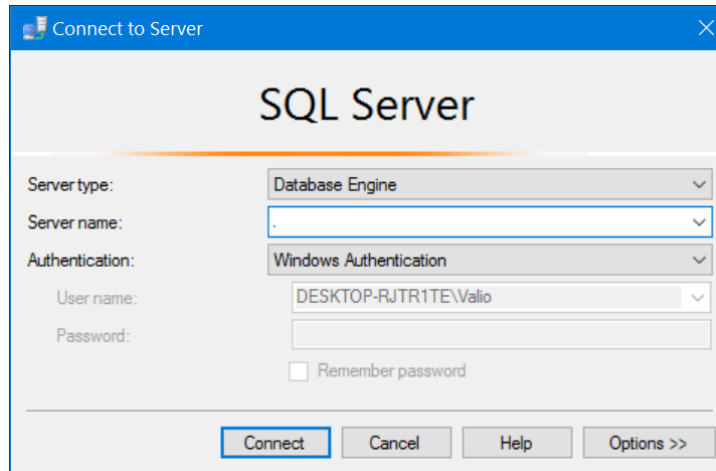


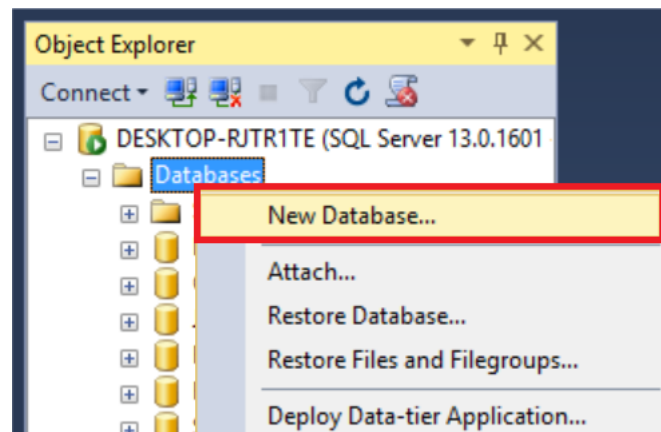
Exercises: Introduction to Databases

Problem 1. Create New Database

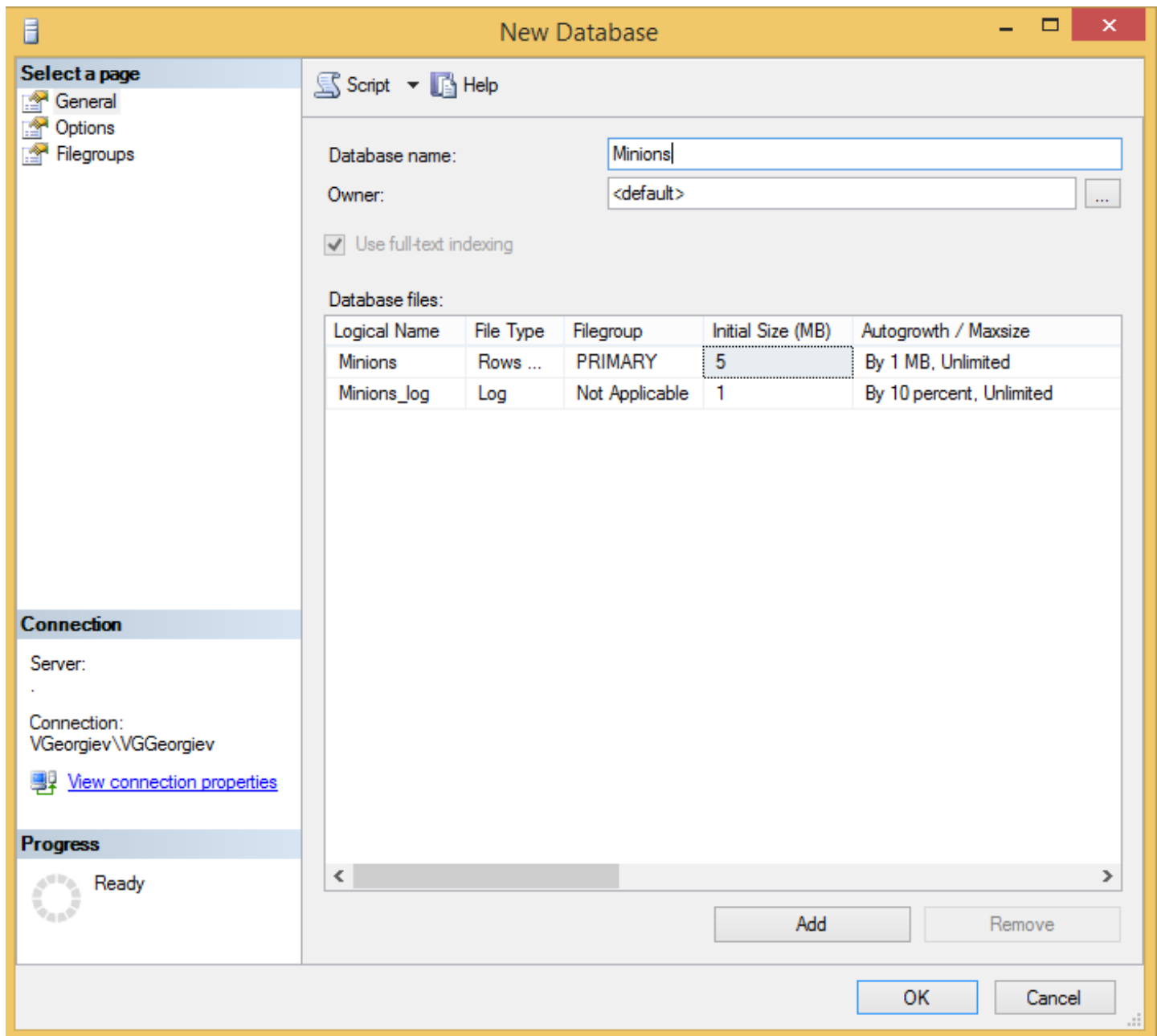
- Connect to Server with Authentication Mode



- Create a new database

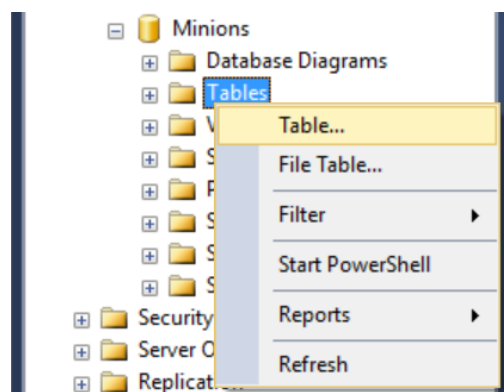


- Type the name of the database and click OK. This will create your database.



Problem 2. Create Table

- Create table **Minions**



- Create columns **Id**, **Name**, **Age**. **Id** and **Name** are **required**; **Age** should **allow null values**.

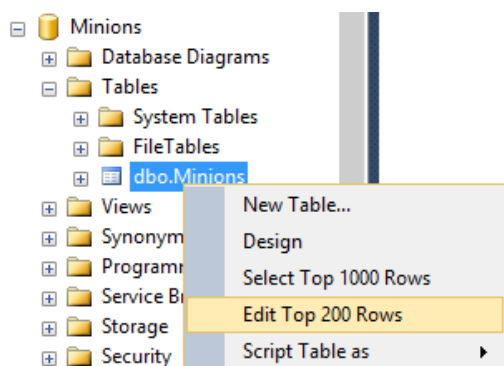
| Column Name | Data Type | Allow Nulls |
|-------------|--------------|-------------------------------------|
| Id | int | <input type="checkbox"/> |
| Name | nvarchar(50) | <input type="checkbox"/> |
| Age | int | <input checked="" type="checkbox"/> |
| | | <input type="checkbox"/> |

- Set the **Id** as **primary key**.

| Column Name | Data Type | Allow Nulls |
|-------------|-----------|-------------------------------------|
| | | <input type="checkbox"/> |
| | | <input type="checkbox"/> |
| | | <input checked="" type="checkbox"/> |
| | | <input type="checkbox"/> |

Problem 3. Insert Data in the Table

Insert data in the table as its show on the picture



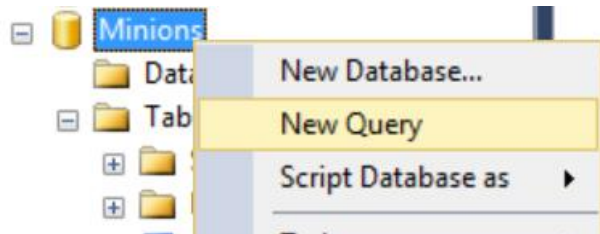
| Id | Name | Age |
|------|--------|------|
| 1 | Kevin | 15 |
| 2 | Bob | 22 |
| 3 | Stuart | NULL |
| NULL | NULL | NULL |

Problem 4. Select Data from Table

- Select all columns from the Minions table.

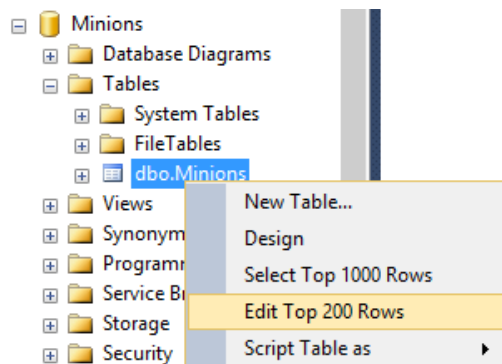


- Open new query window, then write the SQL.
 - * Select **only Names** from Minions table.
 - ** **Order** them **ascending** by name



Problem 5. Update One Record

Change **Stuart's** age from **NULL** to **10**

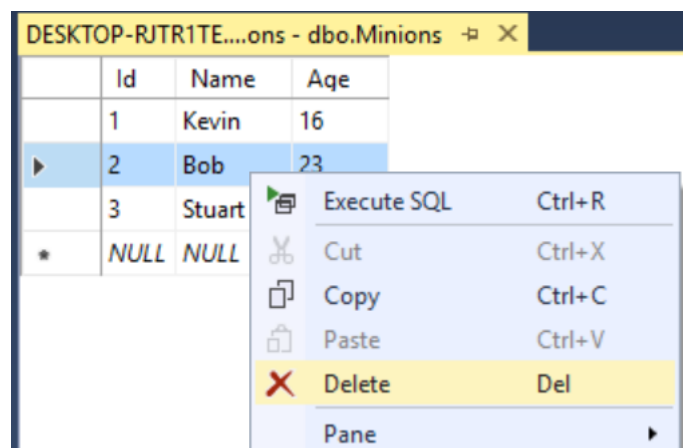


Problem 6. Update All Records

Change all of the Minions age to be + 1 years.

Problem 7. Delete Record

Open table in the Edit Mode, **right click** on the row where **Bob** is situated and delete it.

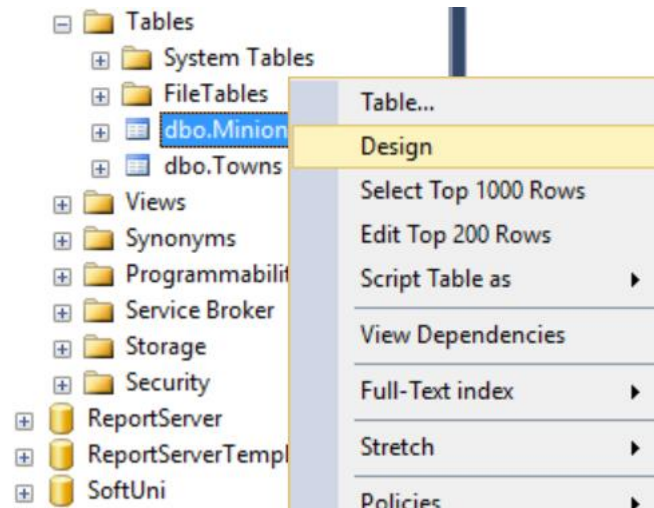


Problem 8. Create New Table

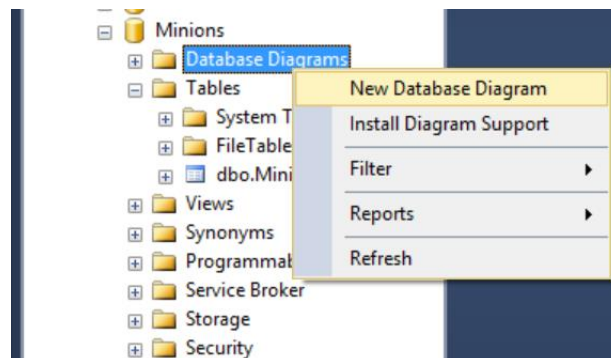
Create new table **Towns**. Every town has **Id (int)** and **Name (text)**. Make the **Id** column **primary key**.

Problem 9. *Connect Tables

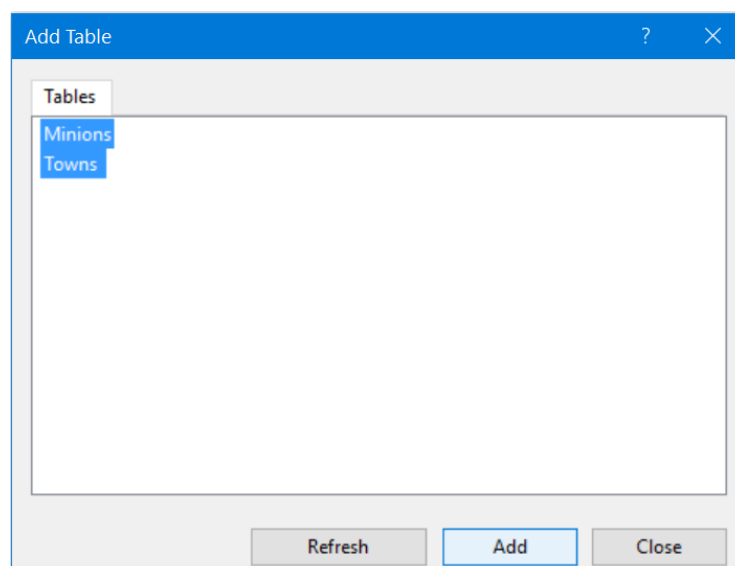
Now let's make a connection (or relationship) between our two tables. First we need modify our Minions table. Add column **TownId** in it (**IMPORTANT: The type of the column must be the same as the type of the column Id of the Towns table**).



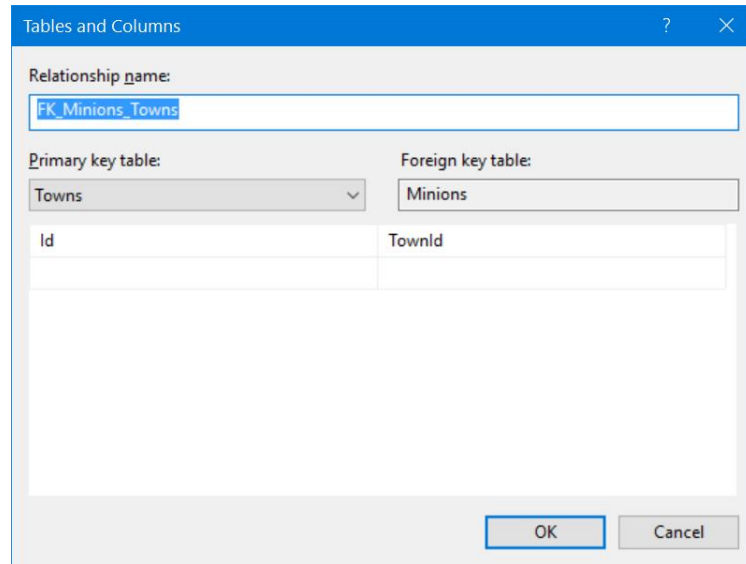
Now we can make new diagram. The diagram shows all tables and the relationships between them.



Select all tables to be on the diagram and click **Add**



Finally, simply drag the **TownId** column and drop it on the Id column in Towns. Then Make sure the window looks like this and click OK.



That's all. Now the two tables have a relationship between them.

Problem 10. Create New Database

Now on your own create a new database **School**. Add a few tables to the database: **Students (Id, Name, Age, PhoneNumber)**, **Classes (Id, Name, MaxStudents)**, **Teachers(Id, Name, Class)**. Add columns for the tables. Populate the tables with random content. Then delete and make changes in some records.

Problem 11. *Generate SQL Script

Generate SQL script from the **School** database. View the script file and try to understand different commands. Execute the script.