



*School Of Computer Science and Engineering*

NAME: M.JASWANTH

REGNO:20BCD7171

**ASSIGNMENT 2**

(Winter Sem 2021-2022)

**Course Code:** CSE2007

**Course Title:** Database Management Systems

Faculty Name: Manomita Chakraborty (70296)

---

Aim:

To know how the constraints are used to make table contain valid data.

Consider the following schema

**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	Number(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) on delete 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

**Table 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:****Employee**

FIRST_NAME	MID_NAME	LAST_NAME	SSN_NUMBER	BIRTHDAY	ADDRESS	SEX	SALARY	SUPERVISOR_SSN	DEPARTMENT_NUMBER
Doug	E	Gilbert	554433221	09-06-60	11 S 59 E, Salt Lake City, UT M	M	80000 (null)		3
Joyce	(null)	PAN	543216789	07-02-78	35 S 18 E, Salt Lake City, UT F	F	70000 (null)		2
Frankin	T	Wong	333445555	08-12-45	638 Voss, Houston, TX	M	40000554433221		5
Jennifer	S	Wallace	987654321	20-06-31	291 Berry, Bellaire, TX	F	43000554433221		4
Johny	B	Smith	123456789	09-01-55	731 Fondren, Houston, TX	M	30000333445555		5
Ramesh	K	Narayan	666884444	15-09-52	975 Fire Oak, Humble, TX	M	38000333445555		5
Joyce	A	English	453453453	31-07-62	5631 Rice, Houston, TX	F	25000333445555		5
James	E	Borg	888665555	10-11-27	450 Stone, Houston, TX	M	55000543216789		1
Alicia	J	Zelaya	999887777	19-07-58	3321 Castle, Spring, TX	F	25000987654321		4
Ahmad	V	Jabbar	987987987	29-03-59	980 Dallas, Houston, TX	M	25000987654321		4

**Department**

DEPT_NAME	DEPT_NO	MANAGERSSN	MANAGESTARTDATE
Administration	2 543216789	04-01-99	
Headquarter	3 554433221	22-09-55	
Finance	4 987654321	01-01-85	
Research	5 333445555	22-05-78	

**Project**

PROJECTNAME	PROJECTNUMBER	PROJECTLOCATION	DEPT_NO
ProjectA		3388 Houston	1
ProjectB		1945 Salt Lake City	3
ProjectC		6688 Houston	5
ProjectD		2423 Bellaire	4
ProjectE		7745 Sugarland	5
ProjectF		1566 Salt Lake City	3
ProjectG		1234 New York	2
ProjectH		3467 Stafford	4
ProjectI		4345 Chicago	1
ProjectJ		2212 San Francisco	2

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

Works\_on

ESSN	Pno	Hours
123456789	3388	32.5
123456789	1945	7.5
666884444	3388	40.0
453453453	7745	20.0
453453453	2212	20.0
333445555	7745	10.0
333445555	6688	10.0
333445555	4345	35.0
333445555	2212	28.5
999887777	2212	11.5
543216789	2212	17.0
554433221	1945	21.5

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

## CODES FOR THE ABOVE TABLES:

Oracle SQL Developer : New

File Edit View Navigate Run Source Team Tools Window Help

Connections New Worksheet Query Builder

```

CREATE TABLE EMPLOYEE_20BCD7171(
    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),
    ADDRESS2 VARCHAR(50),
    ZIP_CODE CHAR(11),
    SALARY NUMBER(7),
    SUPERVISOR_SSN CHAR(9),
    DEPARTMENT_NUMBER NUMBER(5),
    FOREIGN KEY (SUPERVISOR_SSN)
        REFERENCES EMPLOYEE_20BCD7171 (SSN_NUMBER)
    ON DELETE SET NULL
);

```

SELECT \* FROM EMPLOYEE\_20BCD7171;

Script Output Query Result

All Rows Fetched: 0 in 0.013 seconds

FIRST_N...	MID_N...	LAST_N...	SSN_NU...	BIRTHDAY	ADDRESS	SEX	SALARY	SUPERV...	DEPART...

Reports All Reports Analytic View Reports Data Dictionary Reports Data Modeler Reports OLAP Reports TimesTen Reports User Defined Reports

Line 16 Column 24 Insert Modified Windows CR

Oracle SQL Developer : New

File Edit View Navigate Run Source Team Tools Window Help

Connections New Worksheet Query Builder

```

CREATE TABLE DEPT_LOCATIONS_20BCD7171(
    DEPT_NUMBER NUMBER(15),
    DEPT_LOCATION VARCHAR(15),
    FOREIGN KEY (DEPT_NUMBER)
        REFERENCES DEPARTMENT_20BCD7171 (DEPTNUMBER)
    ON DELETE CASCADE
);

```

SELECT \* FROM DEPT\_LOCATIONS\_20BCD7171;

```

CREATE TABLE WORKS_20BCD7171(
    EMPLOYEE_SSN CHAR(9),
    PROJECT_NUMBER NUMBER(15),
    HOURS DECIMAL(1,1) NOT NULL,
    FOREIGN KEY (EMPLOYEE_SSN)
        REFERENCES EMPLOYEE_20BCD7171 (SSN_NUMBER)
    ON DELETE CASCADE
    FOREIGN KEY (PROJECT_NUMBER)
        REFERENCES PROJECT_20BCD7171 (PROJECTNUMBER)
    ON DELETE CASCADE
);

```

SELECT \* FROM WORKS\_20BCD7171;

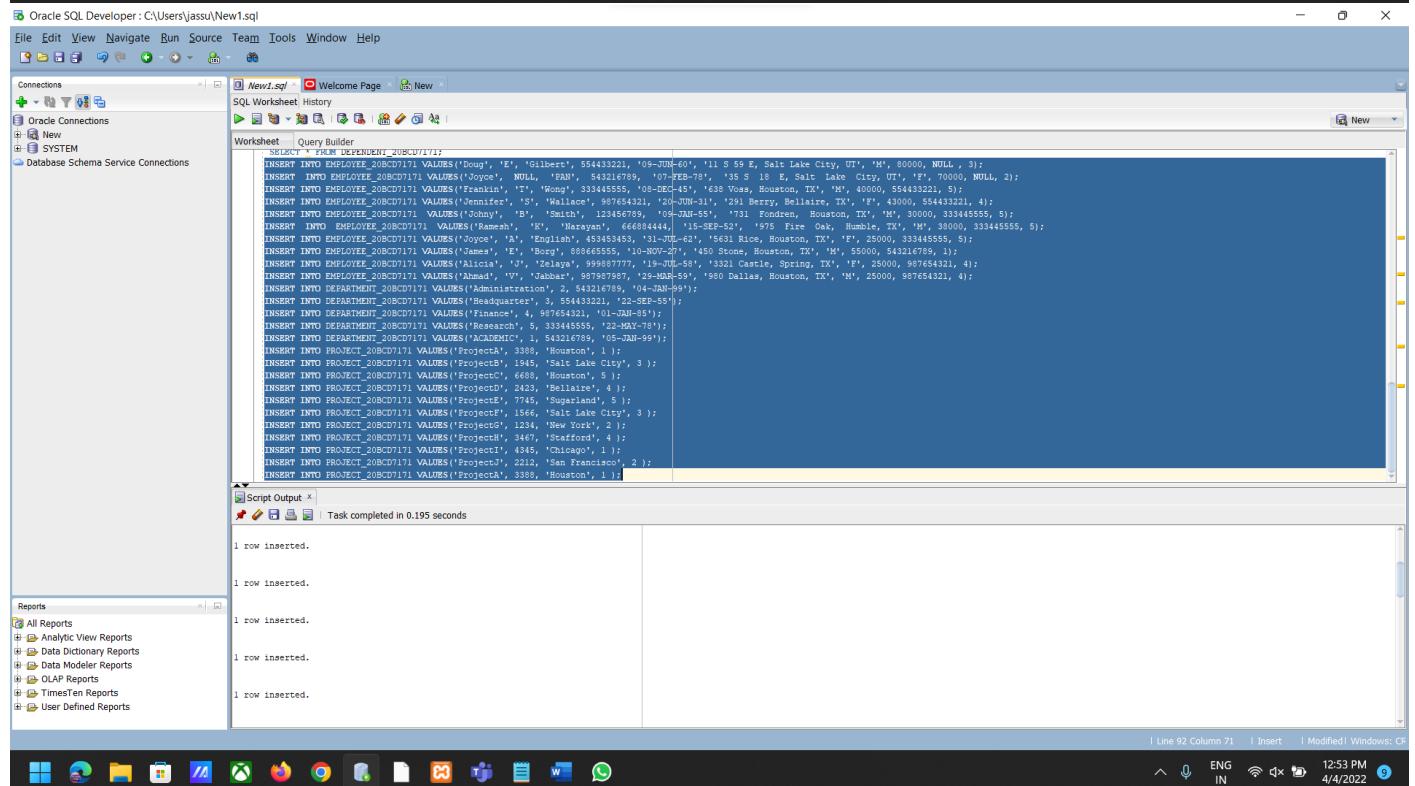
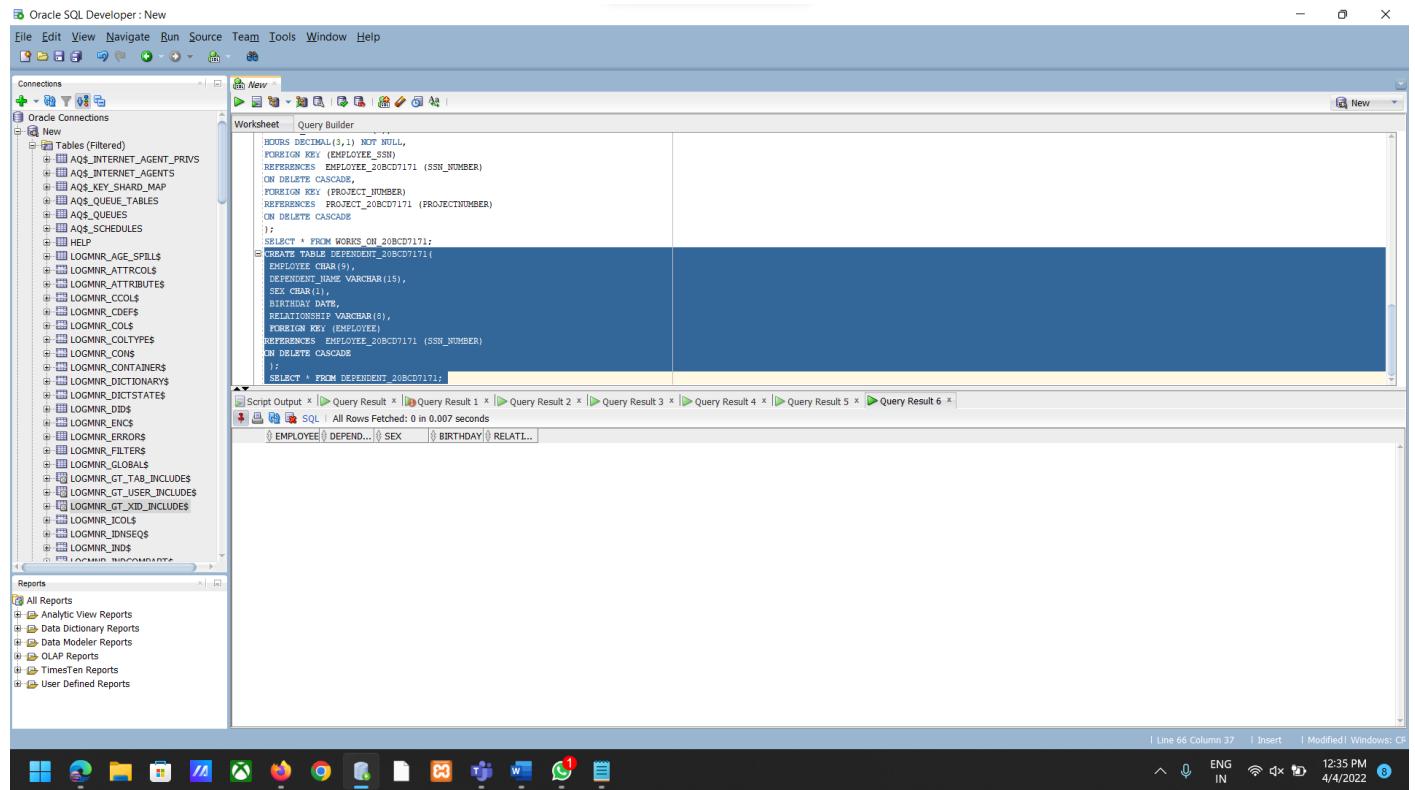
Script Output Query Result 1 Query Result 2 Query Result 3 Query Result 4 Query Result 5

All Rows Fetched: 0 in 0.011 seconds

EMPLOYE...	PROJEC...	HOURS

Reports All Reports Analytic View Reports Data Dictionary Reports Data Modeler Reports OLAP Reports TimesTen Reports User Defined Reports

Line 55 Column 24 Insert Modified Windows CR



Oracle SQL Developer : New

File Edit View Navigate Run Source Team Tools Window Help

Connections

New

Worksheet Query Builder

```

CREATE TABLE DEPARTMENT_20BCD7171 (
    DEPARTMENTNAME VARCHAR2(15) NOT NULL,
    DEPTNUMBER NUMBER(5) PRIMARY KEY,
    MANAGERSSN CHAR(9),
    MANAGERSTARTDATE DATE,
    FOREIGN KEY (MANAGERSSN)
        REFERENCES EMPLOYEE_20BCD7171(SSN_NUMBER)
        ON DELETE SET NULL
);
SELECT * FROM DEPARTMENT_20BCD7171;

```

Script Output | Query Result | Query Result 1 | Query Result 2 | Query Result 3

All Rows Fetched: 0 in 0.006 seconds

DEPART... DEPTNU... MANAGE... MANAGE...

Line 25 Column 35 Insert Modified Windows: CS

Oracle SQL Developer : New

File Edit View Navigate Run Source Team Tools Window Help

Connections

New

Worksheet Query Builder

```

CREATE TABLE DEPARTMENT_20BCD7171 (
    DEPARTMENTNAME VARCHAR2(15) NOT NULL,
    DEPTNUMBER NUMBER(5) PRIMARY KEY,
    MANAGERSSN CHAR(9),
    MANAGERSTARTDATE DATE,
    FOREIGN KEY (MANAGERSSN)
        REFERENCES EMPLOYEE_20BCD7171(SSN_NUMBER)
        ON DELETE SET NULL
);
SELECT * FROM DEPARTMENT_20BCD7171;

CREATE TABLE PROJECT_20BCD7171(
    PROJECTNAME VARCHAR2(15) NOT NULL,
    PROJECTNUMBER NUMBER(5) PRIMARY KEY,
    DEPARTMENTNUMBER NUMBER(5),
    FOREIGN KEY (DEPARTMENTNUMBER)
        REFERENCES DEPARTMENT_20BCD7171(DEPTNUMBER)
        ON DELETE SET NULL
);
SELECT * FROM PROJECT_20BCD7171;

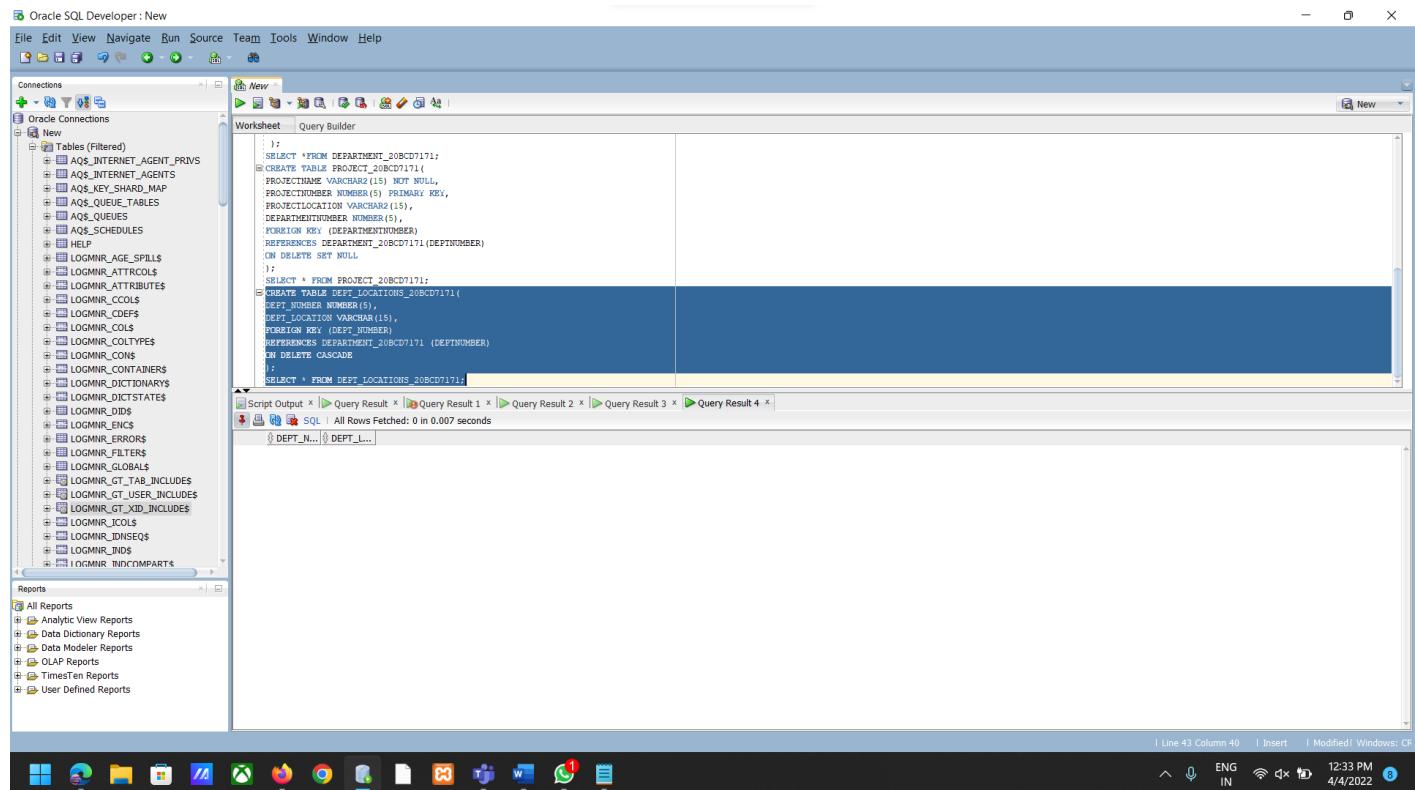
```

Script Output | Query Result | Query Result 1 | Query Result 2 | Query Result 3

All Rows Fetched: 0 in 0.007 seconds

PROJEC... PROJEC... PROJEC... DEPART...

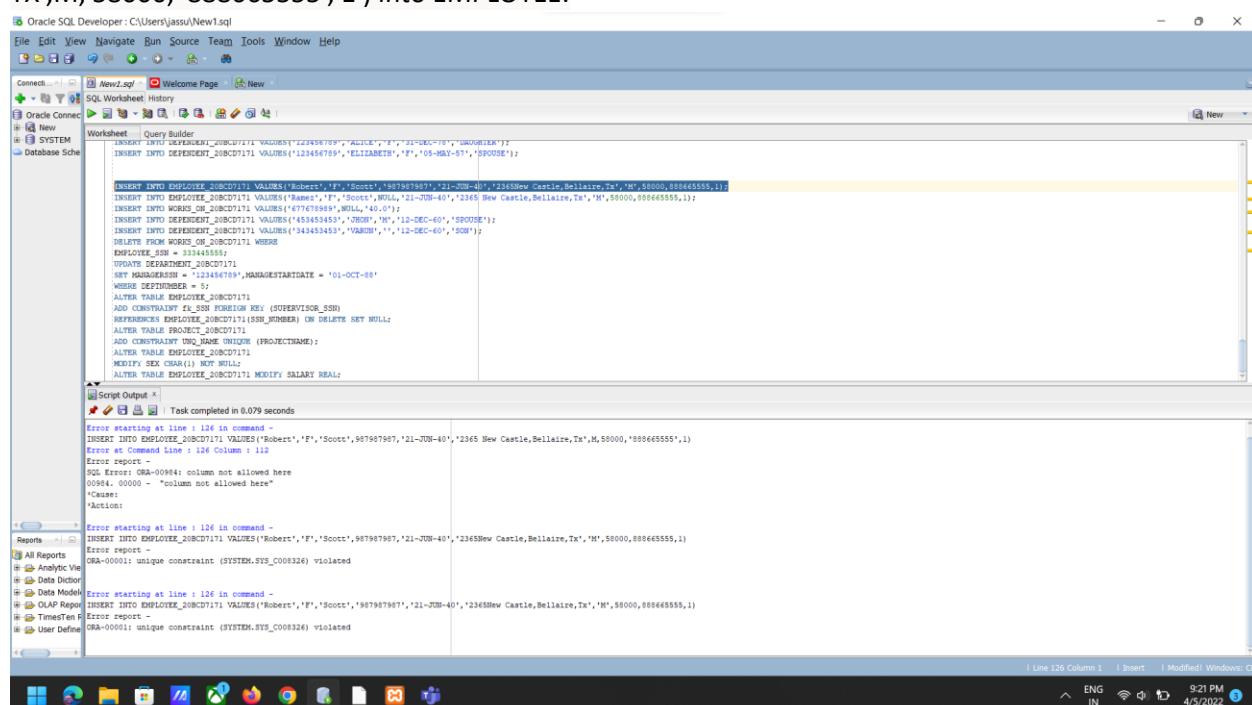
Line 35 Column 33 Insert Modified Windows: CS



#### **QUESTIONS:**

1)

a) Insertion of the tuple('Robert', 'F', 'Scott', '987987987 ', '21-JUN-42', '2365 Newcastle Rd, Bellaire, TX'.M. 58000. '888665555'. 1 ) into EMPLOYEE.



b) Insertion of the tuple('Ramez', 'F', 'Scott', ' ', '21-JUN-42', '2365 Newcastle Rd, Bellaire, TX', M, 58000, '888665555', 1 ) into EMPLOYEE.

The screenshot shows the Oracle SQL Developer interface with a query editor window open. The code entered is:

```

INSERT INTO DEPARTMENT_20BCD711 VALUES('123456789','ADLINE','F','21-JUN-78','IMOSBIEK');
INSERT INTO DEPARTMENT_20BCD711 VALUES('123456789','ELIZABETH','F','05-MAY-57','BROUSE');

INSERT INTO EMPLOYEE_20BCD711 VALUES('Ramez','F','Scott',' ','21-JUN-42','2365New Castle,Bellaire,Tx','M',58000,888665555,1);
INSERT INTO EMPLOYEE_20BCD711 VALUES('Ramez','F','Scott','NULL','21-JUN-40','2365 New Castle,Bellaire,Tx','M',58000,888665555,1);

INSERT INTO WORKS_ON_20BCD711 VALUES('677678989',NULL,'40.0');

INSERT INTO DEPENDENT_20BCD711 VALUES('453453453','OBRIEN','M','12-DEC-60','SPOUSE');
INSERT INTO DEPENDENT_20BCD711 VALUES('343434343','VANISH','M','12-DEC-60','SON');

DELETE FROM WORKS_ON_20BCD711 WHERE
EMPLOYEE_SSN = 333445555;
UPDATE DEPARTMENT_20BCD711
SET MANAGERSSN = '123456789',MANAGESTARTDATE = '01-OCT-88';
ALTER TABLE EMPLOYEE_20BCD711
ADD CONSTRAINT FK_SSN FOREIGN KEY (SUPERVISOR_SSN)
REFERENCES EMPLOYEE_20BCD711(SSN_NUMBER) ON DELETE SET NULL;
ALTER TABLE PROJECT_20BCD711
ADD CONSTRAINT FK_PROJECTNAME FOREIGN KEY (PROJECTNAME);
ALTER TABLE EMPLOYEE_20BCD711
MODIFY SEX CHAR(1) NOT NULL;
ALTER TABLE EMPLOYEE_20BCD711 MODIFY SALARY REAL;

```

The script output shows the command was completed in 0.056 seconds. It lists several errors related to unique constraints (ORA-00001) on columns like SSN and SUPERVISOR\_SSN. The errors are:

- ORA-00001: unique constraint (SYSTEM.SYS\_C00832) violated
- ORA-01400: cannot insert NULL into ("SYSTEM"."EMPLOYEE\_20BCD711"."SSN\_NUMBER")
- ORA-01400: cannot insert NULL into ("SYSTEM"."EMPLOYEE\_20BCD711"."SSN\_NUMBER")
- ORA-01400: cannot insert NULL into ("SYSTEM"."EMPLOYEE\_20BCD711"."SSN\_NUMBER")

c) Insertion of the tuple( '677678989', null, '40.0' ) into WORKS\_ON.

The screenshot shows the Oracle SQL Developer interface with a query editor window open. The code entered is:

```

INSERT INTO DEPARTMENT_20BCD711 VALUES('123456789','ADLINE','F','21-JUN-78','IMOSBIEK');
INSERT INTO DEPARTMENT_20BCD711 VALUES('123456789','ELIZABETH','F','05-MAY-57','BROUSE');

INSERT INTO EMPLOYEE_20BCD711 VALUES('Ramez','F','Scott',' ','21-JUN-42','2365New Castle,Bellaire,Tx','M',58000,888665555,1);
INSERT INTO EMPLOYEE_20BCD711 VALUES('Ramez','F','Scott','NULL','21-JUN-40','2365 New Castle,Bellaire,Tx','M',58000,888665555,1);

INSERT INTO WORKS_ON_20BCD711 VALUES('677678989',NULL,'40.0');

INSERT INTO DEPENDENT_20BCD711 VALUES('453453453','OBRIEN','M','12-DEC-60','SPOUSE');
INSERT INTO DEPENDENT_20BCD711 VALUES('343434343','VANISH','M','12-DEC-60','SON');

DELETE FROM WORKS_ON_20BCD711 WHERE
EMPLOYEE_SSN = 333445555;
UPDATE DEPARTMENT_20BCD711
SET MANAGERSSN = '123456789',MANAGESTARTDATE = '01-OCT-88';
ALTER TABLE EMPLOYEE_20BCD711
ADD CONSTRAINT FK_SSN FOREIGN KEY (SUPERVISOR_SSN)
REFERENCES EMPLOYEE_20BCD711(SSN_NUMBER) ON DELETE SET NULL;
ALTER TABLE PROJECT_20BCD711
ADD CONSTRAINT FK_PROJECTNAME FOREIGN KEY (PROJECTNAME);
ALTER TABLE EMPLOYEE_20BCD711
MODIFY SEX CHAR(1) NOT NULL;
ALTER TABLE EMPLOYEE_20BCD711 MODIFY SALARY REAL;

```

The script output shows the command was completed in 0.056 seconds. It lists several errors related to unique constraints (ORA-00001) on columns like SSN and SUPERVISOR\_SSN. The errors are:

- ORA-00001: unique constraint (SYSTEM.SYS\_C00832) violated
- ORA-01400: cannot insert NULL into ("SYSTEM"."EMPLOYEE\_20BCD711"."SSN\_NUMBER")
- ORA-01400: cannot insert NULL into ("SYSTEM"."EMPLOYEE\_20BCD711"."SSN\_NUMBER")
- ORA-01400: cannot insert NULL into ("SYSTEM"."EMPLOYEE\_20BCD711"."SSN\_NUMBER")

d) Insertion of the tuple( '453453453', 'John', M, '12-DEC-60', 'SPOUSE' ) into DEPENDENT.

```

File Edit View Navigator Run Source Team Tools Window Help
New1.sql Welcome Page New
Oracle Connect
New System Database Schema
Worksheet Query Builder
INSERT INTO DEPENDENT_20BCD711 VALUES('123456789','ALICE','F','21-DEC-78','IMOGNIK');
INSERT INTO DEPENDENT_20BCD711 VALUES('123456789','ELIZABETH','F','05-MAY-57','BROUSE');

INSERT INTO EMPLOYEE_20BCD711 VALUES('Robert','F','Scott','987987987','21-JUN-40','2365 New Castle,Bellaire,Tx','M',50000,888665555,1);
INSERT INTO EMPLOYEE_20BCD711 VALUES('James','F','Scott',NULL,'21-JUN-40','2365 New Castle,Bellaire,Tx','M',50000,888665555,1);
INSERT INTO WORKS_ON_20BCD711 VALUES('434453453','MILL',40,0.1);

INSERT INTO DEPENDENT_20BCD711 VALUES('343453453','VARUN','M','12-DEC-60','SON');

DELETE FROM WORKS_ON_20BCD711 WHERE
EMPLOYEE_SSN = 333445555;
UPDATE DEPARTMENT_20BCD711
SET MANAGER_SSN = 333445555,MANAGERSTARTDATE = '01-OCT-88'
WHERE DEPTNUMBER = 5;
ALTER TABLE EMPLOYEE_20BCD711
ADD CONSTRAINT FK_SSN FOREIGN KEY (SUPERVISOR_SSN)
REFERENCES PROJECT_20BCD711(SSN_NUMBER) ON DELETE SET NULL;
ALTER TABLE PROJECT_20BCD711
ADD CONSTRAINT C92_NAME UNIQUE (PROJECTNAME);
ALTER TABLE EMPLOYEE_20BCD711
MODIFY SEX CHAR(1) NOT NULL;
ALTER TABLE EMPLOYEE_20BCD711 MODIFY SALARY REAL;

```

Script Output:

```

Task completed in 0.025 seconds
Error starting at line : 124 in command -
INSERT INTO EMPLOYEE_20BCD711 VALUES('Robert','F','Scott','987987987','21-JUN-40','2365 New Castle,Bellaire,Tx','M',50000,888665555,1)
Error report -
ORA-00001: unique constraint (SYSTEM.SYS_C00832) violated

Error starting at line : 127 in command -
INSERT INTO EMPLOYEE_20BCD711 VALUES('James','F','Scott',NULL,'21-JUN-40','2365 New Castle,Bellaire,Tx','M',50000,888665555,1)
Error report -
ORA-01400: cannot insert NULL into ("SYSTEM"."EMPLOYEE_20BCD711"."SSN_NUMBER")

Error starting at line : 127 in command -
INSERT INTO EMPLOYEE_20BCD711 VALUES('James','F','Scott',NULL,'21-JUN-40','2365 New Castle,Bellaire,Tx','M',50000,888665555,1)
Error report -
ORA-01400: cannot insert NULL into ("SYSTEM"."EMPLOYEE_20BCD711"."SSN_NUMBER")
1 row inserted.

```

Saved: C:\Users\jassu\New1.sql

e) Insertion of the tuple( '343453453', 'Varun', '', '12-DEC-60', 'SON' ) into DEPENDENT.

```

File Edit View Navigator Run Source Team Tools Window Help
New1.sql Welcome Page New
Oracle Connect
New System Database Schema
Worksheet Query Builder
INSERT INTO DEPENDENT_20BCD711 VALUES('123456789','ALICE','F','21-DEC-78','IMOGNIK');
INSERT INTO DEPENDENT_20BCD711 VALUES('123456789','ELIZABETH','F','05-MAY-57','BROUSE');

INSERT INTO EMPLOYEE_20BCD711 VALUES('Robert','F','Scott','987987987','21-JUN-40','2365 New Castle,Bellaire,Tx','M',50000,888665555,1);
INSERT INTO EMPLOYEE_20BCD711 VALUES('James','F','Scott',NULL,'21-JUN-40','2365 New Castle,Bellaire,Tx','M',50000,888665555,1);
INSERT INTO WORKS_ON_20BCD711 VALUES('434453453','MILL',40,0.1);

INSERT INTO DEPENDENT_20BCD711 VALUES('343453453','VARUN','M','12-DEC-60','SON');

DELETE FROM WORKS_ON_20BCD711 WHERE
EMPLOYEE_SSN = 333445555;
UPDATE DEPARTMENT_20BCD711
SET MANAGER_SSN = 333445555,MANAGERSTARTDATE = '01-OCT-88'
WHERE DEPTNUMBER = 5;
ALTER TABLE EMPLOYEE_20BCD711
ADD CONSTRAINT FK_SSN FOREIGN KEY (SUPERVISOR_SSN)
REFERENCES PROJECT_20BCD711(SSN_NUMBER) ON DELETE SET NULL;
ALTER TABLE PROJECT_20BCD711
ADD CONSTRAINT C92_NAME UNIQUE (PROJECTNAME);
ALTER TABLE EMPLOYEE_20BCD711
MODIFY SEX CHAR(1) NOT NULL;
ALTER TABLE EMPLOYEE_20BCD711 MODIFY SALARY REAL;

```

Script Output:

```

Task completed in 0.025 seconds
Error starting at line : 127 in command -
INSERT INTO EMPLOYEE_20BCD711 VALUES('James','F','Scott',NULL,'21-JUN-40','2365 New Castle,Bellaire,Tx','M',50000,888665555,1)
Error report -
ORA-01400: cannot insert NULL into ("SYSTEM"."EMPLOYEE_20BCD711"."SSN_NUMBER")

Error starting at line : 127 in command -
INSERT INTO EMPLOYEE_20BCD711 VALUES('James','F','Scott',NULL,'21-JUN-40','2365 New Castle,Bellaire,Tx','M',50000,888665555,1)
Error report -
ORA-01400: cannot insert NULL into ("SYSTEM"."EMPLOYEE_20BCD711"."SSN_NUMBER")
1 row inserted.

Error starting at line : 130 in command -
INSERT INTO DEPENDENT_20BCD711 VALUES('343453453','VARUN','','12-DEC-60','SON')
Error report -
ORA-02391: integrity constraint (SYSTEM.SYS_C00839) violated - parent key not found

```

Saved: C:\Users\jassu\New1.sql

f) Deletion of tuples from WORKS\_ON with ESSN= '333445555'.

```

DELETE FROM WORKS_ON WHERE ESSN = '333445555';

```

Script Output:

```

ORA-01400: cannot insert NULL into ("SYSTEM"."EMPLOYEE_20BCD171"."SSN_NUMBER")

```

g) Modify MGRSSN and MGRSTARTDATE of the DEPARTMENT tuple with DNUMBER=5 to '123456789' and '01-OCT-88', respectively.

```

UPDATE DEPARTMENT_20BCD171 SET MGRSSN = '123456789', MGRSTARTDATE = '01-OCT-88' WHERE DNUMBER = 5;

```

Script Output:

```

ORA-02291: integrity constraint (SYSTEM.SYS_C008338) violated - parent key not found

```

2. Alter the tables to

a) Enforce Foreign Keys using Alter command [if not done earlier].

Ans) This was done

b) Remove foreign key defined on SuperSSN and enforce it again using Alter table command.

The screenshot shows the Oracle SQL Developer interface with a query editor window open. The code in the editor is as follows:

```
INSERT INTO DEPENDENT_20BCD711(EMPLOYEE_ID, DEPENDENT_NAME, SEX, BIRTHDAY, RELATIONSHIP) VALUES ('333445555','ALICE','F','05-AUG-76','DAUGHTER');
INSERT INTO DEPENDENT_20BCD711 VALUES('333445555','ROB','M','25-OCT-73','SOM');
INSERT INTO DEPENDENT_20BCD711 VALUES('333445555','JOY','F','03-MAY-48','SPOUSE');
INSERT INTO DEPENDENT_20BCD711 VALUES('987654321','ANNIE','M','29-FEB-32','SPOUSE');
INSERT INTO DEPENDENT_20BCD711 VALUES('123456789','ALICE','F','31-DEC-78','DAUGHTER');
INSERT INTO DEPENDENT_20BCD711 VALUES('123456789','ELIZABETH','F','05-MAY-87','SPOUSE');

INSERT INTO EMPLOYEE_20BCD711 VALUES('Robert','F','Scott','987657897','21-JUN-40','23455New Castle,Bellalite,Tx','M',58000,888665555,1);
INSERT INTO EMPLOYEE_20BCD711 VALUES('Robert','M','Scott','NULL','21-JUN-40','23455 New Castle,Bellalite,Tx','M',58000,888665555,1);
INSERT INTO WORKS_ON_20BCD711 VALUES('453454545','ORCH','M','12-DEC-60','SPOUSE');
INSERT INTO DEPENDENT_20BCD711 VALUES('343454545','VARON','M','12-DEC-60','SPOUSE');
DELETE FROM WORKS_ON_20BCD711 WHERE EMPLOYEE_SSN = 333445555;
UPDATE DEPENDENT_20BCD711 SET MANAGERID = 123456789 WHERE DEPENDENT_DATE = '01-OCT-88' WHERE DEPNUMBER = 5;
ALTER TABLE EMPLOYEE_20BCD711 ADD CONSTRAINT FK_SSNSUPERVISOR FOREIGN KEY (SUPERVISOR_SSN) REFERENCES EMPLOYEE_20BCD711(SSN_NUMBER) ON DELETE SET NULL;
ALTER TABLE PROJECT_20BCD711 ADD CONSTRAINT FK_SSNSUPERVISOR FOREIGN KEY (SUPERVISOR_SSN) REFERENCES EMPLOYEE_20BCD711(SSN_NUMBER) ON DELETE SET NULL;
ADD CONSTRAINT CNO_NAME UNIQUE (PROJECTNAME);
ALTER TABLE EMPLOYEE_20BCD711 MODIFY DEPNUMBER NOT NULL;
ALTER TABLE EMPLOYEE_20BCD711 MODIFY(SALARY REAL);

Script Output [ ] Task completed in 0.133 seconds

Error starting at line 130 in command -
INSERT INTO DEPENDENT_20BCD711 VALUES('343453443','VARON','M','12-DEC-60','SPOUSE')
Error report -
ORA-02391: integrity constraint (SYSTEM.SYS_C008338) violated - parent key not found

0 rows deleted.

1 row updated.

Error starting at line 133 in command -
ALTER TABLE EMPLOYEE_20BCD711 ADD CONSTRAINT FK_SSNSUPERVISOR FOREIGN KEY (SUPERVISOR_SSN) REFERENCES EMPLOYEE_20BCD711(SSN_NUMBER) ON DELETE SET NULL
Error report -
ORA-02375: such a referential constraint already exists in the table
00000 - "such a referential constraint already exists in the table"
*Cause:  Self-evident
*Action: Remove the extra constraint.

Saved: C:\Users\jassu\New1.sql
```

The status bar at the bottom right indicates: Line 133 Column 444 | Insert | Modified | Windows | ENG IN 9:31 PM 4/5/2022

c) Make name of Project as Unique and sex of employee as not null

The screenshot shows the Oracle SQL Developer interface with a query editor window open. The code in the editor is as follows:

```
INSERT INTO WORKS_ON_20BCD711(EMPLOYEE_SSN, PROJECT_NUMBER, HOURS) VALUES('554433221','1945','31.5');
INSERT INTO DEPENDENT_20BCD711(EMPLOYEE_ID, DEPENDENT_NAME, SEX, BIRTHDAY, RELATIONSHIP) VALUES ('333445555','ALICE','F','05-AUG-76','DAUGHTER');
INSERT INTO DEPENDENT_20BCD711 VALUES('333445555','ROB','M','25-OCT-73','SOM');
INSERT INTO DEPENDENT_20BCD711 VALUES('333445555','JOY','F','03-MAY-48','SPOUSE');
INSERT INTO DEPENDENT_20BCD711 VALUES('987654321','ANNIE','M','29-FEB-32','SPOUSE');
INSERT INTO DEPENDENT_20BCD711 VALUES('123456789','ALICE','F','31-DEC-78','DAUGHTER');
INSERT INTO DEPENDENT_20BCD711 VALUES('123456789','ELIZABETH','F','05-MAY-87','SPOUSE');

INSERT INTO EMPLOYEE_20BCD711 VALUES('Robert','F','Scott','987657897','21-JUN-40','23455New Castle,Bellalite,Tx','M',58000,888665555,1);
INSERT INTO EMPLOYEE_20BCD711 VALUES('Robert','M','Scott','NULL','21-JUN-40','23455 New Castle,Bellalite,Tx','M',58000,888665555,1);
INSERT INTO WORKS_ON_20BCD711 VALUES('453454545','ORCH','M','12-DEC-60','SPOUSE');
INSERT INTO DEPENDENT_20BCD711 VALUES('343454545','VARON','M','12-DEC-60','SPOUSE');
DELETE FROM WORKS_ON_20BCD711 WHERE EMPLOYEE_SSN = 333445555;
UPDATE DEPENDENT_20BCD711 SET MANAGERID = 123456789 WHERE DEPENDENT_DATE = '01-OCT-88' WHERE DEPNUMBER = 5;
ALTER TABLE EMPLOYEE_20BCD711 ADD CONSTRAINT FK_SSNSUPERVISOR FOREIGN KEY (SUPERVISOR_SSN) REFERENCES EMPLOYEE_20BCD711(SSN_NUMBER) ON DELETE SET NULL;
ALTER TABLE PROJECT_20BCD711 ADD CONSTRAINT FK_SSNSUPERVISOR FOREIGN KEY (SUPERVISOR_SSN) REFERENCES EMPLOYEE_20BCD711(SSN_NUMBER) ON DELETE SET NULL;
ALTER TABLE EMPLOYEE_20BCD711 MODIFY(SEC CHAR(1) NOT NULL);
ALTER TABLE EMPLOYEE_20BCD711 MODIFY(SALARY REAL);

Script Output [ ] Task completed in 0.078 seconds

Error report -
ORA-02391: integrity constraint (SYSTEM.SYS_C008338) violated - parent key not found

0 rows deleted.

1 row updated.

Error starting at line 133 in command -
ALTER TABLE EMPLOYEE_20BCD711 ADD CONSTRAINT FK_SSNSUPERVISOR FOREIGN KEY (SUPERVISOR_SSN) REFERENCES EMPLOYEE_20BCD711(SSN_NUMBER) ON DELETE SET NULL
Error report -
ORA-02375: such a referential constraint already exists in the table
00000 - "such a referential constraint already exists in the table"
*Cause:  Self-evident
*Action: Remove the extra constraint.

Table PROJECT_20BCD711 altered.

Saved: C:\Users\jassu\New1.sql
```

The status bar at the bottom right indicates: Line 134 Column 76 | Insert | Modified | Windows | ENG IN 9:32 PM 4/5/2022

Oracle SQL Developer : C:\Users\jassu\New1.sql

```

File Edit View Navigate Run Source Team Tools Window Help
New SQL Worksheet History New
Oracle Connect New Database Schema
Worksheet Query Builder
INSERT INTO WORKS_ON_20BCD7171 (EMPLOYEE_SSN, PROJECT_NUMBER, HOURS) VALUES('543216789','2212','117.0');
INSERT INTO WORKS_ON_20BCD7171 (EMPLOYEE_SSN, PROJECT_NUMBER, HOURS) VALUES('554433221','1945','21.5');
INSERT INTO DEPENDENT_20BCD7171 (EMPLOYEE, DEPENDENT_NAME, SEX, BIRTHDAY, RELATIONSHIP) VALUES ('333445555','ALICE','F','05-APR-76','DAUGHTER');
INSERT INTO DEPENDENT_20BCD7171 VALUES('333445555','ALICE','F','05-APR-76','DAUGHTER');

INSERT INTO EMPLOYEE_20BCD7171 VALUES('Robert','F','Scott','987987987','21-JUN-40','2365 New Castle,Bellaire,Tx','M',50000,888645555,1);
INSERT INTO EMPLOYEE_20BCD7171 VALUES('Banes','F','Scott',NULL,'21-JUN-40','2365 New Castle,Bellaire,Tx','M',50000,888645555,1);
INSERT INTO WORKS_ON_20BCD7171 VALUES('477678989',NULL,'40.0');
INSERT INTO WORKS_ON_20BCD7171 VALUES('477678989',NULL,'40.0');
INSERT INTO DEPENDENT_20BCD7171 VALUES('333445555','ALICE','F','12-DEC-60','SPOUSE');
INSERT INTO DEPENDENT_20BCD7171 VALUES('333445555','ALICE','F','12-DEC-60','SPOUSE');
DELETE FROM WORKS_ON_20BCD7171 WHERE EMPLOYEE_SSN = 333445555;
UPDATE DEPARTMENT_20BCD7171 SET MANAGERSTARTDATE = '01-OCT-88' WHERE DEPTNUMBER = 5;
ALTER TABLE EMPLOYEE_20BCD7171 ADD CONSTRAINT fk_SSN FOREIGN KEY (SUPERVISOR_SSN) REFERENCES EMPLOYEE_20BCD7171(SSN_NUMBER) ON DELETE SET NULL;
ALTER TABLE EMPLOYEE_20BCD7171 ADD CONSTRAINT fk_SSN FOREIGN KEY (SUPERVISOR_SSN) REFERENCES EMPLOYEE_20BCD7171(SSN_NUMBER) ON DELETE SET NULL;
ALTER TABLE EMPLOYEE_20BCD7171 MODIFY SEC CHAR(1) NOT NULL;
ALTER TABLE EMPLOYEE_20BCD7171 MODIFY SALARY REAL;

Script Output
Task completed in 0.088 seconds

0 rows deleted.

1 row updated.

Reports
All Reports
Analytic View
Data Dictionary
Data Model
OLAP Report
TimesTen
User Define
Table PROJECT_20BCD7171 altered.

Table EMPLOYEE_20BCD7171 altered.

Saved: C:\Users\jassu\New1.sql
Line 125 Column 21 | Insert | Modified: Windows: CH
ENG IN 9:33 PM 4/5/2022

```

#### d) Make salary of employee to accept real values.

Oracle SQL Developer : C:\Users\jassu\New1.sql

```

File Edit View Navigate Run Source Team Tools Window Help
New SQL Worksheet History New
Oracle Connect New Database Schema
Worksheet Query Builder
INSERT INTO WORKS_ON_20BCD7171 (EMPLOYEE_SSN, PROJECT_NUMBER, HOURS) VALUES('543216789','2212','117.0');
INSERT INTO WORKS_ON_20BCD7171 (EMPLOYEE_SSN, PROJECT_NUMBER, HOURS) VALUES('554433221','1945','21.5');
INSERT INTO DEPENDENT_20BCD7171 (EMPLOYEE, DEPENDENT_NAME, SEX, BIRTHDAY, RELATIONSHIP) VALUES ('333445555','ALICE','F','05-APR-76','DAUGHTER');
INSERT INTO DEPENDENT_20BCD7171 VALUES('333445555','ALICE','F','05-APR-76','DAUGHTER');

INSERT INTO EMPLOYEE_20BCD7171 VALUES('Robert','F','Scott','987987987','21-JUN-40','2365 New Castle,Bellaire,Tx','M',50000,888645555,1);
INSERT INTO EMPLOYEE_20BCD7171 VALUES('Banes','F','Scott',NULL,'21-JUN-40','2365 New Castle,Bellaire,Tx','M',50000,888645555,1);
INSERT INTO WORKS_ON_20BCD7171 VALUES('477678989',NULL,'40.0');
INSERT INTO WORKS_ON_20BCD7171 VALUES('477678989',NULL,'40.0');
INSERT INTO DEPENDENT_20BCD7171 VALUES('333445555','ALICE','F','12-DEC-60','SPOUSE');
INSERT INTO DEPENDENT_20BCD7171 VALUES('333445555','ALICE','F','12-DEC-60','SPOUSE');
DELETE FROM WORKS_ON_20BCD7171 WHERE EMPLOYEE_SSN = 333445555;
UPDATE DEPARTMENT_20BCD7171 SET MANAGERSTARTDATE = '01-OCT-88' WHERE DEPTNUMBER = 5;
ALTER TABLE EMPLOYEE_20BCD7171 ADD CONSTRAINT fk_SSN FOREIGN KEY (SUPERVISOR_SSN) REFERENCES EMPLOYEE_20BCD7171(SSN_NUMBER) ON DELETE SET NULL;
ALTER TABLE EMPLOYEE_20BCD7171 ADD CONSTRAINT fk_SSN FOREIGN KEY (SUPERVISOR_SSN) REFERENCES EMPLOYEE_20BCD7171(SSN_NUMBER) ON DELETE SET NULL;
ALTER TABLE EMPLOYEE_20BCD7171 MODIFY SEC CHAR(1) NOT NULL;
ALTER TABLE EMPLOYEE_20BCD7171 MODIFY SALARY REAL;

Script Output
Task completed in 0.051 seconds

1 row updated.

Error starting at line 133 in command -
ALTER TABLE EMPLOYEE_20BCD7171 ADD CONSTRAINT fk_SSN FOREIGN KEY (SUPERVISOR_SSN) REFERENCES EMPLOYEE_20BCD7171(SSN_NUMBER) ON DELETE SET NULL
Error report -
ORA-02715: such a referential constraint already exists in the table
00275. 00000 - "such a referential constraint already exists in the table"
*Cause:  Self-evident.
*Action: Remove the extra constraint.
Table PROJECT_20BCD7171 altered.

Table EMPLOYEE_20BCD7171 altered.

Saved: C:\Users\jassu\New1.sql
Line 126 Column 21 | Insert | Modified: Windows: CH
ENG IN 9:33 PM 4/5/2022

```