1)

/\*The monitoring application inserts a record only when the server is down.   
The polling takes place every 5 minutes.   
In the above example, "Server1" was down at 10:00. There is no entry for 10:05 which indicates that when the monitoring application checked at 10:05, the server was up.   
So the first downtime is for 00:05 minutes at 10:00 am.\*/

create table assign6\_1(id int identity(1,1),server\_name varchar(10),downtime datetime)

insert into assign6\_1 values

('Server1','2010-01-03 10:00'),

('Server1','2010-01-03 12:00'),

('Server1','2010-01-03 12:05'),

('Server1','2010-01-03 12:10'),

('Server1','2010-01-03 14:05'),

('Server1','2010-01-03 17:35'),

('Server1','2010-01-03 17:45'),

('Server1','2010-01-03 17:50'),

('Server1','2010-01-03 17:55'),

('Server2','2010-01-03 09:55'),

('Server2','2010-01-03 10:00')

with rcte as(

select \*,1 as count from assign6\_1 where id=1

union all

select a.\*,case when datediff(minute,r.downtime,a.downtime)=5 then count else count+1 end

from assign6\_1 a join rcte r on a.id=r.id+1

)

select server\_name,min(downtime) as downtime,cast(dateadd(minute,(sum(count)/count)\*5,'00:00') as time(0)) as downfor from rcte group by count,server\_name

2)

/\*There are employees who will be moved from one department to another in an organization. Get the employees with top 3 salaries in each department as of Today. Employee should be considered only

if he worked for 6 months in that department.

EmpID DepartmentID StartDate EndDate Salary

1 1 10/10/2015 10/6/2016 5000

1 2 10/6/2016 31/12/9999 10000

2 2 10/10/2016 31/12/9999 20000

3 2 12/01/2018 31/12/9999 40000

4 2 10/10/2016 31/12/9999 21000 \*/

create table assign6\_2(EmpID smallint,DepartmentID smallint,StartDate date,EndDate date,Salary int)

set dateformat dmy

insert into assign6\_2 values

(1,1,'10/10/2015','10/6/2016',5000),

(1,2,'10/6/2016','31/12/9999',10000),

(2,2,'10/10/2016','31/12/9999',20000),

(3,2,'12/01/2018','31/12/9999',40000),

(4,2,'10/10/2016','31/12/9999',21000)

with cte1 as(select DepartmentID,EmpID,salary,dense\_rank() over(partition by departmentid order by salary desc) as rank from assign6\_2

where datediff(month,startdate,getdate())>6)

select \* from cte1 where rank<=3

3)

/\*Employee has various groups like departments(like BI,.Net,Java etc), project(Like Project1,Project2,Project3 etc) , Grades(like G0,G1,G2).

Get the list of employees and their salaries and count of groups in which his salary is highest (1 is highest).

Sample Input:

EmpID Department Project Grade Salary

1 BI P1 G0 10000

2 BI P2 G0 20000

3 BI P1 G1 30000

4 .NET P2 G1 40000 \*/

create table assign6\_3(EmpID smallint primary key,Department varchar(10), Project char(2),Grade char(2),Salary int)

insert into assign6\_3 values

(1,'BI','P1','G0',10000),

(2,'BI','P2','G0',20000),

(3,'BI','P1','G1',30000),

(4,'.NET','P2','G1',40000)

with cte6 as

(select empid,salary,

dense\_rank() over(partition by department order by salary desc) as RankByDept,

dense\_rank() over(partition by project order by salary desc) as RankByProject,

dense\_rank() over(partition by grade order by salary desc) as RankByGrade

from assign6\_3 )

select \*,charindex('1',case when len(RankByDept)=1 then cast(RankByDept as varchar) else '0' end)+

charindex('1',case when len(RankByProject)=1 then cast(RankByProject as varchar) else '0' end)+

charindex('1',case when len(RankByGrade )=1 then cast(RankByGrade as varchar) else '0' end) as count from cte6 order by empid

4)

/\*Customer Product

1 A,C

2 B

3 A,G

4 C

5 B

Need to split all the comma separated values and insert as new rows. \*/

create table assign6\_4(Customerid smallint,Product varchar(10))

insert into assign6\_4 values

(1,'A,C'),

(2,'B'),

(3,'A,G'),

(4,'C'),

(5,'B')

select Customerid,Value from assign6\_4 outer apply string\_split(Product,',')

--OR

declare @var int=1;

with cte3(customerid,product) as(select customerid,substring(product,@var,1) from assign6\_4 where product like '%,%' union all

select customerid,case when product like '%,%' then substring(product,@var+2,1) end from assign6\_4 ),

cte4 as( select \* from cte3 where product is not null )

insert into assign6\_4(customerid,product) select customerid,product from cte4 order by customerid

delete assign6\_4 where product like '%,%'