Experiment 3

Title: To understand DDL and DML Command

Objective: To understand the concept of designing issue related to the database with creating, populating the tables. To understand the concept of data constraints that is enforced on data being stored in the table. Focus on Primary Key and the Foreign Key.

   a. **Create the tables for** Company database as per ER diagram of Exp 2.

TABLE 1: EMPLOYEE

[Fname VARCHAR(15) NOT NULL,

Minit CHAR,

Lname VARCHAR(15) NOT NULL,

Ssn CHAR(9) NOT NULL,

Bdate DATE,

Address VARCHAR(30),

Sex CHAR,

Salary DECIMAL(10,2),

Super_ssn CHAR(9),

Dno INT NOT NULL,

PRIMARY KEY (Ssn),

FOREIGN KEY (Super_ssn) REFERENCES EMPLOYEE(Ssn),

FOREIGN KEY (Dno) REFERENCES DEPARTMENT(Dnumber)

]

TABLE 2: DEPARTMENT

[Dname VARCHAR(15) 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));

]

TABLE 3: DEPT_LOCATIONS

(Dnumber INT NOT NULL,

Dlocation VARCHAR(15) NOT NULL,

PRIMARY KEY (Dnumber, Dlocation),

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

TABLE 4: PROJECT

(Pname VARCHAR(15) NOT NULL,

Pnumber INT NOT NULL,

Plocation VARCHAR(15),

Dnum INT NOT NULL,

PRIMARY KEY (Pnumber),

UNIQUE (Pname),

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

TABLE 5: 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));

TABLE 6: DEPENDENT

(Essn CHAR(9) NOT NULL,

Dependent_name VARCHAR(15) NOT NULL,

Sex CHAR,

Bdate DATE,

Relationship VARCHAR(8),

PRIMARY KEY (Essn, Dependent_name),

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

b. Insert the following data into their respective tables of Company database.

DEPARTMENT

DNAME	DNUMBER	MGRSSN	MGRSTARTDATE
Research	5	333445555	1988-05-22
Administration	4	987654321	1995-01-01
Headquarters	1	888665555	1981-06-19

EMPLOYEE

FNAME	LNAME	SSN	BDATE	ADDRESS	SEX	SALARY	SUPERSSN	DNO
John	Smith	123456789	1965-01-09	731 Fondren, Houston TX	M	30000	333445555	5
Franklin	Wong	333445555	1965-12-08	638 Voss, Houston TX	M	40000	888665555	5
Alicia	Zelaya	999887777	1968-01-19	3321 Castle, Spring TX	F	25000	987654321	4
Jennifer	Wallace	987654321	1941-06-20	291 Berry, Bellaire TX	F	43000	888665555	4
Ramesh	Narayan	666884444	1962-09-15	975 Fire Oak, Humble TX	M	38000	333445555	5

EMPLOYEE

FNAME	LNAME	SSN	BDATE	ADDRESS	SEX	SALARY	SUPERSSN	DNO
Joyce	English	453453453	1972-07-31	5631 Rice, Houston TX	F	25000	333445555	5
Ahmad	Jabbar	987987987	1969-03-29	980 Dallas, Houston TX	M	25000	987654321	4
James	Borg	888665555	1937-11-10	450 Stone, Houston TX	M	55000	null	1

PROJECT

PNAME	PNUMBER	PLOCATION	DNUM
ProductX	1	Bellaire	5
ProductY	2	Sugarland	5
ProductZ	3	Houston	5
Computerization	10	Stafford	4
Reorganization	20	Houston	1
Newbenefits	30	Stafford	4

WORKS_ON

ESSN	PNO	HOURS
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

WORKS_ON

ESSN	PNO	HOURS
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

DEPENDENT

ESSN	DEPENDENT_NAME	SEX	BDATE	RELATIONSHIP
333445555	Alice	F	1986-04-04	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

DEPT_LOCATIONS

DNUMBER	DLOCATION
1	Houston
4	Stafford
5	Bellaire
5	Houston
5	Sugarland