Simple DBMS

Software program that controls the organization, storage, management, and retrieval of data in a database.

—

Afnan Mousa 15
Enas Morsy 20
Sara Mohammed 31
Shaima kamal 34

Overview

A Computer Database is a structured collection of records or data that is stored in a computer system. DBMS are categorized according to their data structures or types.

The DBMS accepts requests for data from the application program and instructs the operating system to transfer the appropriate data.

Goals

1. Application program, controls the organization, storage, management and retrieval of data in a database.
2. Implementation for all syntax for SQL statements.

o Create database o Drop database
o Drop table o Create table
o Select from table o Insert into table
o Update table o Delete from table

User Guide

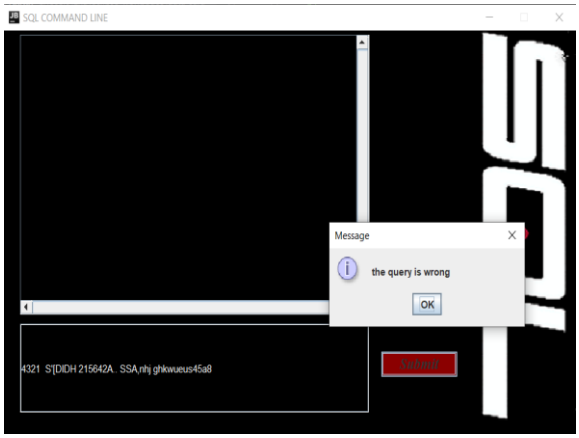
The user should be write the order of SQL statements in the textarea.

Before writing the submit button is disable to use and show massage that the user should write SQL statements first.

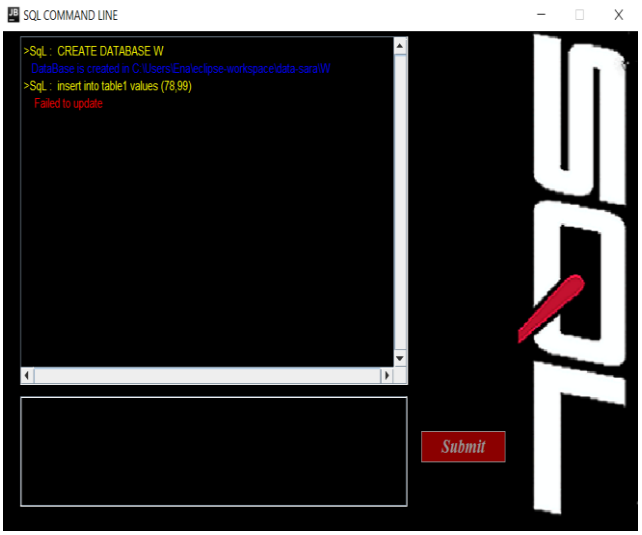
AS Shown

After that the submit button be enable to use

If the sql statement is wrong, Message will appear and you can edit it



If you entered right statement, the statement will appear in the upper panel as command line interface that accepts SQL statements and the result of that appears in the next line .



Design Decisions

I. Design Patterns

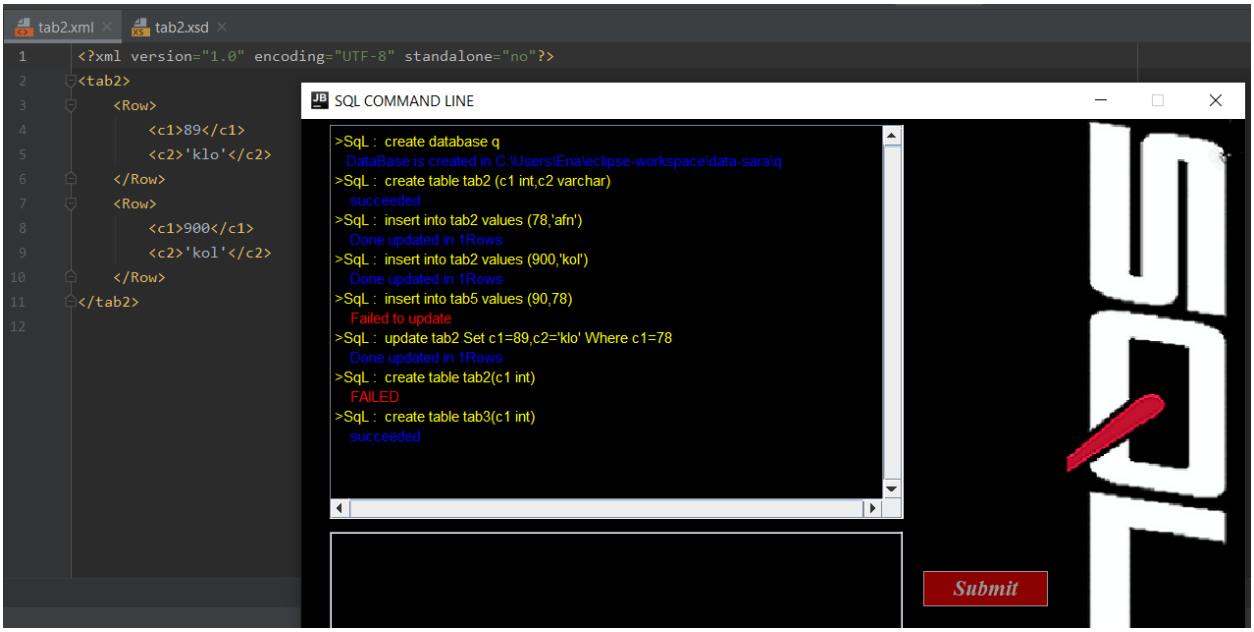
- Façade.
- Factory.
- Strategy.
- Singleton.

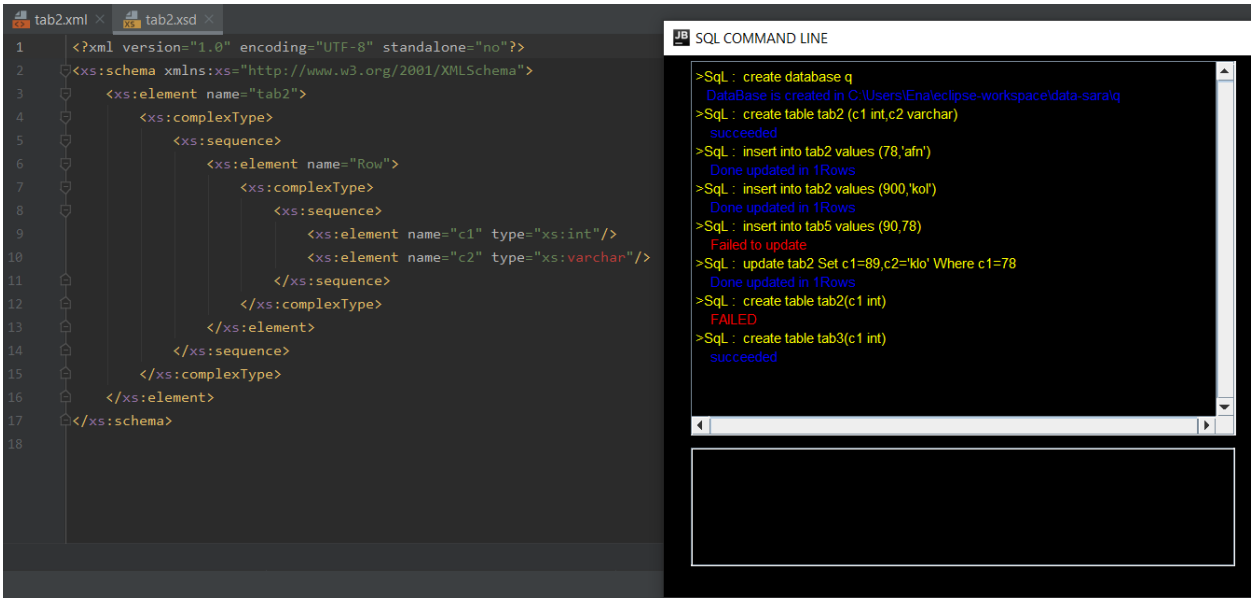
II. Schema File

That contain the data about the tables and columns that validate across the schema by XSD Files.

Each table have two files one for XML and another for XSD.

Using the DOM parser to parse the XML database files.

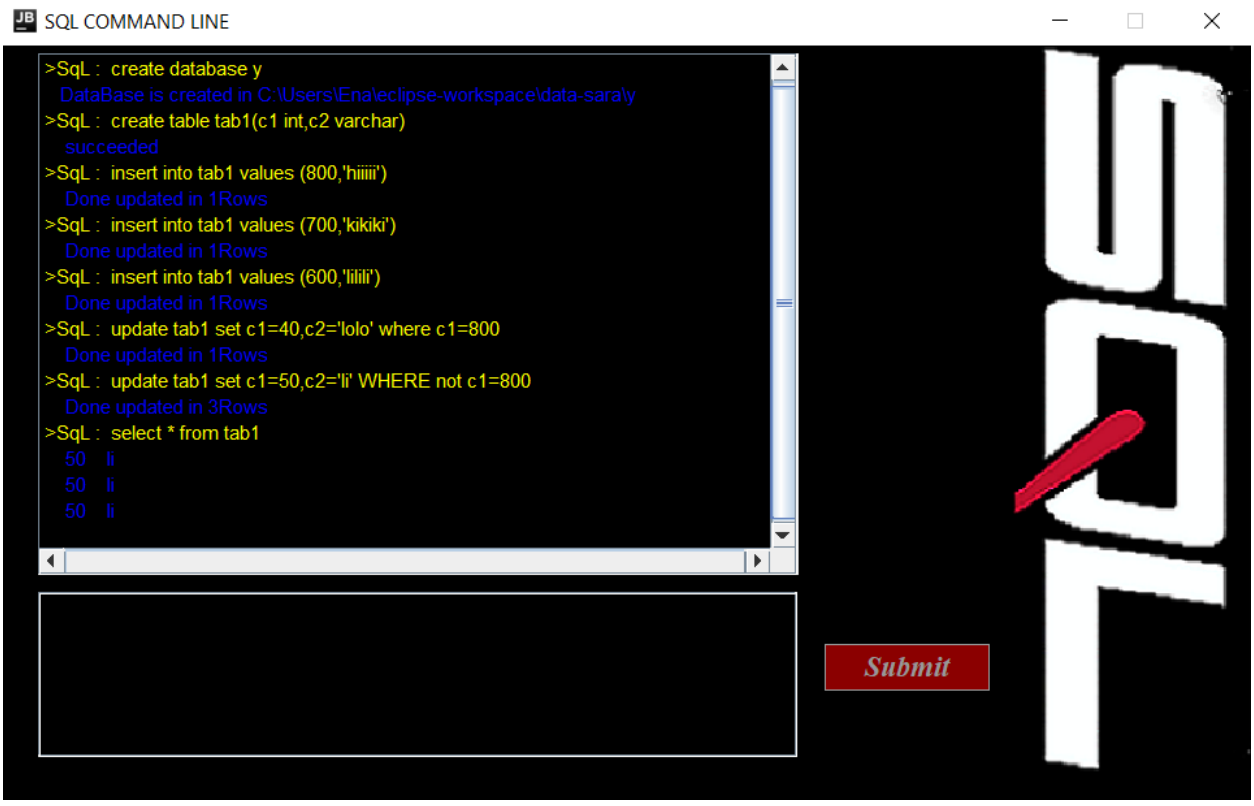


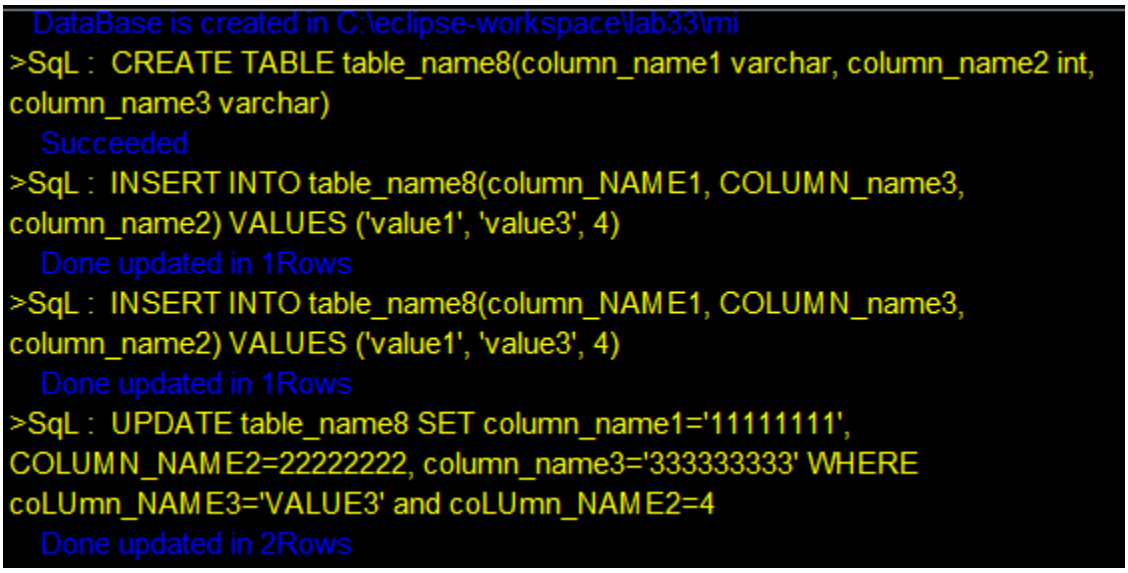


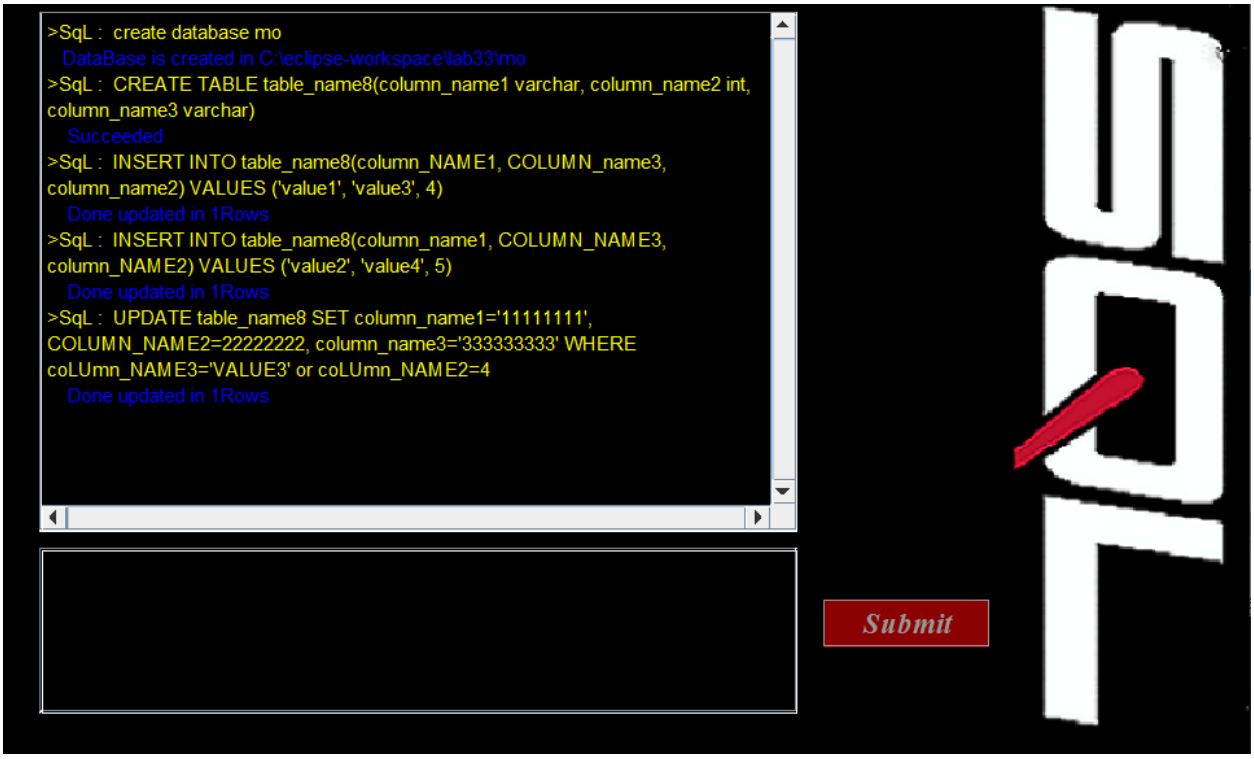
Bonus

In where condition for update, delete and select:

- And
- OR
- Not

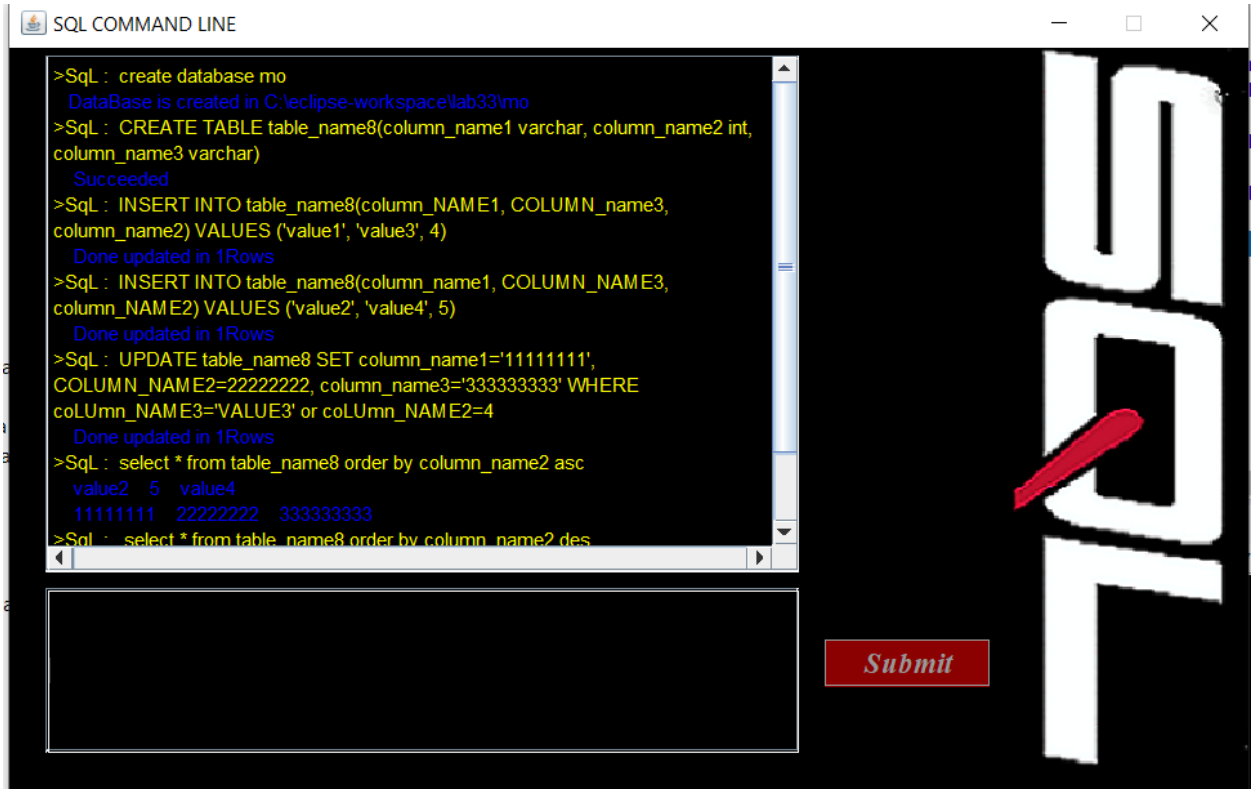

SQL COMMAND LINE
>SqL : create database y
DataBase is created in C:\Users\Ena\eclipse-workspace\data-sara\y
>SqL : create table tab1(c1 int,c2 varchar)
succeeded
>SqL : insert into tab1 values (800,'hiiiii')
Done updated in 1Rows
>SqL : insert into tab1 values (700,'kikiki')
Done updated in 1Rows
>SqL : insert into tab1 values (600,'lilili')
Done updated in 1Rows
>SqL : update tab1 set c1=40,c2='lolo' where c1=800
Done updated in 1Rows
>SqL : update tab1 set c1=50,c2='li' WHERE not c1=800
Done updated in 3Rows
>SqL : select * from tab1
50 li
50 li
50 li
Submit


DataBase is created in C:\eclipse-workspace\lab33\mi
>SqL : CREATE TABLE table_name8(column_name1 varchar, column_name2 int, column_name3 varchar)
Succeeded
>SqL : INSERT INTO table_name8(column_NAME1, COLUMN_name3, column_name2) VALUES ('value1', 'value3', 4)
Done updated in 1Rows
>SqL : INSERT INTO table_name8(column_NAME1, COLUMN_name3, column_name2) VALUES ('value1', 'value3', 4)
Done updated in 1Rows
>SqL : UPDATE table_name8 SET column_name1='11111111', COLUMN_NAME2=22222222, column_name3='333333333' WHERE coLUmn_NAME3='VALUE3' and coLUmn_NAME2=4
Done updated in 2Rows

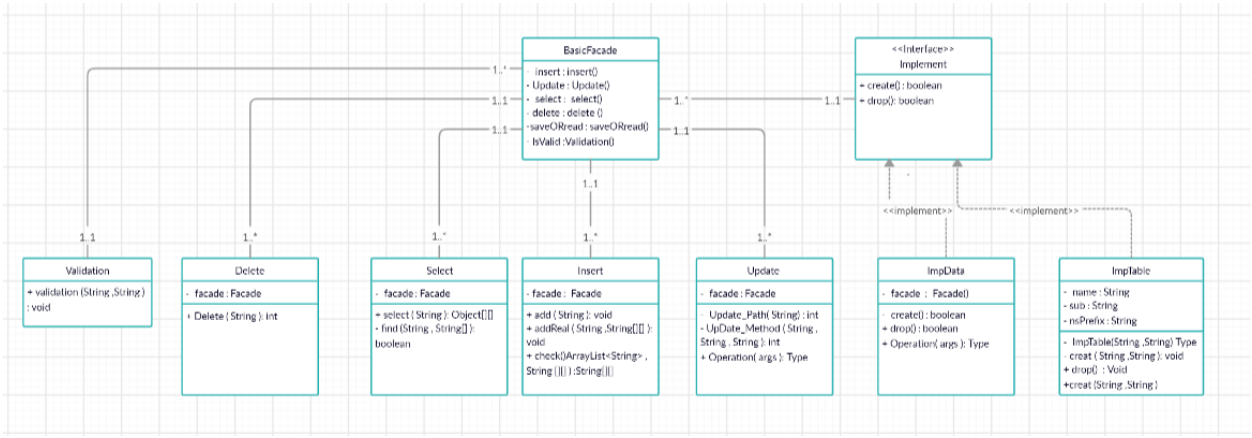


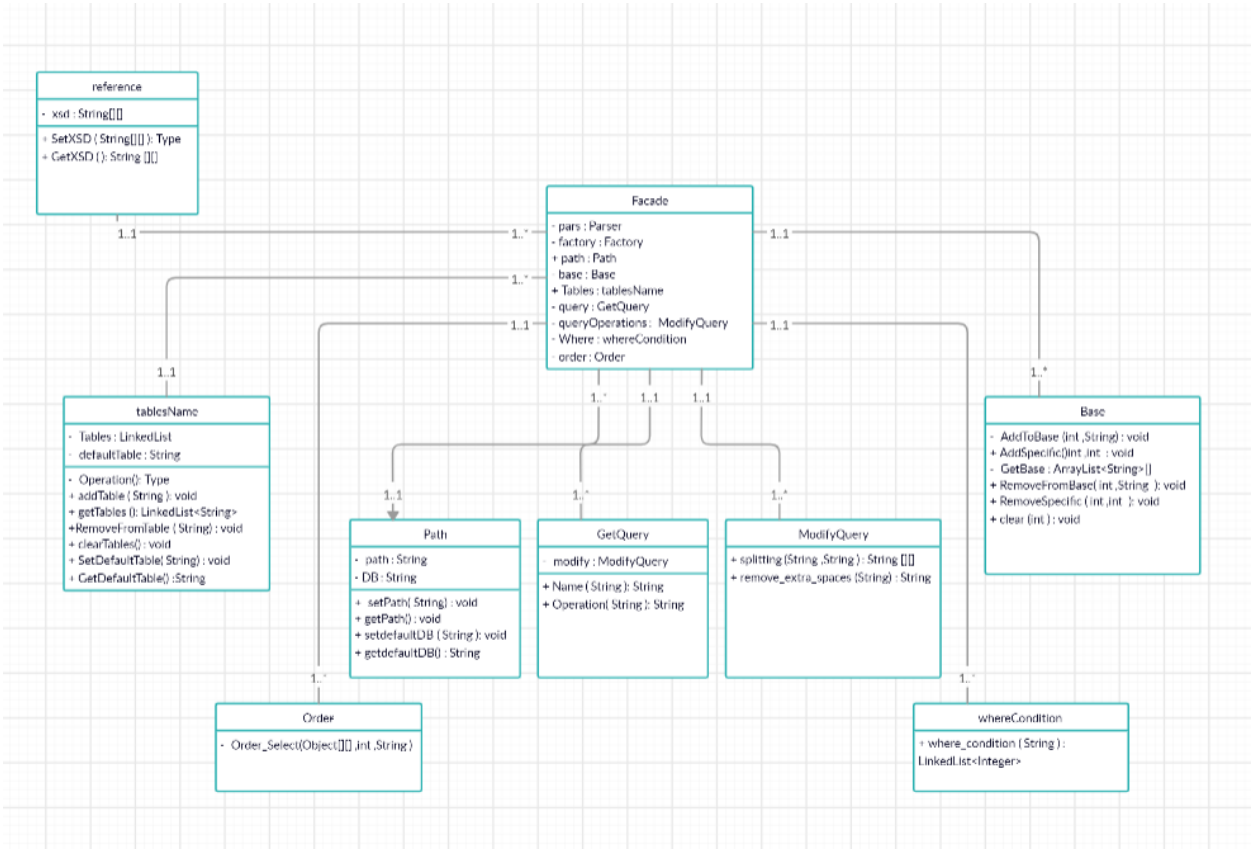
In Select statement:

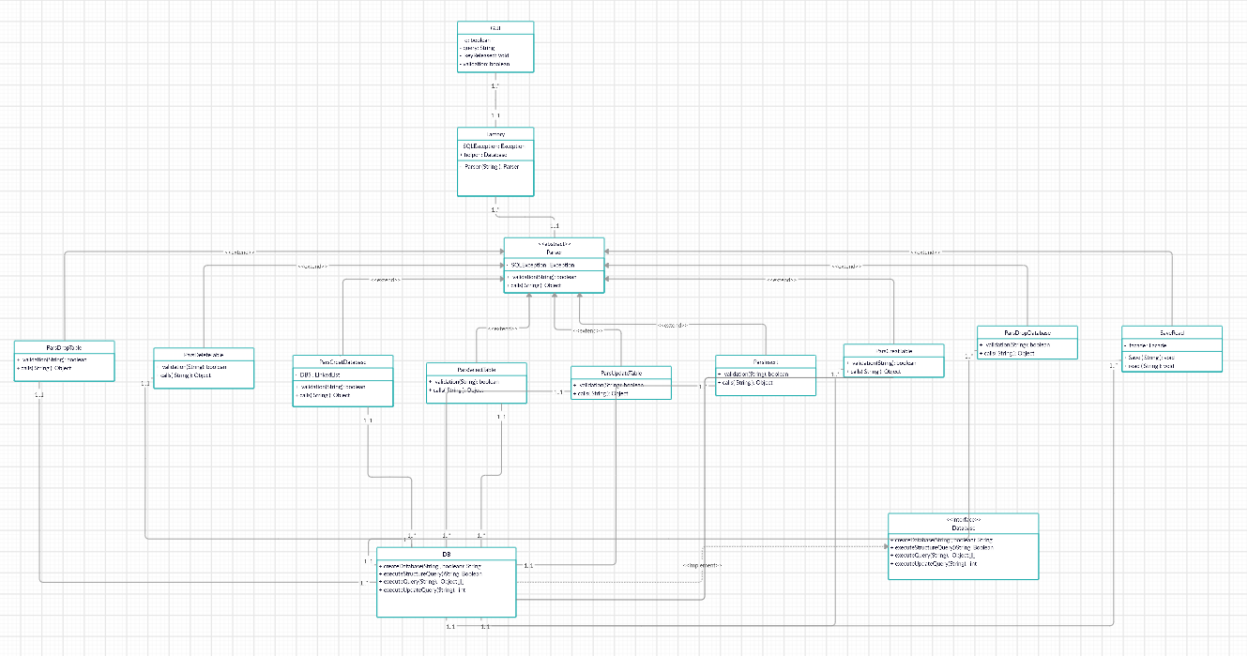
- Order By



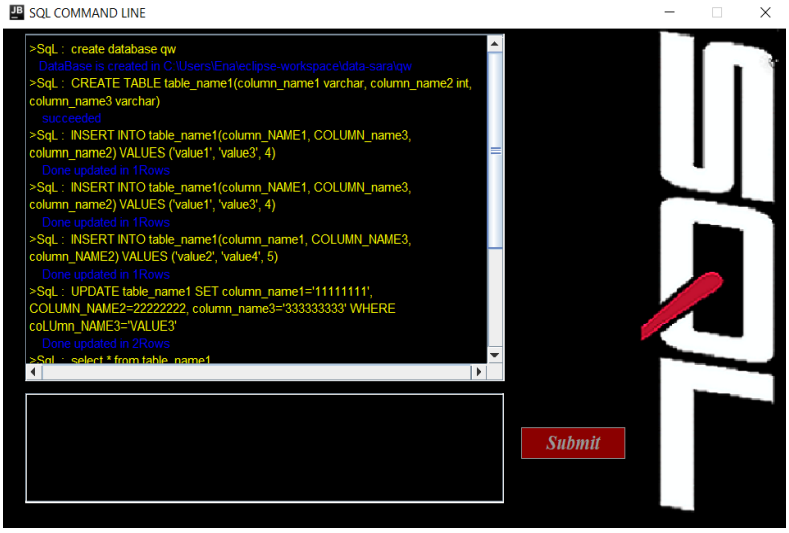
UML Diagram

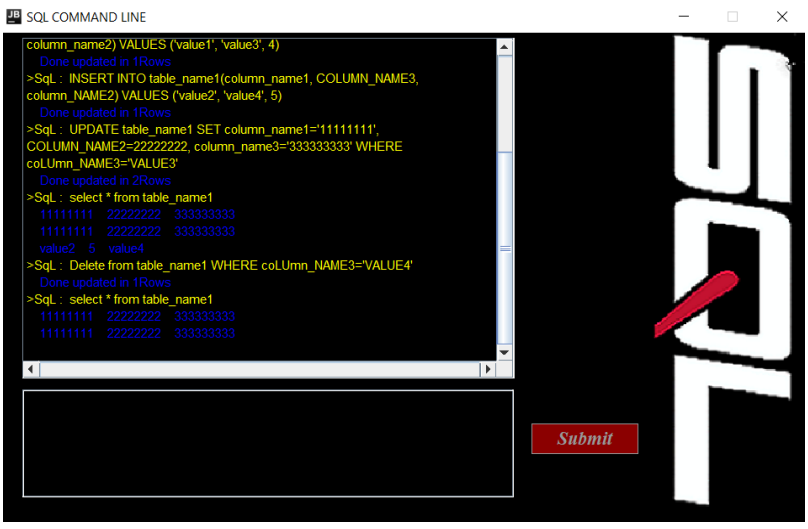

BasicFacade
- insert : insert()
- Update : Update()
- select : select()
- delete : delete ()
-saveORread : saveORread()
- bValid :Validation()
<<Interface>>
Implement
+ create() : boolean
+ drop() : boolean
<<implement>>
<<implement>>
Validation
+ validation (String ,String) : void
Delete
- facade : Facade
+ Delete (String): int
Select
- facade : Facade
+ select (String): Object[][]
- find (String , String[]): boolean
Insert
- facade : Facade
+ add (String): void
+ addReal (String ,String[][]): void
+ check()ArrayList<String> , String [][]):String[][]
Update
- facade : Facade
- Update_Path(String) : int
- UpDate_Method (String , String , String): int
+ Operation(args): Type
ImpData
- facade : Facade()
- create() : boolean
+ drop() : boolean
+ Operation(args): Type
ImpTable
- name : String
- sub : String
- nsPrefix : String
- ImpTable(String ,String) Type
- creat (String ,String): void
+ drop() : Void
+creat (String ,String)


reference
- xsd : String[][]
+ SetXSD (String[][]): Type
+ GetXSD ( ): String [][]
Facade
- pars : Parser
- factory : Factory
+ path : Path
- base : Base
+ Tables : tablesName
- query : GetQuery
- queryOperations : ModifyQuery
- Where : whereCondition
- order : Order
tablesName
- Tables : LinkedList
- defaultTable : String
- Operation(): Type
+ addTable (String): void
+ getTables (): LinkedList<String>
+RemoveFromTable (String) : void
+ clearTables() : void
+ SetDefaultTable(String) : void
+ GetDefaultTable() :String
Path
- path : String
- DB : String
+ setPath(String) : void
+ getPath() : void
+ setdefaultDB (String): void
+ getdefaultDB() : String
GetQuery
- modify : ModifyQuery
+ Name (String): String
+ Operation(String): String
ModifyQuery
+ splitting (String ,String) : String [][]
+ remove_extra_spaces (String) : String
Base
- AddToBase (int ,String) : void
+ AddSpecific()int ,int : void
- GetBase : ArrayList<String>()
+ RemoveFromBase(int ,String): void
+ RemoveSpecific (int ,int): void
+ clear (int) : void
Order
- Order_Select(Object[][] ,int ,String)
whereCondition
+ where_condition (String) : LinkedList<Integer>



Sample Runs:


SQL COMMAND LINE
>SqL : create database qw
DataBase is created in C:\Users\Ena\eclipse-workspace\data-sara\qw
>SqL : CREATE TABLE table_name1(column_name1 varchar, column_name2 int, column_name3 varchar)
succeeded
>SqL : INSERT INTO table_name1(column_NAME1, COLUMN_name3, column_name2) VALUES ('value1', 'value3', 4)
Done updated in 1Rows
>SqL : INSERT INTO table_name1(column_NAME1, COLUMN_name3, column_name2) VALUES ('value1', 'value3', 4)
Done updated in 1Rows
>SqL : INSERT INTO table_name1(column_name1, COLUMN_NAME3, column_NAME2) VALUES ('value2', 'value4', 5)
Done updated in 1Rows
>SqL : UPDATE table_name1 SET column_name1='11111111', COLUMN_NAME2=22222222, column_name3='333333333' WHERE coLUmn_NAME3='VALUE3'
Done updated in 2Rows
Submit


SQL COMMAND LINE
column_name2) VALUES ('value1', 'value3', 4)
Done updated in 1Rows
>SqL : INSERT INTO table_name1(column_name1, COLUMN_NAME3, column_NAME2) VALUES ('value2', 'value4', 5)
Done updated in 1Rows
>SqL : UPDATE table_name1 SET column_name1='11111111', COLUMN_NAME2=22222222, column_name3='333333333' WHERE coLUmn_NAME3='VALUE3'
Done updated in 2Rows
>SqL : select * from table_name1
11111111 22222222 333333333
11111111 22222222 333333333
value2 5 value4
>SqL : Delete from table_name1 WHERE coLUmn_NAME3='VALUE4'
Done updated in 1Rows
>SqL : select * from table_name1
11111111 22222222 333333333
11111111 22222222 333333333
Submit