

```
-- CREATE TABLE CUSTOMERS(  
--   ID   INT NOT NULL,  
--   NAME VARCHAR (20) NOT NULL,  
--   AGE INT NOT NULL,  
--   ADDRESS CHAR (25),  
--   SALARY   DECIMAL (18, 2),  
--   PRIMARY KEY (ID)  
-- );  
  
-- INSERT INTO CUSTOMERS (ID,NAME,AGE,ADDRESS,SALARY)  
-- VALUES (1, 'harsh', 19, 'nagar', 2000.00 );  
  
-- INSERT INTO CUSTOMERS (ID,NAME,AGE,ADDRESS,SALARY)  
-- VALUES (2, 'akash', 19, 'Delhi', 1500.00 );  
  
-- INSERT INTO CUSTOMERS (ID,NAME,AGE,ADDRESS,SALARY)  
-- VALUES (3, 'kaustubh', 19, 'gujarat', 2000.00 );  
  
-- INSERT INTO CUSTOMERS (ID,NAME,AGE,ADDRESS,SALARY)  
-- VALUES (4, 'john', 19, 'mumbai', 6500.00 );  
  
-- INSERT INTO CUSTOMERS (ID,NAME,AGE,ADDRESS,SALARY)  
-- VALUES (5, 'ashish', 19, 'pune', 8500.00 );  
  
-- INSERT INTO CUSTOMERS (ID,NAME,AGE,ADDRESS,SALARY)  
-- VALUES (6, 'onasvee', 19, 'nagpur', 4500.00 );  
  
-- select * from CUSTOMERS;  
  
-- CREATE TABLE cust_visitno(  
--   visitno INT NOT NULL  
-- );  
  
-- INSERT INTO cust_visitno VALUES (1);  
-- INSERT INTO cust_visitno VALUES (2);
```

```
-- INSERT INTO cust_visitno VALUES (1);
-- INSERT INTO cust_visitno VALUES (5);
-- INSERT INTO cust_visitno VALUES (3);
-- INSERT INTO cust_visitno VALUES (2);
```

--Implicit Cursors

```
DECLARE
    total_rows number(2);
BEGIN
    UPDATE customers
    SET salary = salary + 500;
    IF sql%notfound THEN
        dbms_output.put_line('no customers selected');
    ELSIF sql%found THEN
        total_rows := sql%rowcount;
        dbms_output.put_line( total_rows || ' customers selected ');
    END IF;
END;
/
```

-- **Explicit Cursors**

```
DECLARE
    c_id customers.id%type;
    c_name customers.name%type;
    c_addr customers.address%type;
    CURSOR c_customers is
        SELECT id, name, address FROM customers;
BEGIN
    OPEN c_customers;
    LOOP
        FETCH c_customers into c_id, c_name, c_addr;
        EXIT WHEN c_customers%notfound;
        dbms_output.put_line(c_id || ' ' || c_name || ' ' || c_addr);
    END LOOP;
    CLOSE c_customers;
```

```
END;
```

```
/
```

```
-- Parameterized cursor
```

```
DECLARE
```

```
  c_id customers.id%type;
```

```
  c_name customers.name%type;
```

```
  c_salary customers.salary%type;
```

```
  CURSOR c_customers (in_id IN number) is
```

```
    SELECT id, name, salary FROM customers where id>in_id;
```

```
BEGIN
```

```
  OPEN c_customers(1);
```

```
  LOOP
```

```
    FETCH c_customers into c_id, c_name, c_salary;
```

```
      EXIT WHEN c_customers%notfound;
```

```
      dbms_output.put_line(c_id || ' ' || c_name || ' ' || c_salary);
```

```
  END LOOP;
```

```
  CLOSE c_customers;
```

```
END;
```

```
/
```

```
-- multi cursor
```

```
DECLARE
```

```
  c_name customers.name%type;
```

```
  c_visit cust_visitno.visitno%type;
```

```
  CURSOR c_customers is
```

```
    SELECT name FROM customers;
```

```
  CURSOR c_visits is
```

```
    SELECT visitno FROM cust_visitno;
```

```
BEGIN
```

```
  OPEN c_customers;
```

```
  OPEN c_visits;
```

```
LOOP
FETCH c_customers into c_name;
FETCH c_visits into c_visit;

EXIT WHEN c_customers%notfound or c_visits%notfound ;
dbms_output.put_line(' ' || c_name || ' ' || c_visit);
END LOOP;
CLOSE c_customers;
CLOSE c_visits;
END;
/
```

Statement processed.
6 customers selected

Statement processed.
1 harsh nagar
2 akash Delhi
3 kaustubh gujarat
4 john mumbai
5 ashish pune
6 onasvee nagpur

Statement processed.
2 akash 5500
3 kaustubh 6000
4 john 10500
5 ashish 12500
6 onasvee 8500

Statement processed.
harsh 1
akash 2
kaustubh 1
john 5
ashish 3
onasvee 2