



VIT[®]
Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

Assessment 1

LAB SLOT- L45+L46

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Exercise 1

Q1.

```
INSERT INTO Employee VALUES ('Doug','E','Gilbert','123',TO_DATE('09-JUN-1968','DD-MON-YYYY'),'Chennai','M',80000,NULL,1);
INSERT INTO Employee VALUES ('Joyce','PAN','I','124',TO_DATE('07-FEB-1973','DD-MON-YYYY'),'Vellore','F',70000,NULL,1);
INSERT INTO Employee VALUES ('Frankin','T','Wong','125',TO_DATE('08-DEC-1972','DD-MON-YYYY'),'Delhi','M',40000,'123',2);
INSERT INTO Employee VALUES ('Jennifer','S','Wallace','564',TO_DATE('20-JUN-1983','DD-MON-YYYY'),'Chennai','F',43000,'123',2);
INSERT INTO Employee VALUES ('John','B','Smith','678',TO_DATE('09-JAN-1987','DD-MON-YYYY'),'Madurai','M',30000,'124',1);
INSERT INTO Employee VALUES ('Ramesh','K','Narayan','234',TO_DATE('15-SEP-1985','DD-MON-YYYY'),'Bangalore','M',38000,'124',3);
```

```
SQL> INSERT INTO Department VALUES ('Administration',2,'564',TO_DATE('03-JAN-2012','DD-MON-YYYY'));
INSERT INTO Department VALUES ('Headquarter',1,'678',TO_DATE('16-DEC-2014','DD-MON-YYYY'));
INSERT INTO Department VALUES ('Finance',3,'234',TO_DATE('18-MAY-2013','DD-MON-YYYY'));
INSERT INTO Department VALUES ('IT',4,'123',TO_DATE('12-JUN-2015','DD-MON-YYYY'));
```

```
INSERT INTO Project VALUES ('ProjectA',3388,'Delhi',1);
INSERT INTO Project VALUES ('ProjectB',1945,'Hyderabad',1);
INSERT INTO Project VALUES ('ProjectC',6688,'Chennai',2);
INSERT INTO Project VALUES ('ProjectD',2423,'Chennai',2);
INSERT INTO Project VALUES ('ProjectE',7745,'Bangalore',3);
```

Q2.

```
SQL> select * from Employee;
```

FNAME	MI	LNAME	SSN	BDATE			
ADDRESS				S	SALARY	SUPERSSN	
DEPNO							
Doug Chennai	E	Gilbert	123	09-JUN-68 M	80000		
1							
Frankin Delhi	T	Wong	125	08-DEC-72 M	40000	123	
2							

FNAME	MI	LNAME	SSN	BDATE			
ADDRESS				S	SALARY	SUPERSSN	
DEPNO							
Jennifer Chennai	S	Wallace	564	20-JUN-83 F	43000	123	
2							
John Madurai	B	Smith	678	09-JAN-87 M	30000	124	

FNAME	MI	LNAME	SSN	BDATE			
ADDRESS				S	SALARY	SUPERSSN	
DEPNO							
1							
Ramesh Bangalore	K	Narayan	234	15-SEP-85 M	38000	124	
3							
Joyce		PAN	124	07-FEB-73			

FNAME	MI	LNAME	SSN	BDATE			
ADDRESS				S	SALARY	SUPERSSN	
DEPNO							
Vellore				F	70000		
1							

```
SQL> SELECT FName, Minit, LName, SSN, SuperSSN FROM Employee;
```

FNAME	MI	LNAME	SSN	SUPERSSN
Doug	E	Gilbert	123	
Frankin	T	Wong	125	123
Jennifer	S	Wallace	564	123
John	B	Smith	678	124
Ramesh	K	Narayan	234	124

```
SQL> █
```

Q3.

Q4.

```
SQL> SELECT FName, Minit, LName FROM Employee  
WHERE BDate = TO_DATE('20-JUN-1983','DD-MON-YYYY'); 2
```

FNAME	MI	LNAME
Jennifer	S	Wallace

```
SQL> █
```

Q5.

```
SQL> SELECT DISTINCT Salary FROM Employee;
```

SALARY
80000
40000
43000
30000
38000

Q6.

```
SQL> SELECT MgrSSN, MgrStartDate FROM Department WHERE DName = 'Finance';
```

MGRSSN	MGRSTARTD
234	18-MAY-13
234	18-MAY-13

Q7.

```
SQL> SELECT * FROM Employee
WHERE DepNo = 5;
```

2	FNAME	MI	LNAME	SSN	BDATE	ADDRESS	S	SALARY	SUPERSSN
	Joyce		PAN	124	07-FEB-73			70000	
	Vellore				F				
		5							

Q8.

```
SQL> ALTER TABLE Department ADD DepartmentPhoneNum NUMBER;
UPDATE Department SET DepartmentPhoneNum = 9876543210 WHERE DepNo = 1;
UPDATE Department SET DepartmentPhoneNum = 9876543211 WHERE DepNo = 2;
UPDATE Department SET DepartmentPhoneNum = 9876543212 WHERE DepNo = 3;
UPDATE Department SET DepartmentPhoneNum = 9876543213 WHERE DepNo = 4;
Table altered.
```

DNAME	DEPNO	MGRSSN	MGRSTARTD	DEPARTMENTPHONENUM
Administration	2	564	03-JAN-12	9876543211
Headquarter	1	678	16-DEC-14	9876543210
Finance	3	234	18-MAY-13	9876543212
IT	4	123	12-JUN-15	9876543213
Administration	2	564	03-JAN-12	9876543211
Headquarter	1	678	16-DEC-14	9876543210
Finance	3	234	18-MAY-13	9876543212
IT	4	123	12-JUN-15	9876543213

8 rows selected.

Q9.

```
SQL> ALTER TABLE Department MODIFY DepartmentPhoneNum NUMBER(12);
Table altered.
```


Q10.

```
SQL> ALTER TABLE Department RENAME COLUMN DepartmentPhoneNum TO PhNo;
```

Table altered.

```
SQL> select * from Department;
```

DNAME	DEPNO	MGRSSN	MGRSTARTD	PHNO
Administration	2	564	03-JAN-12	9876543211
Headquarter	1	678	16-DEC-14	9876543210
Finance	3	234	18-MAY-13	9876543212
IT	4	123	12-JUN-15	9876543213
Administration	2	564	03-JAN-12	9876543211
Headquarter	1	678	16-DEC-14	9876543210
Finance	3	234	18-MAY-13	9876543212
IT	4	123	12-JUN-15	9876543213

8 rows selected.

Q11.

```
SQL> rename Department to DEPT  
2 ;
```

Table renamed.

```
SQL> select * from DEPT;
```

DNAME	DEPNO	MGRSSN	MGRSTARTD	PHNO
Administration	2	564	03-JAN-12	9876543211
Headquarter	1	678	16-DEC-14	9876543210
Finance	3	234	18-MAY-13	9876543212
IT	4	123	12-JUN-15	9876543213
Administration	2	564	03-JAN-12	9876543211
Headquarter	1	678	16-DEC-14	9876543210
Finance	3	234	18-MAY-13	9876543212
IT	4	123	12-JUN-15	9876543213

8 rows selected.

Q12.

```
SQL> alter table DEPT drop column PhNo;
```

Table altered.

```
SQL> select * from DEPT;
```

DNAME	DEPNO	MGRSSN	MGRSTARTD
Administration	2	564	03-JAN-12
Headquarter	1	678	16-DEC-14
Finance	3	234	18-MAY-13
IT	4	123	12-JUN-15
Administration	2	564	03-JAN-12
Headquarter	1	678	16-DEC-14
Finance	3	234	18-MAY-13
IT	4	123	12-JUN-15

8 rows selected.

Q13.

```
SQL> SQL> CREATE TABLE COPYOFDEPT AS SELECT * FROM DEPT;
```

Table created.

```
SQL> select * from COPYOFDEPT;
```

DNAME	DEPNO	MGRSSN	MGRSTARTD
Administration	2	564	03-JAN-12
Headquarter	1	678	16-DEC-14
Finance	3	234	18-MAY-13
IT	4	123	12-JUN-15
Administration	2	564	03-JAN-12
Headquarter	1	678	16-DEC-14
Finance	3	234	18-MAY-13
IT	4	123	12-JUN-15

8 rows selected.

Q14.

```
SQL> DELETE COPYOFDEPT;

8 rows deleted.

SQL> SELECT * FROM COPYOFDEPT;

no rows selected
```

Q15.

```
SQL> DROP TABLE COPYOFDEPT;

Table dropped.
```

Exercise 2

EXECUTE THE QUERY

Q1.

You're inserting a value into the Employee.Dno column (1 in your case) that doesn't exist in the parent table Department.Dnumber.

```
SQL> INSERT INTO Employee VALUES
('Robert', 'F', 'Scott', '943775543',
 TO_DATE('21-JUN-1942', 'DD-MON-YYYY'),
 '2365 Newcastle Rd, Bellaire, TX',
 'M', 58000, '888665555', 1); 2    3    4    5
INSERT INTO Employee VALUES
*
ERROR at line 1:
ORA-02291: integrity constraint (SYSTEM.FK_EMP_DNO) violated - parent key not
found
```

Q2.

Pno is part of the PRIMARY KEY in Works_On, and primary key columns cannot contain NULL values.

```
SP2-0042: unknown command "Tables" - rest of line ignored.
SQL> INSERT INTO Works_On (ESSN, Pno, Hours)
VALUES ('677678989', NULL, 40.0);
      2  VALUES ('677678989', NULL, 40.0)
*
ERROR at line 2:
ORA-01400: cannot insert NULL into ("SYSTEM"."WORKS_ON"."PNO")
```

Q3.

1. ESSN = '453453453' exists in Employee
→ This satisfied the foreign key constraint FK_DEP_EMP.
2. All other constraints were met.

```
SQL> INSERT INTO Dependent (ESSN, Dependent_name, Sex, Bdate, Relationship)
VALUES ('453453453', 'John', 'M', TO_DATE('12-DEC-1960', 'DD-MON-YYYY'), 'SPOUSE');
2
1 row created.
```

Q4.

If you run this, Oracle will remove all Works_On entries where the employee's SSN is 333445555.

```
SQL> DELETE FROM Works_On
WHERE ESSN = '333445555';
2
4 rows deleted.
```

Q5.

This will change both the manager's SSN and the manager's start date for Dnumber 5.

```
SQL> UPDATE Department
SET MgrSSN = '123456789',
    MgrStartDate = TO_DATE('01-OCT-1988', 'DD-MON-YYYY')
WHERE Dnumber = 5;
2      3      4
1 row updated.
```


ALTER THE TABLES:

Q1.

```
SQL> ALTER TABLE Employee
      ADD CONSTRAINT fk_emp_dno FOREIGN KEY (SuperSSN) REFERENCES Employee(SSN) ON DELETE SET NULL;
2
Table altered.
```

```
SQL> ALTER TABLE Employee
      ADD CONSTRAINT fk_emp_dept FOREIGN KEY (Dno) REFERENCES Department(Dnumber) ON DELETE CASCADE;
2
Table altered.

SQL> ALTER TABLE Department
      ADD CONSTRAINT fk_dept_mgr FOREIGN KEY (MgrSSN) REFERENCES Employee(SSN) ON DELETE SET NULL;
2
Table altered.

SQL> ALTER TABLE Works_On
      ADD CONSTRAINT fk_works_emp FOREIGN KEY (ESSN) REFERENCES Employee(SSN) ON DELETE CASCADE;
2
Table altered.

SQL> ALTER TABLE Dependent
      ADD CONSTRAINT fk_dep_emp FOREIGN KEY (ESSN) REFERENCES Employee(SSN) ON DELETE CASCADE; 2
Table altered.
```

Q2.

```
SQL> ALTER TABLE Employee
      DROP CONSTRAINT fk_emp_dno;

ALTER TABLE Employee
ADD CONSTRAINT fk_emp_super FOREIGN KEY (SuperSSN)
REFERENCES Employee(SSN) ON DELETE SET NULL;
2
Table altered.

SQL> SQL> 2 3
Table altered.
```

Q3.

```
SQL> ALTER TABLE Project
      ADD CONSTRAINT uq_project_name UNIQUE (Pname);

ALTER TABLE Employee
MODIFY Sex CHAR(1) NOT NULL;
2
Table altered.

SQL> SQL> 2
Table altered.
```

Q4.

```
SQL> create or replace type AdressType as object(
  2 DoorNo varchar2(10),
  3 Street varchar2(50),
  4 City varchar2(30),
  5 State varchar2(30),
  6 continent varchar2(20)
  7 );
  8 /
```

Type created.

```
SQL> alter table Employee add AddressObj AdressType;
```

Table altered.

FNAME	MI	LNAME	SSN	BDATE		
ADDRESS				S	SALARY	SUPERSSN

DNO						

ADRESSOBJ(DOORNO, STREET, CITY, STATE, CONTINENT)						

John	B	Smith	123456789	09-JAN-65		
123 Main St				M	30000	
1						

FNAME	MI	LNAME	SSN	BDATE		
ADDRESS				S	SALARY	SUPERSSN

DNO						

ADRESSOBJ(DOORNO, STREET, CITY, STATE, CONTINENT)						

Franklin	T	Wong	666884444	08-DEC-55		
456 Oak St				M	40000	123456789
2						

Q5.

```
SQL> ALTER TABLE Employee
MODIFY Salary NUMBER(10,2);
  2
Table altered.
```