1.

CREATE TABLE EMPLOYEE

(Fname VARCHAR(50) NOT NULL,

Minit CHAR,

Lname VARCHAR(50) NOT NULL,

Ssn CHAR(9) NOT NULL,

Bdate DATE,

Address VARCHAR(50),

Sex CHAR,

Salary DECIMAL(10, 2),

Super\_ssn CHAR(9),

Dno INT NOT NULL,

PRIMARY KEY(Ssn));

CREATE TABLE DEPARTMENT (

Dname varchar(25) NOT NULL,

Dnumber INT NOT NULL,

Mgr\_ssn char(9) NOT NULL,

Mgr\_start\_date date,

PRIMARY KEY(Dnumber),

UNIQUE(Dname),

FOREIGN KEY (Mgr\_ssn) REFERENCES EMPLOYEE(Ssn));

CREATE TABLE DEPT\_LOCATIONS (

Dnumber int NOT NULL,

Dlocation varchar(25) NOT NULL,

PRIMARY KEY (Dnumber, Dlocation),

FOREIGN KEY (Dnumber) REFERENCES DEPARTMENT(Dnumber));

CREATE TABLE PROJECT (

Pname VARCHAR(25) NOT NULL,

Pnumber INT NOT NULL,

Plocation varchar(25),

Dnum INT NOT NULL,

PRIMARY KEY(Pnumber),

UNIQUE (Pname),

FOREIGN KEY (Dnum) REFERENCES DEPARTMENT(Dnumber));

CREATE TABLE WORKS\_ON (

Essn CHAR(9) NOT NULL,

Pno INT NOT NULL,

Hours DECIMAL(3,1) NOT NULL,

PRIMARY KEY(Essn,Pno),

FOREIGN KEY (Essn) REFERENCES EMPLOYEE(Ssn),

FOREIGN KEY (Pno) REFERENCES PROJECT(Pnumber));

CREATE TABLE DEPENDENT (

Essn CHAR(9) NOT NULL,

Dependent\_name varchar(50) NOT NULL,

Sex CHAR,

Bdate DATE,

Relationshop varchar(10),

PRIMARY KEY (Essn, Dependent\_name),

FOREIGN KEY (Essn) REFERENCES EMPLOYEE(Ssn));

INSERT INTO EMPLOYEE values ('John', 'B', 'Smith', '123456789', '1965-01-09', '731 Fondren, Houston, TX', 'M', '30000', '333445555', '5');

INSERT INTO EMPLOYEE values ('Franklin', 'T', 'Wong', '333445555', '1955-12-08', '638 Voss, Houston, TX', 'M', '40000', '888665555', '5');

INSERT INTO EMPLOYEE values ('Alicia', 'J', 'Zelaya', '999887777', '1968-01-19', '3321 Castle, Spring, TX', 'F', '25000', '987654321', '4');

INSERT INTO EMPLOYEE values ('Jennifer', 'S', 'Wallace', '987654321', '1941-06-20', '291 Berry, Bellaire, TX', 'F', '43000', '888665555', '4');

INSERT INTO EMPLOYEE values ('Ramesh', 'K', 'Narayan', '666884444', '1962-09-15', '975 Fire Oak, Humble, TX', 'M', '38000', '333445555', '5');

INSERT INTO EMPLOYEE values ('Joyce', 'A', 'English', '453453453', '1972-07-31', '5631 Rice, Houston, TX', 'F', '25000', '333445555', '5');

INSERT INTO EMPLOYEE values ('Ahmad', 'V', 'Jabbar', '987987987', '1969-03-29', '980 Dallas, Houston, TX', 'M', '25000', '987654321', '4');

INSERT INTO EMPLOYEE values ('James', 'E', 'Borg', '888665555', '1937-11-10', '450 Stone, Houston, TX', 'M', '55000', NULL,'1');

INSERT INTO DEPARTMENT values ('Research', '5', '333445555', '1988-05-22');

INSERT INTO DEPARTMENT values ('Administration', '4', '987654321', '1995-01-01');

INSERT INTO DEPARTMENT values ('Headquarters', '1', '888665555', '1981-06-19');

INSERT INTO DEPT\_LOCATIONS values ('1', 'Houston');

INSERT INTO DEPT\_LOCATIONS values ('4', 'Stafford');

INSERT INTO DEPT\_LOCATIONS values ('5', 'Bellaire');

INSERT INTO DEPT\_LOCATIONS values ('5', 'Sugarland');

INSERT INTO DEPT\_LOCATIONS values ('5', 'Houston');

INSERT INTO PROJECT values ('ProductX', '1', 'Bellaire', '5');

INSERT INTO PROJECT values ('ProductY', '2', 'Sugarland', '5');

INSERT INTO PROJECT values ('ProductZ', '3', 'Houston', '5');

INSERT INTO PROJECT values ('Computerization', '10', 'Stafford', '4');

INSERT INTO PROJECT values ('Reorganization', '20', 'Houston', '1');

INSERT INTO PROJECT values ('Newbenefits', '30', 'Stafford', '4');

INSERT INTO WORKS\_ON values ('123456789', '1', '32.5');

INSERT INTO WORKS\_ON values ('123456789', '2', '7.5');

INSERT INTO WORKS\_ON values ('666884444', '3', '40.0');

INSERT INTO WORKS\_ON values ('453453453', '1', '20.0');

INSERT INTO WORKS\_ON values ('453453453', '2', '20.0');

INSERT INTO WORKS\_ON values ('333445555', '2', '10.0');

INSERT INTO WORKS\_ON values ('333445555', '3', '10.0');

INSERT INTO WORKS\_ON values ('333445555', '10', '10.0');

INSERT INTO WORKS\_ON values ('333445555', '20', '10.0');

INSERT INTO WORKS\_ON values ('999887777', '30', '30.0');

INSERT INTO WORKS\_ON values ('999887777', '10', '10.0');

INSERT INTO WORKS\_ON values ('987987987', '10', '35.0');

INSERT INTO WORKS\_ON values ('987987987', '30', '5.0');

INSERT INTO WORKS\_ON values ('987654321', '30', '20.0');

INSERT INTO WORKS\_ON values ('987654321', '20', '15.0');

INSERT INTO WORKS\_ON values ('888665555', '20', NULL);

INSERT INTO DEPENDENT values ('333445555', 'Alice', 'F', '1988-04-05', 'Daughter');

INSERT INTO DEPENDENT values ('333445555', 'Theodore', 'M', '1983-10-25', 'Son');

INSERT INTO DEPENDENT values ('333445555', 'Joy', 'F', '1958-05-03', 'Spouse');

INSERT INTO DEPENDENT values ('987654321', 'Abner', 'M', '1942-02-28', 'Spouse');

INSERT INTO DEPENDENT values ('123456789', 'Michael', 'M', '1988-01-04', 'Son');

INSERT INTO DEPENDENT values ('123456789', 'Alice', 'F', '1988-12-30', 'Daughter');

INSERT INTO DEPENDENT values ('123456789', 'Elizabeth', 'F', '1967-05-05', 'Spouse');

Graphical user interface

Description automatically generated with low confidence Table

Description automatically generated with medium confidence

a.

SELECT \*

FROM EMPLOYEE, WORKS\_ON, PROJECT

WHERE Dno=5 AND Ssn=Essn AND Pno=Pnumber AND Pname='ProductX' AND HOURS>10;

Graphical user interface, text, application

Description automatically generated

b.

SELECT Lname, Fname

FROM EMPLOYEE, DEPENDENT

WHERE Ssn=Essn AND Fname=DEPENDENT\_NAME;

Text

Description automatically generated

c.

SELECT E.Lname, E.Fname

FROM EMPLOYEE E, EMPLOYEE S

WHERE S.Fname='Franklin' AND S.Lname='Wong' AND E.SUPER\_SSN=S.SSN;

Graphical user interface, application

Description automatically generated

d.

SELECT DISTINCT E.Super\_ssn, D.Mgr\_ssn, Dname, Lname,Dnum,Pname

FROM Employee e, Department D,Project p

WHERE Lname='Smith' AND E.Super\_ssn=D.Mgr\_ssn AND e.Dno=p.Dnum;

Table

Description automatically generated

e.

SELECT Pname, SUM (HOURS)

FROM PROJECT, WORKS\_ON

WHERE Pnumber=Pno

GROUP BY Pname;

Graphical user interface, application

Description automatically generated

f.

SELECT Lname, Fname

FROM EMPLOYEE

WHERE NOT EXISTS ( SELECT Pnumber

FROM PROJECT

WHERE NOT EXISTS ( SELECT \*

FROM WORKS\_ON

WHERE Pnumber=Pno AND Essn=Ssn ) );

Graphical user interface, text, application

Description automatically generated

g.

SELECT Lname, Fname

FROM EMPLOYEE

WHERE EXISTS ( SELECT Pnumber

FROM PROJECT

WHERE EXISTS ( SELECT \*

FROM WORKS\_ON

WHERE Pnumber=Pno AND Essn=Ssn ) );

Graphical user interface, text, application

Description automatically generated

h.

SELECT Dname, AVG (SALARY)

FROM DEPARTMENT, EMPLOYEE

WHERE Dnumber=Dno

GROUP BY Dname;

Graphical user interface, text

Description automatically generated

i.

SELECT AVG (Salary) as AVG

FROM EMPLOYEE

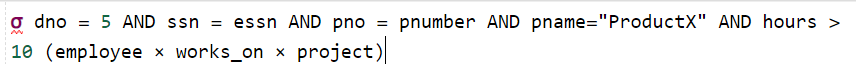
WHERE Sex='F';

Text, application

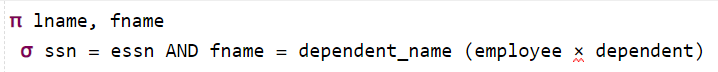
Description automatically generated

3.

a.



b.



c.

A picture containing chart

Description automatically generated

d.

Text

Description automatically generated with low confidence

e.

Graphical user interface, text, application, chat or text message

Description automatically generated

f.



g.



h.

Text, letter

Description automatically generated

i.

Graphical user interface, text, application

Description automatically generated