Alexandria University, Faculty of Engineering

CSED 21

Programming 2 – OOP and Design Patterns

Assignment 3 - DBMS

Names:

1) Mohamed mostafa ahmed Hassan elnashar (44).

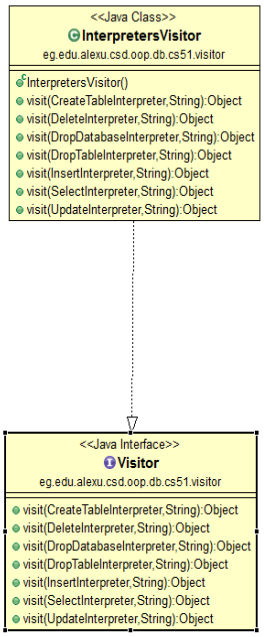
2) Tarek Mohamed kamal (21).

3) Mostafa Nabil Mohamed(51).

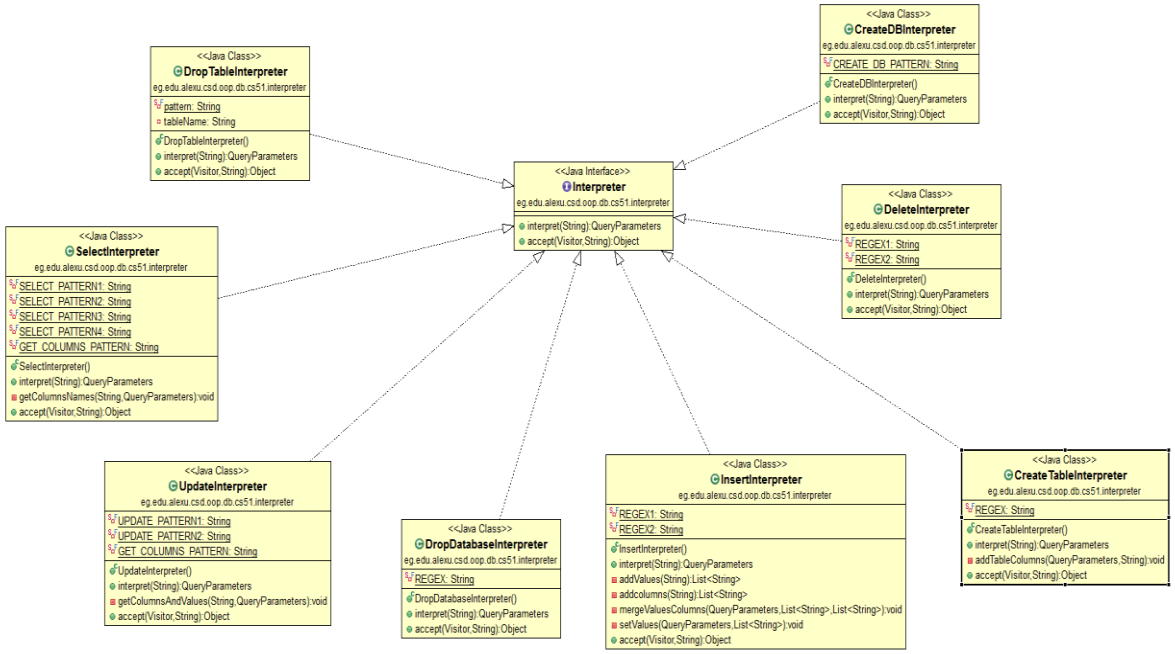
4) Mohamed Salah Mahmoud (41).

1) UML:

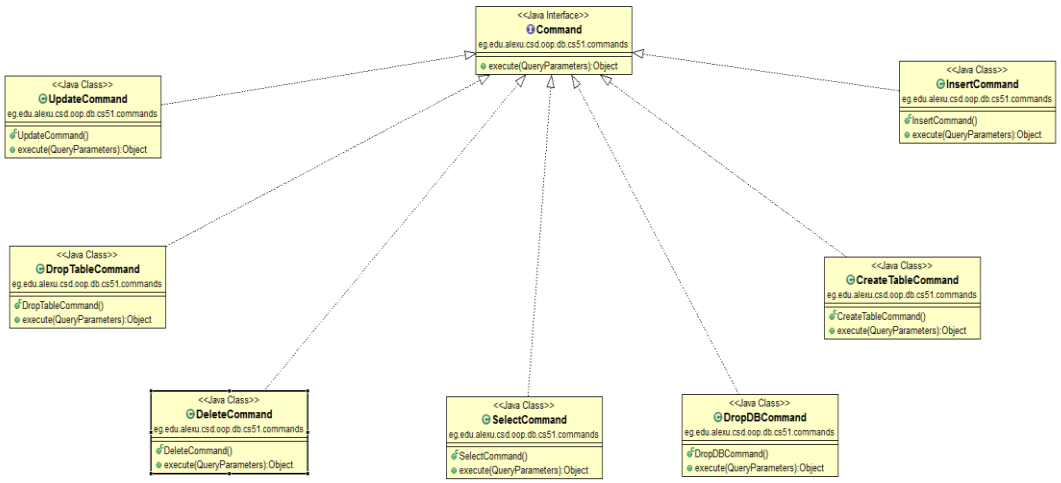
- visitor Design Pattern:



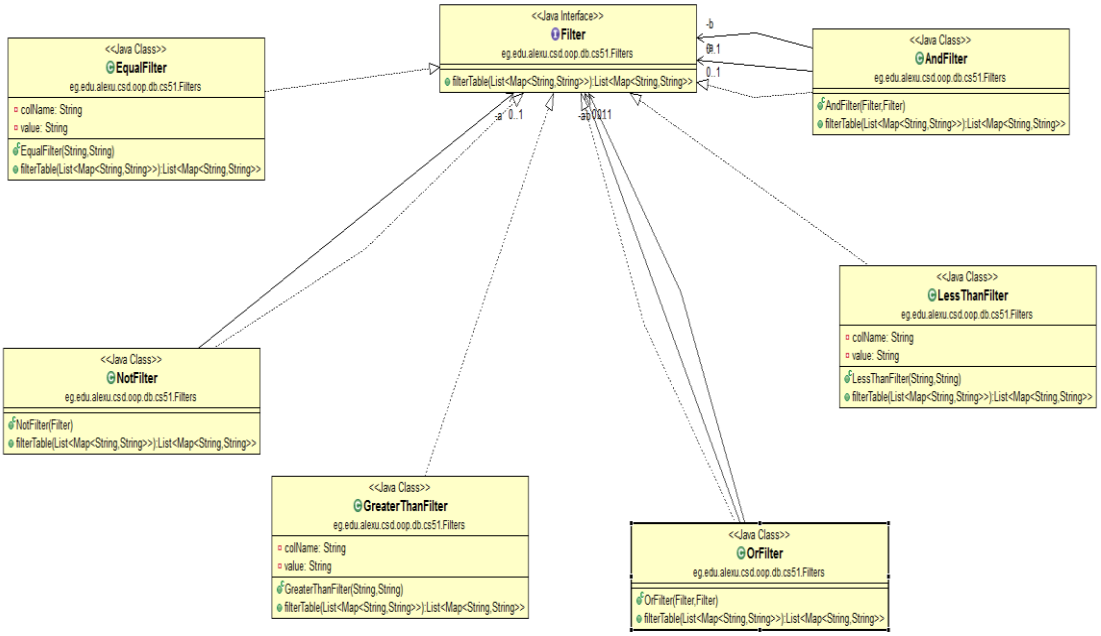
- Interpreter Design Pattern:



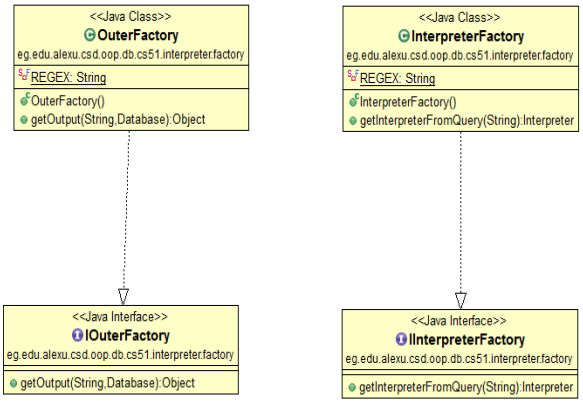
- Command Design Pattern:



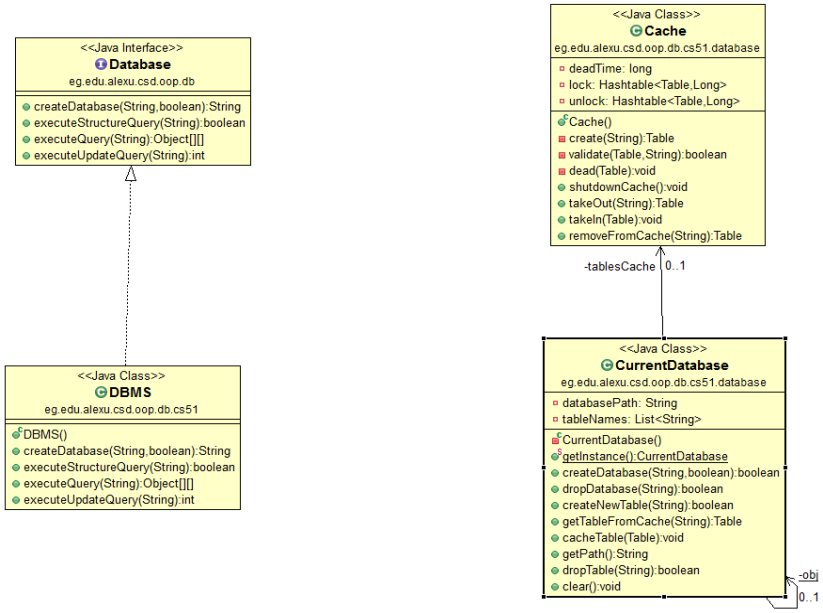
- Filter Design Pattern:



- Factory Design Pattern:



- Singlton and ObjectPool Design Pattern:



2) Design Description and Decisions:

- We used the singelton design pattern to represent the database folder as an object so only one dbms can use the database.

- The outer parser parses the beginning of the query and sends it to the appropriate function in the dbms.

- The execute functions in the dbms sends the query to the interpreter factory which chooses and returns the appropriate interpreter.

- The execute functions sends the visitor to the accept method in the interpreter.

- The interpreter interprets the query and extract the query parameter then the visitor sends the query parameters to the command that executes the query.

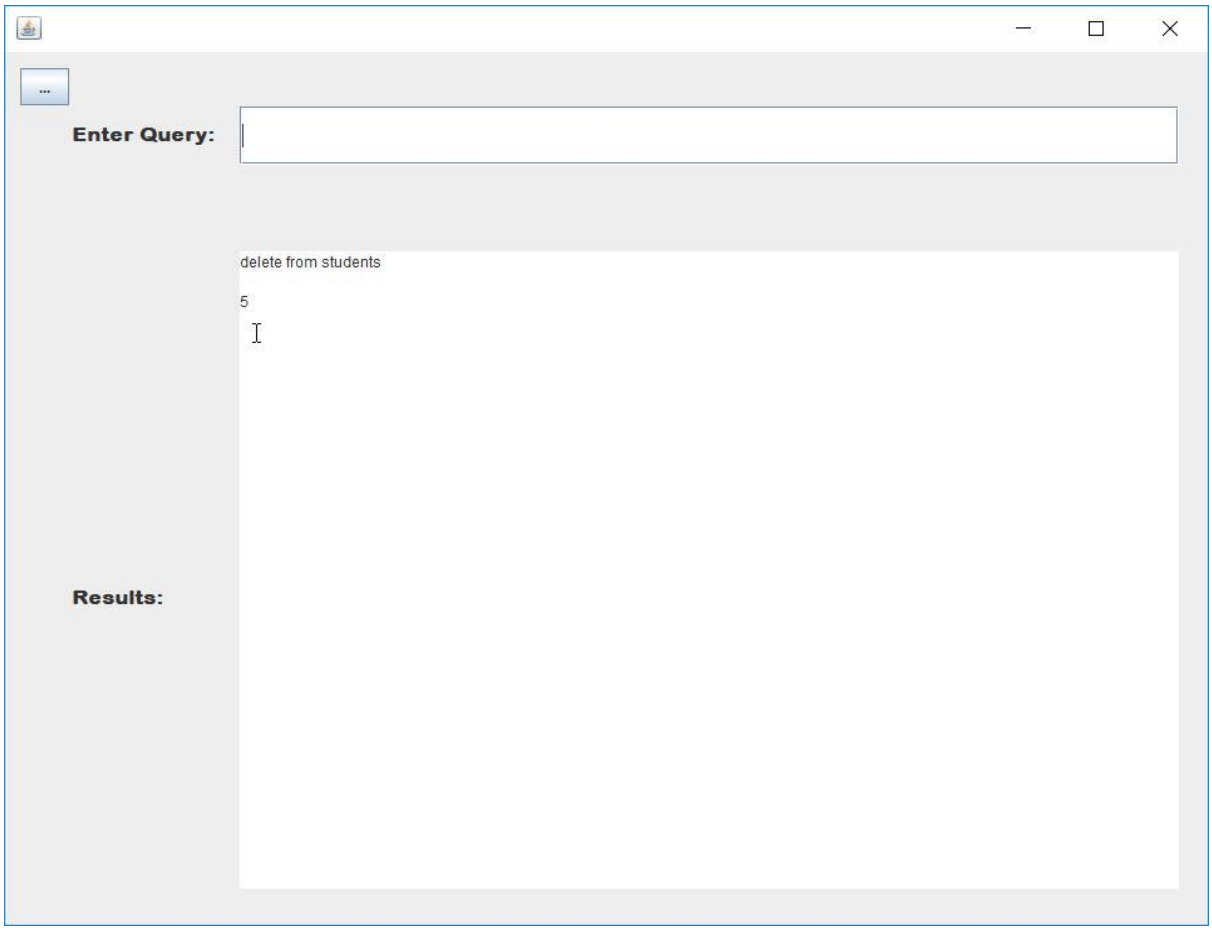
3) User Guide:

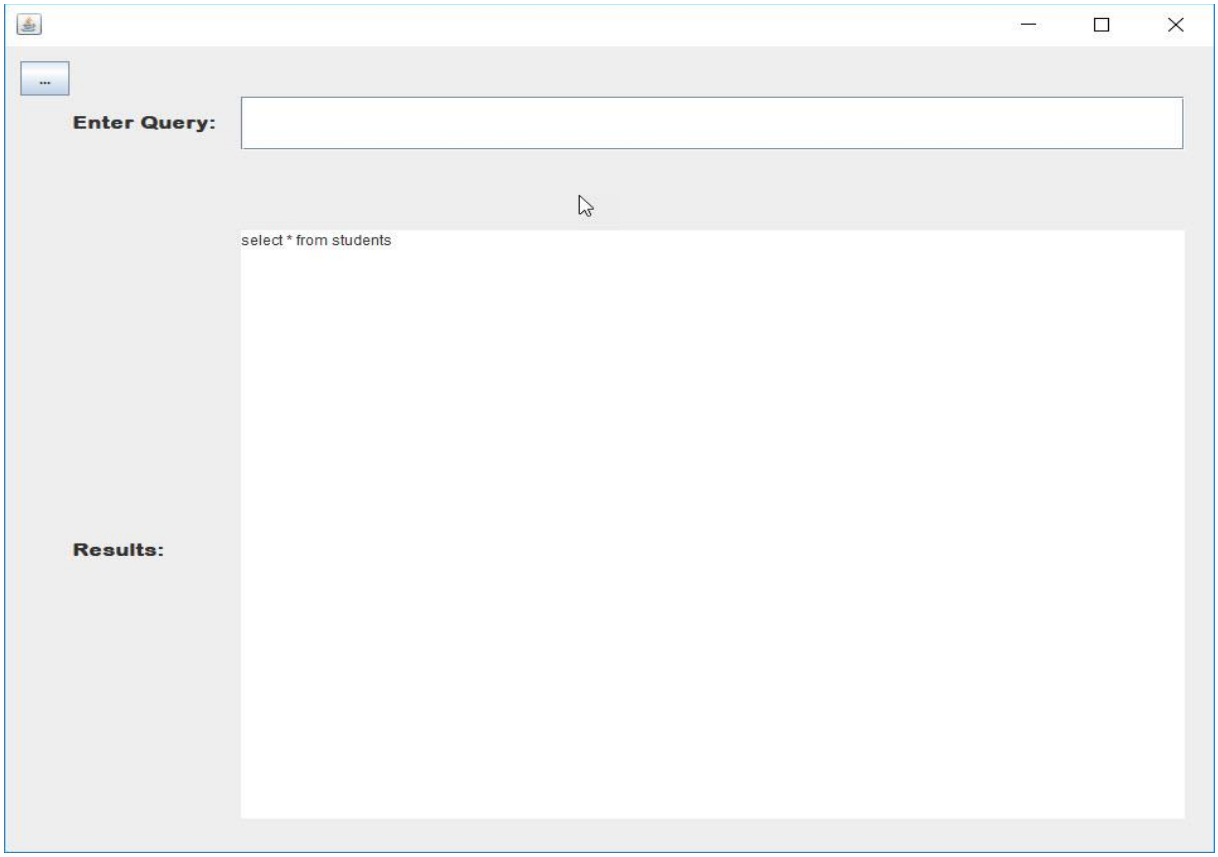
- Write the query in the text field and press enter to execute it.

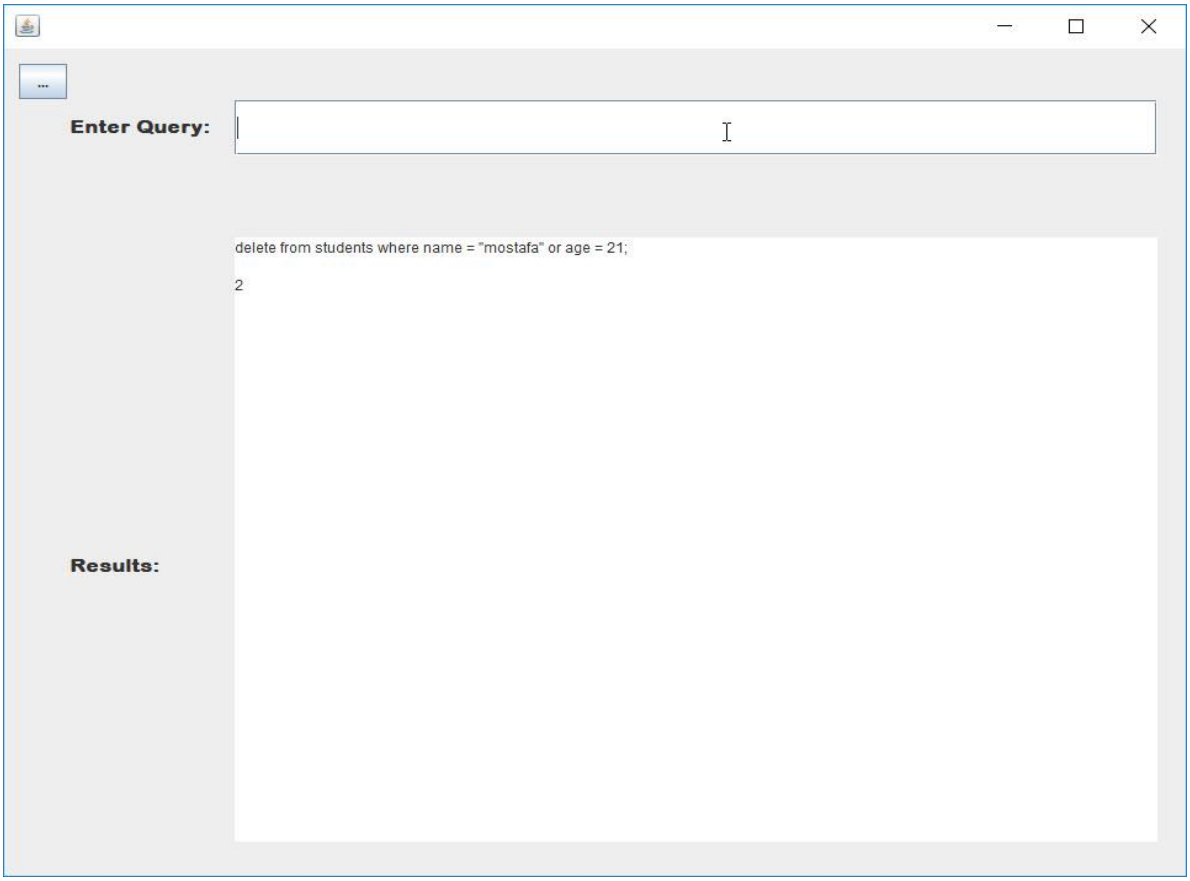
- The results shows in the text area below.

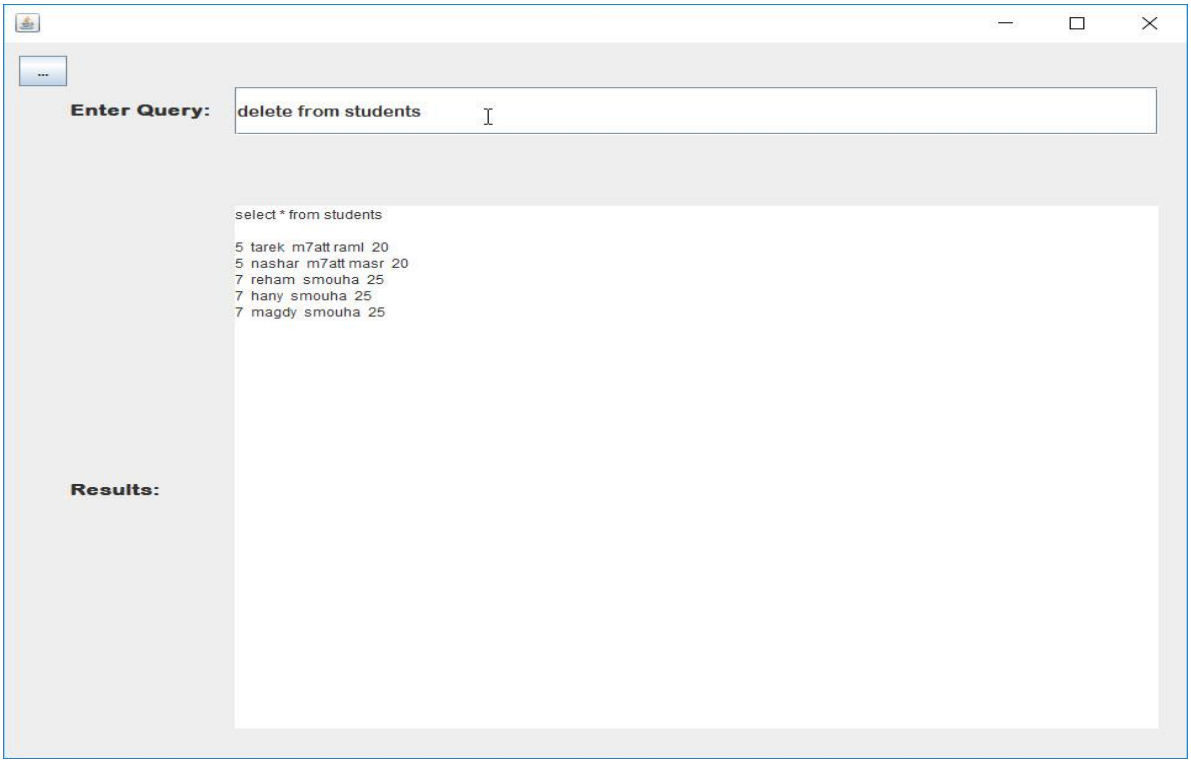
- use w3school.com to know more about SQL queries.

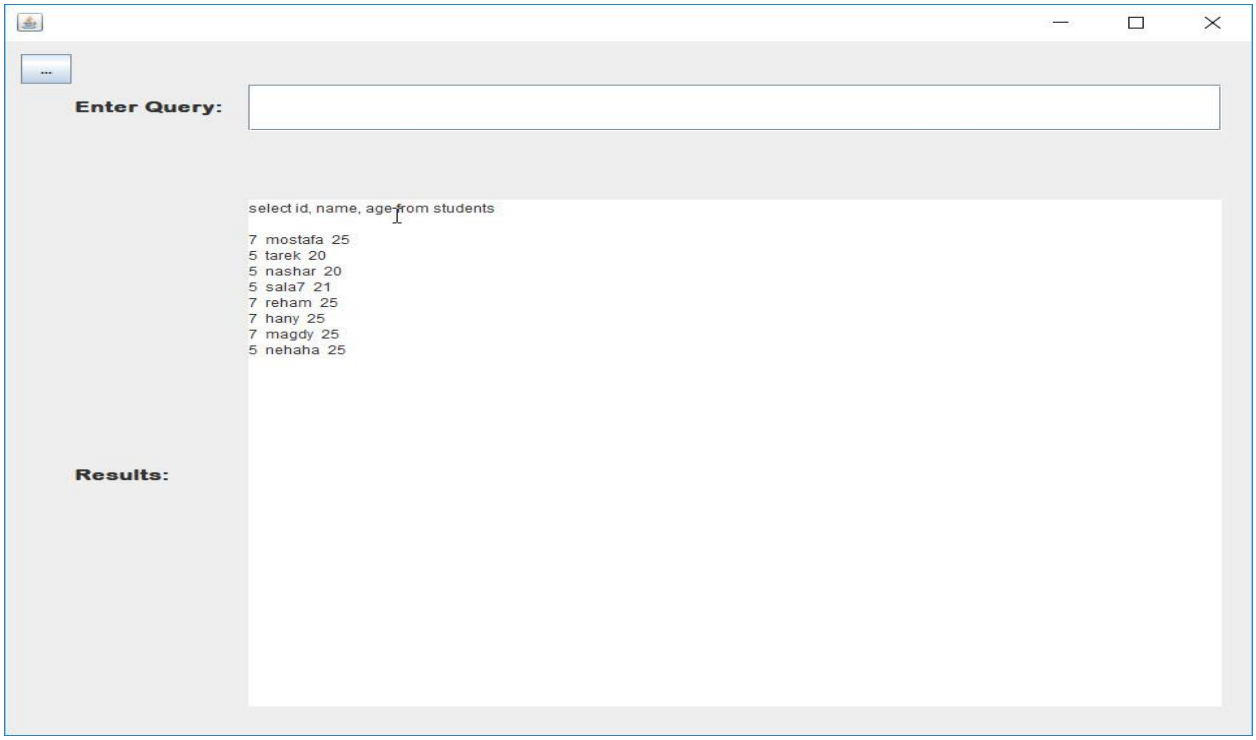
4) Snapshots:

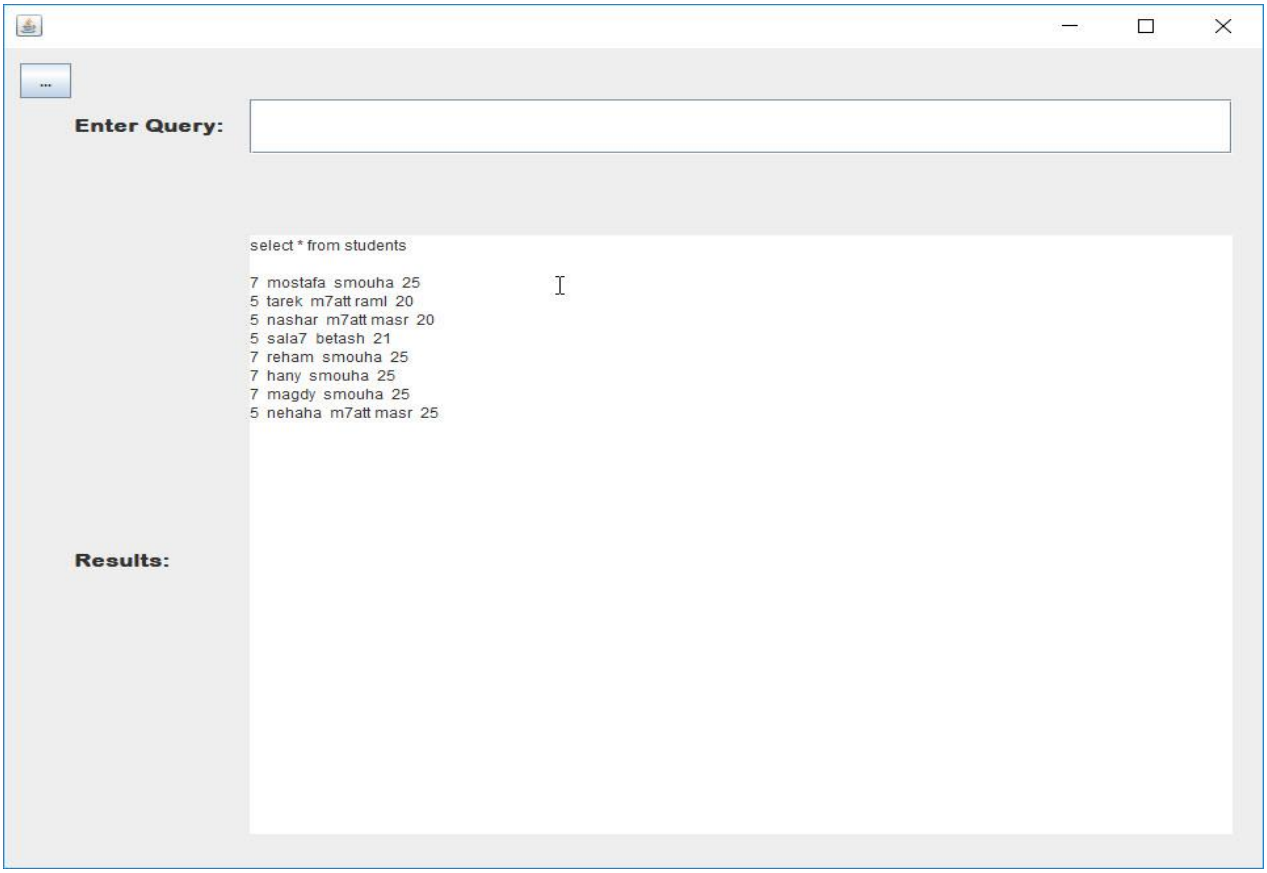

...
Enter Query:
delete from students
5
Results:

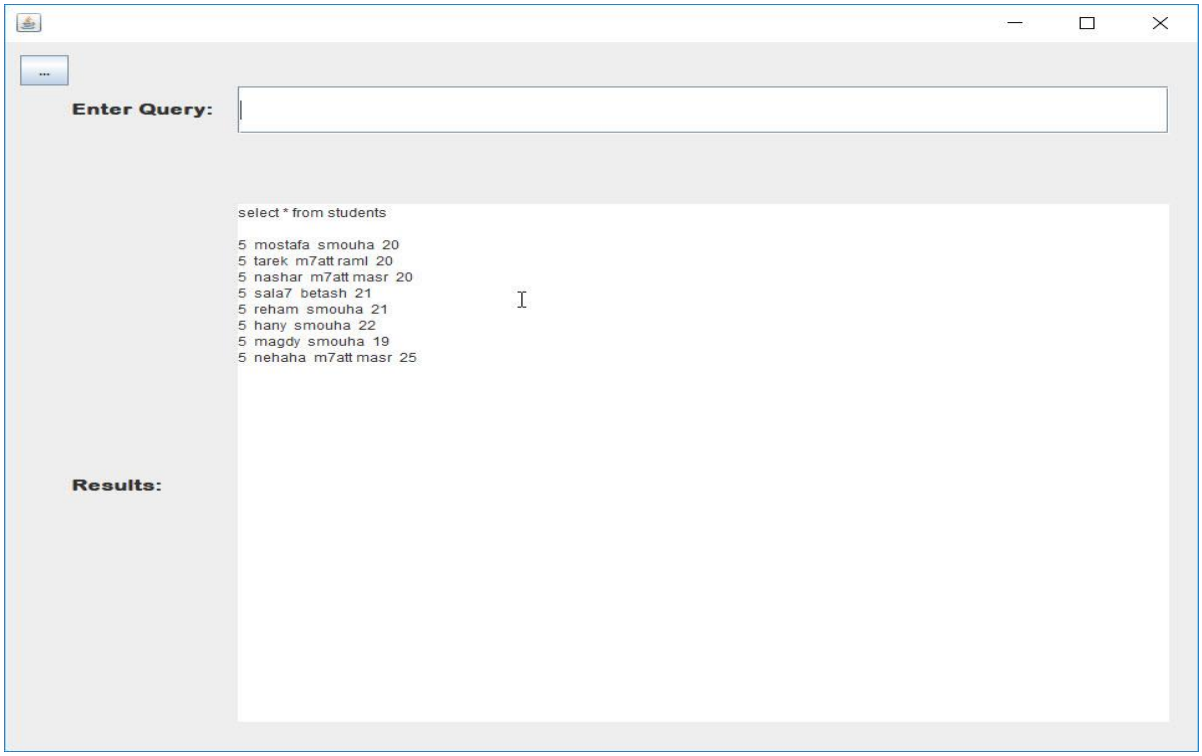

...
Enter Query:
select * from students
Results:

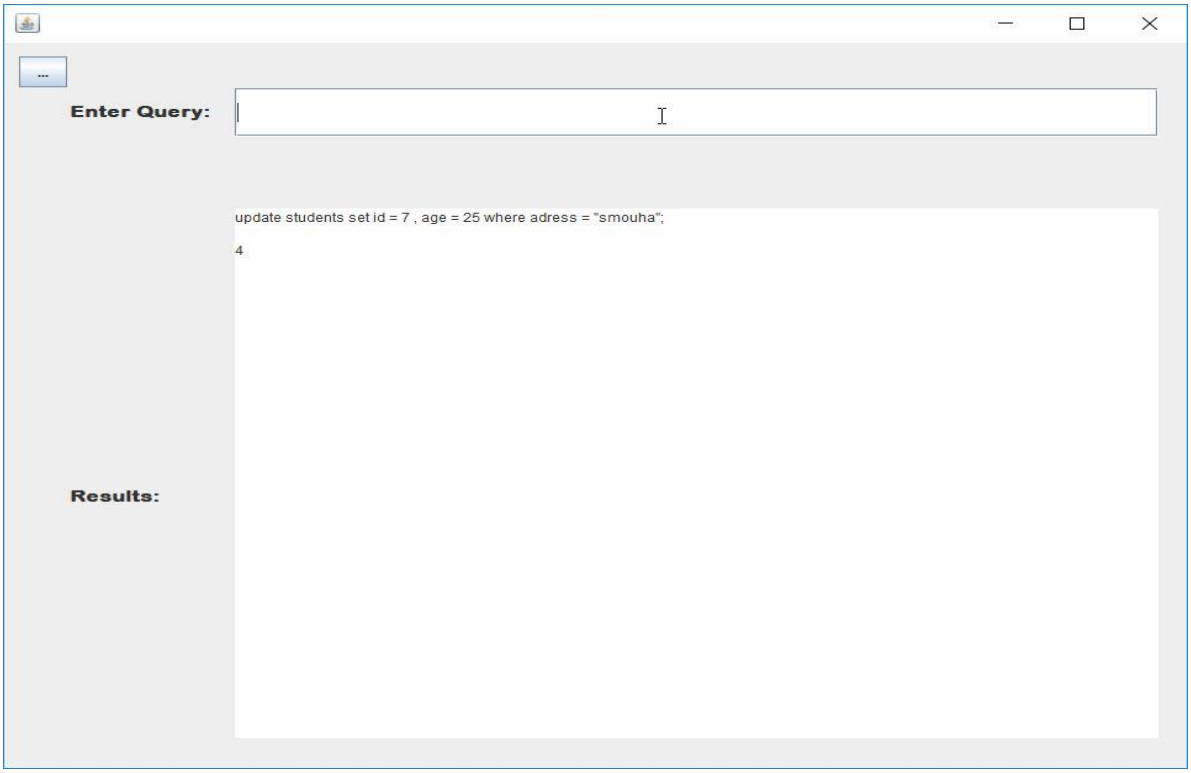

...
Enter Query:
delete from students where name = "mostafa" or age = 21;
2
Results:

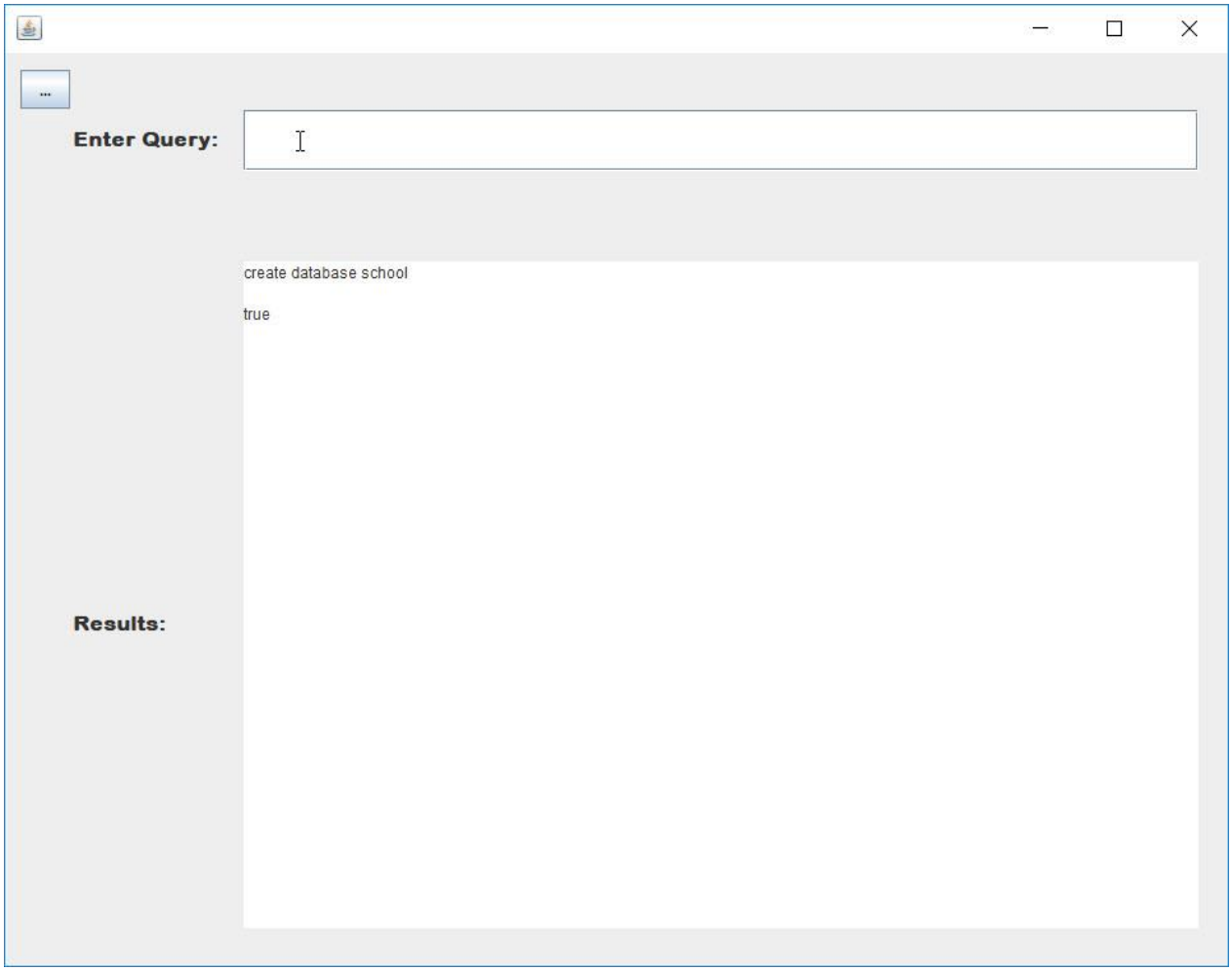

...
Enter Query:
delete from students
select * from students
5 tarek m7att raml 20
5 nashar m7att masr 20
7 reham smouha 25
7 hany smouha 25
7 magdy smouha 25
Results:


...
Enter Query:
select id, name, age from students
7 mostafa 25
5 tarek 20
5 nashar 20
5 sala7 21
7 reham 25
7 hany 25
7 magdy 25
5 nehaha 25
Results:


...
Enter Query:
select * from students
7 mostafa smouha 25
5 tarek m7att raml 20
5 nashar m7att masr 20
5 sala7 betash 21
7 reham smouha 25
7 hany smouha 25
7 magdy smouha 25
5 nehaha m7att masr 25
Results:


...
Enter Query:
select * from students
5 mostafa smouha 20
5 tarek m7att raml 20
5 nashar m7att masr 20
5 sala7 betash 21
5 reham smouha 21
5 hany smouha 22
5 magdy smouha 19
5 nehaha m7att masr 25
Results:


...
Enter Query:
update students set id = 7 , age = 25 where adress = "smouha";
4
Results:


...
Enter Query:
create database school
true
Results: