Simple DBMS

OBJECT-ORIANTED PROJECT

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Description

- This Program provides you with a service to keep data in tables by creating databases you can keep any amount of data.
- You can use the SQL commands to perform operations on your data.

Features

- In this program, you can create or delete databases and tables.
- You can select any column with any condition.
- You can also update your existent data or remove them.
- You can insert any additional data under any condition.

Design overview

JAVA SWING IS USED TO IMPLEMENT THE CONSOLE.

- JFrame: is used to create a window.
- JTextArea: is used to show the inputs and outputs.
- JScrollPane: is used to make the window scroll down and up.

Data structures

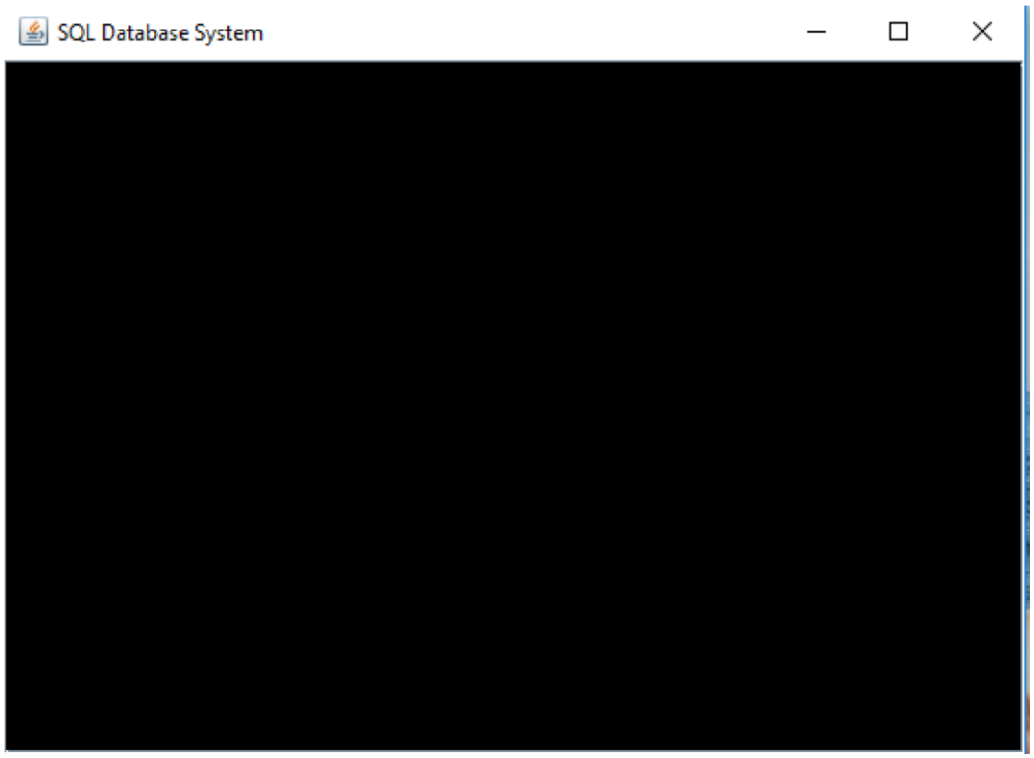
- Object[][]: Array of selected data.
- String: To keep the path and data of type varchar.
- int: Used in iterations and to keep data of type int.
- File: To create a new file or directory.
- Enum: To keep the type of possible commands.

Description of important function

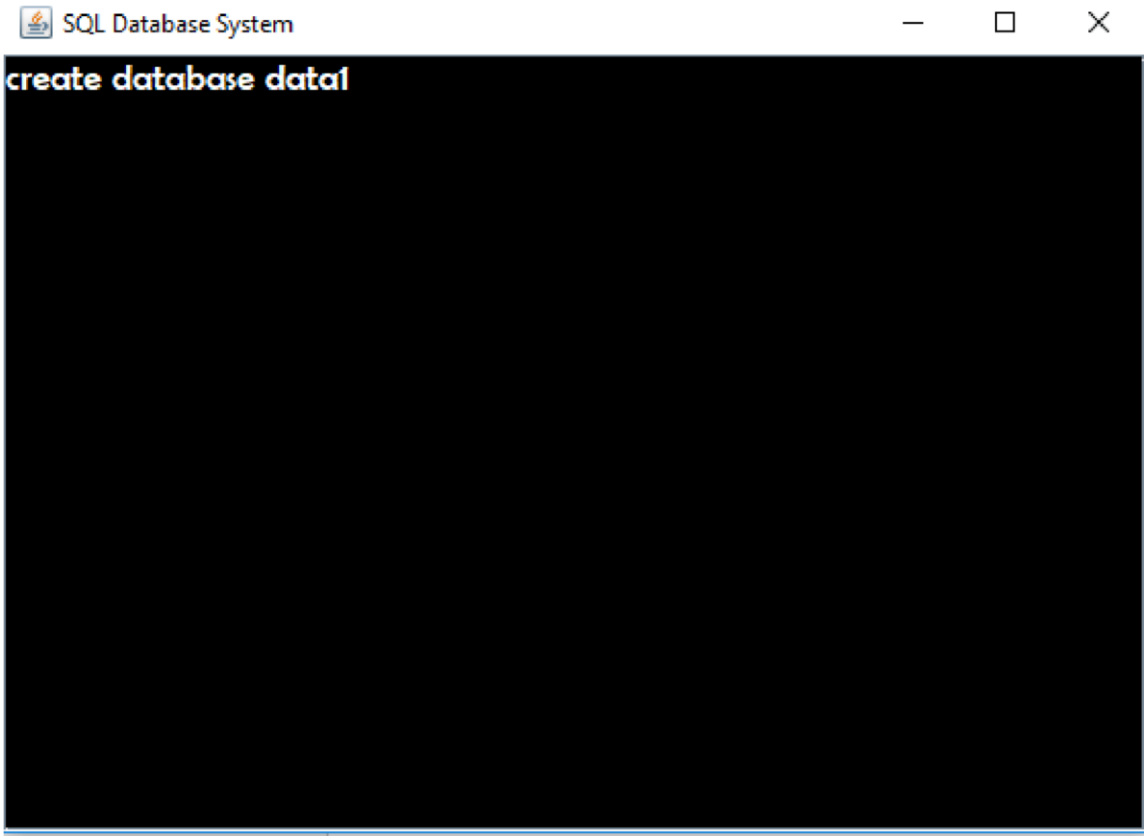
- createDatabase: create a new database.
- executeQuery: used to perform selection queries and return array 2-D of the selected data.
- executeUpdateuery: used to update, insert or remove data.

User manual

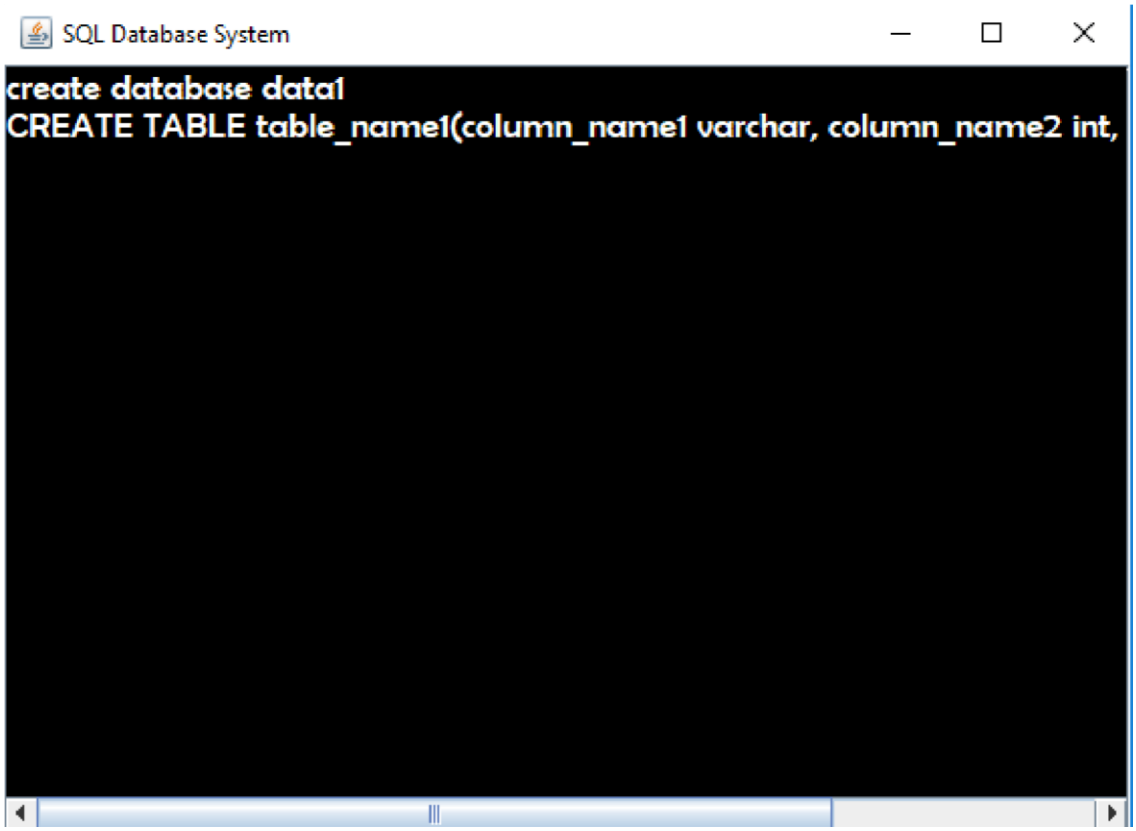
Once the user open the program he will see the shown:



You can start by creating a database with writing the correct query to create.

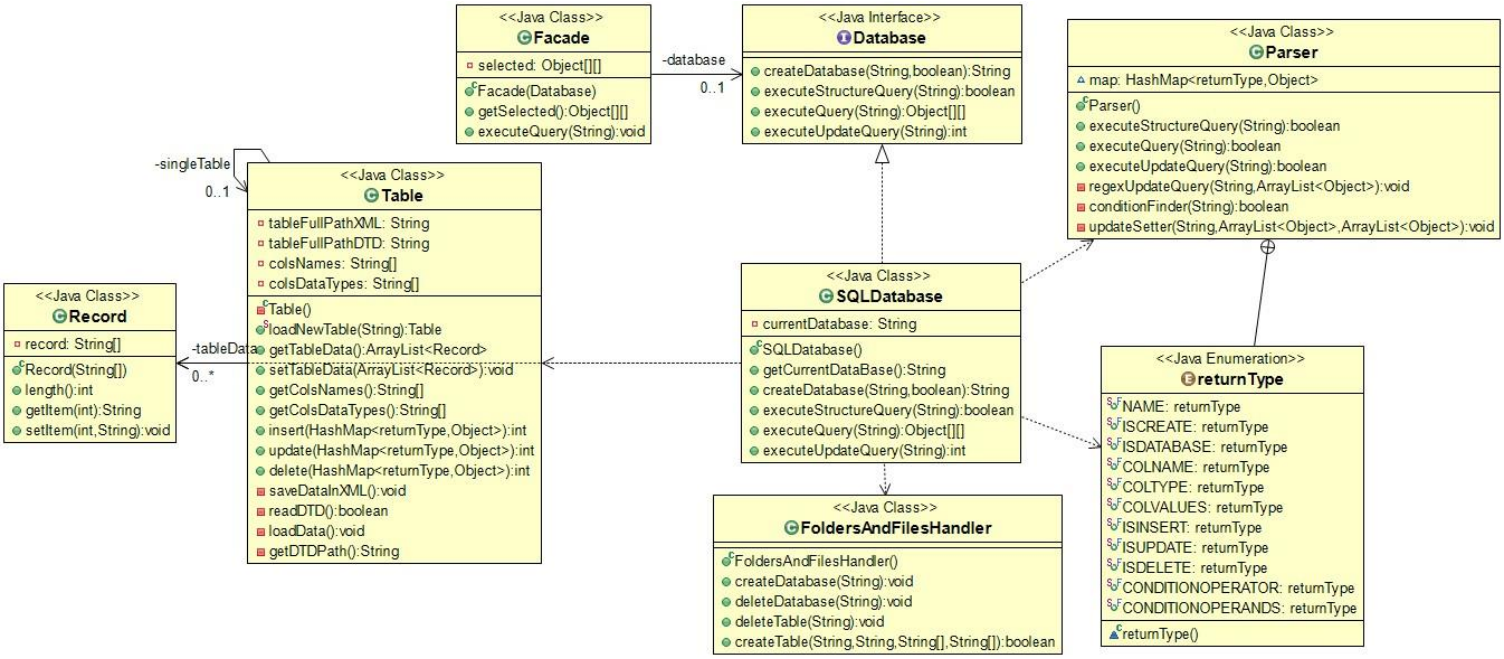

SQL Database System
create database data1

Then you can create tables in your database.



Then you insert the data in your table.

UML


<<Java Class>>
Facade
selected: Object[][]
Facade(Database)
getSelected():Object[][]
executeQuery(String):void
-database
0..1
<<Java Interface>>
Database
createDatabase(String,boolean):String
executeStructureQuery(String):boolean
executeQuery(String):Object[][]
executeUpdateQuery(String):int
<<Java Class>>
Parser
map: HashMap<returnType,Object>
Parser()
executeStructureQuery(String):boolean
executeQuery(String):boolean
executeUpdateQuery(String):boolean
regexUpdateQuery(String,ArrayList<Object>):void
conditionFinder(String):boolean
updateSetter(String,ArrayList<Object>,ArrayList<Object>):void
-singleTable
0..1
<<Java Class>>
Table
tableFullPathXML: String
tableFullPathDTD: String
colsNames: String[]
colsDataTypes: String[]
Table()
loadNewTable(String):Table
getTableData():ArrayList<Record>
setTableData(ArrayList<Record>):void
getColsNames():String[]
getColsDataTypes():String[]
insert(HashMap<returnType,Object>):int
update(HashMap<returnType,Object>):int
delete(HashMap<returnType,Object>):int
saveDataInXML():void
readDTD():boolean
loadData():void
getDTDPath():String
<<Java Class>>
Record
record: String[]
Record(String[])
length():int
getItem(int):String
setItem(int,String):void
-tableData
0..*
<<Java Class>>
SQLDatabase
currentDatabase: String
SQLDatabase()
getCurrentDataBase():String
createDatabase(String,boolean):String
executeStructureQuery(String):boolean
executeQuery(String):Object[][]
executeUpdateQuery(String):int
<<Java Enumeration>>
returnType
NAME: returnType
ISCREATE: returnType
ISDATABASE: returnType
COLNAME: returnType
COLTYPE: returnType
COLVALUES: returnType
ISINSERT: returnType
ISUPDATE: returnType
ISDELETE: returnType
CONDITIONOPERATOR: returnType
CONDITIONOPERANDS: returnType
returnType()
<<Java Class>>
FoldersAndFilesHandler
FoldersAndFilesHandler()
createDatabase(String):void
deleteDatabase(String):void
deleteTable(String):void
createTable(String,String,String[],String[]):boolean