CREATE TABLE Department (

Dname VARCHAR(30),

Dnumber INT PRIMARY KEY,

Mgr\_ssn CHAR(9),

Mgr\_start\_date DATE,

FOREIGN KEY (Mgr\_ssn) REFERENCES Employee(Ssn)

);

CREATE TABLE Employee (

Fname VARCHAR(15),

Minit CHAR(1),

Lname VARCHAR(15),

Ssn CHAR(9) PRIMARY KEY,

Bdate DATE,

Address VARCHAR(30),

Sex CHAR(1),

Salary CHAR(5),

Super\_ssn CHAR(9),

Dno INT,

FOREIGN KEY (Super\_ssn) REFERENCES Employee(Ssn),

FOREIGN KEY (Dno) REFERENCES Department(Dnumber)

);

CREATE TABLE Project (

Pname VARCHAR(30),

Pnumber INT PRIMARY KEY,

Plocation VARCHAR(30),

Dnum INT,

FOREIGN KEY (Dnum) REFERENCES Department(Dnumber)

);

CREATE TABLE Works\_on (

Essn CHAR(9),

Pno INT,

Hours DECIMAL(3,1),

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(1),

Bdate DATE,

Relationship VARCHAR(8),

PRIMARY KEY (Essn, Dependent\_name),

FOREIGN KEY (Essn) REFERENCES Employee(Ssn)

);

CREATE TABLE Dept\_Locations (

Dnumber INT,

Dlocation VARCHAR(30),

PRIMARY KEY (Dnumber, Dlocation),

FOREIGN KEY (Dnumber) REFERENCES Department(Dnumber)

);

-- Insert data into Department table

INSERT INTO Department (Dnumber, Dname, Mgr\_ssn, Mgr\_start\_date) VALUES

(‘Research’, ‘5’, ‘333445555’, ‘1988-05-22’),

(‘Administration’, ‘4’, ‘987654321’, ‘1995-01-01’),

(‘Headquarters’, ‘1’, ‘888665555’, ‘1981-06-19’);

-- Insert data into Project table

INSERT INTO Project (Pname, Pnumber, Plocation, Dnum) VALUES

(‘ProductX’, 1, ‘Bellaire’, 5),

(‘ProductY’, 2, ‘Sugarland’, 5),

(ProductZ’, 3, ‘Houston’, 5),

(‘Computerization’, 10, ‘Stafford’, 4),

(‘Reorganization’, 20, ‘Houston’, 1),

(‘Newbenefits’ 30, ‘Stafford’, 4);

-- Insert data into Employee table

INSERT INTO Employee (Fname, Minit, Lname, Ssn, Bdate, Address, Sex, Salary, Super\_ssn, Dno) VALUES

(‘John’, ‘B’, ‘Smith’, ‘123456789’, ‘1965-01-09’, ‘731 Fondren, Houston, TX’, ‘M’, 30000, ‘333445555’, 5),

(‘Franklin’, ‘T’, ‘Wong’, ‘333445555’, ‘1955-12-08’, ‘638 Voss, Houston, TX’, ‘M’, 40000, ‘888665555’, 5),

(‘Alicia’, ‘J’, ‘Zelaya’, ‘999887777’, ‘1968-01-19’, ‘3321 Castle, Spring, TX’, ‘F’,25000, ‘987654321’, 4),

(‘Jennifer’, ‘S’, ‘Wallace’, ‘987654321’, ‘1941-06-20’, ‘291 Berry, Bellaire, TX’, ‘F’, 43000, ‘888665555’, 4),

(‘Ramesh’, ‘K’, ‘Narayan’, ‘666884444’, ‘1962-09-15’, ‘975 Fire Oak, Humble, TX’, ‘M’, 38000, ‘333445555’, 5),

(‘Joyce’, ‘A’, ‘English’, ‘453453453’, ‘1972-07-31’, ‘5631 Rice, Houston, TX’, ‘F’, 25000, ‘333445555’, 5),

(‘Ahmad’, ‘V’, ‘Jabbar’, ‘987987987’, ‘1969-03-29’, ‘980 Dallas, Houston, TX’, ‘M’, 25000, ‘987654321’, 4),

(‘James’, ‘E’, ‘Borg’, ‘888665555’, ‘1937-11-10’, ‘450 Stone, Houston, TX’, ‘M’, 55000, NULL, 1);

-- Insert data into Works\_on table

INSERT INTO Works\_on (Essn, Pno, Hours) VALUES

(‘123456789’, 1, 32.5),

(‘123456789’, 2, 7.5),

(‘666884444’, 3, 40.0),

(‘453453453’, 1, 20.0),

(‘453453453’, 2, 20.0),

(‘333445555’, 2, 10.0),

(‘333445555’, 3, 10.0),

(‘333445555’, 10, 10.0),

(‘333445555’, 20, 10.0),

(‘999887777’, 30, 30.0),

(‘999887777’, 10, 10.0),

(‘987987987’, 10, 35.0),

(‘987987987’, 30, 5.0),

(‘987654321’, 30, 20.0),

(‘987654321’, 20, 15.0),

(‘888665555’, 20, NULL);

-- Insert data into Dept\_Locations table

INSERT INTO Dept\_Locations (Dnumber, Dlocation) VALUES

(1, ‘Houston’),

(4, ‘Stafford’),

(5, ‘Bellaire’),

(5, ‘Sugarland’),

(5, ‘Houston’);

INSERT INTO Dependant (Essn, Dependent\_name, Sex, Bdate, Relationship) VALUES

(‘333445555’, ‘Alice’, ‘F’, ‘1986-04-05’, ‘Daughter’),

(‘333445555’, ‘Theodore’, ‘M’, ‘1983-10-25’, ‘Son’),

(‘333445555’, ‘Joy’, ‘F’, ‘1958-05-03’, ‘Spouse’),

(‘987654321’, ‘Abner’, ‘M’, ‘1942-02-28’, ‘Spouse’),

(‘123456789’, ‘Michael’, ‘M’, ‘1988-01-04’, ‘Son’),

(‘123456789’, ‘Alice’, ‘F’, ‘1988-12-30’, ‘Daughter’),

(‘123456789’, ‘Elizabeth’, ‘F’, ‘1967-05-05’, ‘Spouse);

(B)

INSERT INTO Project (Pname, Pnumber, Plocation, Dnum) VALUES

(‘Terrible Project’, NULL, ‘Dublin’, 4);

**COLUMN ”PNUMBER” CANNOT BE NULL**

( C)

INSERT INTO Works\_on (Essn, Pno, Hours) VALUES

(‘888665555’, 3, NULL);

**YES WORKS**

(D)

INSERT INTO Dept\_Locations (Dnumber, Dlocation) VALUES

(5, ‘Houston’);

**NO, DUPLICATE ENTRY**

(E)

INSERT INTO Employee (Fname, Minit, Lname, Ssn, Bdate, Address, Sex, Salary, Super\_ssn, Dno) VALUES

(‘Janet’, ‘F’, ‘Smith’, ‘677678989’, ‘1960-04-05’, ‘6357 Windswept, Katy, TX’, F, 28000, ‘987654321’, 9);

(F)

DELETE FROM Dependent WHERE Dependent\_name = ‘Elizabeth’;

**YES**

(G)

DELETE FROM Department WHERE Mgr\_ssn = ‘333445555’;

(H)

DELETE FROM Employee WHERE Bdate = ‘1956-01-09’;

**YES**

(I)

UPDATE Department

SET Mgr\_ssn = NULL

WHERE Dno = 4;

(J)

UPDATE Employee

SET Date\_of\_birth = '1983-09-25'

WHERE SSN = '333445555';

**YES**

(K)

UPDATE Works\_on

SET Pno = 21

WHERE ESSN = '123456789';