Ministerul Educației al Republicii Moldova
Universitatea Tehnică a Moldovei
Facultatea Calculatoare, Informatică și Microelectronică
Ingineria Software

REPORT

Laboratory work Nr.3

Creating and modifying tables in SQL Server Management Studio

Realized by: Popa Eugeniu
FAF-202

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The theoretical part

1. What properties must a column possess?

- Column name
- Data Type
- Allow Nulls

2. What data types does the SQL Server system use?

- Exact numerics:

BIGINT, INT, SMALLINT, TYNYINT, BIT, DECIMAL, MONEY, SMALLMONEY

- Approximate numerics:

FLOAT, REAL

- Character strings:

CHAR, VARCHAR, TEXT

- Binary data:

BINARY, VARBINARY

- Date / time:

DATETIME, DATETIME2, DATE, TIME, DATETIMEOFFSET, SMALLDATETIME

- Special data types:

CURSOR, HIERARCHYID, SQL_VVARIANT, TABLE, TIMESTAMP, UNIQUEIDENTIFIER, XML

- UNICODE data:

NCHAR, NVARCHAR, NTEXT

3. What are SQL Server integrity constraints for maintaining database consistency?

There are five types of integrity constraints supported by the SQL Server SGBD:
NOT NULL, SINGLE, PRIMARY KEY, FOREIGN KEY, CHECK

4. What difficulties may appear while removing a cell from an existing table?
The system will announce the user that the data will be permanently removed.

5. What difficulties you may have when modifying cells of existing tables? Which cells cannot be modified?

When we want to add a column to a table, it is necessary to specify the Default constraint for this column. If the new column does not have Default constraint, it is needed to specify that it accepts Null values. In this case, SQL will insert Null values in the column and will return an error, if the column will not accept Null values.

The practical part

l. Which of numbers presented above can be introduced in cell of type DECIMAL (4,1)?
a) 16.2
b) 116.2
c) 16.21
d) 1116.2
e) 1116.21

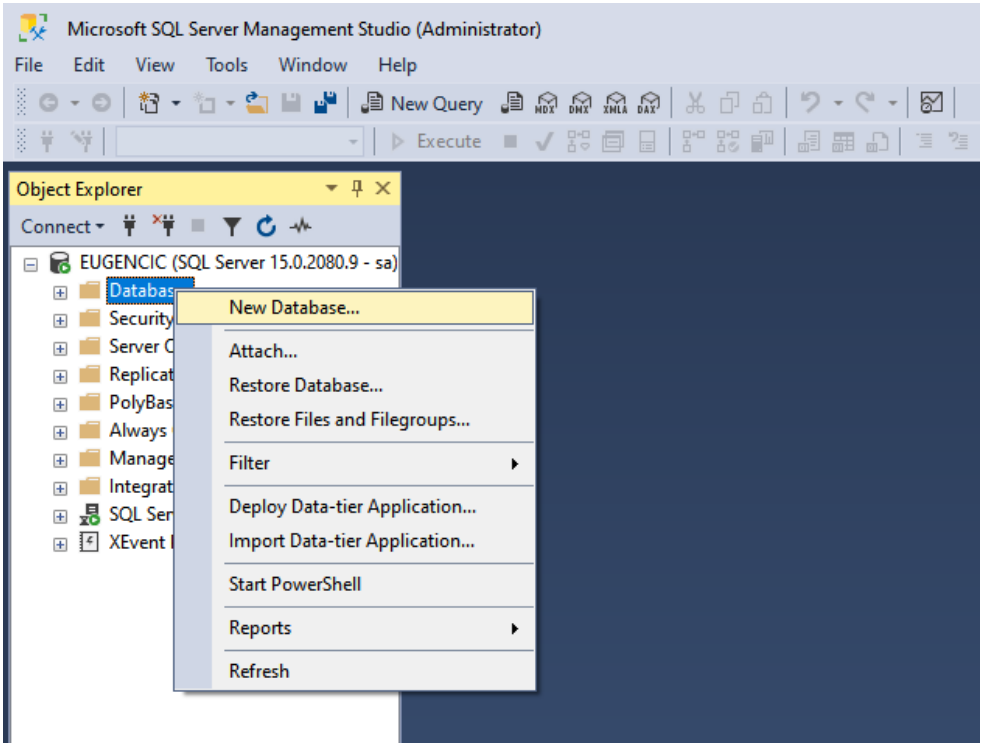
2. Let [Coll] in the table below be of type INT, and [Col2] is of type DECIMAL (2.1).

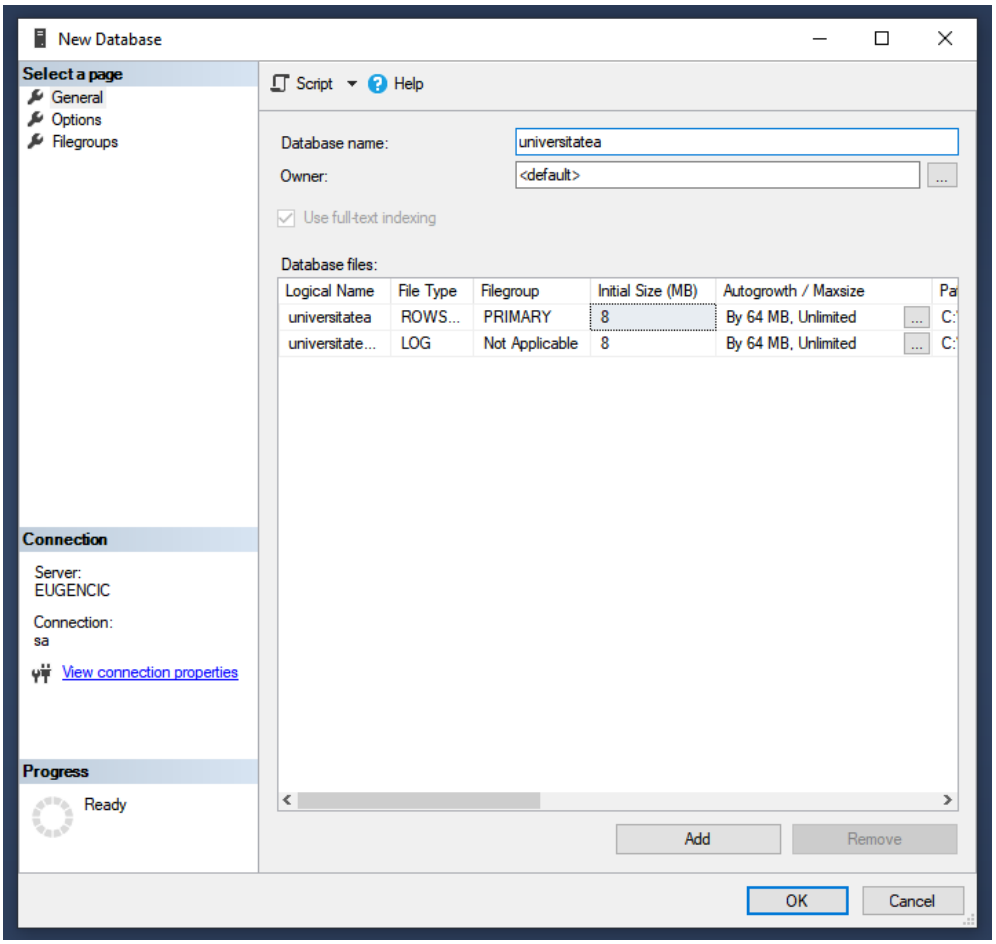
Tabel	Col1	Col2	Col3
	1	1.0	
	2	1.0	

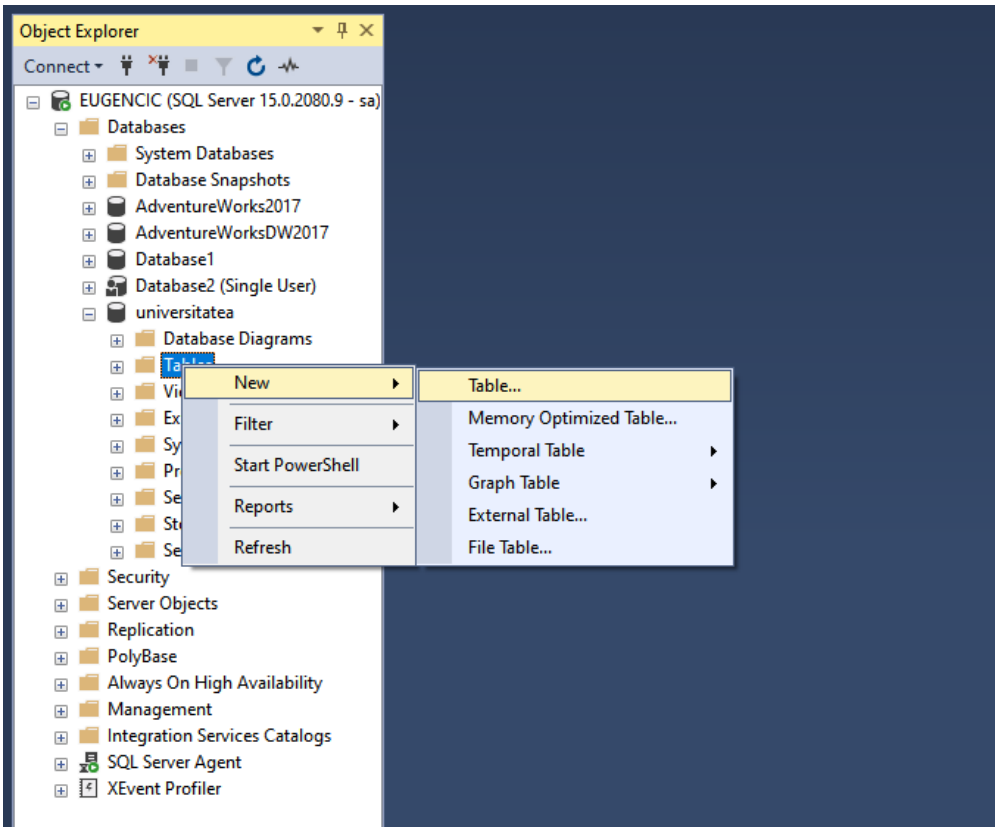
What type of data must be [Col3] to keep the result of the following Col1 * Col2 expression?

DECIMAL

3. Create a database called the university with default properties. Within this database, create 2 tables (groups, disciplines), schemes which are defined in section 3.3 of the chapter.




New Database
Select a page
General
Options
Filegroups
Script
Help
Database name:
universitatea
Owner:
<default>
Use full-text indexing
Database files:
Logical Name
File Type
Filegroup
Initial Size (MB)
Autogrowth / Maxsize
universitatea
ROWS...
PRIMARY
8
By 64 MB, Unlimited
universitate...
LOG
Not Applicable
8
By 64 MB, Unlimited
Connection
Server:
EUGENCIC
Connection:
sa
View connection properties
Progress
Ready
Add
Remove
OK
Cancel


Object Explorer
Connect
EUGENCIC (SQL Server 15.0.2080.9 - sa)
Databases
System Databases
Database Snapshots
AdventureWorks2017
AdventureWorksDW2017
Database1
Database2 (Single User)
universitatea
Database Diagrams
New
Filter
Start PowerShell
Reports
Refresh
Table...
Memory Optimized Table...
Temporal Table
Graph Table
External Table...
File Table...
Security
Server Objects
Replication
PolyBase
Always On High Availability
Management
Integration Services Catalogs
SQL Server Agent
XEvent Profiler

EUGENCIC.universit...sitatea - dbo.grupe | Properties

Column Name	Data Type	Allow Nulls
Id_Grupa	smallint	☐
Cod_Grupa	char(6)	☐
Specialitate	varchar(255)	☑
Nume_Facultate	varchar(255)	☑
		☐

EUGENCIC.universit...sitatea - dbo.grupe | Properties

[Tbl] dbo.grupe

(Identity)	
(Name)	grupe
Database Name	universitatea
Description	
Schema	dbo
Server Name	eugencic
Table Designer	
Identity Column	
Indexable	Yes
Lock Escalation	Table
Regular Data Space Specification	PRIMARY
Replicated	No
Row GUID Column	
Text/Image Filegroup	PRIMARY

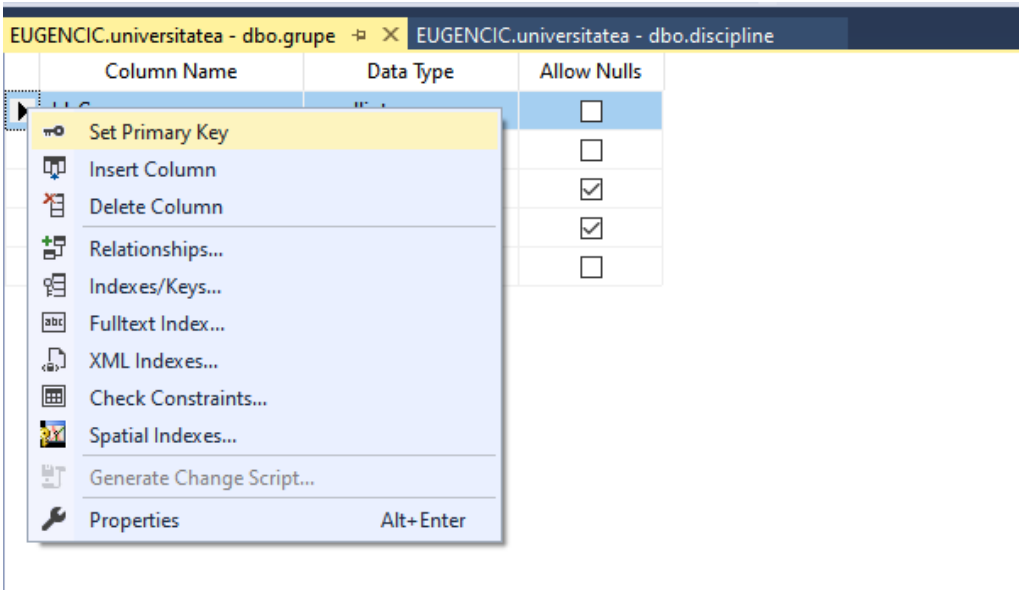
EUGENCIC.universitatea - dbo.discipline | Properties

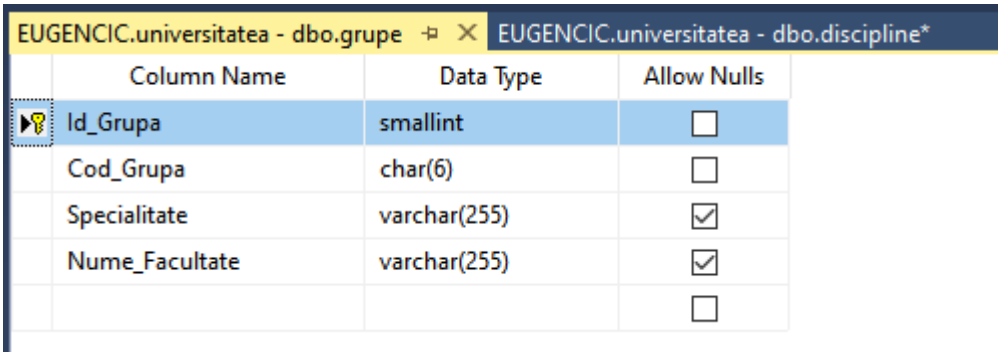
Column Name	Data Type	Allow Nulls
Id_Disciplina	int	☐
Disciplina	varchar(255)	☐
Nr_ore_plan_disciplina	smallint	☑
		☐

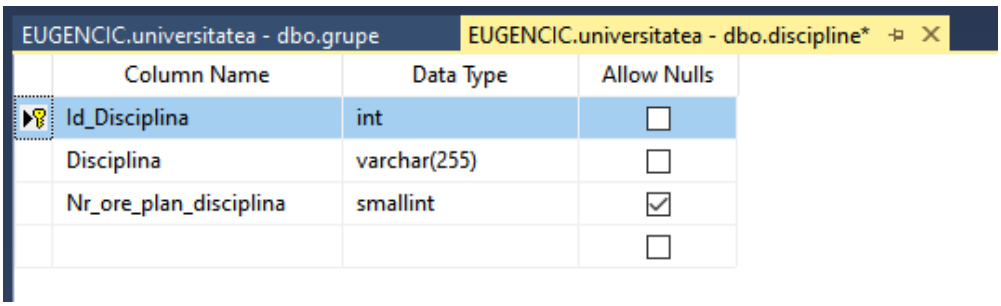
EUGENCIC.universitatea - dbo.discipline | Properties

[Tbl] dbo.discipline

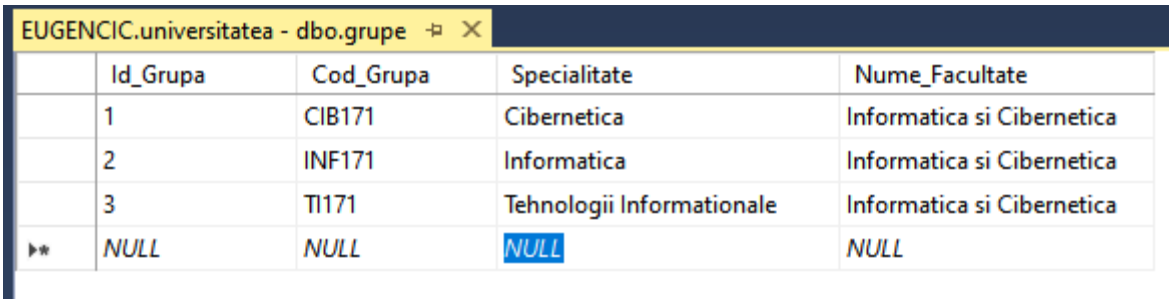
(Identity)	
(Name)	discipline
Database Name	universitatea
Description	
Schema	dbo
Server Name	eugencic
Table Designer	
Identity Column	
Indexable	Yes
Lock Escalation	Table
Regular Data Space Specification	PRIMARY
Replicated	No
Row GUID Column	
Text/Image Filegroup	PRIMARY







4. Insert the following records in the respective tables of the university database:



EUGENCIC.universitatea - dbo.discipline

	Id_Disciplina	Disciplina	Nr_ore_plan_disciplina
	100	Sisteme de operare	60
	101	Programarea calculatoarelor	60
	102	Informatica aplicata	46
	103	Sisteme de calcul	46
	104	Asamblare si depanare PC	60
	105	Cercetari operationale	76
	106	Programarea WEB	46
	107	Baze de date	60
	108	Structuri de date si algoritmi	76
	109	Retele informatice	46
	110	Matematica discreta	60
	111	Modelarea sistemelor	46
	112	Limbaje evaluate de programare (Java,.NET)	76
	113	Programarea aplicatiilor Windows	60
	114	Tehnologii de procesare a informatiei	46
	115	Programarea declarativa	46
	116	Proiectarea sistemelor informatice	60
	117	Practica de licenta	80
	118	Practica de productie	80
	119	Integrare informationala europeana	20
	120	Programe aplicate	46
*	*NULL*	*NULL*	*NULL*