Série N°1 Module 21
Système de Gestion de Base de Données (II)

FILIERE : TDI
NIVEAU : 2éme année

Exercices :

1. Factoriel de n
2. Equation 2eme degré
3. Somme = x^1/1! + x^2 / 2! +…+ x^n/n! pour x et n
4. Pour une valeur A, chercher le plus petit n qui vérifie n!>=A
5. PGDC de a et b
6. Tableau de multiplication pour N
7. Nombre premier < N

Solution :

- Exercice 1

```
declare @n int, @f int, @i int
select @n=5 , @f=1, @i=1
while (@i<=@n)
      begin
            set @f=@f*@i
            set @i=@i+1
      end
select @n as "N", @f as "Factoriel de N"
-- 2eme methode
declare @n int, @f int, @i int
select @n=5 , @f=1, @i=1
a:
      begin
            set @f=@f*@i
            set @i=@i+1
      end
if @i<=@n
      goto a
select @n as "N", @f as "Factoriel de N"
```

- Exercice 2

```
declare @a real, @b real, @c real
declare @delta real, @x1 real, @x2 real
select @a=1, @b=5, @c=2

if @a=0
      begin
            if @b=0
                  select 'l''ensemble IR'
            else
                  select Convert(decimal(10,2),(@c/@b)) as "Solution 1"
      end
else
```

```
	begin
	set @delta = @b*@b - 4*@a*@c
	if @delta=0
		select Convert(decimal(10,2),(-@b/(2*@a))) as "une seul
solution"
	else
		if @delta<0
			select 'aucune solution'
		else
			if @delta>0
				begin
				set @x1=(-@b-sqrt(@delta))/(2*@a)
				set @x2=(-@b+sqrt(@delta))/(2*@a)
				select '2 solution :' as " ",
Convert(decimal(10,2),@x1) as "Solution 1", Convert(decimal(10,2),@x2) as
"Solution 2"
				end
	end

--Exercice 3 :Somme = x^1/1! + x^2 / 2! +…+ x^n/n! pour x et n

declare @x real, @n int, @i int, @f bigint, @som real
select @x=2.5,@n=4, @i=1, @f=1, @som=0

while (@i<=@n)
begin
	set @f=@f*@i
	set @som=@som + power(@x,@i)/@f
	set @i=@i+1
end
Select 'la Somme: ' as " ", Convert(decimal(10,2),@som)

-- Exercice 4 : Pour une valeur A, chercher le plus petit n qui vérifie
n!>=A
declare @A int, @n int, @i int
select @A=25, @n=1, @i=1
a:
	set @n=@n*@i
	set @i=@i+1
if @n<@A goto a
select @A as "Pour A :", @i-1 as " N "

-- Exercice 5 : PGDC de a et b
declare @a int, @b int, @i int, @pgdc int
select @a=24, @b=16, @i=1, @pgdc=1

while @i<=@a or @i<=@b
begin
	if @a%@i=0 and @b%@i=0
		set @pgdc=@i
	set @i=@i+1
end
select @a as "A", @b as "B", @pgdc as "PGDC de A et B"
```

```
-- Exercice 6 : Tableau de multiplication pour N
declare @n int, @i int
declare @TabMul table(a int, b int, r int)
select @n=5, @i=1
while @i<=10
begin
      insert into @TabMul(a,b,r) values (@n,@i,@n*@i)
      set @i=@i+1
end
select * from @TabMul

-- Exercice 7 : Nombre premier < N
declare @n int, @i int, @j int, @diviseur int
declare @Premier table(Premier int)
select @n=100, @i=1

while @i<=@n
begin
      set @j=1
      while @j<@i
      begin
            if @i%@j=0
                  set @diviseur=@j
            set @j=@j+1
      end
      if @diviseur=1
            insert into @premier values (@i)
      set @i=@i+1
end

select * from @premier
```