



**ASSIGNMENT 1**  
**(Winter Sem 2021-2022)**

**Course Code:** CSE2007

**Course Title:** Database Management Systems

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**Date of submission:** 4/1/2022

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**Reg No:** 20BCD7171

**Aim:** To study Data Definition and Data Manipulation commands.

**Consider the following schema:**

**Table Name: Employee**

Attribute	Data Type
First Name	VARCHAR2(15)
Mid Name	CHAR(2)
Last Name	VARCHAR2(15)
SSN Number	CHAR(9)
Birthday	DATE
Address	VARCHAR2(50)
Sex	CHAR(1)
Salary	NUMBER (7)
Supervisor SSN	CHAR(9)
Department Number	NUMBER (5)

**Table Name: Department**

Attribute	Data Type
Department Name	Varchar2(15)
Department Number	Number(5)
ManagerSSN	CHAR(9)
ManageStartDate	DATE

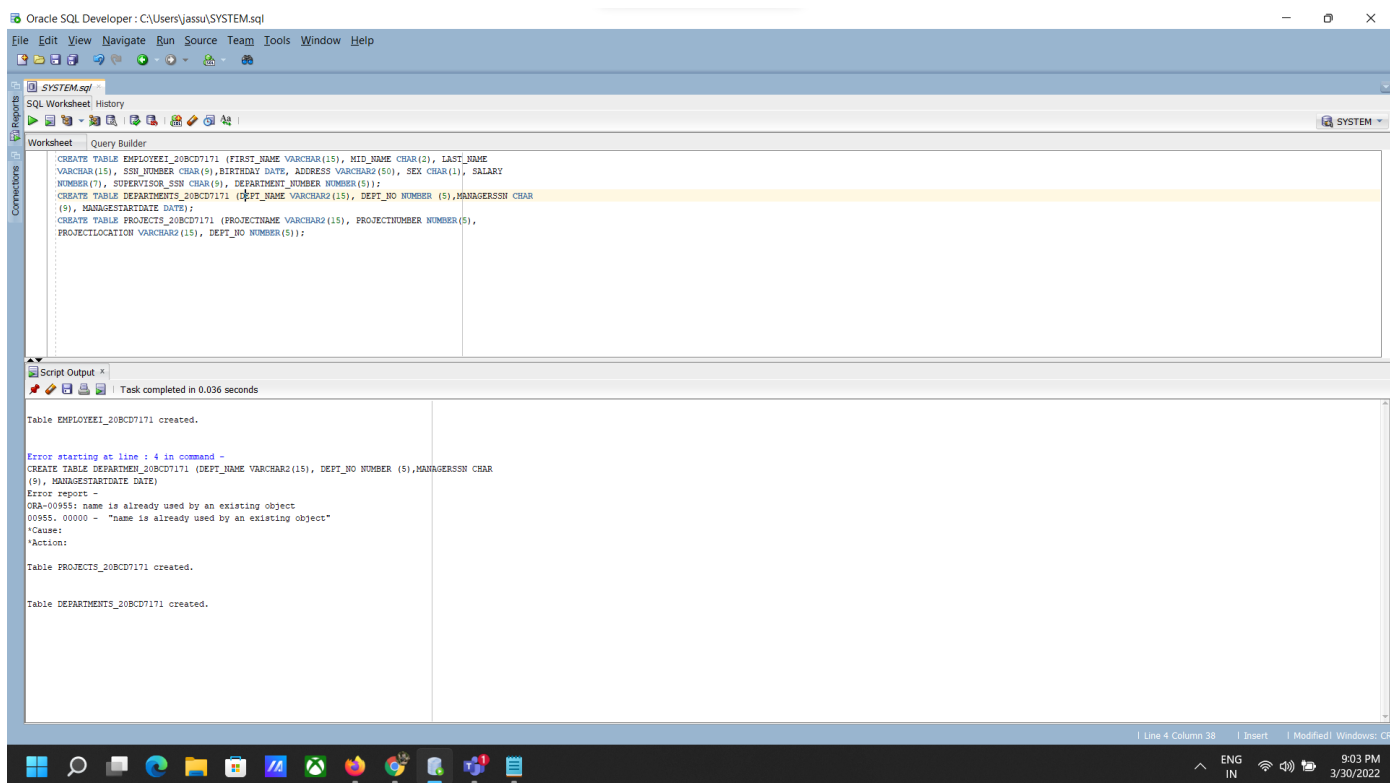
**Table Name: Project**

Attribute	Data Type
Project Name	VARCHAR2(15)
Project Number	NUMBER(5)
Project Location	VARCHAR2(15)
Department Number	NUMBER(5)

# Questions

## 1. Create the tables Employee, department, and Project. Sol)

```
CREATE TABLE EMPLOYEEI_20BCD7171(FIRST_NAME VARCHAR(15),MID_NAME  
CHAR(2),LAST_NAME VARCHAR(15),SSN_NUMBER CHAR(9),BIRTHDAY DATE,ADDRESS  
VARCHAR2(50),SEX CHAR(1),SALARY NUMBER(7),SUPERVISOR_SSN CHAR(9),DEPARTMENT_NUMBER  
NUMBER(5));  
CREATE TABLE DEPARTMENTS_20BCD7171(DEPT_NAME VARCHAR2(15),DEPT_NO NUMBER  
(5),MANAGERSSN CHAR (9),MANAGESTARTDATE DATE);  
CREATE TABLE PROJECTS_20BCD7171(PROJECTNAME VARCHAR2(15),PROJECTNUMBER  
NUMBER(5),PROJECTLOCATION VARCHAR2(15),DEPT_NO NUMBER(5));
```



## 2. Insert the data given in employee, department and project tables as given below:

## 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	80000 (null)		3
Joyce	(null)	PAN	543216789	07-02-78	35 S 18 E, Salt Lake City, UT	F	70000 (null)		2
Frankin	T	Wong	333445555	08-12-45	638 Voss, Houston, TX	M	40000 554433221		5
Jennifer	S	Wallace	987654321	20-06-31	291 Berry, Bellaire, TX	F	43000 554433221		4
Johny	B	Smith	123456789	09-01-55	731 Fondren, Houston, TX	M	30000 333445555		5
Ramesh	K	Narayan	666884444	15-09-52	975 Fire Oak, Humble, TX	M	38000 333445555		5
Joyce	A	English	453453453	31-07-62	5631 Rice, Houston, TX	F	25000 333445555		5
James	E	Borg	888665555	10-11-27	450 Stone, Houston, TX	M	55000 543216789		1
Alicia	J	Zelaya	999887777	19-07-58	3321 Castle, Spring, TX	F	25000 987654321		4
Ahmad	V	Jabbar	987987987	29-03-59	980 Dallas, Houston, TX	M	25000 987654321		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

## //FOR TABLE EMPLOYEE

INSERT INTO EMPLOYEEI\_20BCD7171VALUES('Doug', 'E', 'Gilbert', 554433221, '09-JUN-60', '11 S 59 E, Salt Lake City, UT', 'M', 80000, NULL, 3);

INSERT INTO EMPLOYEEI\_20BCD7171VALUES('Joyce', NULL, 'PAN', 543216789, '07-FEB-78', '35 S 18 E, Salt Lake City, UT', 'F', 70000, NULL, 2);

INSERT INTO EMPLOYEEI\_20BCD7171VALUES('Frankin', 'T', 'Wong', 333445555, '08-DEC-45', '638 Voss, Houston, TX', 'M', 40000, 554433221, 5);

INSERT INTO EMPLOYEEI\_20BCD7171VALUES('Jennifer', 'S', 'Wallace', 987654321, '20-JUN-31', '291 Berry, Bellaire, TX', 'F', 43000, 554433221, 4);

INSERT INTO EMPLOYEEI\_20BCD7171 VALUES('Johny', 'B', 'Smith', 123456789, '09-JAN-55', '731 Fondren, Houston, TX', 'M', 30000, 333445555, 5);

INSERT INTO EMPLOYEEI\_20BCD7171 VALUES('Ramesh', 'K', 'Narayan', 666884444, '15-SEP-52', '975 Fire Oak, Humble, TX', 'M', 38000, 333445555, 5);

INSERT INTO EMPLOYEEI\_20BCD7171VALUES('Joyce', 'A', 'English', 453453453

```

INSERT INTO EMPLOYEEI_20BCD7171VALUES('James', 'E', 'Borg', 888665555, '10-NOV-27', '450
Stone, Houston, TX', 'M', 55000, 543216789, 1);
INSERT INTO EMPLOYEEI_20BCD7171VALUES('Alicia', 'J', 'Zelaya', 999887777, '19-JUL-58', '3321
Castle, Spring, TX', 'F', 25000, 987654321, 4);
INSERT INTO EMPLOYEEI_20BCD7171VALUES('Ahmad', 'V', 'Jabbar', 987987987, '29-MAR59', '980
Dallas, Houston, TX', 'M', 25000, 987654321, 4);

```

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

File Edit View Navigate Run Source Team Tools Window Help

SYSTEM.sql

SQL Worksheet History

Worksheet Query Builder

```

INSERT INTO EMPLOYEEI_20BCD7171 VALUES('Doug', 'E', 'Gilbert', 554433221, '09-JUN-60', '11 S 59 E, Salt Lake City, UT',
'M', 80000, NULL, 3);
INSERT INTO EMPLOYEEI_20BCD7171 VALUES('Joyce', NULL, 'FAM', 543216789, '07-FEB-78', '35 S 18 E, Salt Lake City,
UT', 'F', 70000, NULL, 2);
INSERT INTO EMPLOYEEI_20BCD7171 VALUES('Franklin', 'T', 'Wong', 333445555, '08-DEC-45', '630 Voss, Houston, TX', 'M',
40000, 554433221, 5);
INSERT INTO EMPLOYEEI_20BCD7171 VALUES('Jennifer', 'S', 'Wallace', 987654321, '20-JUN-31', '291 Berry, Bellaire, TX',
'F', 43000, 554433221, 4);
INSERT INTO EMPLOYEEI_20BCD7171 VALUES('Johnny', 'B', 'Smith', 123456789, '09-JAN-55', '731 Fondren, Houston, TX',
'M', 30000, 333445555, 5);
INSERT INTO EMPLOYEEI_20BCD7171 VALUES('Ramesh', 'K', 'Harayan', 666884444, '15-SEP-52', '975 Fire Oak, Humble,
TX', 'M', 38000, 333445555, 5);
INSERT INTO EMPLOYEEI_20BCD7171 VALUES('Joyce', 'A', 'English', 453453453, '31-JUL-62', '5631 Rice, Houston, TX', 'F',
25000, 333445555, 5);
INSERT INTO EMPLOYEEI_20BCD7171 VALUES('James', 'E', 'Borg', 888665555, '10-NOV-27', '450 Stone, Houston, TX', 'M',
55000, 543216789, 1);
INSERT INTO EMPLOYEEI_20BCD7171 VALUES('Alicia', 'J', 'Zelaya', 999887777, '19-JUL-58', '3321 Castle, Spring, TX', 'F',
25000, 987654321, 4);
INSERT INTO EMPLOYEEI_20BCD7171 VALUES('Ahmad', 'V', 'Jabbar', 987987987, '29-MAR-59', '980 Dallas, Houston, TX',
'M', 25000, 987654321, 4);

SELECT * FROM EMPLOYEEI_20BCD7171

```

Script Output Query Result

SQL All Rows Fetched: 10 in 0.01 seconds

	FIRST_NAME	MID_NAME	LAST_NAME	SSN_NUMBER	BIRTHDAY	ADDRESS	SEX	SALARY	SUPERVISOR_SSN	DEPARTMENT_NUMBER
1	Doug	E	Gilbert	554433221	09-JUN-60	11 S 59 E, Salt Lake City, UT	M	80000	(null)	3
2	Joyce		FAM	543216789	07-FEB-78	35 S 18 E, Salt Lake City, UT	F	70000	(null)	2
3	Franklin	T	Wong	333445555	08-DEC-45	630 Voss, Houston, TX	M	40000	554433221	5
4	Jennifer	S	Wallace	987654321	20-JUN-31	291 Berry, Bellaire, TX	F	43000	554433221	4
5	Johnny	B	Smith	123456789	09-JAN-55	731 Fondren, Houston, TX	M	30000	333445555	5
6	Ramesh	K	Harayan	666884444	15-SEP-52	975 Fire Oak, Humble, TX	M	38000	333445555	5
7	Joyce	A	English	453453453	31-JUL-62	5631 Rice, Houston, TX	F	25000	333445555	5
8	James	E	Borg	888665555	10-NOV-27	450 Stone, Houston, TX	M	55000	543216789	1
9	Alicia	J	Zelaya	999887777	19-JUL-58	3321 Castle, Spring, TX	F	25000	987654321	4
10	Ahmad	V	Jabbar	987987987	29-MAR-59	980 Dallas, Houston, TX	M	25000	987654321	4

Line 13 Column 119 | Insert | Modified | Windows: C:\

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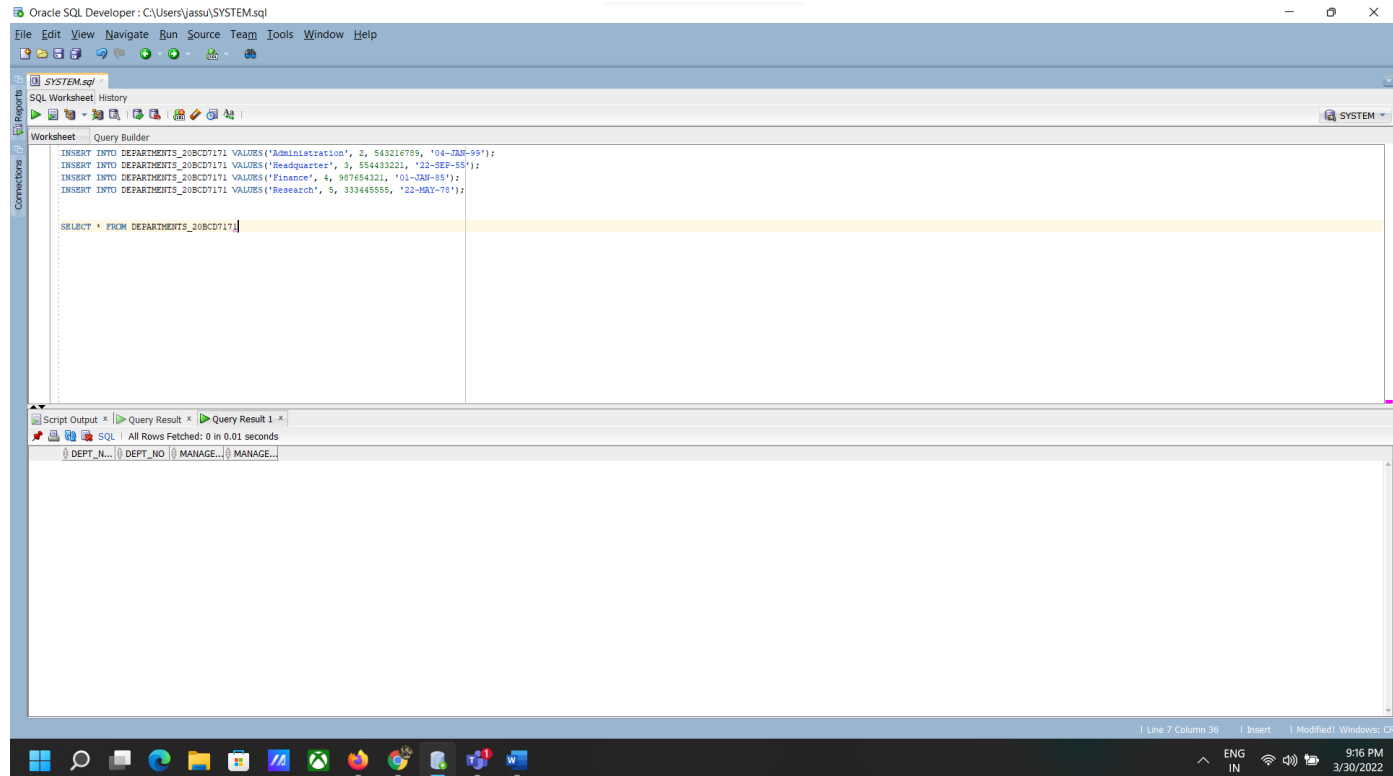
### //FOR TABLE DEPARTMENT

INSERT INTO DEPARTMENTS\_20BCD7171 VALUES('Administration', 2, 543216789, '04-JAN-99');

INSERT INTO DEPARTMENTS\_20BCD7171 VALUES('Headquarter', 3, 554433221, '22-SEP-55');

INSERT INTO DEPARTMENTS\_20BCD7171 VALUES('Finance', 4, 987654321, '01-JAN-85');

INSERT INTO DEPARTMENTS\_20BCD7171 VALUES('Research', 5, 333445555, '22-MAY-78');



### //FOR TABLE PROJECT

INSERT INTO PROJECTS\_20BCD7171 VALUES('ProjectA', 3388, 'Houston', 1 );

INSERT INTO PROJECTS\_20BCD7171 VALUES('ProjectB', 1945, 'Salt Lake City', 3 );

INSERT INTO PROJECTS\_20BCD7171 VALUES('ProjectC', 6688, 'Houston', 5 );

INSERT INTO PROJECTS\_20BCD7171 VALUES('ProjectD', 2423, 'Bellaire', 4 );

INSERT INTO PROJECTS\_20BCD7171 VALUES('ProjectE', 7745, 'Sugarland', 5 );

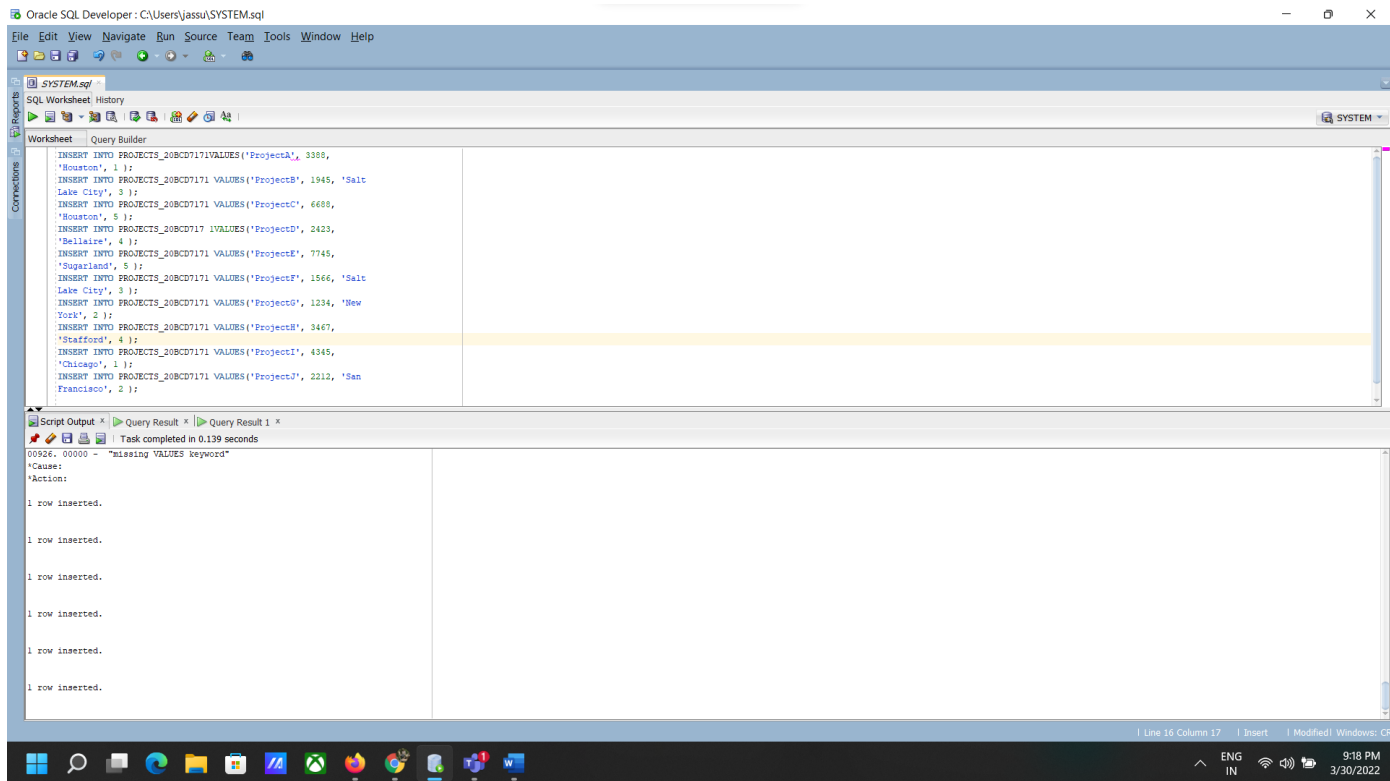
INSERT INTO PROJECTS\_20BCD7171 VALUES('ProjectF', 1566, 'Salt Lake City', 3 );

INSERT INTO PROJECTS\_20BCD7171 VALUES('ProjectG', 1234, 'New York', 2 );

INSERT INTO PROJECTS\_20BCD7171 VALUES('ProjectH', 3467, 'Stafford', 4 );

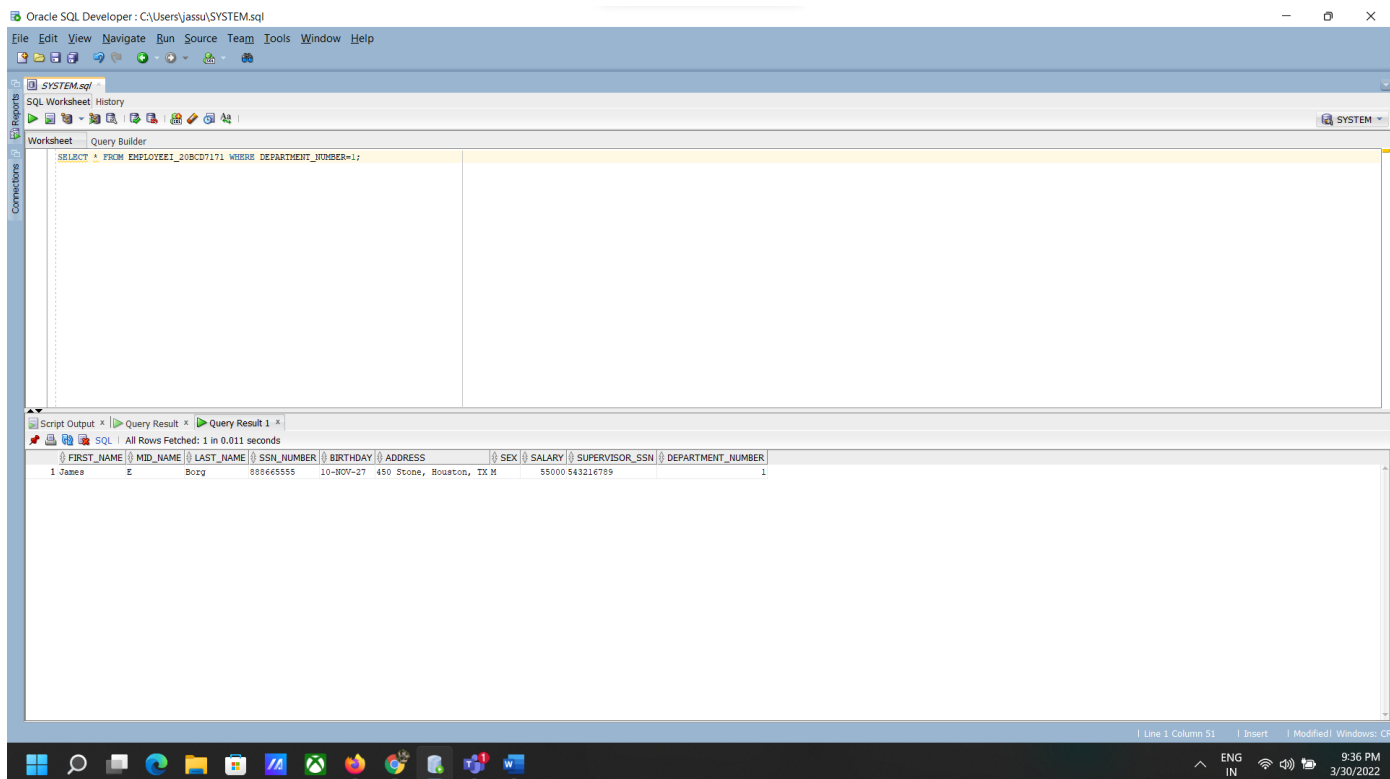
INSERT INTO PROJECTS\_20BCD7171 VALUES('ProjectI', 4345, 'Chicago', 1 );

INSERT INTO PROJECTS\_20BCD7171 VALUES('ProjectJ', 2212, 'San Francisco', 2 );



**3. Retrieve all the employees' information who are working in department number 1.**

**SELECT \* FROM EMPLOYEEI\_20BCD7171 WHERE DEPARTMENT\_NUMBER=1;**



#### 4. Get Employee name along with his SSN and Supervisor SSN

```
SELECT FIRST_NAME, MID_NAME, LAST_NAME, SSN_NUMBER, SUPERVISOR_SSN FROM  
EMPLOYEEI_20BCD7171;
```

The screenshot shows the Oracle SQL Developer interface. The query window contains the following SQL statement:

```
SELECT FIRST_NAME, MID_NAME, LAST_NAME, SSN_NUMBER, SUPERVISOR_SSN FROM EMPLOYEEI_20BCD7171;
```

The query has been executed, and the results are displayed in the Query Result window. The results show 10 rows of employee data:

	FIRST_NAME	MID_NAME	LAST_NAME	SSN_NUMBER	SUPERVISOR_SSN
1	Doug	E	Gilbert	554433221	(null)
2	Joyce	(null)	PMH	543216759	(null)
3	Franklin	T	Wong	333445555	554433221
4	Jennifer	S	Wallace	987654321	554433221
5	Johny	B	Smith	123456789	333445555
6	Ramesh	K	Harayan	666894444	333445555
7	Joyce	A	English	453453453	333445555
8	James	E	Borg	888665555	543216789
9	Alicia	J	Zelaya	999887777	987654321
10	Ahmad	V	Jabbar	987987987	987654321

#### 5. Retrieve the employee names whose bdate is '29-MAR-1959'.

```
SELECT FIRST_NAME, MID_NAME, LAST_NAME FROM EMPLOYEEI_20BCD7171 WHERE BIRTHDAY='29-MAR-1959';
```

The screenshot shows the Oracle SQL Developer interface. The query window contains the following SQL statement:

```
SELECT FIRST_NAME, MID_NAME, LAST_NAME FROM EMPLOYEEI_20BCD7171 WHERE BIRTHDAY='29-MAR-1959';
```

The query has been executed, and the results are displayed in the Query Result window. The results show 1 row of employee data:

	FIRST_NAME	MID_NAME	LAST_NAME
1	Ahmad	V	Jabbar

## 6. Get salaries of the employees without duplications.

**SELECT DISTINCT SALARY FROM EMPLOYEE1\_20BCD7171;**

The screenshot shows the Oracle SQL Developer interface. The main window displays the query `SELECT DISTINCT SALARY FROM EMPLOYEE1_20BCD7171;` in the SQL Worksheet. Below the worksheet, the 'Query Result' tab is active, showing a table with 8 rows of distinct salary values. The status bar at the bottom indicates 'All Rows Fetched: 8 in 0.005 seconds'.

SALARY
80000
70000
40000
43000
30000
38000
25000
55000

## 7. Retrieve the MgrSSN, MgrStartDate of the manager of 'Research' department

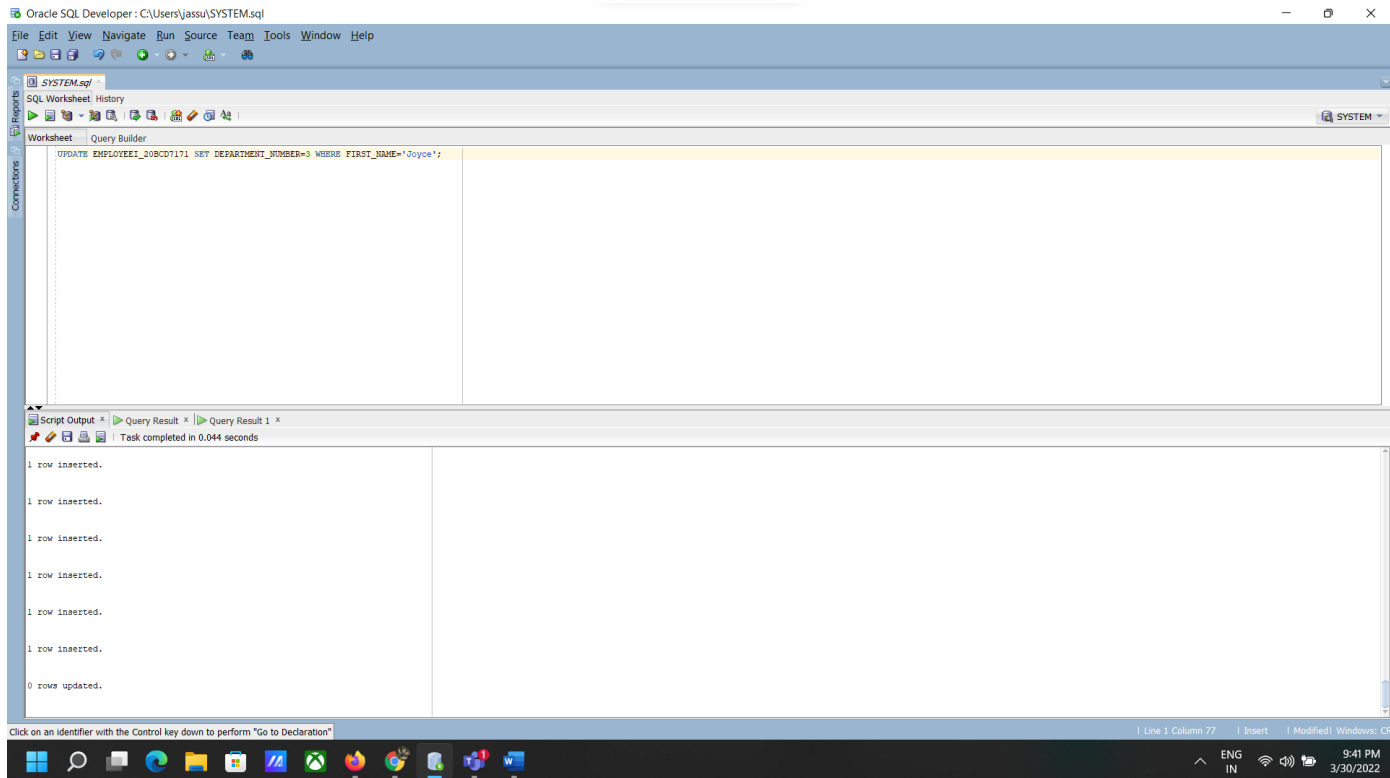
**SELECT MANAGERSSN, MANAGESTARTDATE FROM DEPARTMENTS\_20BCD7171 WHERE DEPT\_NAME='Research';**

The screenshot shows the Oracle SQL Developer interface. The main window displays the query `SELECT MANAGERSSN, MANAGESTARTDATE FROM DEPARTMENTS_20BCD7171 WHERE DEPT_NAME='Research';` in the SQL Worksheet. The 'Query Result' tab is active, but it is currently empty, showing 'All Rows Fetched: 0 in 0.009 seconds'. The status bar at the bottom indicates 'Line 1 Column 90'.



## 8. Change the department number of an employee having fname as 'Joyce' to 3.

**UPDATE EMPLOYEEI\_20BCD7171 SET DEPARTMENT\_NUMBER=3 WHERE FIRST\_NAME='Joyce';**



## 9. Alter Table department add column ContactNo of NUMBER data type and insert values into this column only.

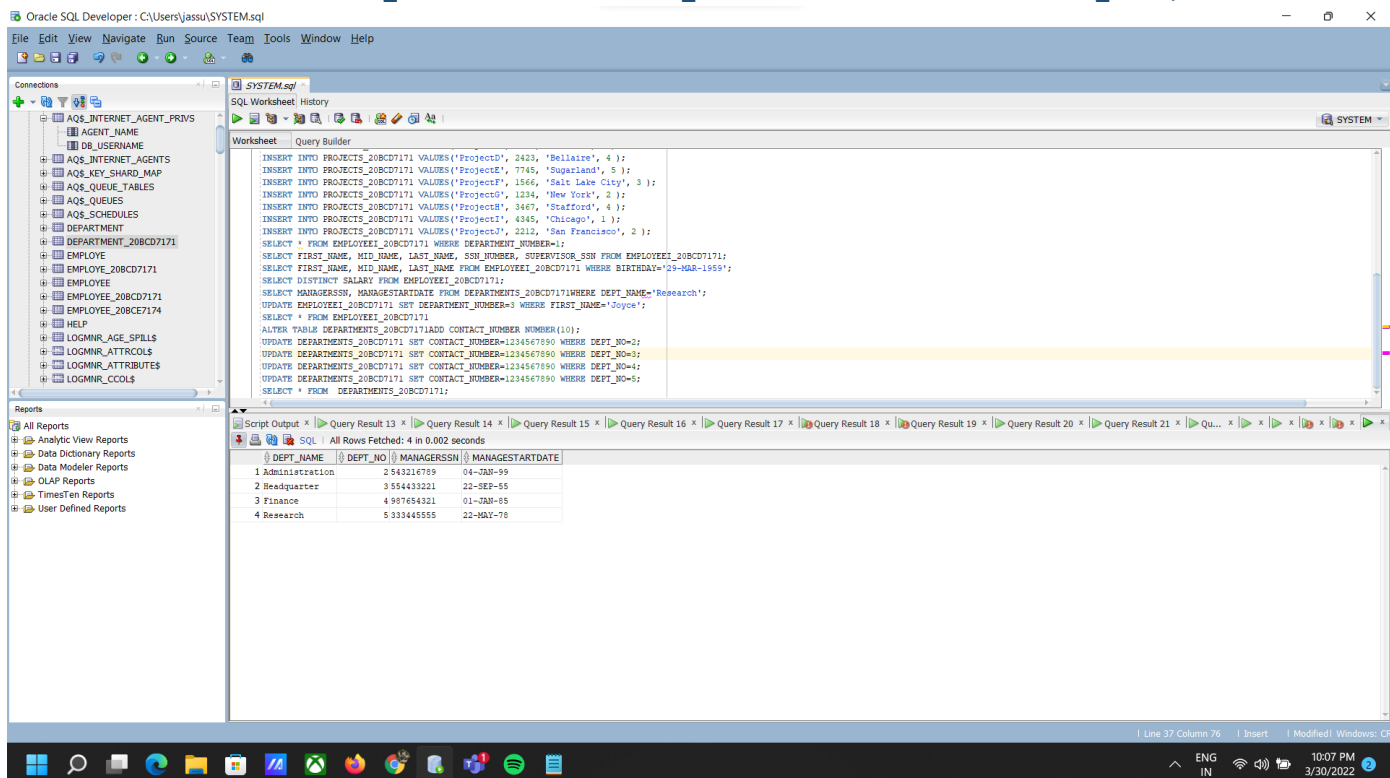
**ALTER TABLE DEPARTMENTS\_20BCD7171 ADD CONTACT\_NUMBER NUMBER(10);**

**UPDATE DEPARTMENTS\_20BCD7171 SET CONTACT\_NUMBER=1234567890 WHERE DEPT\_NO=2;**

**UPDATE DEPARTMENTS\_20BCD7171 SET CONTACT\_NUMBER=1234567890 WHERE DEPT\_NO=3;**

**UPDATE DEPARTMENTS\_20BCD7171 SET CONTACT\_NUMBER=1234567890 WHERE DEPT\_NO=4;**

**UPDATE DEPARTMENTS\_20BCD7171 SET CONTACT\_NUMBER=1234567890 WHERE DEPT\_NO=5;**



## 10. Change table department by modifying the size of field ContactNo.

```
SELECT * FROM DEPARTMENTS_20BCD7171;  
ALTER TABLE DEPARTMENTS_20BCD7171 MODIFY CONTACT_NUMBER NUMBER(11);
```

The screenshot shows the Oracle SQL Developer interface. The left pane displays the database schema, including the DEPARTMENTS\_20BCD7171 table. The main window shows a SQL script with the following commands:

```
INSERT INTO PROJECTS_20BCD7171 VALUES('Project1', 1949, 'Salt Lake City', 3);  
INSERT INTO PROJECTS_20BCD7171 VALUES('Project2', 6688, 'Houston', 5);  
INSERT INTO PROJECTS_20BCD7171 VALUES('Project3', 2423, 'Bellairre', 4);  
INSERT INTO PROJECTS_20BCD7171 VALUES('Project4', 7745, 'Sugarland', 5);  
INSERT INTO PROJECTS_20BCD7171 VALUES('Project5', 1566, 'Salt Lake City', 3);  
INSERT INTO PROJECTS_20BCD7171 VALUES('Project6', 1234, 'New York', 2);  
INSERT INTO PROJECTS_20BCD7171 VALUES('Project7', 3467, 'Stafford', 4);  
INSERT INTO PROJECTS_20BCD7171 VALUES('Project8', 4345, 'Chicago', 1);  
INSERT INTO PROJECTS_20BCD7171 VALUES('Project9', 2212, 'San Francisco', 2);  
SELECT * FROM EMPLOYEE1_20BCD7171 WHERE DEPARTMENT_NUMBER=1;  
SELECT FIRST_NAME, MID_NAME, LAST_NAME, SSN_NUMBER, SUPERVISOR_SSN FROM EMPLOYEE1_20BCD7171;  
SELECT DISTINCT SALARY FROM EMPLOYEE1_20BCD7171;  
SELECT MANAGER_SSN, MANAGER_STARTDATE FROM DEPARTMENTS_20BCD7171 WHERE DEPT_NAME='Research';  
UPDATE EMPLOYEE1_20BCD7171 SET DEPARTMENT_NUMBER=3 WHERE FIRST_NAME='Joyce';  
SELECT * FROM EMPLOYEE1_20BCD7171;  
ALTER TABLE DEPARTMENTS_20BCD7171 ADD CONTACT_NUMBER NUMBER(10);  
UPDATE DEPARTMENTS_20BCD7171 SET CONTACT_NUMBER=1234567890 WHERE DEPT_NO=2;  
UPDATE DEPARTMENTS_20BCD7171 SET CONTACT_NUMBER=1234567890 WHERE DEPT_NO=3;  
UPDATE DEPARTMENTS_20BCD7171 SET CONTACT_NUMBER=1234567890 WHERE DEPT_NO=4;  
UPDATE DEPARTMENTS_20BCD7171 SET CONTACT_NUMBER=1234567890 WHERE DEPT_NO=5;  
SELECT * FROM DEPARTMENTS_20BCD7171;  
ALTER TABLE DEPARTMENTS_20BCD7171 MODIFY CONTACT_NUMBER NUMBER(11);  
SELECT * FROM DEPARTMENTS_20BCD7171;
```

The query result shows the following data:

DEPT_NAME	DEPT_NO	MANAGER_SSN	MANAGER_STARTDATE	CONTACT_NUMBER
Administration	2	543216789	04-JAN-99	1234567890
Headquarter	3	554433221	22-SEP-55	1234567890
Finance	4	907654321	01-JAN-85	1234567890
Research	5	333445555	22-MAY-78	1234567890
Administration	2	543216789	04-JAN-99	1234567890
Headquarter	3	554433221	22-SEP-55	1234567890
Finance	4	907654321	01-JAN-85	1234567890
Research	5	333445555	22-MAY-78	1234567890

## 11. Modify the field name ContactNo of departments table to MobileNo.

```
ALTER TABLE DEPARTMENTS_20BCD7171 RENAME COLUMN CONTACT_NUMBER TO MOBILENO;  
SELECT * FROM DEPARTMENTS_20BCD7171;
```

The screenshot shows the Oracle SQL Developer interface. The left pane displays the database schema, including the DEPARTMENTS\_20BCD7171 table. The main window shows a SQL script with the following commands:

```
INSERT INTO PROJECTS_20BCD7171 VALUES('Project1', 2423, 'Bellairre', 4);  
INSERT INTO PROJECTS_20BCD7171 VALUES('Project2', 7745, 'Sugarland', 5);  
INSERT INTO PROJECTS_20BCD7171 VALUES('Project3', 1566, 'Salt Lake City', 3);  
INSERT INTO PROJECTS_20BCD7171 VALUES('Project4', 1234, 'New York', 2);  
INSERT INTO PROJECTS_20BCD7171 VALUES('Project5', 3467, 'Stafford', 4);  
INSERT INTO PROJECTS_20BCD7171 VALUES('Project6', 4345, 'Chicago', 1);  
INSERT INTO PROJECTS_20BCD7171 VALUES('Project7', 2212, 'San Francisco', 2);  
SELECT * FROM EMPLOYEE1_20BCD7171 WHERE DEPARTMENT_NUMBER=1;  
SELECT FIRST_NAME, MID_NAME, LAST_NAME, SSN_NUMBER, SUPERVISOR_SSN FROM EMPLOYEE1_20BCD7171;  
SELECT FIRST_NAME, MID_NAME, LAST_NAME FROM EMPLOYEE1_20BCD7171 WHERE BIRTHDAY='09-MAR-1959';  
SELECT DISTINCT SALARY FROM EMPLOYEE1_20BCD7171;  
SELECT MANAGER_SSN, MANAGER_STARTDATE FROM DEPARTMENTS_20BCD7171 WHERE DEPT_NAME='Research';  
UPDATE EMPLOYEE1_20BCD7171 SET DEPARTMENT_NUMBER=3 WHERE FIRST_NAME='Joyce';  
SELECT * FROM EMPLOYEE1_20BCD7171;  
ALTER TABLE DEPARTMENTS_20BCD7171 ADD CONTACT_NUMBER NUMBER(10);  
UPDATE DEPARTMENTS_20BCD7171 SET CONTACT_NUMBER=1234567890 WHERE DEPT_NO=2;  
UPDATE DEPARTMENTS_20BCD7171 SET CONTACT_NUMBER=1234567890 WHERE DEPT_NO=3;  
UPDATE DEPARTMENTS_20BCD7171 SET CONTACT_NUMBER=1234567890 WHERE DEPT_NO=4;  
UPDATE DEPARTMENTS_20BCD7171 SET CONTACT_NUMBER=1234567890 WHERE DEPT_NO=5;  
SELECT * FROM DEPARTMENTS_20BCD7171;  
ALTER TABLE DEPARTMENTS_20BCD7171 MODIFY CONTACT_NUMBER NUMBER(11);  
SELECT * FROM DEPARTMENTS_20BCD7171;  
ALTER TABLE DEPARTMENTS_20BCD7171 RENAME COLUMN CONTACT_NUMBER TO MOBILENO;  
SELECT * FROM DEPARTMENTS_20BCD7171;
```

The query result shows the following data:

DEPT_NAME	DEPT_NO	MANAGER_SSN	MANAGER_STARTDATE	MOBILENO
Administration	2	543216789	04-JAN-99	1234567890
Headquarter	3	554433221	22-SEP-55	1234567890
Finance	4	907654321	01-JAN-85	1234567890
Research	5	333445555	22-MAY-78	1234567890
Administration	2	543216789	04-JAN-99	1234567890
Headquarter	3	554433221	22-SEP-55	1234567890
Finance	4	907654321	01-JAN-85	1234567890
Research	5	333445555	22-MAY-78	1234567890

## 12. Alter Table department by removing column MobileNo.

**ALTER TABLE DEPARTMENTS\_20BCD7171 DROP COLUMN MobileNo;  
SELECT \* FROM DEPARTMENTS\_20BCD7171;**

The screenshot shows the Oracle SQL Developer interface. The left pane displays the database schema with tables like AQS\_AGENT\_PRIVS, AQS\_AGENT\_NAME, AQS\_KEY\_SHARD\_MAP, AQS\_QUEUE\_TABLES, AQS\_QUEUES, AQS\_SCHEDULES, DEPARTMENT, DEPARTMENT\_20BCD7171, EMPLOYEE, EMPLOYEE\_20BCD7171, EMPLOYEE\_20BC7174, HELP, LOGMNR\_AGE\_SPILLS, LOGMNR\_ATTRCOLS, LOGMNR\_ATTRIBUTES, and LOGMNR\_CCCLS. The main workspace shows a SQL script with the following commands:

```
INSERT INTO PROJECTS_20BCD7171 VALUES('Project8', 1234, 'New York', 2);
INSERT INTO PROJECTS_20BCD7171 VALUES('Project8', 3467, 'Stafford', 4);
INSERT INTO PROJECTS_20BCD7171 VALUES('Project1', 4345, 'Chicago', 1);
INSERT INTO PROJECTS_20BCD7171 VALUES('Project1', 2212, 'San Francisco', 2);
SELECT * FROM EMPLOYEE1_20BCD7171 WHERE DEPARTMENT_NUMBER=1;
SELECT FIRST_NAME, MID_NAME, LAST_NAME, SSN NUMBER, SUPERVISOR_SSN FROM EMPLOYEE1_20BCD7171;
SELECT FIRST_NAME, MID_NAME, LAST_NAME FROM EMPLOYEE1_20BCD7171 WHERE BIRTHDAY='20-MAR-1959';
SELECT DISTINCT SALARY FROM EMPLOYEE1_20BCD7171;
SELECT MANAGERSSN, MANAGESTARTDATE FROM DEPARTMENTS_20BCD7171 WHERE DEPT_NAME='Research';
UPDATE EMPLOYEE1_20BCD7171 SET DEPARTMENT_NUMBER=3 WHERE FIRST_NAME='Joyce';
SELECT * FROM EMPLOYEE1_20BCD7171;
ALTER TABLE DEPARTMENTS_20BCD7171 ADD CONTACT_NUMBER NUMBER(10);
UPDATE DEPARTMENTS_20BCD7171 SET CONTACT_NUMBER=1234567890 WHERE DEPT_NO=2;
UPDATE DEPARTMENTS_20BCD7171 SET CONTACT_NUMBER=1234567890 WHERE DEPT_NO=3;
UPDATE DEPARTMENTS_20BCD7171 SET CONTACT_NUMBER=1234567890 WHERE DEPT_NO=4;
UPDATE DEPARTMENTS_20BCD7171 SET CONTACT_NUMBER=1234567890 WHERE DEPT_NO=5;
SELECT * FROM DEPARTMENTS_20BCD7171;
ALTER TABLE DEPARTMENTS_20BCD7171 MODIFY CONTACT_NUMBER NUMBER(11);
SELECT * FROM DEPARTMENTS_20BCD7171;
ALTER TABLE DEPARTMENTS_20BCD7171 RENAME COLUMN CONTACT_NUMBER TO MOBILENO;
SELECT * FROM DEPARTMENTS_20BCD7171;
ALTER TABLE DEPARTMENTS_20BCD7171 DROP COLUMN MobileNo;
SELECT * FROM DEPARTMENTS_20BCD7171;
```

The bottom pane shows the query result for the final SELECT statement, displaying 8 rows of data:

DEPT_NAME	DEPT_NO	MANAGERSSN	MANAGESTARTDATE
1 Administration	2543216789	04-JAN-99	
2 Headquarter	3554433221	22-SEP-55	
3 Finance	4987654321	01-JAN-85	
4 Research	5333445555	22-MAY-78	
5 Administration	2543216789	04-JAN-99	
6 Headquarter	3554433221	22-SEP-55	
7 Finance	4987654321	01-JAN-85	
8 Research	5333445555	22-MAY-78	

## 13. Create a table COPYOFDEPT as a copy of the table DEPARTMENT.

**CREATE TABLE COPY OF DEPT\_20BCD7171 AS SELECT \* FROM DEPARTMENTS\_20BCD7171;**

The screenshot shows the Oracle SQL Developer interface. The left pane displays the database schema. The main workspace shows a SQL script with the following commands:

```
INSERT INTO PROJECTS_20BCD7171 VALUES('Project8', 1234, 'New York', 2);
INSERT INTO PROJECTS_20BCD7171 VALUES('Project8', 3467, 'Stafford', 4);
INSERT INTO PROJECTS_20BCD7171 VALUES('Project1', 4345, 'Chicago', 1);
INSERT INTO PROJECTS_20BCD7171 VALUES('Project1', 2212, 'San Francisco', 2);
SELECT * FROM EMPLOYEE1_20BCD7171 WHERE DEPARTMENT_NUMBER=1;
SELECT FIRST_NAME, MID_NAME, LAST_NAME, SSN NUMBER, SUPERVISOR_SSN FROM EMPLOYEE1_20BCD7171;
SELECT FIRST_NAME, MID_NAME, LAST_NAME FROM EMPLOYEE1_20BCD7171 WHERE BIRTHDAY='20-MAR-1959';
SELECT DISTINCT SALARY FROM EMPLOYEE1_20BCD7171;
SELECT MANAGERSSN, MANAGESTARTDATE FROM DEPARTMENTS_20BCD7171 WHERE DEPT_NAME='Research';
UPDATE EMPLOYEE1_20BCD7171 SET DEPARTMENT_NUMBER=3 WHERE FIRST_NAME='Joyce';
SELECT * FROM EMPLOYEE1_20BCD7171;
ALTER TABLE DEPARTMENTS_20BCD7171 ADD CONTACT_NUMBER NUMBER(10);
UPDATE DEPARTMENTS_20BCD7171 SET CONTACT_NUMBER=1234567890 WHERE DEPT_NO=2;
UPDATE DEPARTMENTS_20BCD7171 SET CONTACT_NUMBER=1234567890 WHERE DEPT_NO=3;
UPDATE DEPARTMENTS_20BCD7171 SET CONTACT_NUMBER=1234567890 WHERE DEPT_NO=4;
UPDATE DEPARTMENTS_20BCD7171 SET CONTACT_NUMBER=1234567890 WHERE DEPT_NO=5;
SELECT * FROM DEPARTMENTS_20BCD7171;
ALTER TABLE DEPARTMENTS_20BCD7171 MODIFY CONTACT_NUMBER NUMBER(11);
SELECT * FROM DEPARTMENTS_20BCD7171;
ALTER TABLE DEPARTMENTS_20BCD7171 RENAME COLUMN CONTACT_NUMBER TO MOBILENO;
SELECT * FROM DEPARTMENTS_20BCD7171;
ALTER TABLE DEPARTMENTS_20BCD7171 DROP COLUMN MobileNo;
SELECT * FROM DEPARTMENTS_20BCD7171;
CREATE TABLE COPYOFDEPT AS SELECT * FROM DEPARTMENTS_20BCD7171;
```

The bottom pane shows the query result for the final CREATE TABLE statement, displaying the error message:

```
Error starting at line : 43 in command -
ALTER TABLE DEPARTMENTS_20BCD7171 RENAME COLUMN CONTACT_NUMBER TO MOBILENO
Error report -
ORA-00957: duplicate column name
00957. 00000 - "duplicate column name"
Cause:
Action:
>>Query Run In:Query Result 11
Table DEPARTMENTS_20BCD7171 altered.
>>Query Run In:Query Result 12
Table COPYOFDEPT created.
```

## 14. Remove the rows from COPYOFDEPT table with department number as 5.

**DELETE FROM COPYOFDEPT WHERE DEPT\_NO=5;**  
**SELECT \* FROM DEPARTMENTS\_20BCD7171;**

The screenshot shows the Oracle SQL Developer interface. The 'Connections' pane on the left lists various database connections. The 'SQL Worksheet' pane contains a script with the following SQL statements:

```
INSERT INTO PROJECTS_20BCD7171 VALUES('Project1', 9999, 'Chicago', 2);
INSERT INTO PROJECTS_20BCD7171 VALUES('Project2', 2212, 'San Francisco', 2);
SELECT * FROM EMPLOYEE1_20BCD7171 WHERE DEPARTMENT_NUMBER=1;
SELECT FIRST_NAME, MID_NAME, LAST_NAME, SSN_NUMBER, SUPERVISOR_SSN FROM EMPLOYEE1_20BCD7171;
SELECT FIRST_NAME, MID_NAME, LAST_NAME FROM EMPLOYEE1_20BCD7171 WHERE BIRTHDAY='09-MAR-1959';
SELECT DISTINCT SALARY FROM EMPLOYEE1_20BCD7171;
SELECT MANAGER_SSN, MANAGER_STARTDATE FROM DEPARTMENTS_20BCD7171 WHERE DEPT_NAME='Research';
UPDATE EMPLOYEE1_20BCD7171 SET DEPARTMENT_NUMBER=3 WHERE FIRST_NAME='Joyce';
SELECT * FROM EMPLOYEE1_20BCD7171;
ALTER TABLE DEPARTMENTS_20BCD7171 ADD CONTACT_NUMBER NUMBER(10);
UPDATE DEPARTMENTS_20BCD7171 SET CONTACT_NUMBER=1234567890 WHERE DEPT_NO=2;
UPDATE DEPARTMENTS_20BCD7171 SET CONTACT_NUMBER=1234567890 WHERE DEPT_NO=3;
UPDATE DEPARTMENTS_20BCD7171 SET CONTACT_NUMBER=1234567890 WHERE DEPT_NO=4;
UPDATE DEPARTMENTS_20BCD7171 SET CONTACT_NUMBER=1234567890 WHERE DEPT_NO=5;
SELECT * FROM DEPARTMENTS_20BCD7171;
ALTER TABLE DEPARTMENTS_20BCD7171 MODIFY CONTACT_NUMBER NUMBER(11);
SELECT * FROM DEPARTMENTS_20BCD7171;
ALTER TABLE DEPARTMENTS_20BCD7171 RENAME COLUMN CONTACT_NUMBER TO MOBILENO;
SELECT * FROM DEPARTMENTS_20BCD7171;
ALTER TABLE DEPARTMENTS_20BCD7171 DROP COLUMN MobileNo;
SELECT * FROM DEPARTMENTS_20BCD7171;
CREATE TABLE COPYOFDEPT AS SELECT * FROM DEPARTMENTS_20BCD7171;
DELETE FROM COPYOFDEPT WHERE DEPT_NO=5;
```

The 'Script Output' pane shows the following error messages:

```
ORA-00955: name is already used by an existing object
ORA-00955: 00000 - "name is already used by an existing object"
Cause:
Action:
Error starting at line : 48 in command -
DELETE FROM COPYOFDEPT WHERE DEPARTMENT_NUMBER=5
Error at Command Line : 48 Column : 30
Error report -
SQL Error: ORA-00904: "DEPARTMENT_NUMBER": invalid identifier
ORA-00904: 00000 - "is: invalid identifier"
Cause:
Action:
2 rows deleted.
```

## 15. Delete all rows from COPYOFDEPT.

**TRUNCATE TABLE COPYOFDEPT;**  
**SELECT \* FROM COPYOFDEPT ;**

The screenshot shows the Oracle SQL Developer interface. The 'Connections' pane on the left lists various database connections. The 'SQL Worksheet' pane contains a script with the following SQL statements:

```
INSERT INTO PROJECTS_20BCD7171 VALUES('Project1', 9999, 'Chicago', 2);
INSERT INTO PROJECTS_20BCD7171 VALUES('Project2', 2212, 'San Francisco', 2);
SELECT * FROM EMPLOYEE1_20BCD7171 WHERE DEPARTMENT_NUMBER=1;
SELECT FIRST_NAME, MID_NAME, LAST_NAME, SSN_NUMBER, SUPERVISOR_SSN FROM EMPLOYEE1_20BCD7171;
SELECT FIRST_NAME, MID_NAME, LAST_NAME FROM EMPLOYEE1_20BCD7171 WHERE BIRTHDAY='09-MAR-1959';
SELECT DISTINCT SALARY FROM EMPLOYEE1_20BCD7171;
SELECT MANAGER_SSN, MANAGER_STARTDATE FROM DEPARTMENTS_20BCD7171 WHERE DEPT_NAME='Research';
UPDATE EMPLOYEE1_20BCD7171 SET DEPARTMENT_NUMBER=3 WHERE FIRST_NAME='Joyce';
SELECT * FROM EMPLOYEE1_20BCD7171;
ALTER TABLE DEPARTMENTS_20BCD7171 ADD CONTACT_NUMBER NUMBER(10);
UPDATE DEPARTMENTS_20BCD7171 SET CONTACT_NUMBER=1234567890 WHERE DEPT_NO=2;
UPDATE DEPARTMENTS_20BCD7171 SET CONTACT_NUMBER=1234567890 WHERE DEPT_NO=3;
UPDATE DEPARTMENTS_20BCD7171 SET CONTACT_NUMBER=1234567890 WHERE DEPT_NO=4;
UPDATE DEPARTMENTS_20BCD7171 SET CONTACT_NUMBER=1234567890 WHERE DEPT_NO=5;
SELECT * FROM DEPARTMENTS_20BCD7171;
ALTER TABLE DEPARTMENTS_20BCD7171 MODIFY CONTACT_NUMBER NUMBER(11);
SELECT * FROM DEPARTMENTS_20BCD7171;
ALTER TABLE DEPARTMENTS_20BCD7171 RENAME COLUMN CONTACT_NUMBER TO MOBILENO;
SELECT * FROM DEPARTMENTS_20BCD7171;
ALTER TABLE DEPARTMENTS_20BCD7171 DROP COLUMN MobileNo;
SELECT * FROM DEPARTMENTS_20BCD7171;
CREATE TABLE COPYOFDEPT AS SELECT * FROM DEPARTMENTS_20BCD7171;
DELETE FROM COPYOFDEPT WHERE DEPT_NO=5;
TRUNCATE TABLE COPYOFDEPT;
```

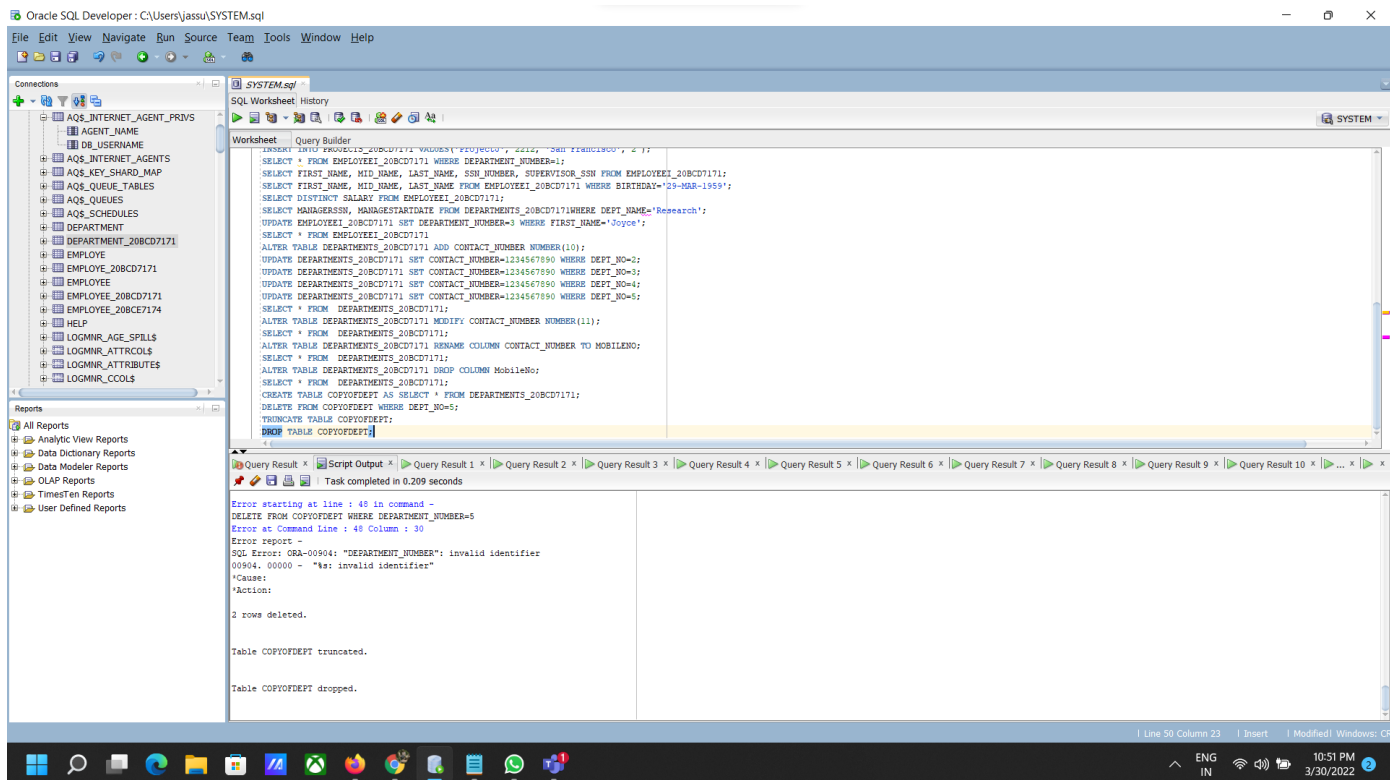
The 'Script Output' pane shows the following error messages:

```
ORA-00955: name is already used by an existing object
ORA-00955: 00000 - "name is already used by an existing object"
Cause:
Action:
Error starting at line : 48 in command -
DELETE FROM COPYOFDEPT WHERE DEPARTMENT_NUMBER=5
Error at Command Line : 48 Column : 30
Error report -
SQL Error: ORA-00904: "DEPARTMENT_NUMBER": invalid identifier
ORA-00904: 00000 - "is: invalid identifier"
Cause:
Action:
2 rows deleted.
```

Table COPYOFDEPT truncated.

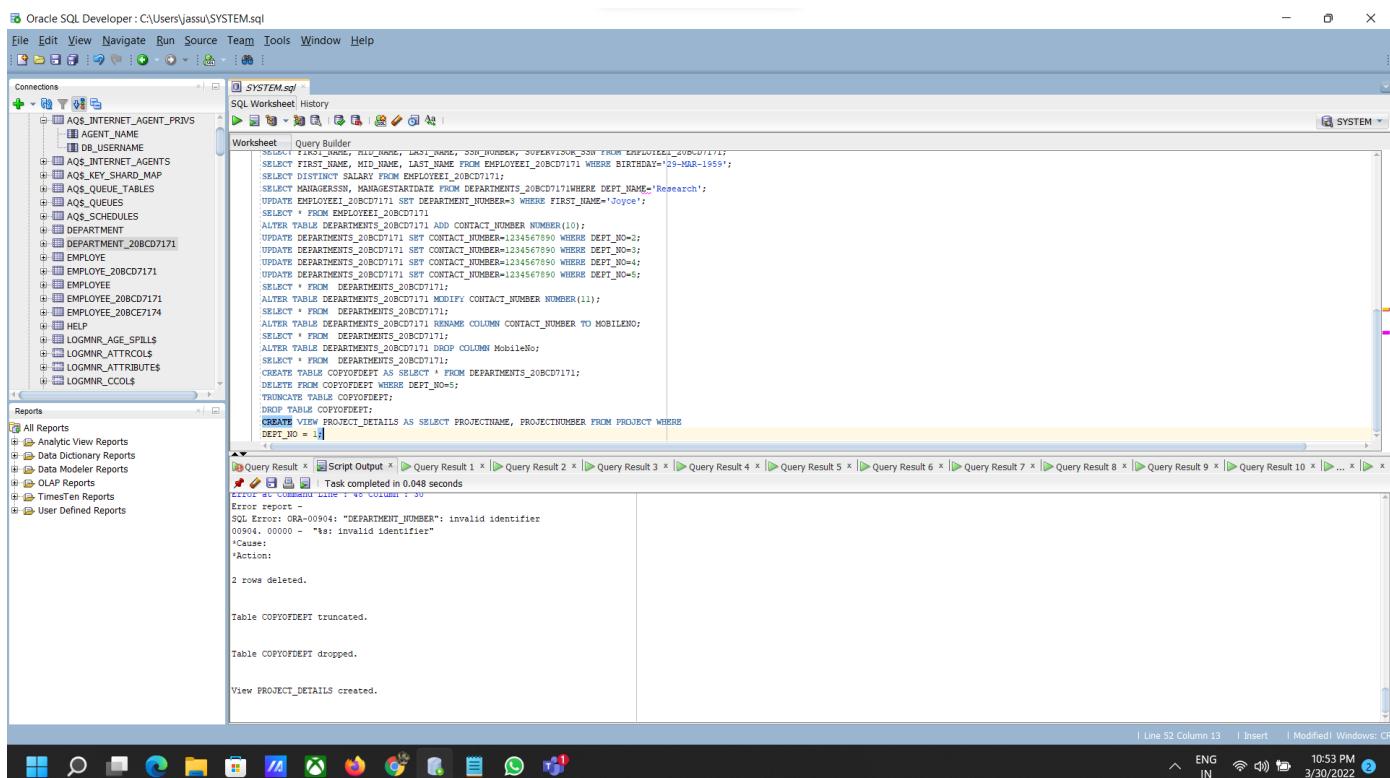
## 16. Remove COPYOFDEPT table.

### DROP TABLE COPYOFDEPT;



## 17. Create a View that selects the name and number of the projects handled by department number 1.

CREATE VIEW PROJECT\_DETAILS\_20BCD7171 AS SELECT PROJECTNAME, PROJECTNUMBER FROM PROJECTS\_20BCD7171 WHERE DEPT\_NO= 1;



## 18. Change name of Table Department to DEPT.

**RENAME DEPARTMENTS\_20BCD7171 TO DEPT\_20BCD7111;**  
**SELECT \* FROM DEPT\_20BCD7111 ;**

The screenshot shows the Oracle SQL Developer interface. The main window displays a SQL script in the 'Worksheet' tab. The script includes several SQL statements for renaming a table and selecting data. The 'Connections' pane on the left shows the 'SYSTEM' connection selected. The 'Reports' pane on the left shows a list of reports. The 'Query Result' pane at the bottom shows the results of the 'SELECT \* FROM DEPT\_20BCD7111' query, which is a table with 8 rows and 4 columns: DEPT\_NAME, DEPT\_NO, MANAGERSSN, and MANAGERSTARTDATE.

```
SELECT DISTINCT SALARY FROM EMPLOYEE1_20BCD7171;  
SELECT MANAGERSSN, MANAGERSTARTDATE FROM DEPARTMENTS_20BCD7171 WHERE DEPT_NAME='Research';  
UPDATE EMPLOYEE1_20BCD7171 SET DEPARTMENT_NUMBER=3 WHERE FIRST_NAME='Jeyce';  
SELECT * FROM EMPLOYEE1_20BCD7171;  
ALTER TABLE DEPARTMENTS_20BCD7171 ADD CONTACT_NUMBER NUMBER(10);  
UPDATE DEPARTMENTS_20BCD7171 SET CONTACT_NUMBER=1234567890 WHERE DEPT_NO=2;  
UPDATE DEPARTMENTS_20BCD7171 SET CONTACT_NUMBER=1234567890 WHERE DEPT_NO=3;  
UPDATE DEPARTMENTS_20BCD7171 SET CONTACT_NUMBER=1234567890 WHERE DEPT_NO=4;  
UPDATE DEPARTMENTS_20BCD7171 SET CONTACT_NUMBER=1234567890 WHERE DEPT_NO=5;  
SELECT * FROM DEPARTMENTS_20BCD7171;  
ALTER TABLE DEPARTMENTS_20BCD7171 MODIFY CONTACT_NUMBER NUMBER(11);  
SELECT * FROM DEPARTMENTS_20BCD7171;  
ALTER TABLE DEPARTMENTS_20BCD7171 RENAME COLUMN CONTACT_NUMBER TO MOBILENO;  
SELECT * FROM DEPARTMENTS_20BCD7171;  
ALTER TABLE DEPARTMENTS_20BCD7171 DROP COLUMN MobileNo;  
SELECT * FROM DEPARTMENTS_20BCD7171;  
CREATE TABLE COPYOFDEPT AS SELECT * FROM DEPARTMENTS_20BCD7171;  
DELETE FROM COPYOFDEPT WHERE DEPT_NO=5;  
TRUNCATE TABLE COPYOFDEPT;  
CREATE VIEW PROJECT_DETAILS AS SELECT PROJECTNAME, PROJECTNUMBER FROM PROJECT WHERE  
DEPT_NO = 1;  
RENAME DEPARTMENTS_20BCD7171 TO DEPT_20BCD7111;  
SELECT * FROM DEPT_20BCD7111;
```

DEPT_NAME	DEPT_NO	MANAGERSSN	MANAGERSTARTDATE
Administration	2543216789	04-JAN-99	
Headquarter	3554433221	22-SEP-55	
Finance	4987654321	01-JAN-85	
Research	5333445555	22-MAY-78	
Administration	2543216789	04-JAN-99	
Headquarter	3554433221	22-SEP-55	
Finance	4987654321	01-JAN-85	
Research	5333445555	22-MAY-78	