Student: Sergiu Redeca

**Group: 30234**

Table of Contents

1. Requirements Analysis 3

1.1 Assignment Specification 3

1.2 Functional Requirements 3

1.3 Non-functional Requirements 3

2. Use-Case Model 3

3. System Architectural Design 3

4. UML Sequence Diagrams 3

5. Class Design 3

6. Data Model 3

7. System Testing 3

8. Bibliography 3

1. Requirements Analysis

# Assignment Specification

*The application is used to manage the orders of a furniture manufacturer. It has two types of users: the regular user (the order manager) and the administrator.*

*The regular user can:*

* *Add/update/view order information (customer, shipping, address, identification number, delivery date, status)*
* *Create/update/delete/view product information (name, description, color, size, price, stock)*
* *Add products to order (the price should be updated accordingly)*

*The administrator can:*

* *CRUD (create, read, update, delete) employees’ information*
* *Generate reports for a particular period containng activities performed by the employees*

# Functional Requirements

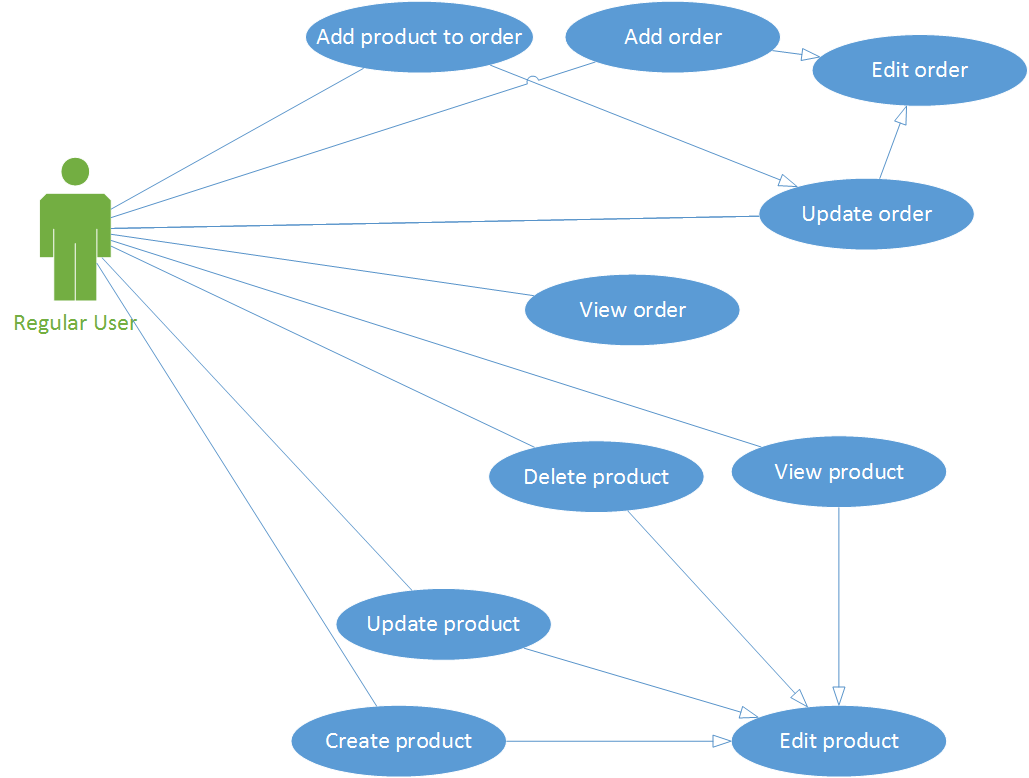
*The users should perform the previously mentioned opperations.*

# Non-functional Requirements

*The software should be easy-to-use.*

*Also, the data will be stored in a DB. The login should be secured.*

2. Use-Case Model



*Use case: normal user operations*

*Level: user-goal level*

*Primary actor: normal user*

*Main success scenario: <the steps of the main success scenario from trigger to goal delivery>*

*Extensions: <alternate scenarios of success or failure>*

*Use case: administrator operations*

*Level: user-goal level*

*Primary actor: administrator*

*Main success scenario: <the steps of the main success scenario from trigger to goal delivery>*

*Extensions: <alternate scenarios of success or failure>*

3. System Architectural Design

**3.1 Architectural Pattern Description**

*For this assignment the multitier architecture was used.*

*We have the following layers:*

* *Presentation layer*
* *Business logic layer*
* *Data access layer*

*It is called three-tier layer architecture.*

**3.2 Diagrams**

*Multylayer architecture*



4. UML Sequence Diagrams

*Sequence diagram for the order manager. In this scenario the user wants to add a product.*



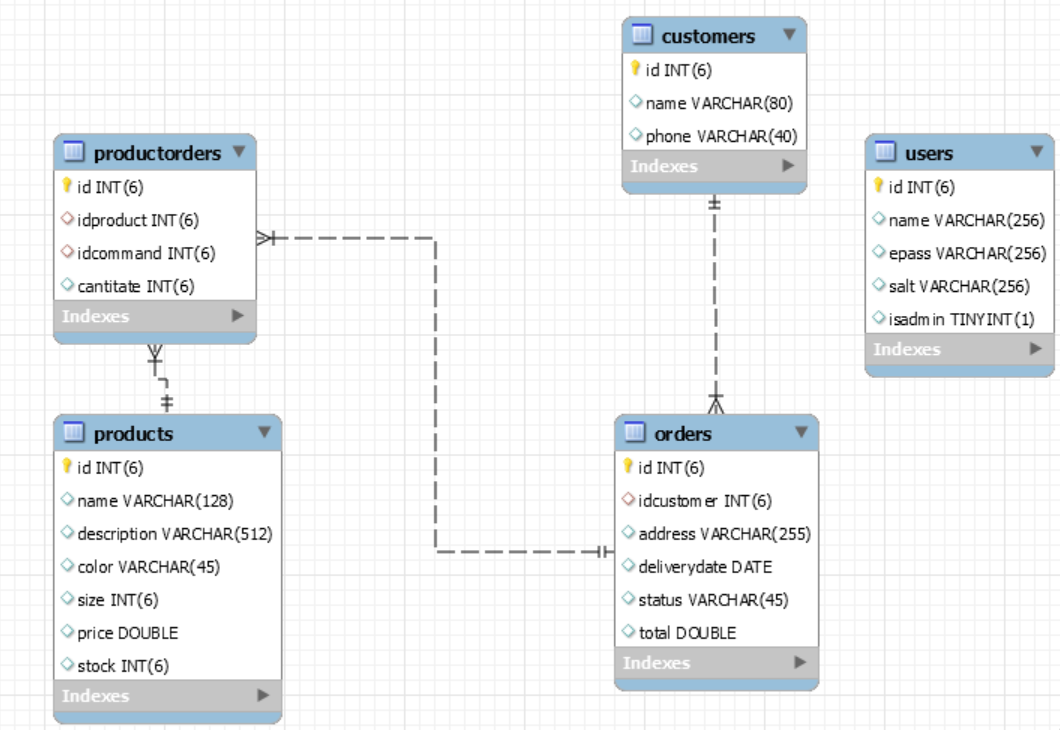
5. Class Design

**5.1 Design Patterns Description**

*Three design patterns were used to create the three layers of the application:*

* *The presentation layer contains the interface (displayed windows) shown to the user*
* *The business logic layer is used to make the verifications and it has the purpose of binding the presentation layer to the data access layer*
* *The data access layer is used to access the data from the database*

6. Data Model

**

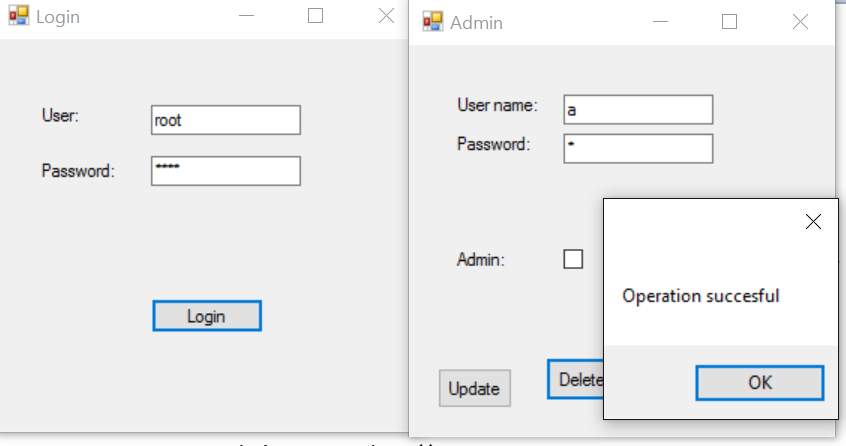
*Beside the SQL description, the data model is also described in the C# program.*

7. System Testing

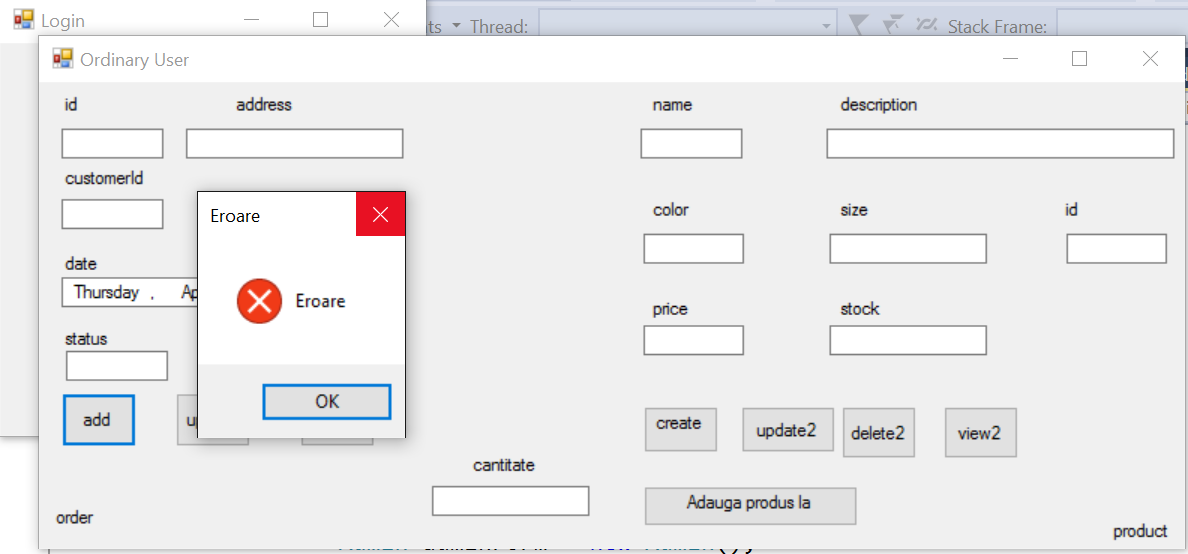
*The system testing have been made using the .NET program and also using MySQL Workbench.*

*In the program there are displayed several error messages if the user makes an error and also there are some messages displayed in case of success.*

*In the image below the administrator have sucessfully added a new user, so he/she sees a message to confirm that.*

**

*Here on the other side, the user tried to add an order without specifiying the details. He/she got an error message.*

**

8. Bibliography

<https://en.wikipedia.org/wiki/Multitier_architecture>

<http://stackoverflow.com>