DBMS

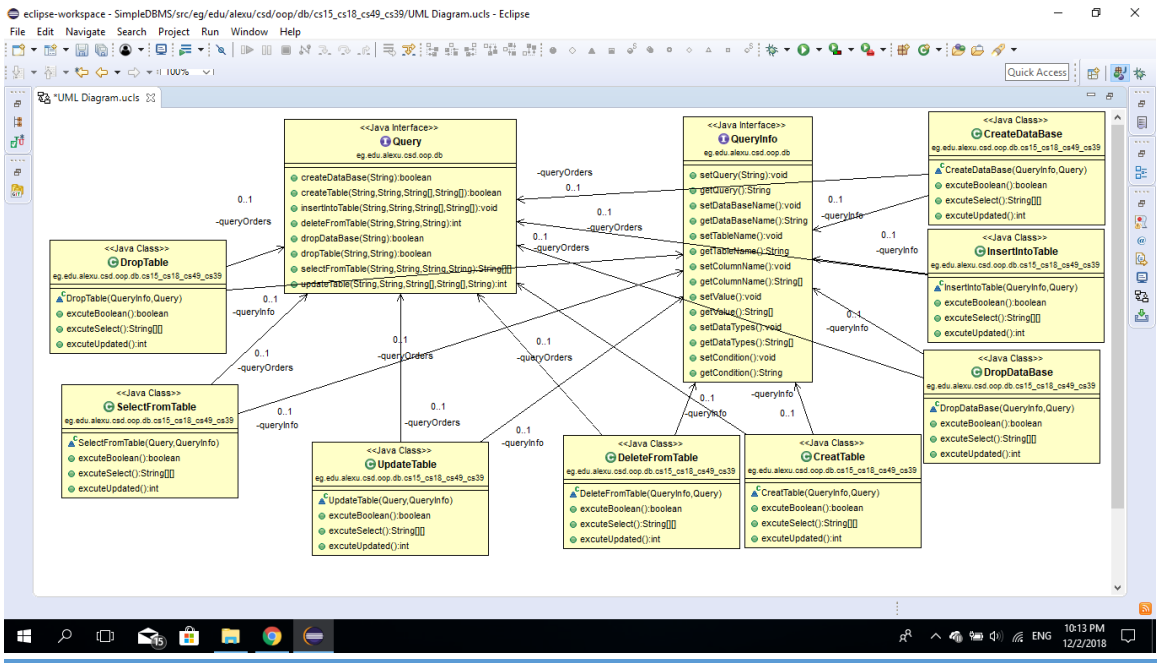
Gamal Eldin Ahmed Khalaf

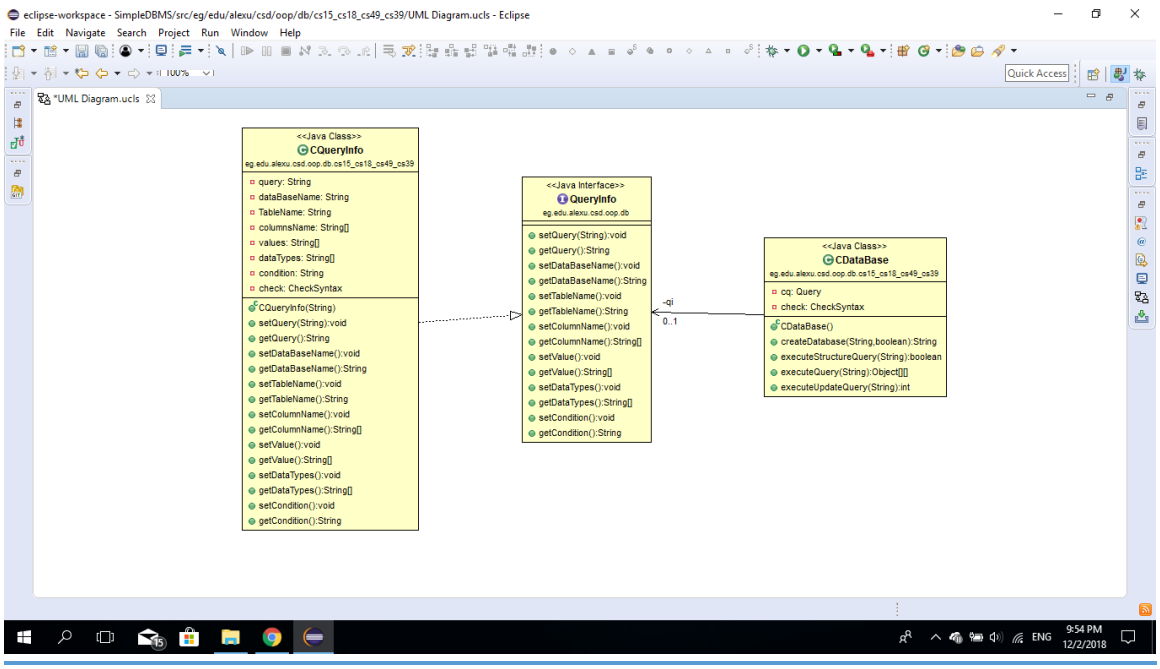
Ziad Taha Ali Mekawy

Mohamed Samy

Mostafa Mohamed Mahmoud Hussien Farrag

UML DIAGRAM:


eclipse-workspace - SimpleDBMS/src/eg/edu/alexu/csd/oop/db/cs15_cs18_cs49_cs39/UML Diagram.ucls - Eclipse
File Edit Navigate Search Project Run Window Help
Quick Access
*UML Diagram.ucls
<<Java Interface>>
Query
eg.edu.alexu.csd.oop.db
createDataBase(String):boolean
createTable(String,String,String[],String[]):boolean
insertIntoTable(String,String,String[],String[]):void
deleteFromTable(String,String,String):int
dropDataBase(String):boolean
dropTable(String,String):boolean
selectFromTable(String,String,String,String):String[][]
updateTable(String,String,String[],String[],String):int
<<Java Interface>>
QueryInfo
eg.edu.alexu.csd.oop.db
setQuery(String):void
getQuery():String
setDataBaseName():void
getDataBaseName():String
setTableName():void
getTableName():String
setColumnName():void
getColumnName():String[]
setValue():void
getValue():String[]
setDataTypes():void
getDataTypes():String[]
setCondition():void
getCondition():String
<<Java Class>>
CreateDataBase
eg.edu.alexu.csd.oop.db.cs15_cs18_cs49_cs39
CreateDataBase(QueryInfo,Query)
excuteBoolean():boolean
excuteSelect():String[][]
excuteUpdated():int
<<Java Class>>
InsertIntoTable
eg.edu.alexu.csd.oop.db.cs15_cs18_cs49_cs39
InsertIntoTable(QueryInfo,Query)
excuteBoolean():boolean
excuteSelect():String[][]
excuteUpdated():int
<<Java Class>>
DropDataBase
eg.edu.alexu.csd.oop.db.cs15_cs18_cs49_cs39
DropDataBase(QueryInfo,Query)
excuteBoolean():boolean
excuteSelect():String[][]
excuteUpdated():int
<<Java Class>>
DropTable
eg.edu.alexu.csd.oop.db.cs15_cs18_cs49_cs39
DropTable(QueryInfo,Query)
excuteBoolean():boolean
excuteSelect():String[][]
excuteUpdated():int
<<Java Class>>
SelectFromTable
eg.edu.alexu.csd.oop.db.cs15_cs18_cs49_cs39
SelectFromTable(Query,QueryInfo)
excuteBoolean():boolean
excuteSelect():String[][]
excuteUpdated():int
<<Java Class>>
UpdateTable
eg.edu.alexu.csd.oop.db.cs15_cs18_cs49_cs39
UpdateTable(Query,QueryInfo)
excuteBoolean():boolean
excuteSelect():String[][]
excuteUpdated():int
<<Java Class>>
DeleteFromTable
eg.edu.alexu.csd.oop.db.cs15_cs18_cs49_cs39
DeleteFromTable(QueryInfo,Query)
excuteBoolean():boolean
excuteSelect():String[][]
excuteUpdated():int
<<Java Class>>
CreatTable
eg.edu.alexu.csd.oop.db.cs15_cs18_cs49_cs39
CreatTable(QueryInfo,Query)
excuteBoolean():boolean
excuteSelect():String[][]
excuteUpdated():int
-queryOrders
-queryInfo
0..1
ENG
10:13 PM
12/2/2018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<<Java Class>>
CQueryInfo
eg.edu.alexu.csd.oop.db.cs15_cs18_cs49_cs39
query: String
dataBaseName: String
TableName: String
columnsName: String[]
values: String[]
dataTypes: String[]
condition: String
check: CheckSyntax
CQueryInfo(String)
setQuery(String):void
getQuery():String
setDataBaseName():void
getDataBaseName():String
setTableName():void
getTableName():String
setColumnName():void
getColumnName():String[]
setValue():void
getValue():String[]
setDataTypes():void
getDataTypes():String[]
setCondition():void
getCondition():String
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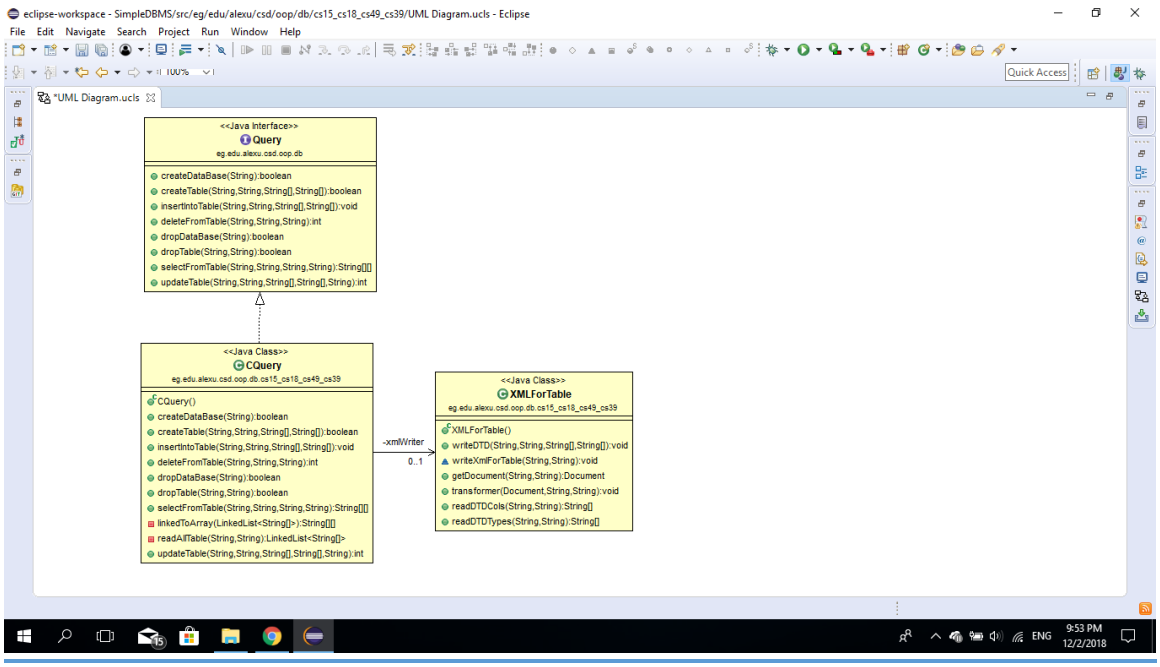
QueryInfo
eg.edu.alexu.csd.oop.db
setQuery(String):void
getQuery():String
setDataBaseName():void
getDataBaseName():String
setTableName():void
getTableName():String
setColumnName():void
getColumnName():String[]
setValue():void
getValue():String[]
setDataTypes():void
getDataTypes():String[]
setCondition():void
getCondition():String
<<Java Class>>
CDataBase
eg.edu.alexu.csd.oop.db.cs15_cs18_cs49_cs39
cq: Query
check: CheckSyntax
CDataBase()
createDatabase(String,boolean):String
executeStructureQuery(String):boolean
executeQuery(String):Object[][]
executeUpdateQuery(String):int
-qi
0..1
ENG
9:54 PM
12/2/2018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createTable(String,String,String[],String[]):boolean
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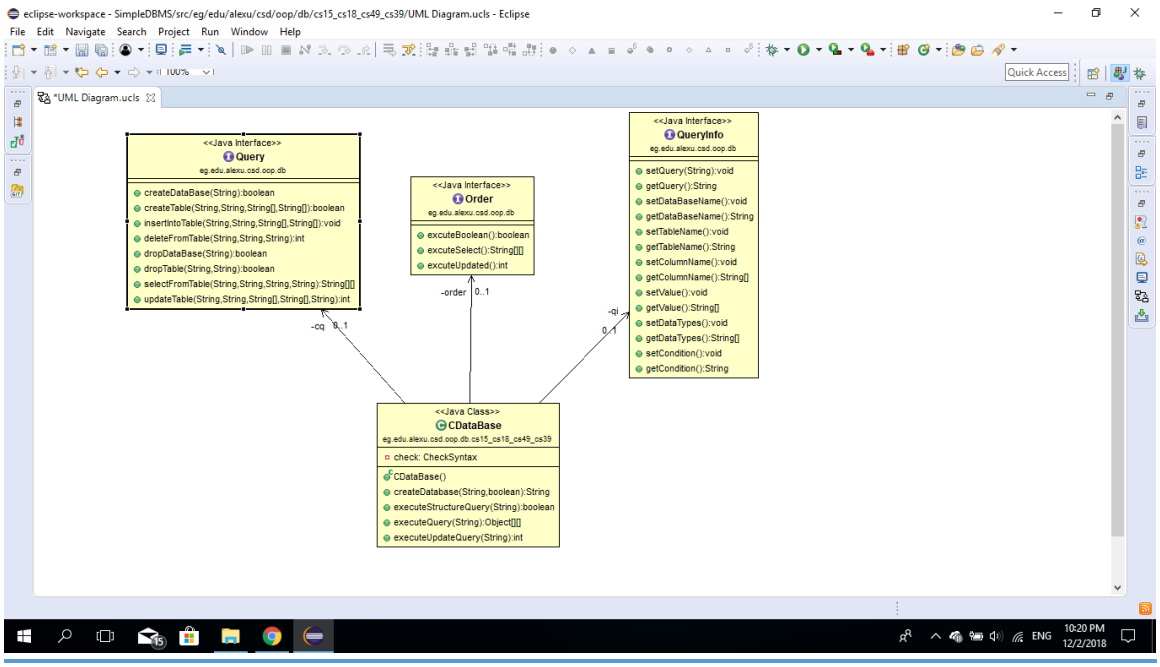
deleteFromTable(String,String,String):int
dropDataBase(String):boolean
dropTable(String,String):boolean
selectFromTable(String,String,String,String):String[][]
updateTable(String,String,String[],String[],String):int
<<Java Class>>
CQuery
eg.edu.alexu.csd.oop.db.cs15_cs18_cs49_cs39
CQuery()
createDataBase(String):boolean
createTable(String,String,String[],String[]):boolean
insertIntoTable(String,String,String[],String[]):void
deleteFromTable(String,String,String):int
dropDataBase(String):boolean
dropTable(String,String):boolean
selectFromTable(String,String,String,String):String[][]
linkedToArray(LinkedList<String[]>):String[][]
readAllTable(String,String):LinkedList<String[]>
updateTable(String,String,String[],String[],String):int
-xmlWriter
0..1
<<Java Class>>
XMLForTable
eg.edu.alexu.csd.oop.db.cs15_cs18_cs49_cs39
XMLForTable()
writeDTD(String,String,String[],String[]):void
writeXmlForTable(String,String):void
getDocument(String,String):Document
transformer(Document,String,String):void
readDTDCols(String,String):String[]
readDTDTypes(String,String):String[]
ENG
9:53 PM
12/2/2018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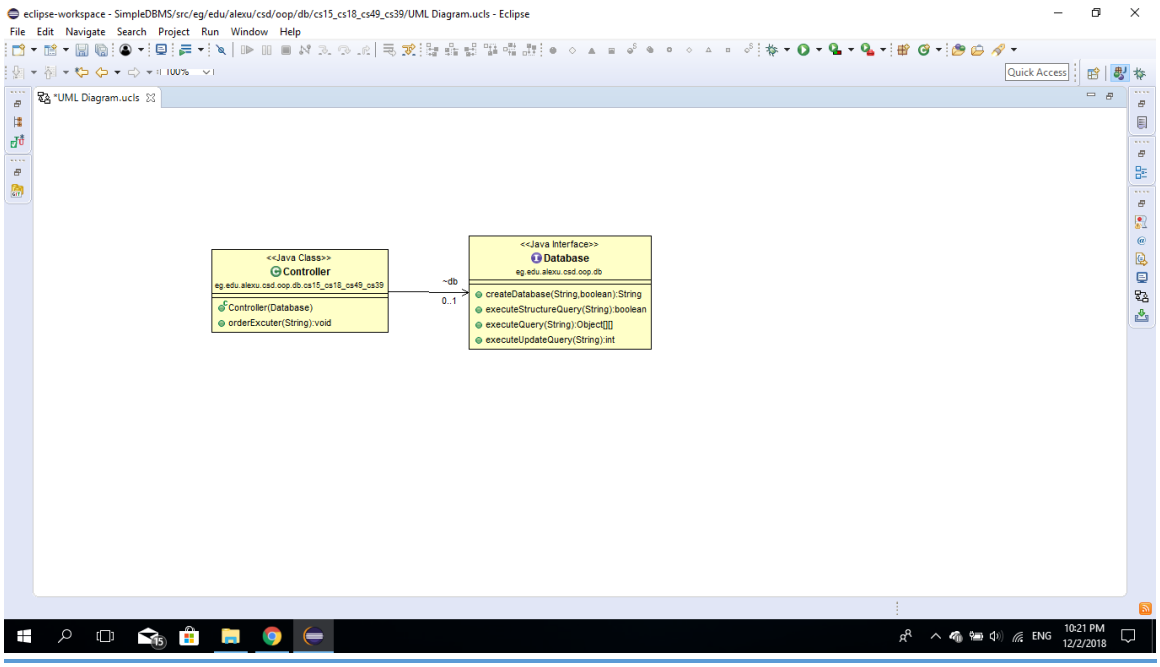
deleteFromTable(String,String,String):int
dropDataBase(String):boolean
dropTable(String,String):boolean
selectFromTable(String,String,String,String):String[][]
updateTable(String,String,String[],String[],String):int
<<Java Interface>>
Order
eg.edu.alexu.csd.oop.db
excuteBoolean():boolean
excuteSelect():String[][]
excuteUpdated():int
<<Java Interface>>
QueryInfo
eg.edu.alexu.csd.oop.db
setQuery(String):void
getQuery():String
setDataBaseName():void
getDataBaseName():String
setTableName():void
getTableName():String
setColumnName():void
getColumnName():String[]
setValue():void
getValue():String[]
setDataTypes():void
getDataTypes():String[]
setCondition():void
getCondition():String
-order
0..1
-cq
0..1
-qi
0..1
<<Java Class>>
CDataBase
eg.edu.alexu.csd.oop.db.cs15_cs18_cs49_cs39
check: CheckSyntax
CDataBase()
createDatabase(String,boolean):String
executeStructureQuery(String):boolean
executeQuery(String):Object[][]
executeUpdateQuery(String):int
ENG
10:20 PM
12/2/2018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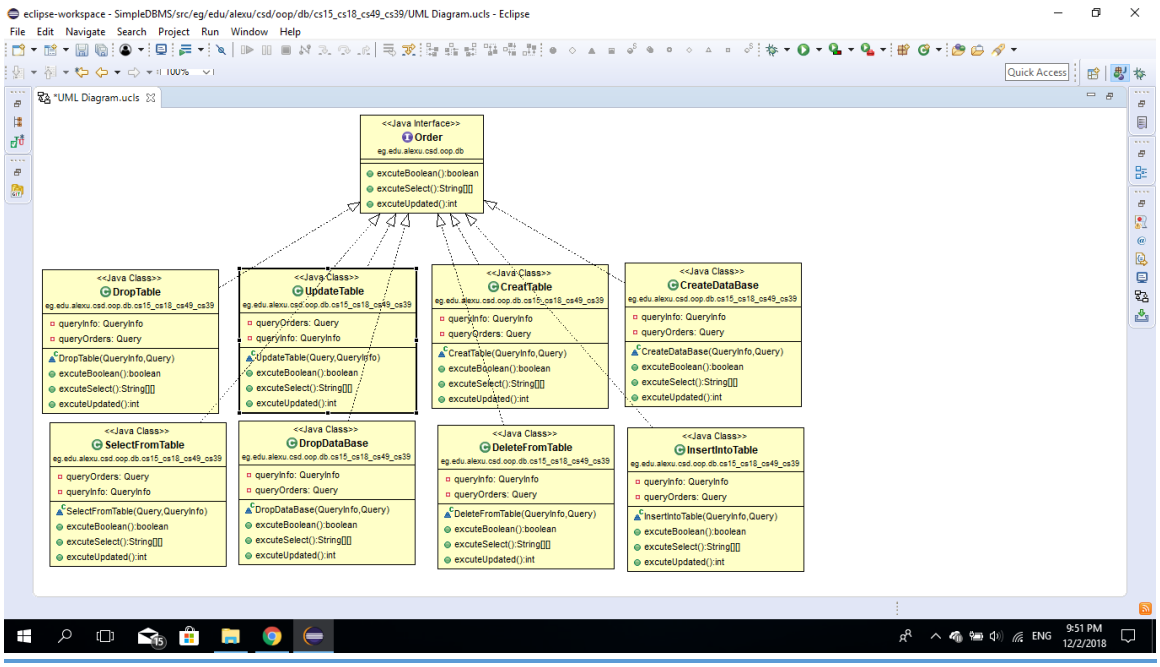
Quick Access
*UML Diagram.ucls
<<Java Class>>
Controller
eg.edu.alexu.csd.oop.db.cs15_cs18_cs49_cs39
Controller(Database)
orderExcuter(String):void
~db
0..1
<<Java Interface>>
Database
eg.edu.alexu.csd.oop.db
createDatabase(String,boolean):String
executeStructureQuery(String):boolean
executeQuery(String):Object[][]
executeUpdateQuery(String):int
ENG
10:21 PM
12/2/2018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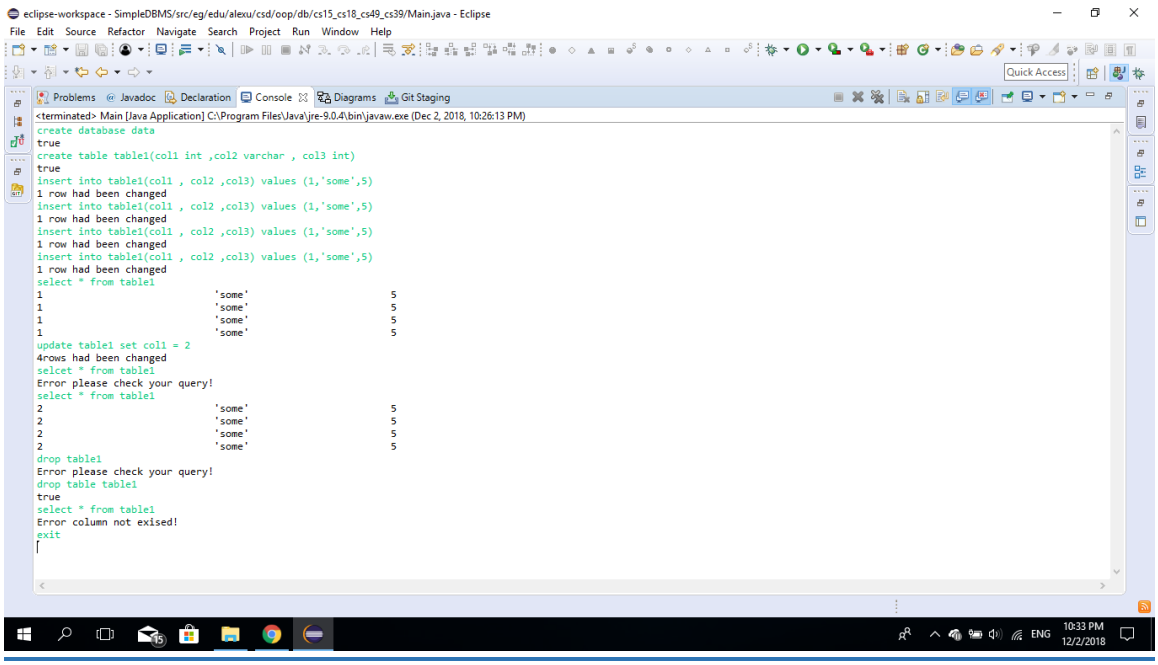
<<Java Interface>>
Order
eg.edu.alexu.csd.oop.db
excuteBoolean():boolean
excuteSelect():String[][]
excuteUpdated():int
<<Java Class>>
DropTable
queryInfo: QueryInfo
queryOrders: Query
DropTable(QueryInfo,Query)
<<Java Class>>
UpdateTable
queryOrders: Query
queryInfo: QueryInfo
UpdateTable(Query,QueryInfo)
<<Java Class>>
CreatTable
queryInfo: QueryInfo
queryOrders: Query
CreatTable(QueryInfo,Query)
<<Java Class>>
CreateDataBase
queryInfo: QueryInfo
queryOrders: Query
CreateDataBase(QueryInfo,Query)
<<Java Class>>
SelectFromTable
queryOrders: Query
queryInfo: QueryInfo
SelectFromTable(Query,QueryInfo)
<<Java Class>>
DropDataBase
queryInfo: QueryInfo
queryOrders: Query
DropDataBase(QueryInfo,Query)
<<Java Class>>
DeleteFromTable
queryInfo: QueryInfo
queryOrders: Query
DeleteFromTable(QueryInfo,Query)
<<Java Class>>
InsertIntoTable
queryInfo: QueryInfo
queryOrders: Query
InsertIntoTable(QueryInfo,Query)
ENG
9:51 PM
12/2/2018

SCREENSHOT:



DESIGN:

we used regex to validate SQL queries to match its syntax

,Dom parsers to store the tables in xml files and used DTD schemas to validate xml files ,each table was saved in separate folder and all tables was saved in DB folder.

We used command design pattern to handle all the database operations.

DESIGN DECISIONS:

We decided to make a class to execute every query according to command design pattern .

We decided to use factory to choose the query we need.

USER GUIDE:

User should follow the following syntax to be apple to use the application :

create database database_name
create table table_name(column_name datatype)
insert into table_name (columns_name_separated with ",") values (their_values separated with ",")
delete from table_name **you can put a condition using 'where'**
drop database database_name
drop table table_name
select("*" for all columns or write column_name) from table_name
update table_name set column_name=value*you can put condition using where*