# Documentation

**Assignment 3**

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**1.Assignment objectives**

A screenshot of a computer

Description automatically generated with low confidence

The scope of this assignment is to learn about the layered architecture and reflection techniques and all their possible uses in databases such as sql syntax and the way a program should be layered into packages.

Everything is made on the GUI so no files and only when an operation is successfully finished it will write that on the console.

# 2.Problem Analysis, Modeling, Scenarios, Use Cases

Problem analysis involves identifying, defining and comprehending a problem in order to find one or more solutions for it. In this regard, my use of OO language confers an advantage. This type of language enables me to work at a higher, more abstract level, free from the constraints of technical details.

The applications will be used by people who might not be programmers, so I need a friendly user interface for it that is easy and convenient.

We know that the simulation requires some inputs that need to be changed at every run (press of the button “Simulate” in this case). The input can be written in the interface I created and attached a photo below.

The output will be written on the viewFrame of each table in their JTable component.

# 3.Design

A screenshot of a computer program

Description automatically generated with medium confidence

-All DAO objects inherit the AbstractDAO class which contains multiple methods such as findById,edit,add,delete or view(which returns a list of all the elements in the SQL table).

-the controller “controls” all the elements in all the GUI’s such as the main view buttons, all the buttons in the productView such as add, delete, view or edit which do the intended action.

-The bussinessLogic class makes all the logic instructions of the project. The controller only gives the commands to the BLL and the parameters it wants for that action but only the BLL checks if the parameters are valid.

# 4.Implementation

A screen shot of a computer program

Description automatically generated with low confidence

This is a photo of the AbstractDAO class which shows how a field of type T is inserted into a table.

This photo gives a good impression of how most of the queries are made in a way that works for any type of class that have the first field the id of the object.

A screen shot of a computer program

Description automatically generated with low confidence

For example this class has getters and setters and has the first field the id field as stated before. This class represents the table client in the SQL database.

A picture containing text, screenshot, font

Description automatically generated

This photo shows the way all getters are made such that it makes sure to tell the instruction that calls the getter if there were errors and not to continue the execution with a faulty variable.

A picture containing text, screenshot, font

Description automatically generated

This shows how the parameters are checked that they are not faulty as stated before and also shows the way in which a client object is added/inserted into the database in the SQL program.

A screen shot of a computer program

Description automatically generated with low confidence

This section of code shows the way in which reflection is used to place all the elements of a list of UNKNOWN type into a given JTable. Which is a nice way of code.

# 5.Results

The result is that the program runs as intended. All tables can be viewed with no problems and any element (except for orders) can be edited, deleted and all elements can be added or viewed. The abstract methods for generating the SQL syntaxes are made and was interesting.

# 6.Conclusions

Reflection is a nice way to make the SQL syntax because it enables you to make one method that works on almost any type of objects without any change in code for any of them.  
Reflection is nice.

# 7.Bibliography:

-stackoverflow.com

-geeksforgeeks.com