L07 Sinteza datelor

```sql
-- SINTEZA DATELOR
select  codSpec  ,nume , codCurs,Nota
    from tStudenti as A inner join tNote as B on A.codStud=B.codStud
    union
select codSpec, nume , '*', avg(convert (decimal,nota)) as media
    from tStudenti as A inner join tNote as B on A.codStud=B.codStud
    group by codSpec,Nume
    union
select codSpec, '*' ,'*' , avg(convert (decimal,nota)) as media
    from tStudenti as A inner join tNote as B on A.codStud=B.codStud
    group by codSpec
    union
select '*' ,'*','*' , avg (convert(decimal,nota)) as media
    from tStudenti as A inner join tNote as B on A.codStud=B.codStud
    order by codSpec ,Nume, codCurs
/*
codSpec       nume          codCurs       Nota
    *         *             *             6.636363
Info          *             *             6.750000
Info          Alexandra     *             6.000000
Info          Alexandra     ASD           8.000000
Info          Alexandra     FP            4.000000
Info          Andreea       *             7.500000
Info          Andreea       ASD           5.000000
Info          Andreea       FP            10.000000
Info          Florin        *             6.000000
Info          Florin        ASD           7.000000
Info          Florin        FP            5.000000
Info          Mihai         *             7.500000
Info          Mihai         ASD           9.000000
Info          Mihai         FP            6.000000
Mate          *             *             6.333333
Mate          Adrian        *             7.000000
Mate          Adrian        FP            7.000000
Mate          Flavius       *             8.000000
Mate          Flavius       FP            8.000000
Mate          Marian        *             4.000000
Mate          Marian        FP            4.000000
*/


--Sa se modifice interogarea precedenta astfel incat sa apara nota maxima si
nota minima la nivel de student , etc.
select  codSpec  ,nume , codCurs,Nota,' 'as [nota minima], ' ' as [ nota maxima]
    from tStudenti as A inner join tNote as B on A.codStud=B.codStud
    union
select codSpec, nume, '*', avg(convert (decimal,nota)) as media, str(min(nota)),
str(max(nota))
    from tStudenti as A inner join tNote as B on A.codStud=B.codStud
    group by codSpec,Nume
    union
```

```sql
select codSpec, '*' ,'*' , avg(convert (decimal,nota)) as media,str(min(nota)),
str( max(nota))
    from tStudenti as A inner join tNote as B on A.codStud=B.codStud
    group by codSpec
    union
select '*' ,'*','*' , avg (convert(decimal,nota)) as media,str(min(nota)),
str(max(nota))
    from tStudenti as A inner join tNote as B on A.codStud=B.codStud
    order by codSpec ,Nume, codCurs
/*
```

codSpec	nume	codCurs	Nota	nota minima	nota maxima
*	*	*	6.636363	4	10
Info	*	*	6.750000	4	10
Info	Alexandra	*	6.000000	4	8
Info	Alexandra	ASD	8.000000		
Info	Alexandra	FP	4.000000		
Info	Andreea	*	7.500000	5	10
Info	Andreea	ASD	5.000000		
Info	Andreea	FP	10.000000		
Info	Florin	*	6.000000	5	7
Info	Florin	ASD	7.000000		
Info	Florin	FP	5.000000		
Info	Mihai	*	7.500000	6	9
Info	Mihai	ASD	9.000000		
Info	Mihai	FP	6.000000		
Mate	*	*	6.333333	4	8
Mate	Adrian	*	7.000000	7	7
Mate	Adrian	FP	7.000000		
Mate	Flavius	*	8.000000	8	8
Mate	Flavius	FP	8.000000		
Mate	Marian	*	4.000000	4	4
Mate	Marian	FP	4.000000		

```
*/

--Varianta optimizata. Utilizarea clauzei ROLLUP
select  codSpec  ,nume , codCurs, avg(convert(decimal,nota)) as media
    from tStudenti as A inner join tNote as B on A.codStud=B.codStud
    group by  CodSpec, nume, CodCurs
    with rollup
/*
```

codSpec	nume	codCurs	media
Info	Alexandra	ASD	8.000000
Info	Alexandra	FP	4.000000
Info	Alexandra	NULL	6.000000
Info	Andreea	ASD	5.000000
Info	Andreea	FP	10.000000
Info	Andreea	NULL	7.500000
Info	Florin	ASD	7.000000
Info	Florin	FP	5.000000
Info	Florin	NULL	6.000000
Info	Mihai	ASD	9.000000
Info	Mihai	FP	6.000000
Info	Mihai	NULL	7.500000
Info	NULL	NULL	6.750000
Mate	Adrian	FP	7.000000
Mate	Adrian	NULL	7.000000
Mate	Flavius	FP	8.000000
Mate	Flavius	NULL	8.000000

```
Mate        Marian      FP          4.000000
Mate        Marian      NULL        4.000000
Mate        NULL        NULL        6.333333
NULL        NULL        NULL        6.636363
*/

--Utilizarea clauzei CUBE
select  codSpec  ,nume , codCurs, avg(convert(decimal,nota)) as media
    from tStudenti as A inner join tNote as B on A.codStud=B.codStud
    group by  CodSpec, nume, CodCurs
    with cube
/*
codSpec     nume        codCurs     media
Info        Alexandra   ASD         8.000000
NULL        Alexandra   ASD         8.000000
Info        Andreea     ASD         5.000000
NULL        Andreea     ASD         5.000000
Info        Florin      ASD         7.000000
NULL        Florin      ASD         7.000000
Info        Mihai       ASD         9.000000
NULL        Mihai       ASD         9.000000
NULL        NULL        ASD         7.250000
Mate        Adrian      FP          7.000000
NULL        Adrian      FP          7.000000
Info        Alexandra   FP          4.000000
NULL        Alexandra   FP          4.000000
Info        Andreea     FP          10.000000
NULL        Andreea     FP          10.000000
Mate        Flavius     FP          8.000000
NULL        Flavius     FP          8.000000
Info        Florin      FP          5.000000
NULL        Florin      FP          5.000000
Mate        Marian      FP          4.000000
NULL        Marian      FP          4.000000
Info        Mihai       FP          6.000000
NULL        Mihai       FP          6.000000
NULL        NULL        FP          6.285714
NULL        NULL        NULL        6.636363
Info        NULL        ASD         7.250000
Info        NULL        FP          6.250000
Info        NULL        NULL        6.750000
Mate        NULL        FP          6.333333
Mate        NULL        NULL        6.333333
Mate        Adrian      NULL        7.000000
NULL        Adrian      NULL        7.000000
Info        Alexandra   NULL        6.000000
NULL        Alexandra   NULL        6.000000
Info        Andreea     NULL        7.500000
NULL        Andreea     NULL        7.500000
Mate        Flavius     NULL        8.000000
NULL        Flavius     NULL        8.000000
Info        Florin      NULL        6.000000
NULL        Florin      NULL        6.000000
Mate        Marian      NULL        4.000000
NULL        Marian      NULL        4.000000
Info        Mihai       NULL        7.500000
NULL        Mihai       NULL        7.500000
*/
```

```sql
select  codSpec  ,nume+' '+prenume as nume , codCurs,Nota
    from tStudenti as A inner join tNote as B on A.codStud=B.codStd
    order by nume

--TABELE PIVOT
select CodSpec , Nume,isnull( str(AG),'-') as [Alg gr],isnull(str( ASD),'-') as
[Str date ],
    isnull(str( FP),'-') as [Fundamentele pr],isnull(str( BD),'-') as [Baze date
]
    from ( select  codSpec  ,nume as nume , codCurs,Nota
    from tStudenti as A inner join tNote as B on A.codStud=B.codStud ) as A
    pivot (avg(nota) for CodCurs in ([AG],[ASD],[FP], [BD] )  ) as PVT
/*
CodSpec     Nume        Alg gr      Str date    Fundamentele pr    Baze date
Mate        Adrian      -       -           7            -
Info        Alexandra   -       8           4            -
Info        Andreea     -       5           10           -
Mate        Flavius     -       -           8            -
Info        Florin      -       7           5            -
Mate        Marian      -       -           4            -
Info        Mihai       -       9           6            -
*/
```