**Database Management System – cs422 DE**

**Lab 3 – Week 7**

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**This Lab is based on Transact-SQL.**

- Submit your *own work* on time. No credit will be given if the lab is submitted after the due date.
- Note that the completed lab should be submitted in .doc, .docx, .rtf, .pdf or .zip format only.

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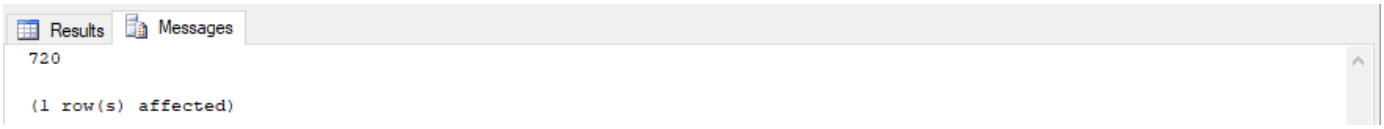
**1)** [3] Write and execute a T-SQL stored procedure *Factorial*(*n*), which computes and outputs the factorial of the input parameter *n*. If *n* is negative, then the procedure prints an error message.
Attach the screenshots of the output and the command which you used to execute the SP.
ANS:

```
create Procedure Factorial @n int ,@result int output
AS
Begin

 if @n<0
    begin
        print 'error: number is negative' ;
     end
if @n=0  or @n=1
     begin
      set @result=1
      end
 if @n>2
 begin
   set @result=1
     while @n>1
       Begin
           set @result=@result*@n  ;
           set @n=@n-1 ;

       end
           print  @result
     end
END
```







To execute the store procedure type this as new query

```
USE [lab3-week7];
Declare @var varchar(30)
EXEC  dbo.Factorial 6,@var;
```

**2)** [7] Create a Table *Employee* with the fields: social security no. (primary key), name, position, no. of dependents, annual salary.

Write and execute a T-SQL procedure *Compute_Tax* to do the following:

- Create a new table *Tax* with fields: social security no., income tax.
- Fill the table *Tax* with data by computing the income tax for each person in the Employee Table.

The income tax is computed from the annual salary S and the number of dependents D.

Net Salary: S - (7000 + D*950)

Tax Computed as follows:

- 10% of the first 15,000 of net salary;
- plus 15% of the next 15,000 of net salary;
- plus 28% of any net salary over 30,000.

For getting full credit for this problem, you need to show me the complete code for the *Compute_Tax* SP. Also attach the screenshots of the *Employee* and the new *Tax* table.

ANS:



```
if(OBJECT_ID ('compute_tax')) is not null
    Drop procedure compute_tax
  Go

  create procedure compute_tax
  as

  begin
   Drop table ##Tax
   create table ##Tax ( ssn int , tax float )
     begin
      insert into ##Tax

           select ssn ,
            CASE
             WHEN (salary -(7000+ numberOfDependents*950))<=15000
             THEN (salary -(7000+ numberOfDependents*950)) * 0.1

            WHEN (salary -(7000+ numberOfDependents*950)) > 15000
              and  (salary -(7000+ numberOfDependents*950)) <= 30000
             THEN ((15000) * 0.1) + (((salary -(7000+ numberOfDependents*950))-
15000)*0.15)

             WHEN (salary -(7000+ numberOfDependents*950)) > 30000
             THEN (15000 * 0.1) + (15000*0.15) + + (((salary -(7000+
numberOfDependents*950))-30000)*0.28)

             END

           from Employee
  END
      END
```

```
Use [lab3-week7];
Exec dbo.compute_tax
select * from ##Tax
```

Results | Messages

| | ssn | tax |
|---|---|---|
| 1 | 1 | 26192 |
| 2 | 2133212 | 4324 |
| 3 | 2221122 | 11660 |
| 4 | 4232321 | 6858 |
| 5 | 22114421 | 1665 |
| 6 | 33112312 | 2550 |