## Program 1

```
CREATE TABLE employee(
   id NUMBER PRIMARY KEY,
   name VARCHAR2(20),
   surname VARCHAR2(20),
   dpt VARCHAR2(20),
   salary NUMBER(10,4)
);
ALTER TABLE employee ADD salary NUMBER(10);
ALTER TABLE employee MODIFY salary NUMBER(10,4);
INSERT INTO employee(id, name, surname, dpt, salary) VALUES(000, 'john', 'skulls', 'cse', 40000.0);
INSERT INTO employee(id, name, surname, dpt, salary) VALUES(001, 'sam', 'jackson', 'bca', 55000.00);
SELECT * FROM employee;
DELETE FROM employee;
SELECT * FROM employee;
```

**Program 2**

```
CREATE TABLE employer(
   id NUMBER(10) PRIMARY KEY,
   name VARCHAR2(20),
   dpt VARCHAR2(20),
   address VARCHAR2(20),
   rank VARCHAR2(20)
);
INSERT INTO employer (id, name, dpt, address, rank) VALUES
(0, 'Tom', 'BBA', 'Bangalore', 'First'),
(1, 'Grace', 'ACC', 'Vizag', 'First'),
(10, 'James', 'BCA', 'Kerala', 'Second'),
```

```
(11, 'Sam', 'BBA', 'Tamil Nadu', 'Third');

SELECT * FROM employer;

SELECT * FROM employer WHERE rank = 'first';

SELECT * FROM employer WHERE rank = 'first';

SELECT * FROM employer WHERE rank = 'third';

SELECT name FROM employer;

SELECT name, dpt FROM employer;

UPDATE employer SET rank = 'fourth' WHERE id = 0;

SELECT * FROM employer;

DELETE FROM employer WHERE name = 'James';

SELECT * FROM employer;

COMMIT;

SAVEPOINT a;

INSERT INTO employer (id, name, dpt, address, rank) VALUES (12, 'Alice', 'HR', 'Mumbai', 'Second');

SAVEPOINT b;

ROLLBACK TO b;

SELECT * FROM employer;
```

## Program 3

```
CREATE TABLE student(
   id NUMBER NOT NULL,
   name VARCHAR2(20),
   surname VARCHAR2(20),
   address VARCHAR2(20),
   city VARCHAR2(20),
   PRIMARY KEY(id)
);

INSERT INTO student VALUES(100, 'chillas', 'munenge', 'gitam', 'bangalore');

INSERT INTO student VALUES(101, 'mustapha', 'hasssan', 'vizag', 'rajasthan');

INSERT INTO student VALUES(102, 'usamn', 'mumbai', 'shehu', 'gujarat');
```

```
INSERT INTO student VALUES(103, 'ebleis', 'delhi', 'hell', 'fire');
SELECT * FROM student;
CREATE TABLE course(
   course_id NUMBER PRIMARY KEY,
   course_name VARCHAR2(20),
   student_id NUMBER,
   FOREIGN KEY(student_id) REFERENCES student(id)
);
CREATE TABLE college(
   college_id NUMBER NOT NULL UNIQUE,
   college_code VARCHAR2(20) UNIQUE,
   college_name VARCHAR2(20)
);
CREATE TABLE order(
   order_id NUMBER PRIMARY KEY,
   amount NUMBER CHECK(amount >= 10000)
);
ALTER TABLE `order` DROP PRIMARY KEY;
SELECT * FROM student;
```

## Program 4

```
mysql> create table guest(
    id int,
    name varchar(20),
    surname varchar(20),
    g_type varchar(20),
   m_tpe varchar(20),
   m_cost decimal(10,4),
   total int,
   primary key(id));
```

```
mysql> insert into guest values(100, 'chetan', 'popeye', 'visitor', 'premium', 3000.0, 15000.0);
mysql> INSERT INTO guest VALUES (101, 'Alex', 'Smith', 'resident', 'standard', 5000.0, 10000.0);
mysql> INSERT INTO guest VALUES (102, 'Jordan', 'Doe', 'member', 'gold', 7500.0, 20000.0);
mysql> INSERT INTO guest VALUES (103, 'Emily', 'Clark', 'visitor', 'silver', 6000.0, 12000.0);
mysql> INSERT INTO guest VALUES (104, 'Michael', 'Roberts', 'member', 'bronze', 4000.0, 8000.0);
mysql> INSERT INTO guest VALUES (105, 'Sara', 'Johnson', 'visitor', 'platinum', 9000.0, 25000.0);
mysql> select * from guest;
mysql> select name, surname from guest where g_type = 'visitor';
mysql> select name, id, total from guest where total > (select avg(total) from guest);
mysql> CREATE TABLE employees (
        employee_id INT PRIMARY KEY,
        employee_name VARCHAR(50),
         department_id INT,
        email VARCHAR(100)
    );
mysql> INSERT INTO employees (employee_id, employee_name, department_id, email) VALUES
    (1, 'Alice Smith', 1, 'alice.smith@example.com'),
    (2, 'Bob Johnson', 2, 'bob.johnson@example.com'),
    (3, 'Charlie Davis', 3, 'charlie.davis@example.com'),
    (4, 'Dana Lee', 2, 'dana.lee@example.com'),
    (5, 'Evan Wright', 4, 'evan.wright@example.com');
mysql> select * from employees;
mysql> CREATE TABLE departments (
         department_id INT PRIMARY KEY,
        department_name VARCHAR(50),
         location VARCHAR(50),
         budget DECIMAL(10,2)
    );
mysql> INSERT INTO departments (department_id, department_name, location, budget) VALUES
```

```
    (1, 'Human Resources', 'New York', 50000.00),

    (2, 'Engineering', 'San Francisco', 150000.00),

    (3, 'Marketing', 'Chicago', 75000.00),

    (4, 'Sales', 'Boston', 100000.00),

    (6, 'Research', 'Seattle', 50000.00);
```

```
mysql> select * from departments;
```

```
mysql> SELECT employees.employee_id, employees.employee_name, departments.department_name, departments.location FROM employees INNER JOIN departments ON employees.department_id = departments.department_id;
```

```
mysql> SELECT employees.employee_id, employees.employee_name, departments.department_name, departments.location FROM employees LEFT JOIN departments ON employees.department_id = departments.department_id;
```

```
mysql> SELECT departments.department_id, departments.department_name, departments.location, employees.employee_id, employees.employee_name FROM employees RIGHT JOIN departments ON employees.department_id = departments.department_id;
```

```
mysql> -- LEFT JOIN to get all employees and their matching departments, if any

mysql> SELECT employees.employee_id, employees.employee_name, departments.department_id, departments.department_name FROM employees

LEFT JOIN departments ON employees.department_id = departments.department_id UNION

  -- RIGHT JOIN to get all departments and their matching employees, if any

  SELECT employees.employee_id, employees.employee_name, departments.department_id, departments.department_name

   FROM employees

   RIGHT JOIN departments ON employees.department_id = departments.department_id;
```

## Program 5

## Program code 5 a:

```
set serveroutput on;
declare
        var1 integer;
        var2 integer;
        Var3 integer;
begin
        Var1:=&var1;
        Var2:=&var2;
        Var3:=Var1+Var2;
```

```
        dbms_output.put_line(Var3);
end;
/
```

**Program code 5 b:**

```
set serveroutput on;
declare
num1 integer;
num2 integer;
Var1 integer;
Var2 integer;

begin
Var1:=&num1;
Var2:=&num2;

if Var1 > Var2 then
dbms_output.put_line('Var1 Greater');
end if;

dbms_output.put_line('I am Not in if');

end;
/
```

**Program code 5 c:**

```
set serveron output;

DECLARE
   num1 NUMBER := 25;
   num2 NUMBER := 40;
   num3 NUMBER := 15;
   greatest NUMBER;
BEGIN
   -- Find the greatest of three numbers
   IF num1 >= num2 AND num1 >= num3 THEN
      greatest := num1;
   ELSIF num2 >= num1 AND num2 >= num3 THEN
      greatest := num2;
   ELSE
      greatest := num3;
   END IF;

   -- Display the result
```

```
   DBMS_OUTPUT.PUT_LINE('The greatest of ' || num1 || ', ' || num2 || ', and ' || num3 || ' is ' ||
greatest);
END;
/
```

**Program code 5 d:**

```
set serveroutput on;
DECLARE
   -- declare variable num
   num NUMBER(3) := 1;
   sum1 NUMBER(4) := 0;
BEGIN
   WHILE num <= 5 LOOP
      -- display odd number
      dbms_output.Put_line(num);
        -- the sum of all odd numbers
       sum1 := sum1 + num;
        --next odd number
      num := num + 2;
    -- end  loop
   END LOOP;
dbms_output.Put_line('Sum of all odd numbers is '|| sum1);
END;
/
```

**Program code 5 e:**

```
set serveroutput on;
declare
          a number:=&a;
          b number:=&b;
begin
       WHILE a!=b loop
            if(a>b) Then
                    a:=a-b;
            else
                    b:=b-a;
            end if;
       END LOOP;
          dbms_output.put_line('GCD is'||a);
end;
/
```

**Program 6**

**Implicit cursor**

```
SQL> INSERT INTO EMP VALUES (101,'KATHIR',35000);
SQL>  INSERT INTO EMP VALUES (102,'Deva',35000);
SQL>  INSERT INTO EMP VALUES (103,'Harish',35000);
SQL>  INSERT INTO EMP VALUES (103,'Harish',35000);
SQL> SELECT * FROM EMP;
```

```
DECLARE
    emp_name EMP.NAME%TYPE;
   emp_salary EMP.SALARY%TYPE;
 BEGIN
 -- Implicit cursor is used in the SELECT INTO statement
 SELECT NAME,SALARY INTO emp_name, emp_salary FROM EMP WHERE ID=101;
 -- Display the result
 DBMS_OUTPUT.PUT_LINE('Employee Name: ' || emp_name);
 DBMS_OUTPUT.PUT_LINE('Employee Salary: ' || emp_salary);
END;
 /
```

**Explicit Cursor**

```
DECLARE
   CURSOR emp_cursor IS
   SELECT NAME, SALARY FROM EMP WHERE ID=103;
   emp_name EMP.NAME%TYPE;
   emp_salary EMP.SALARY%TYPE;
   BEGIN
      -- Open the cursor
      OPEN emp_cursor;
    -- Fetch and process each row
     LOOP
```

```
        FETCH emp_cursor INTO emp_name, emp_salary;
        EXIT WHEN emp_cursor%NOTFOUND;
        -- Display the result for each row
        DBMS_OUTPUT.PUT_LINE('Employee Name: ' || emp_name);
        DBMS_OUTPUT.PUT_LINE('Employee Salary: ' || emp_salary);
    END LOOP;
    -- Close the cursor
    CLOSE emp_cursor;
 END;
/
```