Technical University of Moldova

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# DB Laboratory 7

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## General purpose:

**Learn about SQL Query Language**

## Tasks:

- Answer Questions at the end of Chapter 7;
- Solve ex. 1 - 8 at the end of Chapter 7.

## Task Realization:

In Figure 1 we can see the diagram of Universitatea Database as with four initial tables.

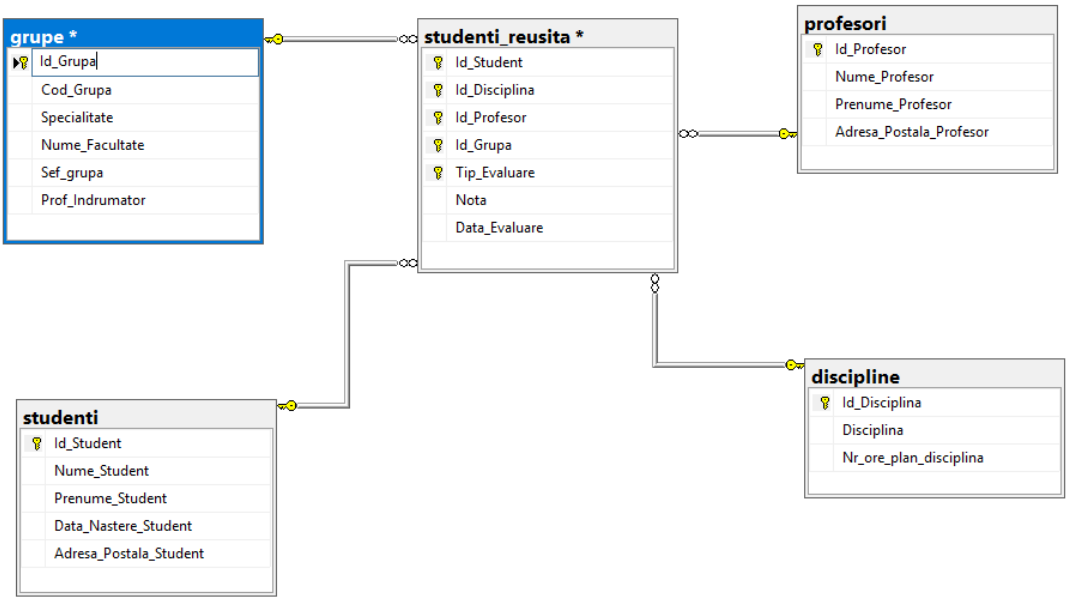


Figure 1: Finding group leaders and teachers counting most pairs

In figure 2 I added new constrain between grupe table and profesori according to sef grupa. Also added constrain between gruppe and profesori.

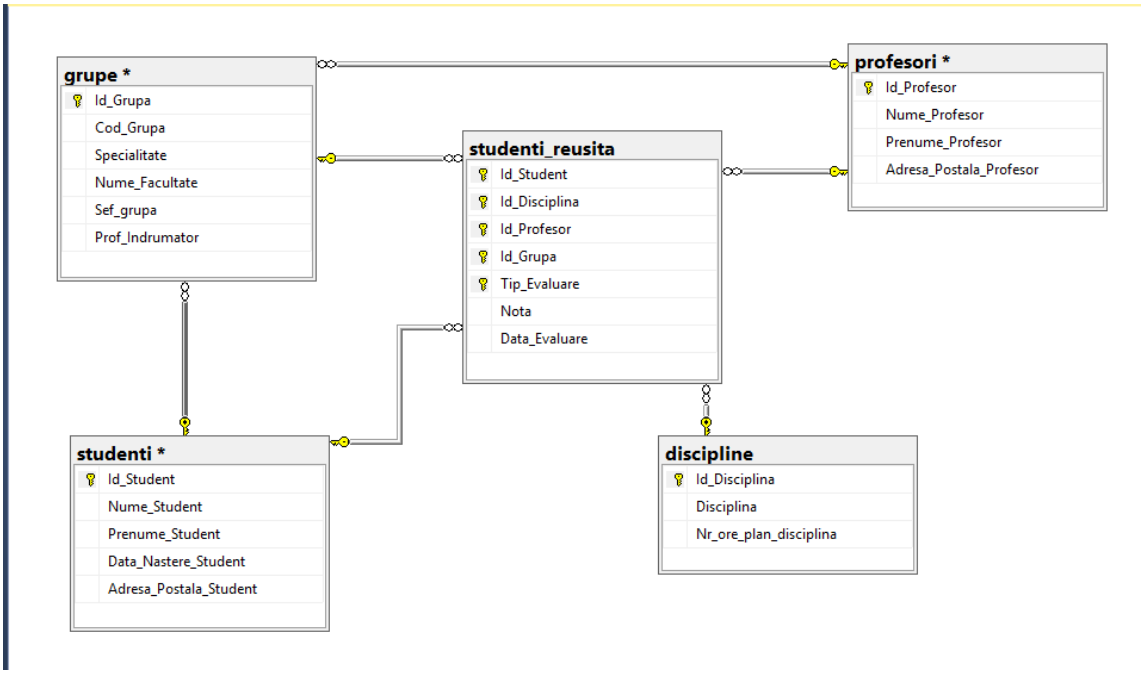


Figure 2: additional constrains for grupe table

In figure 3 i traced the constraints between the table grupe and other tables. According to Lab 6 Ex3. Also i want to mention that for ex 5 i have the same image.

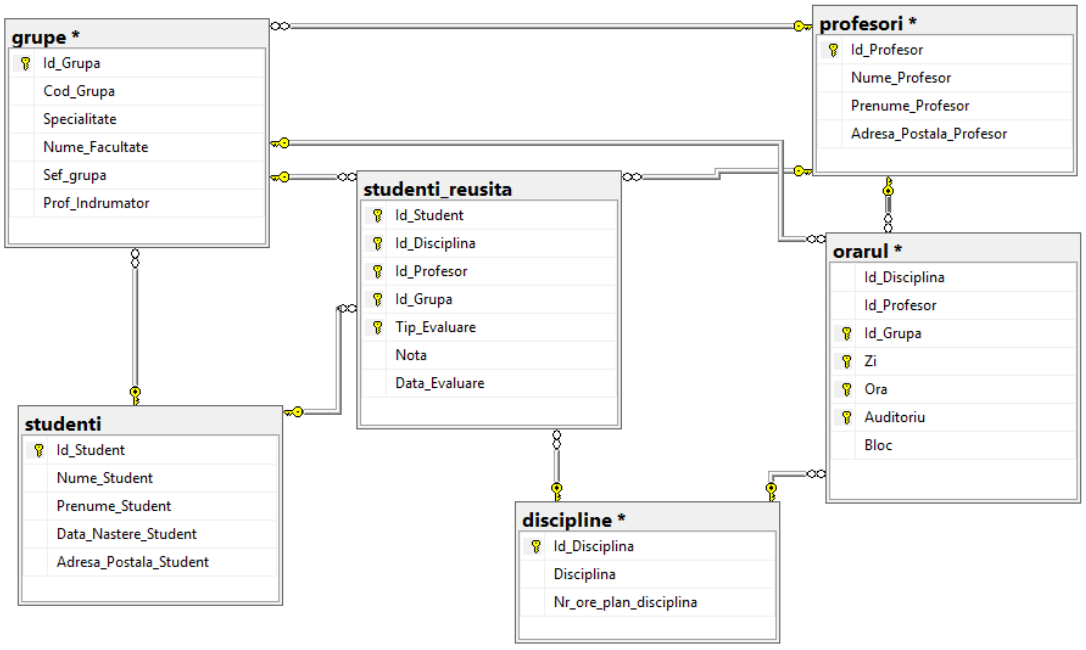


Figure 3: Constraints for orarul table

In figure 4 and 5 i created two secondar keys for orarul table. (Zi,Ora, IdGrupa, IdProfesor) and (Zi, Ora , IdGrupa, IdDisciplina)

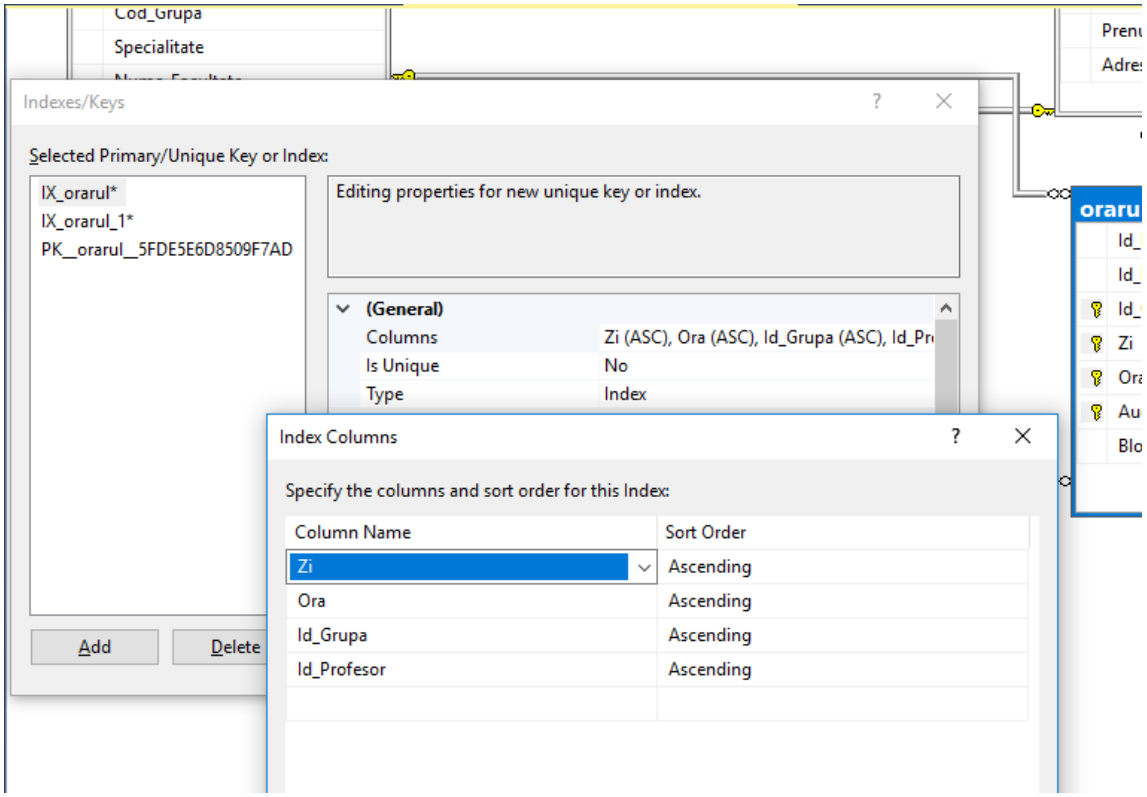


Figure 4: First PK

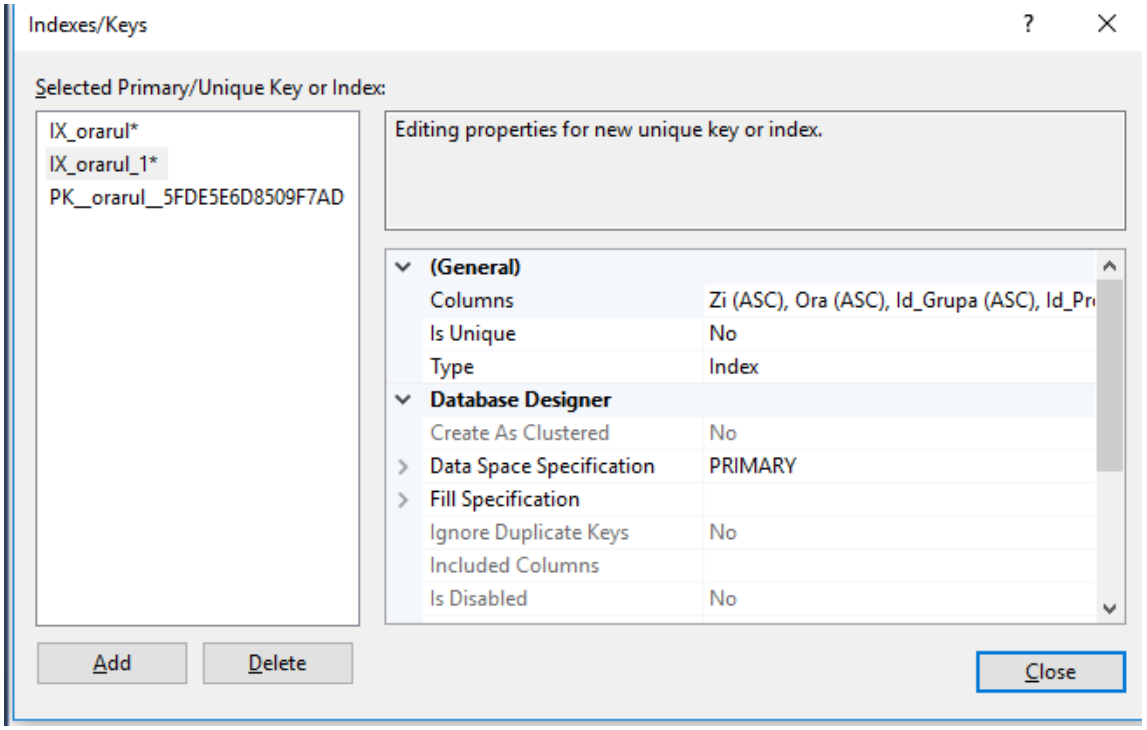


Figure 5: second PK

In figure 6 i created three schemas and transferred tables from dbo scheme in there.

```
--(6)
Use universitatea
Go
CREATE SCHEMA cadre_didactice
GO
CREATE SCHEMA plan_studii
GO
CREATE SCHEMA studenti
GO
ALTER SCHEMA cadre_didactice TRANSFER [dbo].[profesori]
GO
ALTER SCHEMA plan_studii TRANSFER [dbo].[orarul]
GO
ALTER SCHEMA plan_studii TRANSFER [dbo].[discipline]
GO
ALTER SCHEMA studenti TRANSFER [dbo].[studenti]
GO
ALTER SCHEMA studenti TRANSFER [dbo].[studenti_reusita]
GO
```

Figure 6: Query ex 6

In figure 7 we can observe three queries from Lab 4. in previous number i created three schemas with all tables. So here i just wrote the schema name then dot table name

```
--(7)
Select Id_Disciplina,Disciplina,Nr_ore_plan_disciplina from plan_studii.discipline
 ORDER BY  Nr_ore_plan_disciplina DESC;

SELECT DISTINCT D.Id_Disciplina, D.Disciplina,
           P.Nume_Profesor, P.Prenume_Profesor
    FROM plan_studii.discipline D
        JOIN studenti.studenti_reusita S_r ON D.Id_Disciplina = S_r.Id_Disciplina
        JOIN cadre_didactice.Profesori P ON P.Id_Profesor = S_r.Id_Profesor
    ORDER BY
        Nume_Profesor DESC,
        Prenume_Profesor DESC;


SELECT Id_Disciplina,Disciplina FROM plan_studii.discipline
    WHERE LEN(Disciplina) > 20;
```

Figure 7: Query ex 7

In figure 8 we can see the same three Queries asin previous exercise. The main difference is that i created Synonyms for schemas and used them instead of long names used before.

```
--(8)
CREATE SYNONYM Stdnt FOR [studenti].[studenti]
CREATE SYNONYM Prof FOR [cadre_didactice].[profesori]
CREATE SYNONYM Discipl FOR [plan_studii].[discipline]
CREATE SYNONYM SReusita FOR [studenti].[studenti_reusita]

Select Id_Disciplina,Disciplina,Nr_ore_plan_disciplina from Discipl
 ORDER BY  Nr_ore_plan_disciplina DESC;

SELECT DISTINCT D.Id_Disciplina, D.Disciplina,
           P.Nume_Profesor, P.Prenume_Profesor
    FROM Discipl D
        JOIN SReusita S_r ON D.Id_Disciplina = S_r.Id_Disciplina
        JOIN Prof P ON P.Id_Profesor = S_r.Id_Profesor
    ORDER BY
        Nume_Profesor DESC,
        Prenume_Profesor DESC;


SELECT Id_Disciplina,Disciplina FROM Discipl
    WHERE LEN(Disciplina) > 20;
```

Figure 8: Query ex 8

### Conclusion

During This lab work i find out how to Make synonyms and use them. I learned what is an diagram and how to do it step by step and edit in case of needing. Also i find out how to make schemas, and why do we need schemas in our databases, they are container like objects. [1]

## References

[1] SQL Server Management Studio 2017, Tutorials for Lab 7

[2] MSSQL Official Documentation https://docs.microsoft.com/en-us/sql/t-sql/language-elements/try-catch-transact-sql?view=sql-server-2017