

## Exercise: II

Aim: To know how the constraints are used to make table is consistent.

### Table Name: Employee

Attribute	Data Type	Constraint
First Name	Varchar (15)	Not Null
Mid Name	Char(2)	
Last Name	Varchar (15)	Not Null
SSN Number	Char (9)	Primary Key
Birthday	Date	
Address	Varchar (50)	
Sex	Char(1)	Sex In (M,F,m,f)
Salary	Number (7)	Default 800
Supervisor SSN	Char (9)	Foreign Key Employee (SSN) on delete set null
Department number	Number(5)	Foreign key to department number of department table on delete cascade

### Table Name : Department

Attribute	Data type	Constraint
Department Name	Varchar(15)	Not Null
Department number	INT(5)	Primary key
Manager SSN	Char (9)	Foreign key-Employee (SSN) on delete set null
Manage start date	Date	

### Table Name : Dept\_locations

Attribute	Data type	Constraint
Department Number	Number(5)	Department (dep no) onDelete Cascade
Department Location	Varchar (15)	

### Table Name: Project

Attribute	Data type	Constraint
Project Name	Varchar2(15)	Not Null
Project number	Number(5)	Primary key
Project Location	Varchar2(50)	
Department Number	Number(5)	Foreign Key –Department (dep no ) on delete set null

**Table Name: Works\_On**

**The combination of Employee SSN and Project Number must be a Primary Key**

Attribute	Data type	Constraint
Employee SSN	Char (9)	Foreign Key Employee (SSN) on delete cascade
Project number	INT(5)	Foreign Key project ( Pnumber ) on delete cascade
Hours	Decimal (3,1)	Not null

**Name: Dependent**

**The combination of Employee SSN and Dependent Name must be a Primary Key.**

Attribute	Datatype	Constraint
Employee	Char (9)	Foreign Key- Employee (SSN) on Delete Cascade
Dependent Name	Varchar(15)	
Sex	Char(1)	Check Sex in (M,F,m,f)
Birthday	Date	
Relationship	Varchar(8)	

**Data for table - Dept\_Locations**

Dep No	D Location
1	Houston
1	Chicago
2	New York
2	San Francisco
3	Salt Lake City
4	Stafford
4	Bellaire
5	Sugarland
5	Houston

**Data for Table - Works\_On**

ESSN	Pno	Hours
123456789	3388	32.5
123456789	1945	7.5
666884444	3388	40.0
453453453	77	20.0
453453453	22	20.0
333445555	77	10.0
333445555	6688	10.0
333445555	43	35.0
333445555	22	28.5
999887777	1	11.5
999887777	12	13.0
543216789	22	17.0
554433221	1945	21.5

**Data for Table - Dependent**

ESSN	Dependent_name	Sex	Bdate	Relationship
333445555	Alice	F	05-Apr-76	Daughter
333445555	Theodore	M	25-Oct-73	Son
333445555	Joy	F	03-May-48	Spouse
987654321	Abner	M	29-Feb-32	Spouse
123456789	Alice	F	31-Dec-78	Daughter
123456789	Elizabeth	F	05-may-57	Spouse

**Execute the following Query on the Db to display and discuss the integrity constraints violated by any of the following operations**

1. Insert ('Robert', 'F', 'Scott', '943775543', '21-JUN-42', '2365 Newcastle Rd, Bellaire, TX', M, 58000, '888665555', 1 ) into EMPLOYEE.
2. Insert ( '677678989', null, '40.0' ) into WORKS\_ON.
3. Insert ( '453453453', 'John', M, '12-DEC-60', 'SPOUSE' ) into DEPENDENT
4. Delete the WORKS\_ON tuples with ESSN= '333445555'.
5. Modify the MGRSSN and MGRSTARTDATE of the DEPARTMENT tuple with DNUMBER=5 to '123456789' and '01-OCT-88', respectively.

**Alter the tables to**

1. Add Foreign Keys using Alter Table [if not done earlier].
2. Drop Foreign key defined on SuperSSN and add it using Alter table command.
3. Make name of Project as Unique and sex of employee as not null.
4. Make Address as a new type containing door no, street, city, State, Continent.
5. Make salary of employee to accept real values.