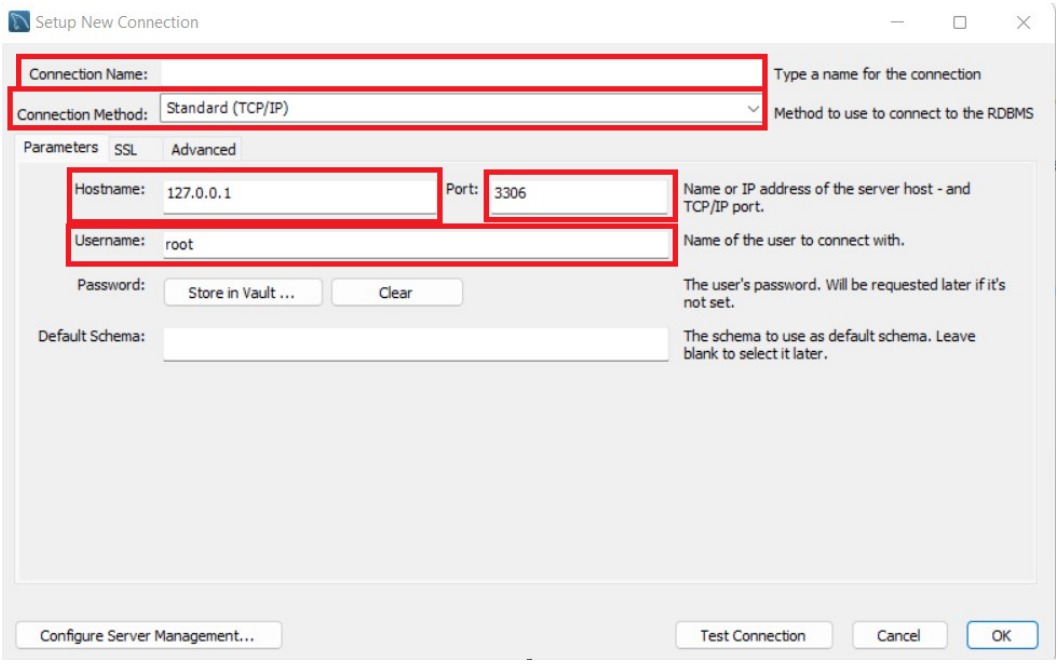
EXERCISE 1: Create your own two tables, binding them via keys, define your fields (simple structures, didactic applications, catalog, student data etc.). Insert data by using the statement INSERT INTO. Create simple SELECT statements.

STEP 1. MySQL Workbench configuration (*creating a local server connection)*

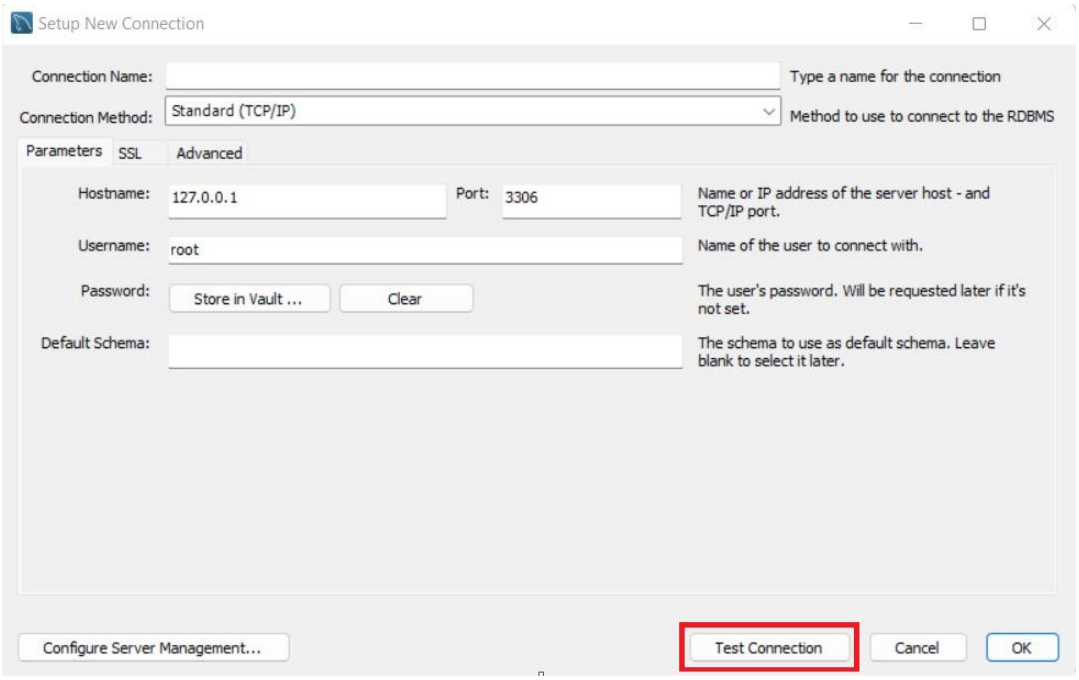
General set-up

On the first screen (*Welcome to MySQL Workbench)* we press the ⊕ next to *MySQL Connections* and we create our server connection:

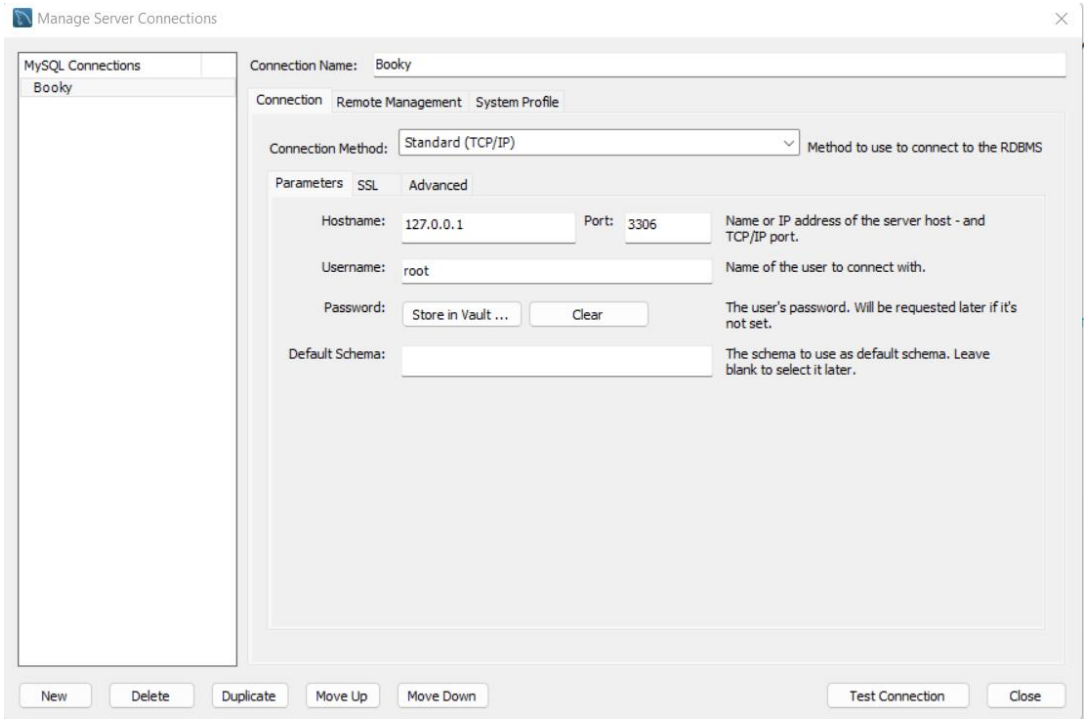
- Connection Name : choosen by the user;
- Connection Method: *Standard (TCP/IP);*
- Hostname: by default or the IP address of the server host;
- Port: 3306
- Username: user name to be used (by default is *root* - represents the admin user)



After that we press *Test Connection* button

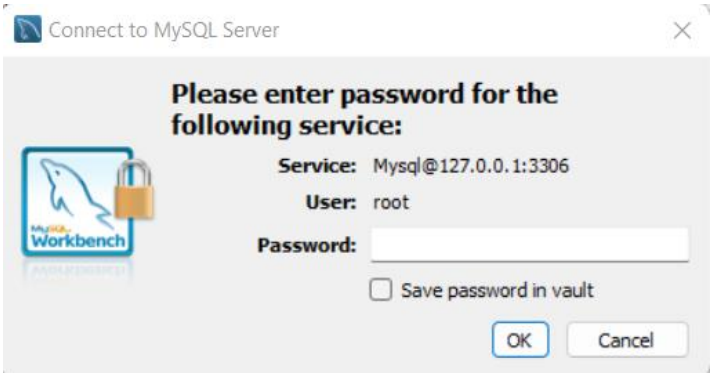


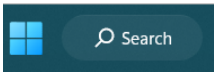
Personal set-up



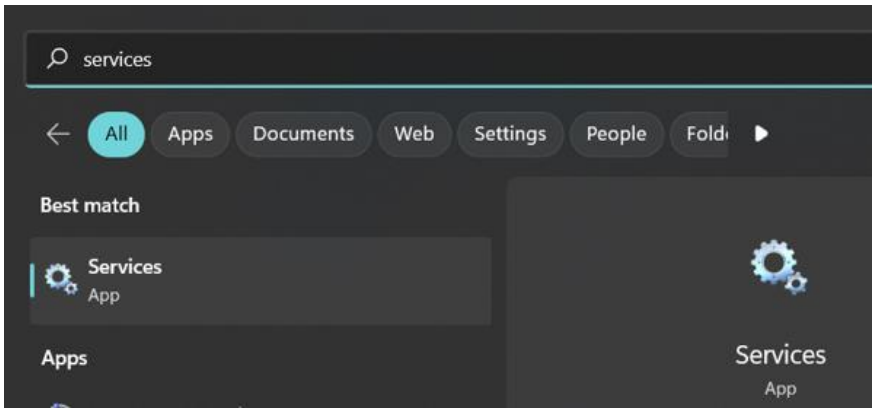
Notes

- after pressing *Test Connection,* in case that the username is root (the admin) we will be asked to enter the password we have set-up when installing MySQL:

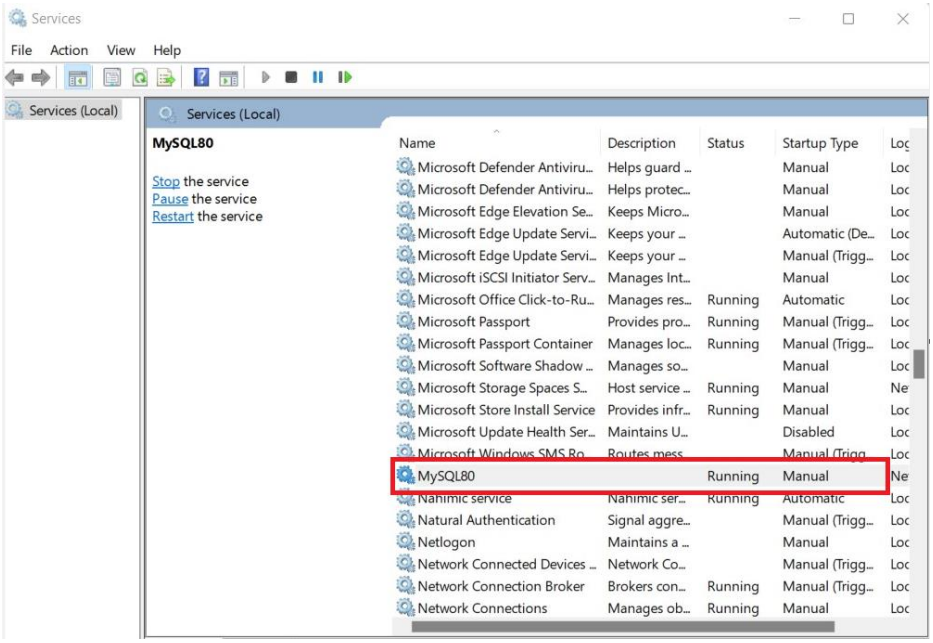


- if we receive an error that the connection cannot be created, then we need to start the server. For that, we use the *Search* feature from the Windows tab 

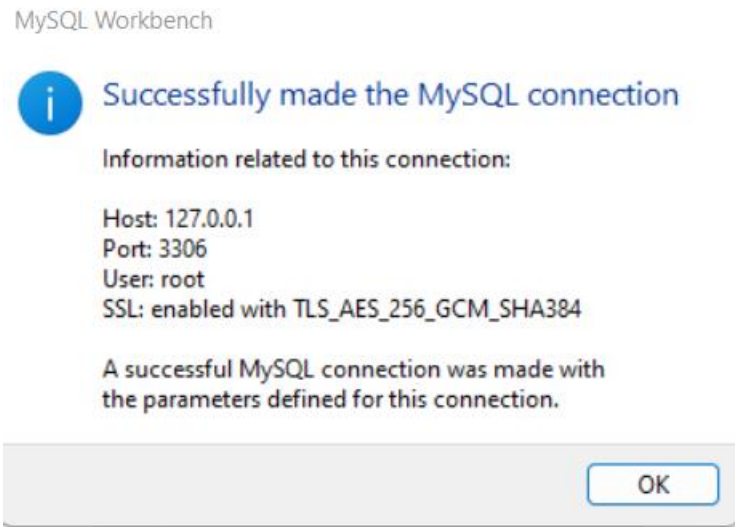
and we lookup *Services.* We choose the app that appears:



After that, we look for MySQL80 and we right-click on it and we press *Start* and we should see *Running* as status.



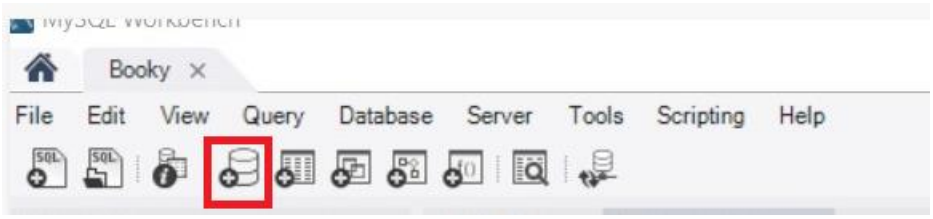
Now, we go back to MYSql Workbench and we test again the connection. If everything is in order, we receive the following message:



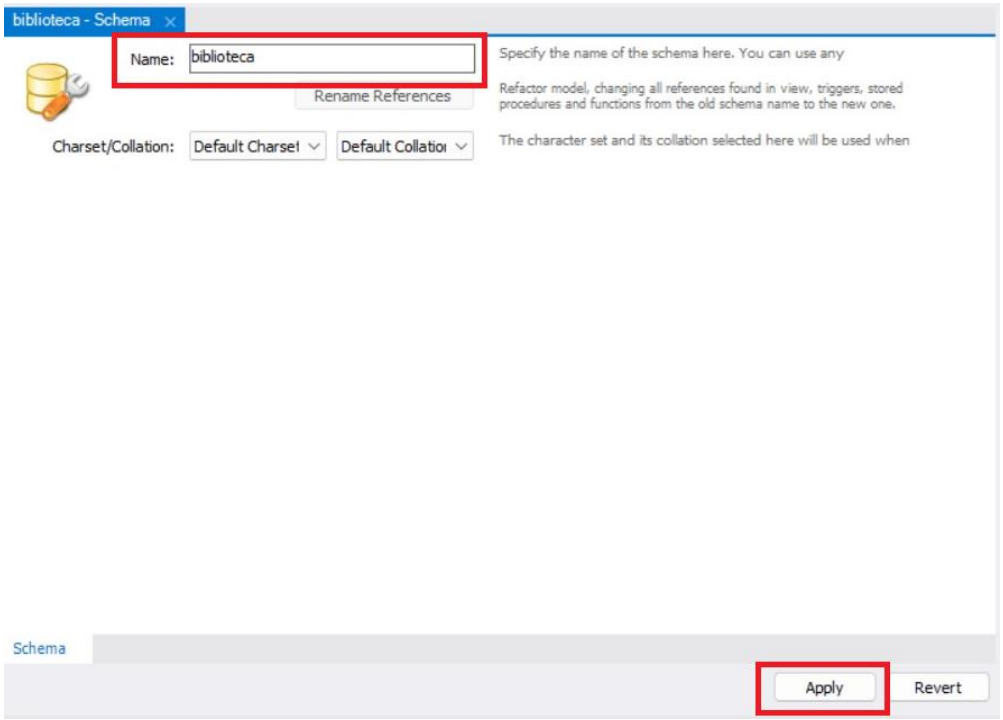
STEP 2. CREATING TABLES

Before we create the two requested tabels, we need to first create the database that will contain them.

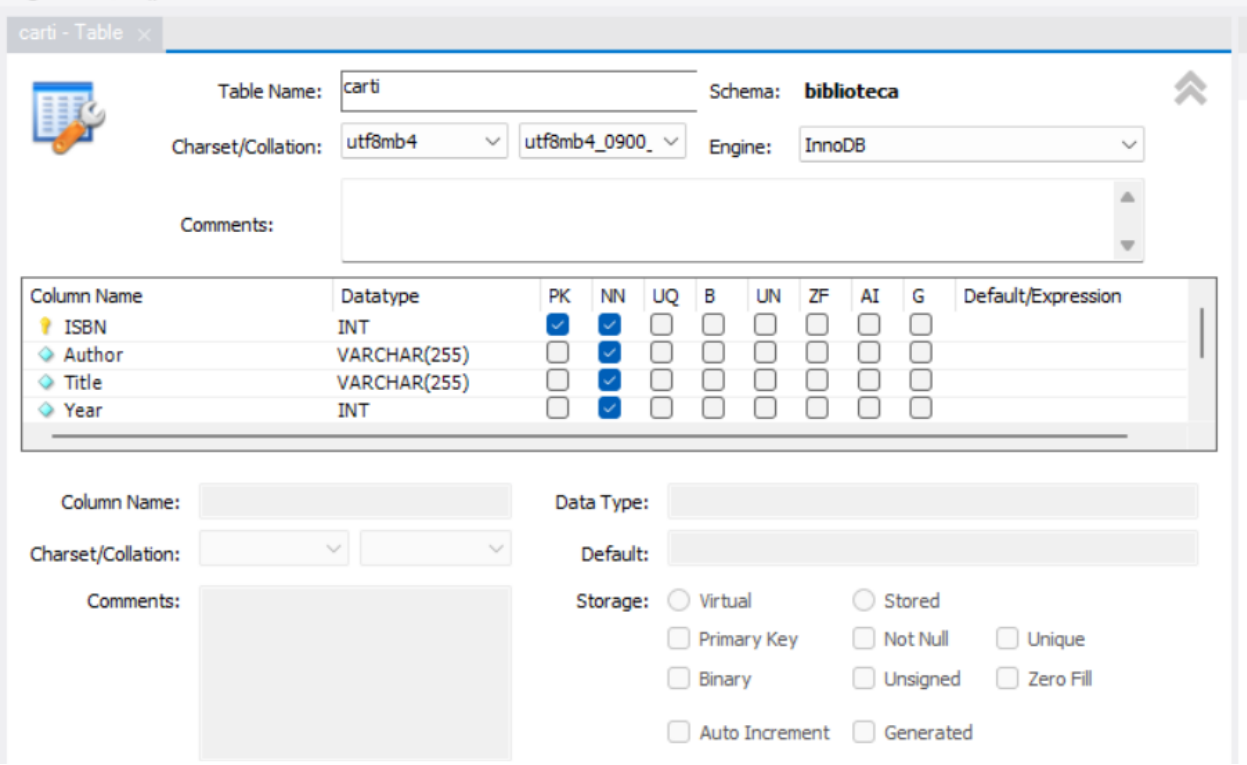
For that we create what is called a *Schema (database)*



We specifiy the name of the *Schema (database)* and we press *Apply:*



On the left side we notice that our database has been created. Here, we also see the *Tables* under menu. If we right-click on it, we have the right to create tables for our database.



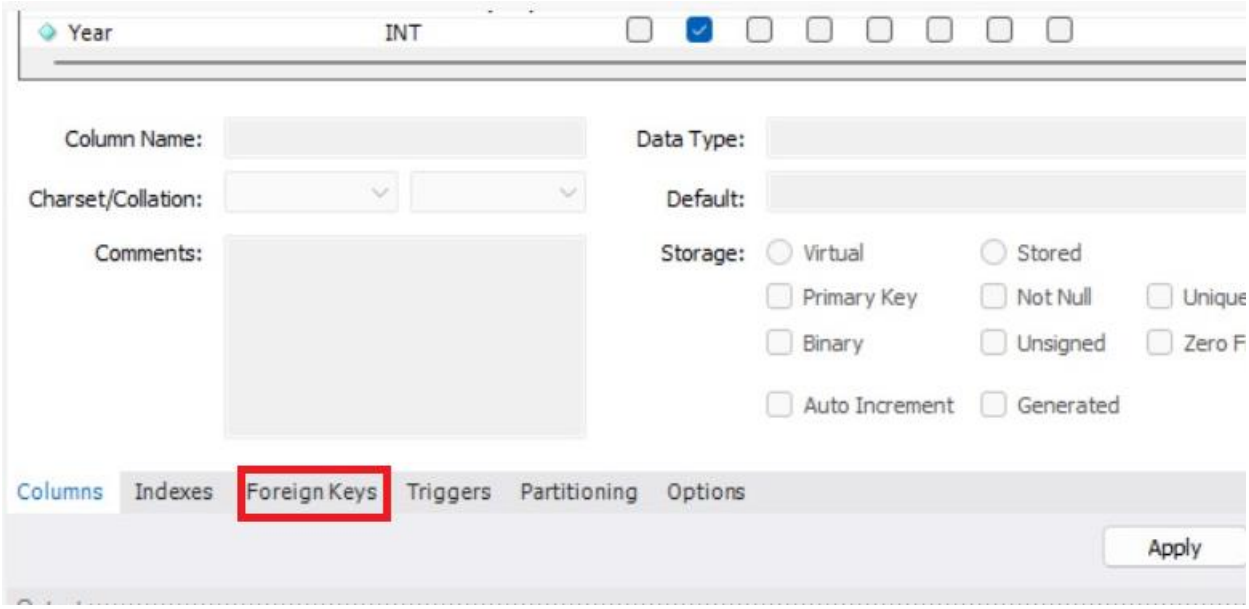
Thus we set:

- table name
- column names with data type and properties (PK – primary key; NN – non-null value / not null etc.)

The related code in MYSQL to create the *cărți* table is:

```
CREATE TABLE `carti` (
  `ISBN` int NOT NULL,
  `Author` varchar(255) NOT NULL,
  `Title` varchar(255) NOT NULL,
  `Year` int NOT NULL,
  PRIMARY KEY (`ISBN`)
)
```

Similarly, we will create the loan table, but here we will also set the foreign key to be able to connect the two tables:



The related code in MYSQL to create the *împrumut* table is:

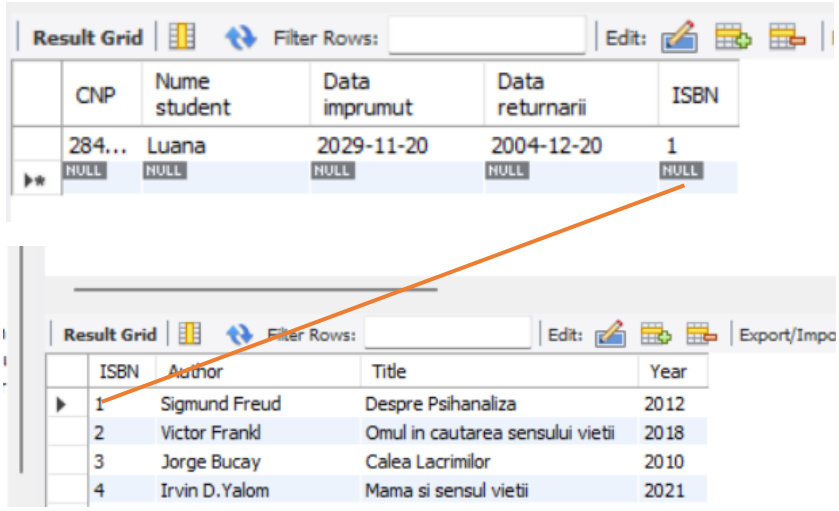
```
CREATE TABLE `imprumut` (
  `CNP` int NOT NULL AUTO_INCREMENT,
  `Nume student` varchar(255) NOT NULL,
  `Data imprumut` date NOT NULL,
  `Data returnarii` date NOT NULL,
  `ISBN` int DEFAULT NULL,
  PRIMARY KEY (`CNP`),
  KEY `ISBN_idx` (`ISBN`),
  CONSTRAINT `ISBN` FOREIGN KEY (`ISBN`) REFERENCES `carti` (`ISBN`)
)
```

STEP 3. INSERT INTO

In order to add data into the table we can do that either manually or by writing the following code:

```
INSERT INTO `biblioteca`.`imprumut` (`CNP`, `Nume student`, `Data imprumut`, `Data returnarii`, `ISBN`)
VALUES ('2840911080041', 'Luana', '29.11.2022', '04.12.2022', '1');
```

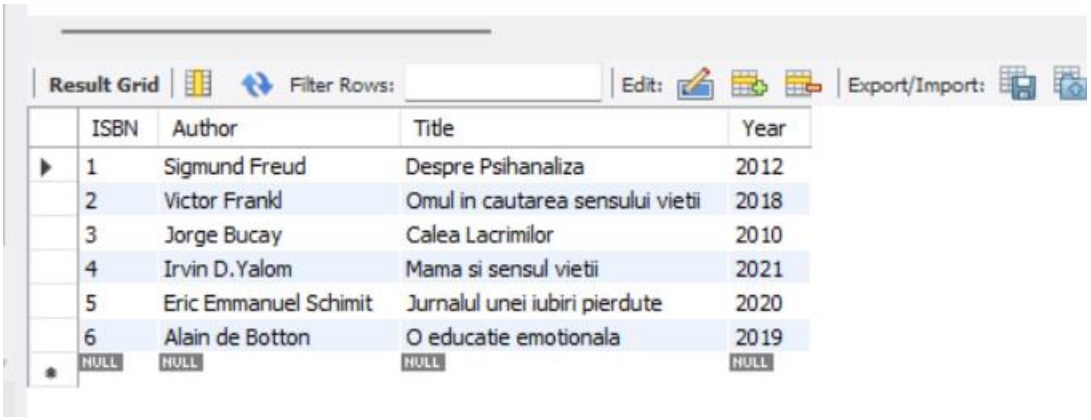
note : in order for the operation to take place we need to set-up the ISBN with the same data that exist in column ISBN in the *carti* table. In this case 1 belong to the first record in *carti* table.



STEP 4. SELECT

- select all data:

```
SELECT * FROM biblioteca.carti;
```

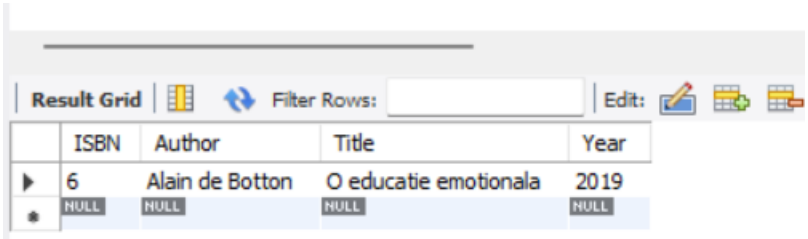


Result Grid | Filter Rows: | Edit: | Export/Import:

ISBN	Author	Title	Year
1	Sigmund Freud	Despre Psihanaliza	2012
2	Victor Frankl	Omul in cautarea sensului vietii	2018
3	Jorge Bucay	Calea Lacrimilor	2010
4	Irvin D.Yalom	Mama si sensul vietii	2021
5	Eric Emmanuel Schimit	Jurnalul unei iubiri pierdute	2020
6	Alain de Botton	O educatie emotionala	2019
NULL	NULL	NULL	NULL

- **select specific data exemple with *Where***

```
SELECT * FROM biblioteca.carti where ISBN = 6;
```

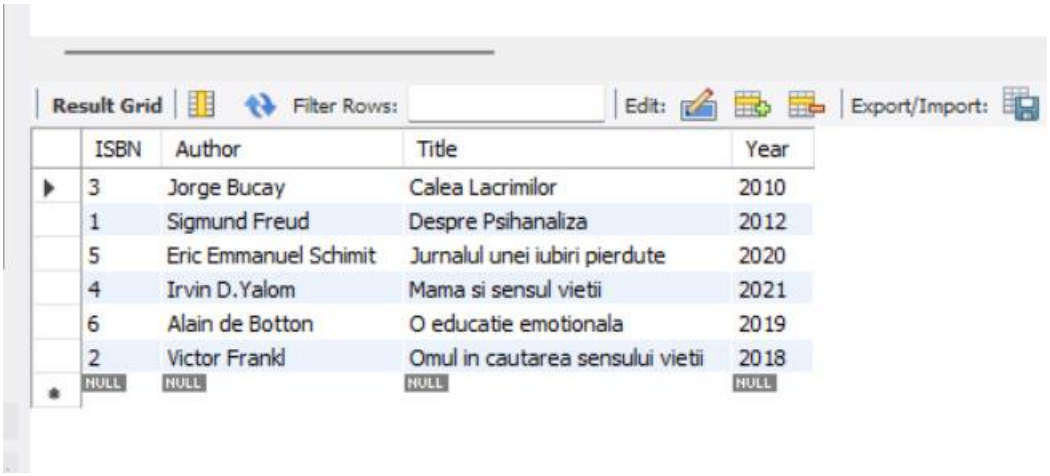


Result Grid | Filter Rows: | Edit:

ISBN	Author	Title	Year
6	Alain de Botton	O educatie emotionala	2019
NULL	NULL	NULL	NULL

- **select specific data exemple with *Order By***

SELECT * FROM biblioteca.carti order by Title;

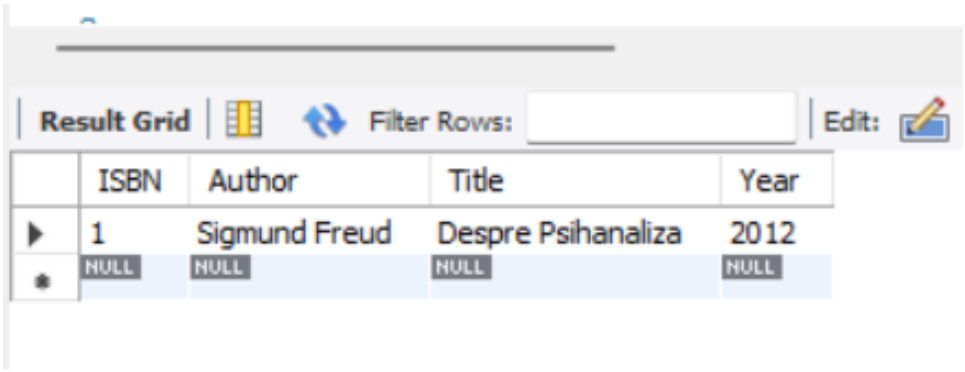


Result Grid | Filter Rows: | Edit: | Export/Import:

ISBN	Author	Title	Year
3	Jorge Bucay	Calea Lacrimilor	2010
1	Sigmund Freud	Despre Psihanaliza	2012
5	Eric Emmanuel Schimit	Jurnalul unei iubiri pierdute	2020
4	Irvin D.Yalom	Mama si sensul vietii	2021
6	Alain de Botton	O educatie emotionala	2019
2	Victor Frankl	Omul in cautarea sensului vietii	2018
NULL	NULL	NULL	NULL

- **select specific data exemple with *AND***

SELECT * FROM biblioteca.carti where ISBN = 1 AND Year = 2012;

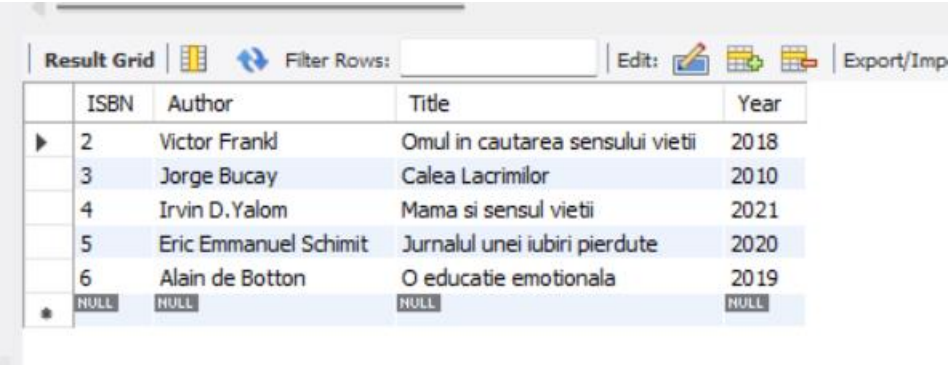


Result Grid | Filter Rows: | Edit:

ISBN	Author	Title	Year
1	Sigmund Freud	Despre Psihanaliza	2012
NULL	NULL	NULL	NULL

- **select specific data exemple with *Where Not***

```
SELECT * FROM biblioteca.carti where not ISBN = 1;
```

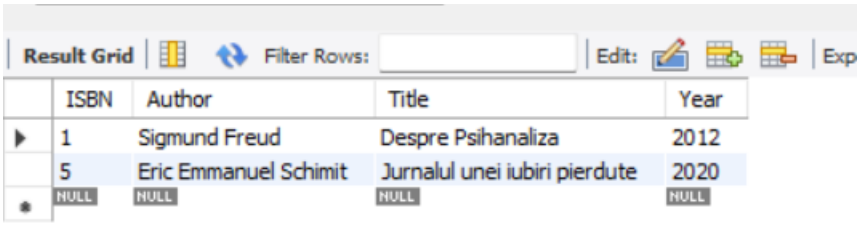


Result Grid | Filter Rows: | Edit: | Export/Imp

ISBN	Author	Title	Year
2	Victor Frankl	Omul in cautarea sensului vietii	2018
3	Jorge Bucay	Calea Lacrimilor	2010
4	Irvin D.Yalom	Mama si sensul vietii	2021
5	Eric Emmanuel Schimit	Jurnalul unei iubiri pierdute	2020
6	Alain de Botton	O educatie emotionala	2019
NULL	NULL	NULL	NULL

- **select specific data exemple with *OR***

```
SELECT * FROM biblioteca.carti where ISBN = 1 OR ISBN = 5;
```



Result Grid | Filter Rows: | Edit: | Exp

ISBN	Author	Title	Year
1	Sigmund Freud	Despre Psihanaliza	2012
5	Eric Emmanuel Schimit	Jurnalul unei iubiri pierdute	2020
NULL	NULL	NULL	NULL