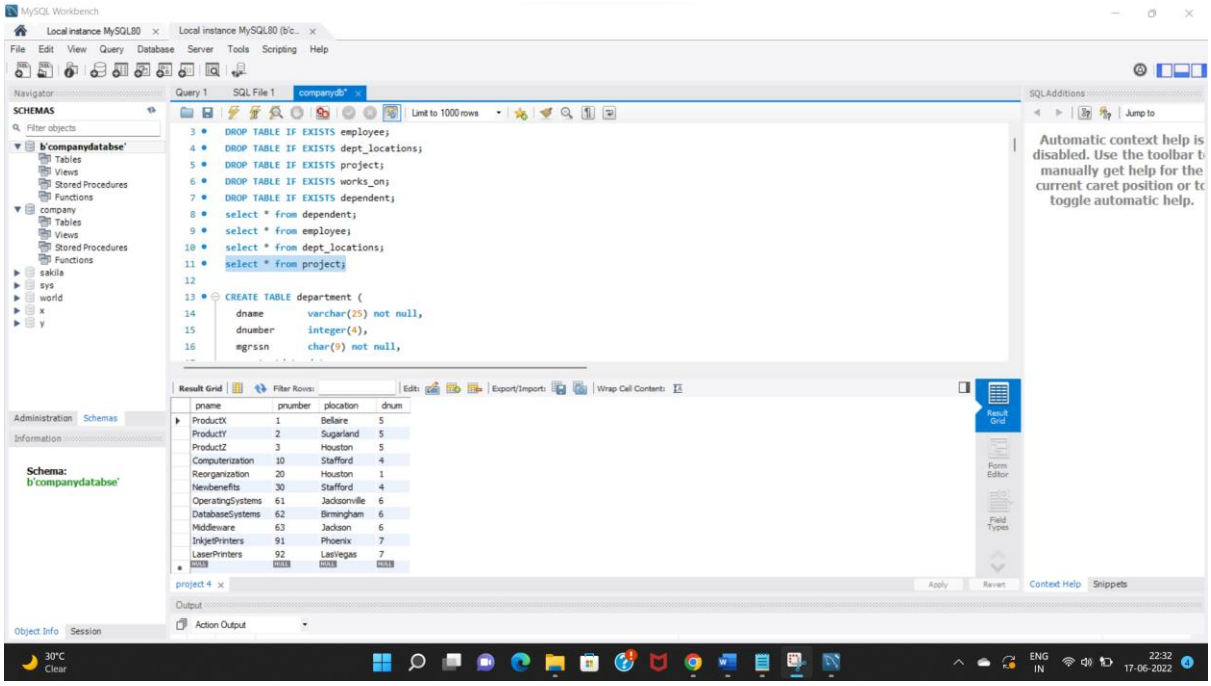
Values for the Employee table



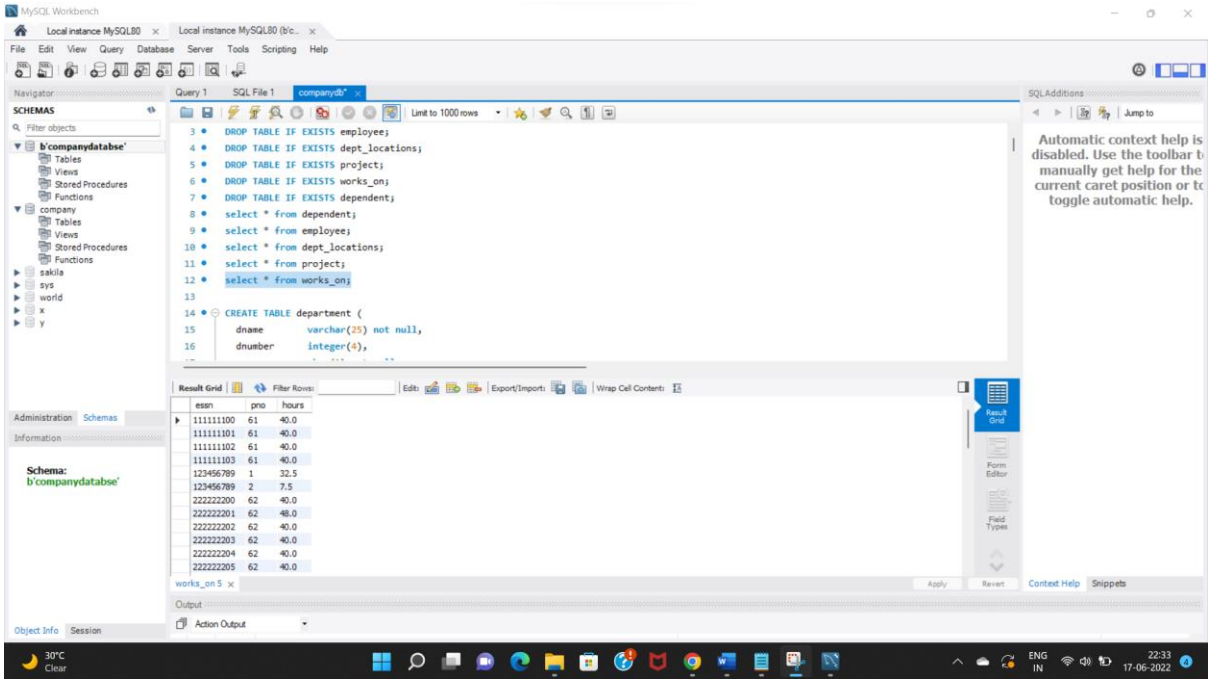
Values from the dept_locations



Values from the table project



‘Values from the table works_on

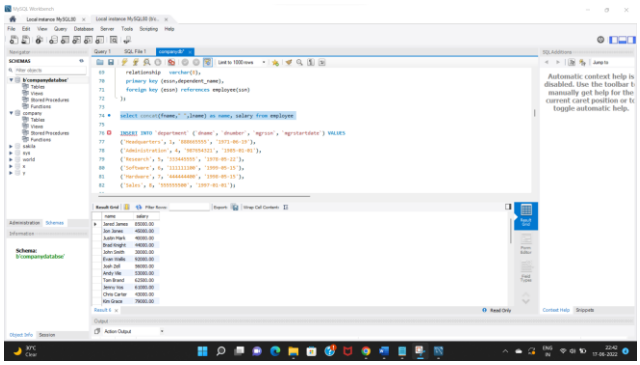


2. [70 pts] Write/Run SQL queries for the following use cases (no screenshots of these queries and their input/output needed).

a.[5 pts] Retrieve the name and salary of all employees.

Query:

select concat(fname," ",lname) as name, salary from employee



b. [5 pts] Retrieve the name and address of all employees who work for the 'Sales'
department.

Query:

select concat(emp.fname," ",emp.lname) as name, emp.address from employee as emp join Department as dept on emp.dno = dept.dnumber where dept.dname = ‘Sales’

since it is not necessary I am not displaying the output screens

c. [5 pts] Retrieve the name and address of all employees who work either for the 'Sales'
or ‘Administration’ department.

Query:

select concat(emp.fname," ",emp.lname) as name, emp.address from employee as emp join Department as dept on emp.dno = dept.dnumber where dept.dname = ‘Sales’ or dept.dname = ‘Administration’

d. [5 pts] Retrieve the name and address of all employees who work either for the 'Sales'
or ‘Administration’ department, sorted alphabetically by last name, then first name.

Query:

select emp.fname,emp.lname, emp.address from employee as emp join Department as dept on emp.dno = dept.dnumber where dept.dname = ‘Sales’ or dept.dname = ‘Administration’ order by emp.lname, emp.fname

e. [5 pts] Retrieve all employees in the research department whose salary is between
$30,000 and $40,000.

Query:

Select emp.* from Employee as emp join Department as dept on emp.dno = dept.dnumber Where emp.Salary between 30000 and 40000 and dept.dname = ‘research’

f. [5 pts] List all name of employees, the projects that they have been working on, and the
amount of time they spent for those projects.

Query:

Select concat(emp.fname," ",emp.lname) as name, emp.address, pr.pname, wo.hours from Employee as emp join Works_on as wo on emp.ssn = wo.essn join Project as pr on wo.pno = pr.pnumber

g. [5 pts] Retrieve all employees whose address is in Atlanta, GA.

Query:

Select * from Employee where address = ‘Atlanta, GA’

h. [5 pts] List all the department names which are located in Houston.

Query:

Select dept.*,dl.dlocation from Department as dept join Dept_locations as dl on dept.dnumber = dl.dnumber where dl.dlocation = ‘Houston’

i. [5 pts] Retrieve all distinct salary values of very employee.

Query:

Select distinct(Salary), concat(fname," ",lname) as name, address,ssn, bdate from Employee

j. [5 pts] A new person whose name is Joshua T Miller has been hired. Add this new employed person to the system along with his following information:
SSN: 456363313
birth date: 1971-10-18
address: 98 Oak Forest, Katy, TX
salary: 37000
superssn: 456363313
dno: 4

Query:

Insert into Employee values(‘Joshua’,’T’,’Miller’,’456363313’,’1971-10-18’,’98 Oak Forest, Katy, TX’,’M’,’37000’,’456363313’,4)

k. [5 pts] Joshua’s salary has been increased with 10%. Make the required update.

Query:

Update Employee set Salary = Salary + Salary *0.1 where fname = ‘Joshua’

l. [5 pts] Joshua left the company after working 3 years. Delete his personal record from the system.

Query:

delete Employee where essn = ‘456363313’

m. [10 pts] Make a list of all project numbers and project names for projects that involve an employee whose last name is 'Smith', either as a worker or as a manager of the department that controls the project.

Query:

Select pr.pnumber,pr.pname,emp.lname,dept.dnumber,dept.dname from EMPLOYEE as emp join department dept join project as pr on dept.dnumber = pr.dnum where lname = 'Smith';