## IST 659 LAB Assignment NO -7

1) Add an employee using your own name and create a project assignment for yourself using existing project id.

## Query:

```
/*1) Add an employee using your own name */
INSERT INTO employee VALUES (11118, 'Rahuk', 'Rathod', 100000);

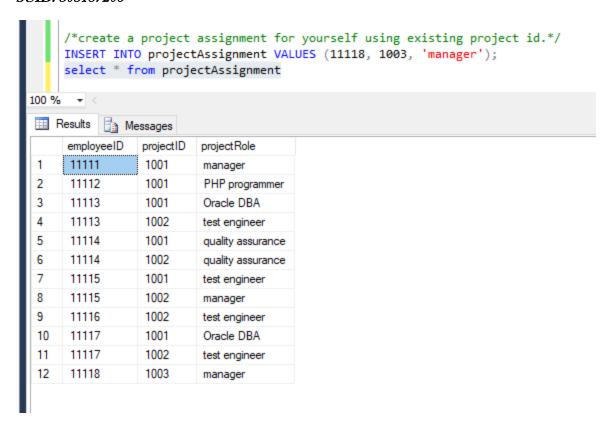
/* updating the employeeFName from Rahuk to Rahul */
update employee
set employeeFName= 'Rahul'
where employeeID=11118

/* create a project assignment for yourself using existing project id.*/
INSERT INTO projectAssignment VALUES (11118, 1003, 'manager');
```

## **Result:**

```
Add an employee using your own name */
     INSERT INTO employee VALUES (11118, 'Rahuk', 'Rathod', 100000);
     /* updating the employeeFName from Rahuk to Rahul */
     update employee
     set employeeFName= 'Rahul'
     where employeeID=11118
     select * from employee
100 %
Results
           Messages
      employeeID
                  employeeFName
                                  employeeLName
                                                  employee Salary
      11111
                                   Smith
                                                  30000
                  James
 2
      11112
                  Ada
                                  Zack
                                                  40000
      11113
                  Ben
                                   Yale
                                                  50000
      11114
                  Callen
                                   Wales
                                                  60000
      11115
                                                  70000
                  Dale
                                  Veller
      11116
                  Ethan
                                   Miller
                                                  80000
      11117
                  Fanny
                                   Niel
                                                  90000
      11118
                  Rahul
                                  Rathod
                                                  100000
```

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# 1) Write a scalar function that returns the average salary of the Employees **Query:**

```
/* scalar function that returns the average salary of the Employees*/
create function averageSalary(@i int)
returns decimal(10,1)
as
begin
declare @ret INT;
select @ret= avg(employeeSalary)
from employee
return @ret;
end;

/* call the function averageSalary*/
select dbo.averageSalary(8) as averageSalary
```

#### Result:

```
/* scalar function that returns the average salary of the Employees*/
create function averageSalary(@i int)
returns decimal(10,1)
as
begin
declare @ret INT;
select @ret= avg(employeeSalary)
from employee
return @ret;
end;

/* call the function averageSalary*/
select dbo_averageSalary(8) as averageSalary

/* create table-valued function that returns the Projects given an EmployeeID as a paramete*/
100 % 
Results Messages

averageSalary

1 65000.0
```

- 3. Write a table-valued function that returns the Projects given an EmployeeID as a parameter and
  - a. Show the function created
  - b. return the results for your own project

### Query:

```
/* create table-valued function that returns the Projects given an EmployeeID as a paramete*/
create function employeeProject(@employeeID int)
returns table
as
return
(
select pa.projectId as employeeProject
from projectAssignment pa
Inner Join employee e on pa.employeeID = e.employeeID
Inner Join project p on pa.projectID = p.projectID
where e.employeeID = @employeeID
)
drop function dbo.employeeProject
/* call the function employeeProject(11118);
```

#### Result:

```
/* create table-valued function that returns the Projects given an EmployeeID as a paramete*/
create function employeeProject(@employeeID int)
returns table
as
return
(
(
select pa.projectId as employeeProject
from projectAssignment pa
Inner Join employee e on pa.employeeID = e.employeeID
Inner Join project p on pa.projectID = p.projectID
where e.employeeID = @employeeID
)

/* call the function employeeProject*/
select * from employeeProject(11118);

100 % 
Results Messages

employeeProject

1 1003
```

4. Alter the Employee table to add a new column called 'Num of Projects' which can be **INTEGER** data type. Write a procedure that updates employee table with the total projects assigned to each employee (to the newly created column)

## Query:

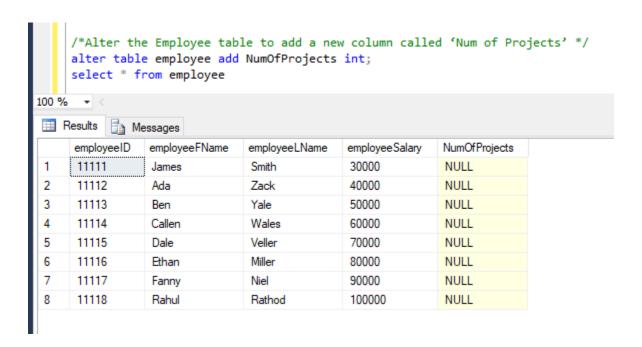
END;

```
/*Alter the Employee table to add a new column called 'Num of Projects' */
alter table employee add NumOfProjects int;
select * from employee

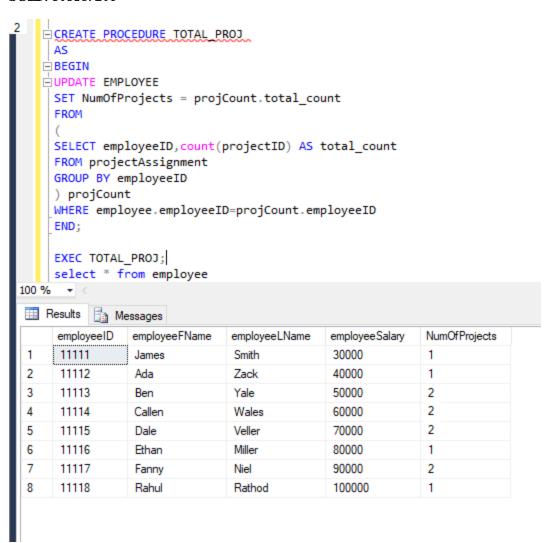
CREATE PROCEDURE TOTAL_PROJ
AS
BEGIN
UPDATE EMPLOYEE
SET NumOfProjects = projCount.total_count
FROM
(
SELECT employeeID,count(projectID) AS total_count
FROM projectAssignment
GROUP BY employeeID
) projCount
WHERE employee.employeeID=projCount.employeeID
```

## EXEC TOTAL\_PROJ;

## Result:



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5. Create a trigger that can update the num of projects whenever a new project is assigned to an employee.

Test the trigger with the below insert

- a. INSERT INTO projectAssignment VALUES (11114, 1003, 'quality assurance');
- b. INSERT INTO projectAssignment VALUES (11115, 1003, 'test engineer');

## Query:

```
CREATE TRIGGER NumofProjectsTrigger
ON projectAssignment
FOR INSERT,UPDATE
AS
IF @@ROWCOUNT >= 1
BEGIN
```

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```
UPDATE EMPLOYEE

SET NumOfProjects = projCount.total_count
FROM

(
SELECT employeeID,count(projectID) AS total_count
FROM projectAssignment
GROUP BY employeeID
) projCount
WHERE employee.employeeID=projCount.employeeID
END;

INSERT INTO projectAssignment VALUES (11114, 1003, 'quality assurance');
INSERT INTO projectAssignment VALUES (11115, 1003, 'test engineer');
```

#### Result:

```
||

□ CREATE TRIGGER NumofProjectsTrigger
     ON projectAssignment
     FOR INSERT, UPDATE
     AS
   ☐ IF @@ROWCOUNT >= 1
   ⊟BEGIN
   DUPDATE EMPLOYEE
     SET NumOfProjects = projCount.total_count
     FROM
     SELECT employeeID, count(projectID) AS total_count
     FROM projectAssignment
     GROUP BY employeeID
     ) projCount
     WHERE employee.employeeID=projCount.employeeID
     END;
100 %
Results
           Messages
      employeeID
                  employeeFName
                                  employeeLName
                                                  employee Salary
                                                                  NumOfProjects
      11111
                  James
                                   Smith
                                                  30000
 2
      11112
                  Ada
                                   Zack
                                                  40000
                                                                  1
 3
                                                                  2
      11113
                  Ben
                                   Yale
                                                  50000
 4
      11114
                                                                  3
                  Callen
                                   Wales
                                                  60000
 5
      11115
                  Dale
                                   Veller
                                                  70000
                                                                  3
 6
      11116
                  Ethan
                                   Miller
                                                  80000
                                                                  1
 7
                                                                  2
      11117
                                   Niel
                                                  90000
                  Fanny
 8
                  Rahul
                                   Rathod
      11118
                                                  100000
                                                                  1
```