EXPERIMENT-1

Roll no : 224G1A0502 Name : AJAY KUMAR P

```
SQL> create table student(
  2  sid NUMBER,
  3  sname VARCHAR2(20),
  4  sage NUMBER,
  5  saddress VARCHAR2(20)
  6  );

Table created.

SQL> desc student
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 SID                                                NUMBER
 SNAME                                              VARCHAR2(20)
 SAGE                                               NUMBER
 SADDRESS                                           VARCHAR2(20)

SQL> select * from student;

no rows selected
```

```
SQL> ALTER TABLE student ADD sphone NUMBER;

Table altered.
```

```
SQL> DESC STUDENT
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 SID                                                NUMBER
 SNAME                                              VARCHAR2(20)
 SAGE                                               NUMBER
 SADDRESS                                           VARCHAR2(20)
 SPHONE                                             NUMBER

SQL> ALTER TABLE student DROP COLUMN sphone;

Table altered.

SQL> desc student
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 SID                                                NUMBER
 SNAME                                              VARCHAR2(20)
 SAGE                                               NUMBER
 SADDRESS                                           VARCHAR2(20)
```

```
SQL> ALTER TABLE student modify sid VARCHAR2(20);

Table altered.

SQL> desc student
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 SID                                                VARCHAR2(20)
 SNAME                                              VARCHAR2(20)
 SAGE                                               NUMBER
 SADDRESS                                           VARCHAR2(20)

SQL> ALTER TABLE student RENAME COLUMN sid to rollno;

Table altered.

SQL> desc student
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 ROLLNO                                             VARCHAR2(20)
 SNAME                                              VARCHAR2(20)
 SAGE                                               NUMBER
 SADDRESS                                           VARCHAR2(20)

SQL> ALTER TABLE student RENAME to students;

Table altered.

SQL> desc students
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 ROLLNO                                             VARCHAR2(20)
 SNAME                                              VARCHAR2(20)
 SAGE                                               NUMBER
 SADDRESS                                           VARCHAR2(20)
```

```
SQL> ALTER TABLE students ADD PRIMARY KEY(rollno);

Table altered.

SQL> desc students
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 ROLLNO                                    NOT NULL VARCHAR2(20)
 SNAME                                              VARCHAR2(20)
 SAGE                                               NUMBER
 SADDRESS                                           VARCHAR2(20)
```

```
SQL> create table std(
  2  sid NUMBER,
  3  sname VARCHAR2(10),
  4  AGE INT
  5  );

Table created.

SQL> DROP TABLE STD;

Table dropped.
```

```
SQL> truncate table students;

Table truncated.

SQL> select * from students;

no rows selected
```

EXPERIMENT_2

Roll no : 224G1A0502 Name : AJAY KUMAR P

```
SQL> CREATE TABLE employee(
  2  eid NUMBER,
  3  ename VARCHAR2(20),
  4  eage INT,
  5  esalary NUMBER
  6  );

Table created.
```

```
SQL> INSERT INTO employee
  2  VALUES(1,'HARSHA',18,50000);

1 row created.

SQL> INSERT INTO employee
  2  VALUES(2,'ARUN',19,60000);

1 row created.

SQL> INSERT INTO employee
  2  VALUES(3,'DINESH',21,61000);

1 row created.

SQL> INSERT INTO employee
  2  VALUES(4,'NIVAS',20,51000);

1 row created.
```

EXPERIMENT_2

Roll no : 224G1A0502 Name : AJAY KUMAR P

```
SQL> SELECT * FROM employee;

       EID ENAME                          EAGE    ESALARY
---------- -------------------- ---------- ----------
         1 HARSHA                         18      50000
         2 ARUN                           19      60000
         3 DINESH                         21      61000
         4 NIVAS                          20      51000
```

```
SQL> SELECT eid FROM employee;

       EID
----------
         1
         2
         3
         4
```

```
SQL> SELECT ename FROM employee;

ENAME
--------------------
HARSHA
ARUN
DINESH
NIVAS
```

EXPERIMENT_2

Roll no : 224G1A0502 Name : AJAY KUMAR P

```
SQL> SELECT eid,esalary FROM employee;

       EID    ESALARY
---------- ----------
         1      50000
         2      60000
         3      61000
         4      51000

SQL> SELECT eid,ename,esalary FROM employee;

       EID ENAME                    ESALARY
---------- -------------------- ----------
         1 HARSHA                    50000
         2 ARUN                      60000
         3 DINESH                    61000
         4 NIVAS                     51000
```

```
SQL> SELECT * from EMPLOYEE WHERE esalary>50000;

       EID ENAME                     EAGE    ESALARY
---------- -------------------- ---------- ----------
         2 ARUN                         19      60000
         3 DINESH                       21      61000
         4 NIVAS                        20      51000
```

EXPERIMENT_2

Roll no : 224G1A0502 Name : AJAY KUMAR P

```
SQL> UPDATE employee SET esalary=esalary+500 WHERE eid=1;

1 row updated.

SQL> SELECT * FROM employee;

       EID ENAME                          EAGE    ESALARY
---------- -------------------- ---------- ----------
         1 HARSHA                         18      50500
         2 ARUN                           19      60000
         3 DINESH                         21      61000
         4 NIVAS                          20      51000
```

```
SQL> DELETE FROM employee WHERE eid=4;

1 row deleted.

SQL> SELECT * FROM employee;

       EID ENAME                          EAGE    ESALARY
---------- -------------------- ---------- ----------
         1 HARSHA                         18      50500
         2 ARUN                           19      60000
         3 DINESH                         21      61000
```

EXPERIMENT_2

Roll no : 224G1A0502 Name : AJAY KUMAR P

EXPERIMENT – 3

224G1A0502 AJAY KUMAR P

AIM: To design VIEWS for various databases using DDL commands

Creating a table :

```
SQL> CREATE TABLE students(
  2    ID NUMBER(10) PRIMARY KEY,
  3     name VARCHAR2(50) ,
  4     gender CHAR,
  5     mobile_no NUMBER(10),
  6     dept VARCHAR2(5)
  7  );

Table created.
```

Inserting values into the table :

```
SQL> INSERT ALL
  2     INTO students VALUES (510,'Raju','M',7648982567,'CSE')
  3     INTO students VALUES (339,'Suresh','M',7839265709,'CSM')
  4     INTO students VALUES (289,'Krishna','M',6289106653,'EEE')
  5     INTO students VALUES (501,'Alex','M',9286470178,'CSE')
  6     INTO students VALUES (145,'Harsha','M',7459026841,'ECE')
  7     SELECT * FROM DUAL;

5 rows created.

SQL> SELECT * FROM students;

        ID NAME                                               G  MOBILE_NO DEPT
---------- -------------------------------------------------- - ---------- -----
       510 Raju                                               M 7648982567 CSE
       339 Suresh                                             M 7839265709 CSM
       289 Krishna                                            M 6289106653 EEE
       501 Alex                                               M 9286470178 CSE
       145 Harsha                                             M 7459026841 ECE
```

Creating a VIEW :

```
SQL> CREATE VIEW std AS SELECT id,name,dept FROM students;

View created.

SQL> CREATE VIEW cse_std AS SELECT id,name,gender,dept FROM students WHERE dept='cse';

View created.
```

EXPERIMENT_2

Roll no : 224G1A0502 Name : AJAY KUMAR P

```
SQL> SELECT * FROM std;

        ID NAME                                               DEPT
---------- -------------------------------------------------- -----
       510 Raju                                               CSE
       339 Suresh                                             CSM
       289 Krishna                                            EEE
       501 Alex                                               CSE
       145 Harsha                                             ECE
```

Inserting values into the table :

```
SQL> INSERT INTO std VALUES(509,'baba','cse');

1 row created.

SQL> select * from std;

        ID NAME                                               DEPT
---------- -------------------------------------------------- -----
       510 Raju                                               CSE
       339 Suresh                                             CSM
       289 Krishna                                            EEE
       501 Alex                                               CSE
       145 Harsha                                             ECE
       509 baba                                               cse
```

Deleting rows in a VIEW :

```
SQL> DELETE FROM std WHERE id=509;

1 row deleted.

SQL> select * from std;

        ID NAME                                               DEPT
---------- -------------------------------------------------- -----
       510 Raju                                               CSE
       339 Suresh                                             CSM
       289 Krishna                                            EEE
       501 Alex                                               CSE
       145 Harsha                                             ECE
```

EXPERIMENT_4

ROLL NO : 224G1A0502 NAME : AJAY KUMAR P

```
SQL> CREATE TABLE instructor(
  2  id NUMBER PRIMARY KEY,
  3  name VARCHAR2(10),
  4  dep_name VARCHAR2(10),
  5  salary NUMBER
  6  );

Table created.

SQL> CREATE TABLE department(
  2  did NUMBER PRIMARY KEY,
  3  dname VARCHAR2(15),
  4  building VARCHAR2(15),
  5  budget NUMBER
  6  );

Table created.
```

```
SQL> INSERT ALL
  2  INTO instructor VALUES(1,'HARSHA','CSE',50000)
  3  INTO instructor VALUES(2,'ARUN','CSE',55000)
  4  INTO instructor VALUES(3,'DINESH','EEE',52000)
  5  INTO instructor VALUES(4,'BASHA','ECE',42000)
  6  INTO instructor VALUES(5,'SUMANTH','CSM',32000)
  7  INTO department VALUES(1,'CSE','B',35000000)
  8  INTO department VALUES(2,'ECE','A',1780000)
  9  INTO department VALUES(3,'MECH','MAIN',1734000)
 10  SELECT * FROM dual;

8 rows created.
```

```
SQL> select * from department;

       DID DNAME           BUILDING           BUDGET
---------- --------------- --------------- ----------
         1 CSE             B                35000000
         2 ECE             A                 1780000
         3 MECH            MAIN              1734000
```

EXPERIMENT_4

ROLL NO : 224G1A0502 NAME : AJAY KUMAR P

```
SQL> select * from instructor;

        ID NAME       DEP_NAME       SALARY
---------- ---------- ---------- ----------
         1 HARSHA     CSE             50000
         2 ARUN       CSE             55000
         3 DINESH     EEE             52000
         4 BASHA      ECE             42000
         5 SUMANTH    CSM             32000
```

```
SQL> SELECT dep_name from instructor
  2  UNION
  3  SELECT dname from department;

DEP_NAME
---------------
CSE
EEE
ECE
CSM
MECH
```

```
SQL> select dep_name from instructor
  2  UNION ALL
  3  select dname from department;

DEP_NAME
---------------
CSE
CSE
EEE
ECE
CSM
CSE
ECE
MECH

8 rows selected.
```

EXPERIMENT_4

ROLL NO : 224G1A0502 NAME : AJAY KUMAR P

```
SQL> select dep_name from instructor
  2  INTERSECT
  3  select dname from department;

DEP_NAME
---------------
CSE
ECE
```

```
SQL> select dname from department
  2  MINUS
  3  select dep_name from instructor;

DNAME
---------------
MECH
```

```
SQL> select i.name,d.dname,d.budget from instructor i,department d;

NAME       DNAME              BUDGET
---------- -------------- ----------
HARSHA     CSE              35000000
ARUN       CSE              35000000
DINESH     CSE              35000000
BASHA      CSE              35000000
SUMANTH    CSE              35000000
HARSHA     ECE               1780000
ARUN       ECE               1780000
DINESH     ECE               1780000
BASHA      ECE               1780000
SUMANTH    ECE               1780000
HARSHA     MECH              1734000

NAME       DNAME              BUDGET
---------- -------------- ----------
ARUN       MECH              1734000
DINESH     MECH              1734000
BASHA      MECH              1734000
SUMANTH    MECH              1734000

15 rows selected.
```

EXPERIMENT_4

ROLL NO : 224G1A0502 NAME : AJAY KUMAR P

```
SQL> select i.name,d.dname,d.budget from instructor i CROSS JOIN department d;

NAME       DNAME              BUDGET
---------- -------------- ----------
HARSHA     CSE              35000000
ARUN       CSE              35000000
DINESH     CSE              35000000
BASHA      CSE              35000000
SUMANTH    CSE              35000000
HARSHA     ECE               1780000
ARUN       ECE               1780000
DINESH     ECE               1780000
BASHA      ECE               1780000
SUMANTH    ECE               1780000
HARSHA     MECH              1734000

NAME       DNAME              BUDGET
---------- -------------- ----------
ARUN       MECH              1734000
DINESH     MECH              1734000
BASHA      MECH              1734000
SUMANTH    MECH              1734000

15 rows selected.
```

```
SQL> select i.name,d.dname,d.budget from instructor i NATURAL JOIN department d;

NAME       DNAME              BUDGET
---------- -------------- ----------
HARSHA     CSE              35000000
ARUN       CSE              35000000
DINESH     CSE              35000000
BASHA      CSE              35000000
SUMANTH    CSE              35000000
HARSHA     ECE               1780000
ARUN       ECE               1780000
DINESH     ECE               1780000
BASHA      ECE               1780000
SUMANTH    ECE               1780000
HARSHA     MECH              1734000

NAME       DNAME              BUDGET
---------- -------------- ----------
ARUN       MECH              1734000
DINESH     MECH              1734000
BASHA      MECH              1734000
SUMANTH    MECH              1734000

15 rows selected.
```

EXPERIMENT_5

ROLL NO: 224G1A0502 NAME : AJAY KUMAR P

```
SQL> create table instructors(
  2  id NUMBER PRIMARY KEY,
  3  name VARCHAR2(19),
  4  salary NUMBER
  5  );

Table created.

SQL> CREATE TABLE departments(
  2  id NUMBER PRIMARY KEY,
  3  dname VARCHAR2(10)
  4  );

Table created.
```

```
SQL> INSERT ALL
  2  INTO instructors VALUES(1,'HARSHA',80000)
  3  INTO instructors VALUES(2,'ARUN',90000)
  4  INTO instructors VALUES(3,'DINESH',70000)
  5  INTO instructors VALUES(4,'BASHA',75000)
  6  INTO departments VALUES(1,'CSE')
  7  INTO departments VALUES(2,'EEE')
  8  INTO departments VALUES(3,'ECE')
  9  SELECT * FROM dual;

7 rows created.
```

EXPERIMENT_5

ROLL NO: 224G1A0502 NAME : AJAY KUMAR P

```
SQL> select * from instructors;

        ID NAME                          SALARY
---------- -------------------- ----------
         1 HARSHA                        80000
         2 ARUN                          90000
         3 DINESH                        70000
         4 BASHA                         75000

SQL> select * from departments;

        ID DNAME
---------- ----------
         1 CSE
         2 EEE
         3 ECE
```

```
SQL> select * from instructors
  2  WHERE
  3  salary IS NULL;

        ID NAME                          SALARY
---------- -------------------- ----------
         4 BASHA
```

```
SQL> select * from instructors
  2  where
  3  salary between 80000 and 90000;

        ID NAME                          SALARY
---------- -------------------- ----------
         1 HARSHA                        80000
         2 ARUN                          90000
```

EXPERIMENT_5

ROLL NO: 224G1A0502 NAME : AJAY KUMAR P

```
SQL> select * from instructors
  2  where
  3  name like'B%';

        ID NAME                      SALARY
---------- ------------------- ----------
         4 BASHA
```

```
SQL> select * from instructors
  2  where
  3  salary IN(10000,80000,90000);

        ID NAME                      SALARY
---------- ------------------- ----------
         1 HARSHA                    80000
         2 ARUN                      90000
```

```
SQL> select * from instructors
  2  where
  3  EXISTS(SELECT * FROM departments WHERE instructors.id=departments.id);

        ID NAME                      SALARY
---------- ------------------- ----------
         1 HARSHA                    80000
         2 ARUN                      90000
         3 DINESH                    70000
```

EXPERIMENT_5

ROLL NO: 224G1A0502 NAME : AJAY KUMAR P

EXPERIMENT-6

224G1A0502 AJAY KUMAR P

```
SQL> create table student(
  2  rollno NUMBER PRIMARY KEY,
  3  name VARCHAR2(20) NOT NULL,
  4  dname VARCHAR2(10) NOT NULL
  5  );

Table created.

SQL> CREATE TABLE building(
  2  dname VARCHAR2(10),
  3  bname VARCHAR2(10)
  4  );

Table created.
```

```
SQL> INSERT ALL
  2  INTO student VALUES(1,'harsha','cse')
  3  INTO student VALUES(2,'basha','ece')
  4  INTO student VALUES(3,'dinesh','eee')
  5  INTO student VALUES(4,'hari','csd')
  6  INTO building VALUES('cse','b')
  7  INTO building VALUES('eee','a')
  8  INTO building VALUES('csd','c')
  9  select * from dual;

7 rows created.
```

```
SQL> select * from student;

    ROLLNO NAME                 DNAME
---------- -------------------- ----------
         1 harsha               cse
         2 basha                ece
         3 dinesh               eee
         4 hari                 csd
```

EXPERIMENT_5

ROLL NO: 224G1A0502 NAME : AJAY KUMAR P

```
SQL> select * from building;

DNAME      BNAME
---------- ----------
cse        b
eee        a
csd        c
```

```
SQL> select * from student
  2  JOIN building ON
  3  student.dname=building.dname;

    ROLLNO NAME                 DNAME      DNAME      BNAME
---------- -------------------- ---------- ---------- ----------
         1 harsha               cse        cse        b
         3 dinesh               eee        eee        a
         4 hari                 csd        csd        c
```

```
SQL> select * from student JOIN building
  2  USING(dname);

DNAME          ROLLNO NAME                 BNAME
---------- ---------- -------------------- ----------
cse                 1 harsha               b
eee                 3 dinesh               a
csd                 4 hari                 c
```

```
SQL> select * from student
  2  LEFT OUTER JOIN building ON
  3  student.dname=building.dname;

    ROLLNO NAME                 DNAME      DNAME      BNAME
---------- -------------------- ---------- ---------- ----------
         1 harsha               cse        cse        b
         3 dinesh               eee        eee        a
         4 hari                 csd        csd        c
         2 basha                ece
```

EXPERIMENT_5

ROLL NO: 224G1A0502 NAME : AJAY KUMAR P

```
SQL> select * from student
  2  RIGHT OUTER JOIN building ON
  3  student.dname=building.dname;

    ROLLNO NAME                 DNAME      DNAME      BNAME
---------- -------------------- ---------- ---------- ----------
         1 harsha               cse        cse        b
         3 dinesh               eee        eee        a
         4 hari                 csd        csd        c
```

```
SQL> select * from student
  2  FULL OUTER JOIN building ON
  3  student.dname=building.dname;

    ROLLNO NAME                 DNAME      DNAME      BNAME
---------- -------------------- ---------- ---------- ----------
         1 harsha               cse        cse        b
         2 basha                ece
         3 dinesh               eee        eee        a
         4 hari                 csd        csd        c
```

EXPERIMENT_5

ROLL NO: 224G1A0502 NAME : AJAY KUMAR P

Experiment – 7

224G1A0502 AJAY KUMAR P

AIM : To writer SQL queries to perform JOIN OPERATIONS(i.e. CONDITIONAL JOIN ,EQUAL JOIN,LEFT OUTER JOIN,RIGHT OUTER JOIN,FULL OUTER JOIN).

Creating a table :

```
SQL> CREATE TABLE student(
  2  roll_no NUMBER PRIMARY KEY,
  3  name VARCHAR2(50) NOT NULL,
  4  dept_name VARCHAR2(50) NOT NULL
  5  );

Table created.
```

```
SQL> CREATE TABLE blocks(
  2  dept_name VARCHAR2(10) PRIMARY KEY,
  3  block_name VARCHAR2(20) NOT NULL
  4  );

Table created.
```

INSERTING VALUES INTO THE TABLE :

EXPERIMENT_5

ROLL NO: 224G1A0502 NAME : AJAY KUMAR P

```
SQL> INSERT ALL
  2   INTO student VALUES (505,'Aravind','CSE')
  3   INTO student VALUES (411,'Rani','EEE')
  4   INTO student VALUES (310,'Raju','ECE')
  5   INTO student VALUES (509,'Baba','CSM')
  6   INTO blocks VALUES ('CSE','C-BLOCK')
  7   INTO blocks VALUES ('CSM','B-BLOCK')
  8   INTO blocks VALUES ('EEE','A-BLOCK')
  9  SELECT * FROM dual;

7 rows created.
```

IS NULL :

```
SQL> SELECT * FROM student
  2  JOIN blocks ON
  3  student.dept_name=blocks.dept_name;

   ROLL_NO NAME
---------- --------------------------------------------------
DEPT_NAME                                          DEPT_NAME
-------------------------------------------------- ----------
BLOCK_NAME
--------------------
       505 Aravind
CSE                                                CSE
C-BLOCK

       411 Rani
EEE                                                EEE
A-BLOCK
```

LEFT OUTER JOIN :

EXPERIMENT_5

ROLL NO: 224G1A0502 NAME : AJAY KUMAR P

```
SQL> SELECT * FROM student
  2  LEFT OUTER JOIN blocks ON
  3  student.dept_name=blocks.dept_name;

   ROLL_NO NAME
---------- --------------------------------------------------
DEPT_NAME                                                    DEPT_NAME
------------------------------------------------------------ ----------
BLOCK_NAME
--------------------
       505 Aravind
CSE                                                          CSE
C-BLOCK

       411 Rani
EEE                                                          EEE
A-BLOCK

   ROLL_NO NAME
---------- --------------------------------------------------
DEPT_NAME                                                    DEPT_NAME
------------------------------------------------------------ ----------
BLOCK_NAME
--------------------

       310 Raju
```

RIGHT OUTER JOIN :

```
B-BLOCK
CSE                                                          CSE
       209 Bapa

--------------------
BLOCK_NAME
------------------------------------------------------------ ----------
DEPT_NAME                                                    DEPT_NAME
---------- --------------------------------------------------
   ROLL_NO NAME

A-BLOCK
EEE                                                          EEE
       411 Rani

C-BLOCK
CSE                                                          CSE
       202 Aravind
--------------------
BLOCK_NAME
------------------------------------------------------------ ----------
DEPT_NAME                                                    DEPT_NAME
---------- --------------------------------------------------
   ROLL_NO NAME

  3  student.dept_name=blocks.dept_name;
  2  RIGHT OUTER JOIN blocks ON
SQL> SELECT * FROM student
```

FULL OUTER JOIN :

EXPERIMENT_5

ROLL NO: 224G1A0502 NAME : AJAY KUMAR P

```
SQL> SELECT * FROM student
  2  FULL OUTER JOIN blocks ON
  3  student.dept_name=blocks.dept_name;

   ROLL_NO NAME
---------- --------------------------------------------------
DEPT_NAME                                          DEPT_NAME
-------------------------------------------------- ----------
BLOCK_NAME
--------------------
       505 Aravind
CSE                                                CSE
C-BLOCK

       411 Rani
EEE                                                EEE
A-BLOCK
```

EXPERIMENT_5

ROLL NO: 224G1A0502 NAME : AJAY KUMAR P

EXPERIMENT-8

224G1A0502 AJAY KUMAR P

```
SQL> CREATE TABLE name(
  2  fname VARCHAR2(20) NOT NULL,
  3  lname VARCHAR2(20) NOT NULL
  4  );

Table created.
```

```
SQL> INSERT ALL
  2  INTO name VALUES('Harsha','Reddy')
  3  INTO name VALUES('Dinesh','Reddy')
  4  INTO name VALUES('Arun','Naik')
  5  INTO name VALUES('Syed','Basha')
  6  select * from dual;

4 rows created.

SQL> select * from name;

FNAME                LNAME
-------------------- --------------------
Harsha               Reddy
Dinesh               Reddy
Arun                 Naik
Syed                 Basha
```

EXPERIMENT_5

ROLL NO: 224G1A0502 NAME : AJAY KUMAR P

```
SQL> select LOWER(fname) from name;

LOWER(FNAME)
--------------------
harsha
dinesh
arun
syed
```

```
SQL> select UPPER(fname) from name;

UPPER(FNAME)
--------------------
HARSHA
DINESH
ARUN
SYED
```

```
SQL> select INITCAP(fname) from name;

INITCAP(FNAME)
--------------------
Harsha
Dinesh
Arun
Syed
```

```
SQL> select CONCAT(fname,lname) from name;

CONCAT(FNAME,LNAME)
----------------------------------------
HarshaReddy
DineshReddy
ArunNaik
SyedBasha
```

EXPERIMENT_5

ROLL NO: 224G1A0502 NAME : AJAY KUMAR P

```
SQL> select SUBSTR(fname,1,3) from name;

SUBSTR(FNAME
------------
Har
Din
Aru
Sye
```

```
SQL> select LENGTH(fname) from name;

LENGTH(FNAME)
-------------
            6
            6
            4
            4
```

```
SQL> select INSTR(fname,'a') from name;

INSTR(FNAME,'A')
----------------
               2
               0
               0
               0
```

```
SQL> select TRIM(' ' from fname) from name;

TRIM(''FROMFNAME)
--------------------
Harsha
Dinesh
Arun
Syed
```

EXPERIMENT_5

ROLL NO: 224G1A0502 NAME : AJAY KUMAR P

```
SQL> select ROUND(11.231,2) from dual;

ROUND(11.231,2)
---------------
          11.23
```

```
SQL> select MOD(25,2) from dual;

 MOD(25,2)
----------
         1
```

```
SQL> select SYSDATE FROM dual;

SYSDATE
---------
17-DEC-23

SQL> select MONTHS_BETWEEN(SYSDATE,'17-DEC-2025') FROM DUAL;

MONTHS_BETWEEN(SYSDATE,'17-DEC-2025')
-------------------------------------
                                  -24

SQL> SELECT ADD_MONTHS(SYSDATE,12) FROM DUAL;

ADD_MONTH
---------
17-DEC-24
```

EXPERIMENT_5

ROLL NO: 224G1A0502 NAME : AJAY KUMAR P

```
SQL> SELECT NEXT_DAY(SYSDATE,'MONDAY') FROM DUAL;

NEXT_DAY(
---------
18-DEC-23

SQL> SELECT LAST_DAY(SYSDATE) FROM DUAL;

LAST_DAY(
---------
31-DEC-23

SQL> SELECT CURRENT_TIMESTAMP(3) FROM DUAL;

CURRENT_TIMESTAMP(3)
---------------------------------------------------------------------------
17-DEC-23 10.07.42.234 AM +05:30
```

EXPERIMENT_5

ROLL NO: 224G1A0502 NAME : AJAY KUMAR P

EXPERIMENT-9

224G1A0502 AJAY KUMAR P

Primary key :

```
SQL> create table college(
  2  id varchar2(10) PRIMARY KEY,
  3  name varchar2(20),
  4  branch varchar2(10),
  5  section varchar2(10)
  6  );

Table created.
```

```
SQL> desc college
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 ID                                        NOT NULL VARCHAR2(10)
 NAME                                               VARCHAR2(20)
 BRANCH                                             VARCHAR2(10)
 SECTION                                            VARCHAR2(10)
```

Foreign key :

```
SQL> create table marks(
  2  id varchar2(10) PRIMARY KEY,
  3  num NUMBER NOT NULL,
  4  marks varchar2(20) REFERENCES college(id)
  5  );

Table created.
```

```
SQL> desc marks
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 ID                                        NOT NULL VARCHAR2(10)
 NUM                                       NOT NULL NUMBER
 MARKS                                              VARCHAR2(20)

SQL>
```

EXPERIMENT_5

ROLL NO: 224G1A0502 NAME : AJAY KUMAR P

EXPERIMENT-10

224G1A0502 AJAY KUMAR P

```
SQL> ED
Wrote file afiedt.buf

  1  DECLARE
  2  n NUMBER;
  3  fac NUMBER:=1;
  4  n1 NUMBER;
  5  BEGIN
  6  n:=&n;
  7  n1:=n;
  8  WHILE N>0 LOOP
  9  fac:=n*fac;
 10  n:=n-1;
 11  END LOOP;
 12  DBMS_OUTPUT.PUT_LINE('The factorial of '||n1||' is '||fac);
 13* END;
SQL> /
Enter value for n: 5
old   6: n:=&n;
new   6: n:=5;

PL/SQL procedure successfully completed.

SQL> SET SERVEROUT ON
SQL> SET VERIFY OFF
SQL> /
Enter value for n: 5
The factorial of 5 is 120

PL/SQL procedure successfully completed.
```

EXPERIMENT_5

ROLL NO: 224G1A0502 NAME : AJAY KUMAR P

EXPERIMENT-11

224G1A0502 AJAY KUMAR P

```
SQL> ED
Wrote file afiedt.buf

  1  DECLARE
  2  n NUMBER;
  3  i NUMBER;
  4  temp NUMBER;
  5  BEGIN
  6  n:=&n;
  7  i:=2;
  8  temp:=1;
  9  FOR I IN 2..n/2
 10  LOOP
 11  IF MOD(n,i)=0
 12  THEN
 13  temp:=0;
 14  EXIT;
 15  END IF;
 16  END LOOP;
 17  IF temp=1
 18  THEN
 19  DBMS_OUTPUT.PUT_LINE(n||' is a prime number');
 20  ELSE
 21  DBMS_OUTPUT.PUT_LINE(n||' is not a prime number');
 22  END IF;
 23* END;
SQL> /
Enter value for n: 12
12 is not a prime number

PL/SQL procedure successfully completed.

SQL> SET SERVEROUT ON
SQL> SET VERIFY OFF
SQL> /
Enter value for n: 3
3 is a prime number

PL/SQL procedure successfully completed.
```

EXPERIMENT_5

ROLL NO: 224G1A0502 NAME : AJAY KUMAR P

EXPERIMENT-12

224G1A0502 AJAY KUMAR P

```
SQL> ED
Wrote file afiedt.buf

  1  DECLARE
  2  first NUMBER:=0;
  3  second NUMBER:=1;
  4  temp NUMBER;
  5  n NUMBER;
  6  i NUMBER;
  7  BEGIN
  8  n:=&n;
  9  DBMS_OUTPUT.PUT_LINE('SERIES');
 10  DBMS_OUTPUT.PUT_LINE(first);
 11  DBMS_OUTPUT.PUT_LINE(second);
 12  FOR i IN 2..n
 13  LOOP
 14  temp:=first+second;
 15  first:=second;
 16  second:=temp;
 17  DBMS_OUTPUT.PUT_LINE(temp);
 18  END LOOP;
 19* END;
 20  /
Enter value for n: 5
SERIES
0
1
1
2
3
5

PL/SQL procedure successfully completed.
```

EXPERIMENT_5

ROLL NO: 224G1A0502 NAME : AJAY KUMAR P

EXPERIMENT-13

224G1A0502 AJAY KUMAR P

```
SQL> CREATE TABLE sailor(
  2  id NUMBER PRIMARY KEY,
  3  name VARCHAR2(20) NOT NULL
  4  );

Table created.
```

```
SQL> ED
Wrote file afiedt.buf

  1  CREATE OR REPLACE PROCEDURE insertuser(id IN NUMBER,name IN VARCHAR2)
  2  AS
  3  BEGIN
  4  INSERT INTO sailor VALUES(id,name);
  5  DBMS_OUTPUT.PUT_LINE('Record inserted successfully');
  6* END;
  7  /

Procedure created.
```

```
SQL> ED
Wrote file afiedt.buf

  1  DECLARE
  2  co NUMBER;
  3  BEGIN
  4  insertuser(26,'Harsha');
  5  select count(*) INTO co FROM sailor;
  6  DBMS_OUTPUT.PUT_LINE(co||' Record is inserted successfully');
  7* END;
SQL> /
Record inserted successfully
1 Record is inserted successfully

PL/SQL procedure successfully completed.
```

EXPERIMENT_5

ROLL NO: 224G1A0502 NAME : AJAY KUMAR P

```
SQL> ED
Wrote file afiedt.buf

  1  DECLARE
  2  co NUMBER;
  3  BEGIN
  4  insertuser(25,'Harsha');
  5  select count(*) INTO co FROM sailor;
  6  DBMS_OUTPUT.PUT_LINE(co||' Record is inserted successfully');
  7* END;
SQL> /
Record inserted successfully
2 Record is inserted successfully

PL/SQL procedure successfully completed.
```

EXPERIMENT_5

ROLL NO: 224G1A0502 NAME : AJAY KUMAR P

EXPERIMENT-14

224G1A0502 AJAY KUMAR P

```
SQL> CREATE TABLE branch(
  2  id NUMBER PRIMARY KEY,
  3  name VARCHAR2(20) NOT NULL,
  4  strength NUMBER
  5  );

Table created.
```

```
SQL> INSERT ALL
  2  INTO branch VALUES(1,'CSE',144)
  3  INTO branch VALUES(2,'CSD',140)
  4  INTO branch VALUES(2,'EEE',120)
  5  SELECT * FROM DUAL;
INSERT ALL
*
ERROR at line 1:
ORA-00001: unique constraint (C##526.SYS_C008329) violated


SQL> INSERT ALL
  2  INTO branch VALUES(1,'CSE',144)
  3  INTO branch VALUES(2,'CSD',140)
  4  INTO branch VALUES(3,'EEE',120)
  5  SELECT * FROM DUAL;

3 rows created.
```

EXPERIMENT_5

ROLL NO: 224G1A0502 NAME : AJAY KUMAR P

```
SQL> SET SERVEROUT ON
SQL> SET VERIFY OFF
SQL> CREATE OR REPLACE FUNCTION totalstrength RETURN NUMBER
  2  AS
  3  total NUMBER:=0;
  4  BEGIN
  5  SELECT sum(strength) INTO total FROM branch;
  6  return total;
  7  END;
  8  /

Function created.
```

```
SQL> DECLARE
  2  answer NUMBER;
  3  BEGIN
  4  answer:=totalstrength();
  5  DBMS_OUTPUT.PUT_LINE('Total strength of students is '||answer);
  6  END;
  7  /
Total strength of students is 404

PL/SQL procedure successfully completed.
```

EXPERIMENT_5

ROLL NO: 224G1A0502 NAME : AJAY KUMAR P

EXPERIMENT-15

224G1A0502 AJAY KUMAR P

```
SQL> CREATE TABLE instruct(
  2  id NUMBER PRIMARY KEY,
  3  name VARCHAR2(10) NOT NULL,
  4  dname VARCHAR2(10) NOT NULL,
  5  salary NUMBER CHECK(salary>10000)
  6  );

Table created.
```

```
SQL> INSERT ALL
  2  INTO instruct VALUES(1,'HARSHA','CSE',50000)
  3  INTO instruct VALUES(2,'ARUN','CSE',60000)
  4  INTO instruct VALUES(3,'BASHA','ECE',55000)
  5  INTO instruct VALUES(4,'DINESH','EEE',65000)
  6  SELECT * FROM DUAL;

4 rows created.
```

```
SQL> CREATE OR REPLACE TRIGGER display_changes
  2  BEFORE UPDATE ON instruct
  3  FOR EACH ROW
  4  WHEN(NEW.ID=OLD.ID)
  5  DECLARE
  6  sal_diff number;
  7  BEGIN
  8  sal_diff:=:NEW.salary-:OLD.salary;
  9  DBMS_OUTPUT.PUT_LINE('OLD SALARY: '||:OLD.salary);
 10  DBMS_OUTPUT.PUT_LINE('NEW SALARY: '||:NEW.salary);
 11  DBMS_OUTPUT.PUT_LINE('Salary difference : '||sal_diff);
 12  END;
 13  /

Trigger created.
```

EXPERIMENT_5

ROLL NO: 224G1A0502 NAME : AJAY KUMAR P

```
SQL> DECLARE
  2  tot_rows NUMBER;
  3  BEGIN
  4  UPDATE instruct
  5  SET salary=salary*1.5;
  6  IF sql%notfound THEN
  7  DBMS_OUTPUT.PUT_LINE('no instructors updated');
  8  ELSIF sql%found THEN
  9  tot_rows:=sql%rowcount;
 10  DBMS_OUTPUT.PUT_LINE(tot_rows||' instructors updated');
 11  END IF;
 12  END;
 13  /

PL/SQL procedure successfully completed.

SQL> SET SERVEROUT ON
SQL> SET VERIFY OFF
SQL> /
OLD SALARY: 75000
NEW SALARY: 112500
Salary difference : 37500
OLD SALARY: 90000
NEW SALARY: 135000
Salary difference : 45000
OLD SALARY: 82500
NEW SALARY: 123750
Salary difference : 41250
OLD SALARY: 97500
NEW SALARY: 146250
Salary difference : 48750
4 instructors updated

PL/SQL procedure successfully completed.
```

EXPERIMENT_5

ROLL NO: 224G1A0502 NAME : AJAY KUMAR P

EXPERIMENT-16

224G1A0502 AJAY KUMAR P

```
SQL> CREATE TABLE customers(
  2  id NUMBER PRIMARY KEY,
  3  name VARCHAR2(20) NOT NULL,
  4  age NUMBER NOT NULL,
  5  salary NUMBER NOT NULL
  6  );

Table created.
```

```
SQL> INSERT ALL
  2  INTO customers VALUES(1,'HARSHA',18,50000)
  3  INTO customers VALUES(2,'ARUN',19,60000)
  4  INTO customers VALUES(3,'BASHA',19,65000)
  5  INTO customers VALUES(4,'DINESH',20,55000)
  6  SELECT * FROM DUAL;

4 rows created.
```

```
SQL> DECLARE
  2  tot_rows NUMBER;
  3  BEGIN
  4  UPDATE customers SET salary=salary*1.5;
  5  IF sql%notfound THEN
  6  DBMS_OUTPUT.PUT_LINE('No customers updated');
  7  ELSIF sql%found THEN
  8  tot_rows :=sql%rowcount;
  9  DBMS_OUTPUT.PUT_LINE(tot_rows||' customers updated');
 10  END IF;
 11  END;
 12  /
4 customers updated

PL/SQL procedure successfully completed.
```

EXPERIMENT_5

ROLL NO: 224G1A0502 NAME : AJAY KUMAR P

```
SQL> DECLARE
  2  c_id customers.id%type;
  3  c_name customers.name%type;
  4  c_age customers.age%type;
  5  CURSOR c_customers IS
  6  SELECT id,name,age FROM customers;
  7  BEGIN
  8  OPEN c_customers;
  9  LOOP
 10  FETCH c_customers INTO c_id,c_name,c_age;
 11  EXIT WHEN c_customers%notfound;
 12  DBMS_OUTPUT.PUT_LINE(c_id||' '||c_name||' '||c_age);
 13  END LOOP;
 14  CLOSE c_customers;
 15  END;
 16  /
1 HARSHA 18
2 ARUN 19
3 BASHA 19
4 DINESH 20

PL/SQL procedure successfully completed.
```