Assignment 3: Cursors

SET A: Bus – Route Database

Consider the following database

Bus (bus_noint , capacity int , depot_name varchar(20))

Route (route_no int, source varchar(20), destination varchar(20), No_of_stations int)

Bus and Route are related with many to many relationship.

Create the above database in PostGreSQL and insert sufficient records.

a. Write a stored function using cursor, which will give details of all routes on which bus no

110 is running.

b. Write a stored function using cursor, which will give details of all buses on route from

"Station" to "Airport".

```
CREATE TABLE Bus (

    bus_no INTEGER PRIMARY KEY,

    capacity INTEGER,

    depot_name VARCHAR(20)

);
```

```
CREATE TABLE Route (

    route_no INTEGER PRIMARY KEY,

    source VARCHAR(20),

    destination VARCHAR(20),

    no_of_stations INTEGER

);
```

-- Create a bridge table for many-to-many relationship

```
CREATE TABLE Bus_Route (

    bus_no INTEGER REFERENCES Bus(bus_no),

    route_no INTEGER REFERENCES Route(route_no),

    PRIMARY KEY (bus_no, route_no)

);
```

```
INSERT INTO Bus (bus_no, capacity, depot_name)
VALUES
    (110, 50, 'Central Depot'),
    (125, 60, 'East Depot'),
    (130, 40, 'West Depot');


INSERT INTO Route (route_no, source, destination, no_of_stations)
VALUES
    (1, 'Station', 'Airport', 5),
    (2, 'University', 'Market', 3),
    (3, 'Hospital', 'Park', 4);


INSERT INTO Bus_Route (bus_no, route_no)
VALUES
    (110, 1),
    (110, 2),
    (125, 1),
    (130, 3);


-- Stored function to find routes for a specific bus number
```

Q1. Write a stored function using cursor, which will give details of all routes on which bus no 110 is running.

```
create or replace function r_details(num int) returns int as'
 Declare
   rcursor cursor for select * from Bus a,Route b,Bus_Route c where a.bus_no=num AND
a.bus_no=c.bus_no AND b.route_no=c.route_no;
   rno int;
   source text;
   destination text;
   nos int;
```

```
Begin

  open rcursor;

  loop

  fetch rcursor into rno,source,destination,nos;

  exit when not found;

  Raise Notice''% % % %'', rno,source,destination,nos;

  End loop;

  close rcursor;

  return 1;

  End;

  'language plpgsql;
```

--To display Output:

```
  Select  r_details(110);
```

Q2. Write a stored function using cursor, which will give details of all buses on route from "Station" to "Airport".

```
Create or replace function bus_details(src text,dest text) returns int as '
  Declare
    c1 cursor for select * from Bus a,route b,Bus_Route c where b.source=src AND b.destination=dest AND a.bus_no=c.bus_no AND b.route_no=c.route_no;
    cp text;
    num int;
    depo text;
    Begin
    Open c1;
    loop
    fetch c1 into num,cp,depo;
    exit when not found;
     Raise Notice''% % % '', num,cp,depo;
```

End loop;

close c1;

return 1;

End;

'language plpgsql;

--To display Output:

select bus_details('Station','Airport');