22AIE303 – DBMS

CLASS WORKSHEET – 09-dec-2024

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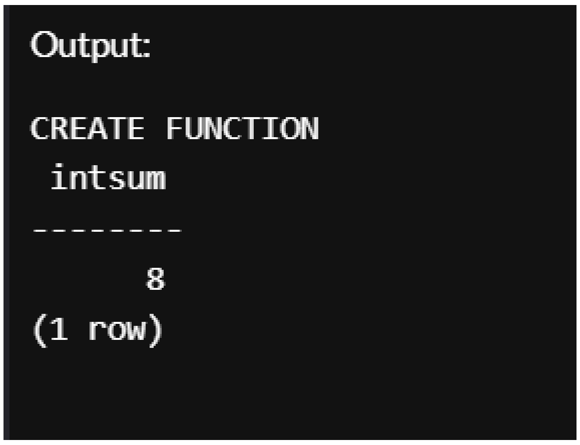
1. Write a function that accepts two ints and returns its sum

   CODE :

```
CREATE function intsum(a int, b int) returns int AS
$$
Declare
c int;

begin
c:=a+b;
return c;
end;
$$

language 'plpgsql';


select intsum(5,3);
```

   OUTPUT :



```
Output:

CREATE FUNCTION
 intsum
--------
      8
(1 row)
```

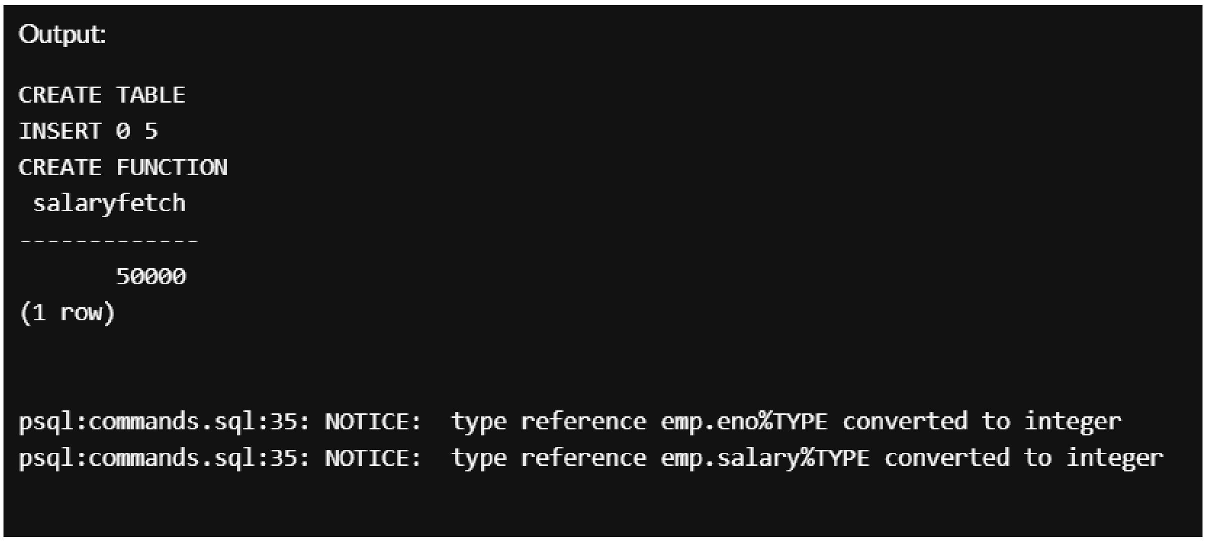
2. Create a function that accepts eno and returns salary

   CODE :

```
CREATE table emp(eno int primary key, ename varchar(10),  salary
int);
INSERT INTO emp (eno, ename, salary) VALUES
```

```
(1, 'Alice', 50000),
(2, 'Bob', 60000),
(3, 'Charlie', 55000),
(4, 'Diana', 70000),
(5, 'Eve', 45000);


CREATE function salaryfetch(enum emp.eno%type, OUT sal
emp.salary%type) AS
$$
begin
select salary into sal from emp where enum = eno;
end;
$$

language 'plpgsql';

select salaryfetch(1);
```

OUTPUT :



Output:

```
CREATE TABLE
INSERT 0 5
CREATE FUNCTION
 salaryfetch
-------------
       50000
(1 row)


psql:commands.sql:35: NOTICE:  type reference emp.eno%TYPE converted to integer
psql:commands.sql:35: NOTICE:  type reference emp.salary%TYPE converted to integer
```

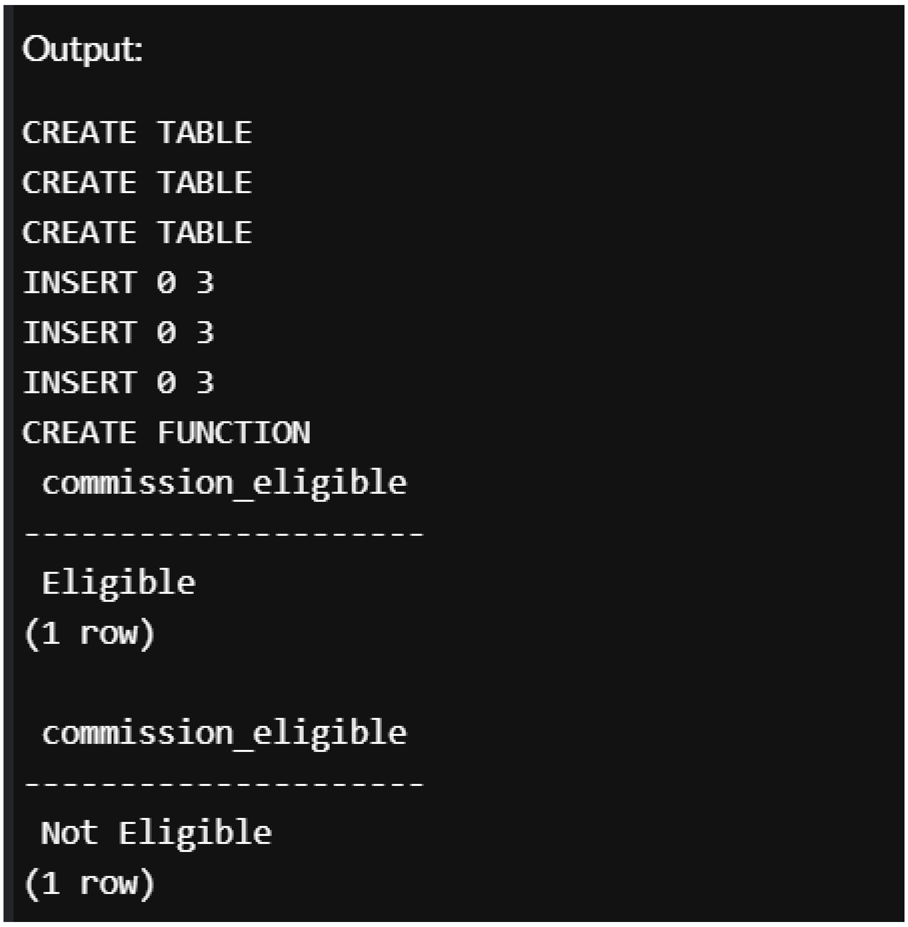
3. Write a function which accepts salesperson number and check if the salesperson is eligible for getting commission. A salesperson is eligible for commission only if he has sold a total of 1000 quantity or more for all products together. If salesperson is eligible update the commission amount for the corresponding salesperson in the salesperson table. Initially commission is null

CODE :

```
CREATE TABLE SalesPerson (
    slno INT PRIMARY KEY,
    slname VARCHAR(10),
    commission CHAR(1)
);
```

```
CREATE TABLE Product (
    pno INT PRIMARY KEY,
    pname VARCHAR(10),
    unitprice INT
);
CREATE TABLE Sales (
    sno INT PRIMARY KEY,
    slno INT REFERENCES SalesPerson(slno),
    pno INT REFERENCES Product(pno),
    qtysold int
);
INSERT INTO SalesPerson (slno, slname, commission) VALUES
(1, 'Alice', null),
(2, 'Bob', null),
(3, 'Charlie', null);
INSERT INTO Product (pno, pname, unitprice) VALUES
(101, 'Laptop', 800),
(102, 'Tablet', 500),
(103, 'Phone', 300);
INSERT INTO Sales (sno, slno, pno, qtysold) VALUES
(1, 1, 101, 6501),
(2, 2, 103, 540),
(3, 3, 102, 1200);

CREATE function commission_eligible(sales_no SalesPerson.slno%type,
OUT msg varchar) AS
$$
Declare
tot_qty Sales.qtysold%type;

begin
select sum(qtysold) into tot_qty from Sales where slno = sales_no;
if tot_qty > 1000 then
update SalesPerson set commission = 'y' where slno = sales_no;
msg := 'Eligible';

else
update SalesPerson set commission = 'n' where slno = sales_no;
msg := 'Not Eligible';

end if;

end;
$$

language 'plpgsql';

select commission_eligible(1);
select commission_eligible(2);
```

OUTPUT :



```
Output:

CREATE TABLE
CREATE TABLE
CREATE TABLE
INSERT 0 3
INSERT 0 3
INSERT 0 3
CREATE FUNCTION
 commission_eligible
---------------------
 Eligible
(1 row)

 commission_eligible
---------------------
 Not Eligible
(1 row)
```

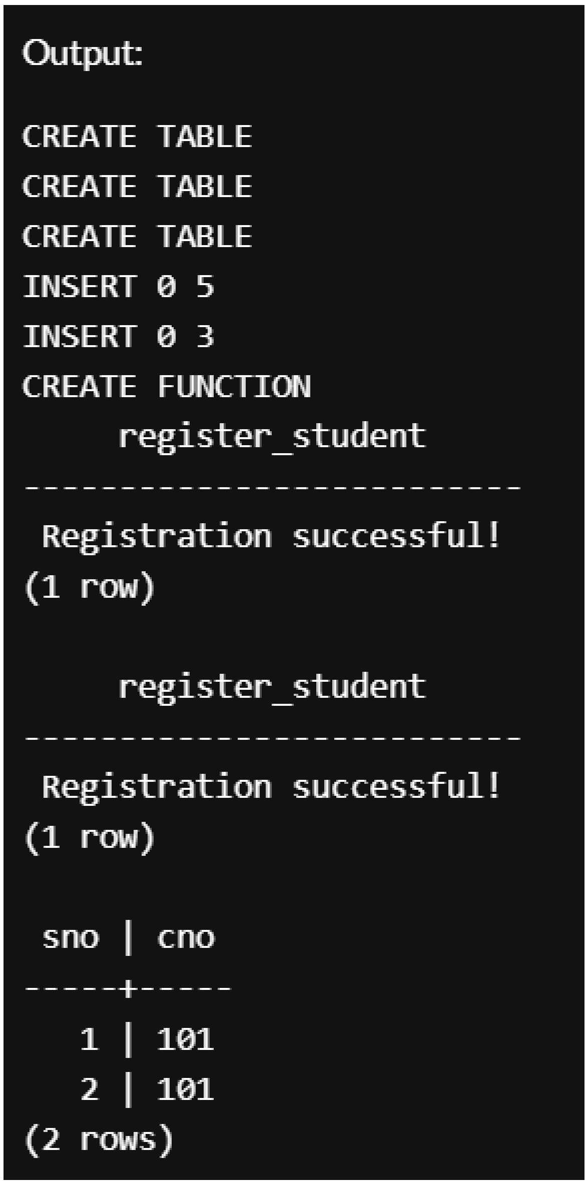
4. For all courses maximum sixty students can be registered write a function to register a student for a particular course only if current Number of students registered for that course is not exceeding the limit

CODE :

```
-- Create the student table
CREATE TABLE Student (
    sno INT PRIMARY KEY,
    sname VARCHAR(15)
);

-- Create the course table
CREATE TABLE Course (
    cno INT PRIMARY KEY,
    cname VARCHAR(15)
);

-- Create the stud_course table to represent the many-to-many
relationship
CREATE TABLE Stud_Course (
    sno INT REFERENCES Student(sno),
    cno INT REFERENCES Course(cno),
    PRIMARY KEY (sno, cno)
);
```

```sql
-- Insert sample students
INSERT INTO Student (sno, sname) VALUES
(1, 'Alice'),
(2, 'Bob'),
(3, 'Charlie'),
(4, 'Diana'),
(5, 'Eve');

-- Insert sample courses
INSERT INTO Course (cno, cname) VALUES
(101, 'Mathematics'),
(102, 'Physics'),
(103, 'Chemistry');

CREATE OR REPLACE FUNCTION register_student(s_id INT, c_id INT)
RETURNS TEXT AS $$
DECLARE
    current_count INT;
BEGIN
    SELECT COUNT(*) INTO current_count
    FROM Stud_Course
    WHERE cno = c_id;

    -- Check if the limit is exceeded
    IF current_count >= 60 THEN
        RETURN 'Registration failed: Maximum student limit (60)
reached for this course.';
    ELSE
        -- Insert the student into the course
        INSERT INTO Stud_Course (sno, cno) VALUES (s_id, c_id);
        RETURN 'Registration successful!';
    END IF;
END;
$$ LANGUAGE plpgsql;


SELECT register_student(1, 101);
SELECT register_student(2, 101);
SELECT * FROM Stud_Course;
```

OUTPUT :


Output:

```
CREATE TABLE
CREATE TABLE
CREATE TABLE
INSERT 0 5
INSERT 0 3
CREATE FUNCTION
     register_student
--------------------------
 Registration successful!
(1 row)

     register_student
--------------------------
 Registration successful!
(1 row)

 sno | cno
-----+-----
   1 | 101
   2 | 101
(2 rows)
```