Ceng201 Project

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Chapter 1

OOP_Group10

This repository will be used for Ceng201 Project Group 10

1.1 Group members:

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1.2 To execute & run:

Open > gui_v2\exe\application.exe Once you open the application, enter a name and a password you want then proceed with clicking "Log in" button. After logging in, you can select the items on the list and you can add them to your cart, remove from the cart, apply discount and select gift wrapping by clicking the named buttons. Finally you can click on "Confirm Order" and finish your shopping.

1.3 Contributions:

Sıla created the initial codes and worked on doxygen. Aybüke worked on login window. Sema worked on main window. Özgür worked on order window. Murathan worked on images and created executable.

Chapter 2

Hierarchical Index

2.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

Chapter 3

Class Index

3.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

Chapter 4

File Index

4.1 File List

Here is a list of all documented files with brief descriptions:

Chapter 5

Class Documentation

5.1   Customer Class Reference

Derived class representing a customer in the system.

```
#include <Customer.h>
```

Inheritance diagram for Customer:
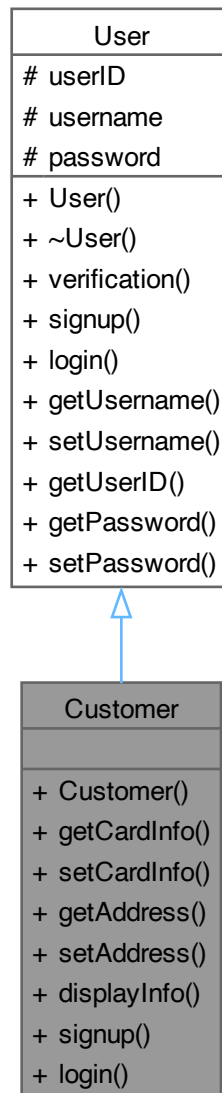
Collaboration diagram for Customer:
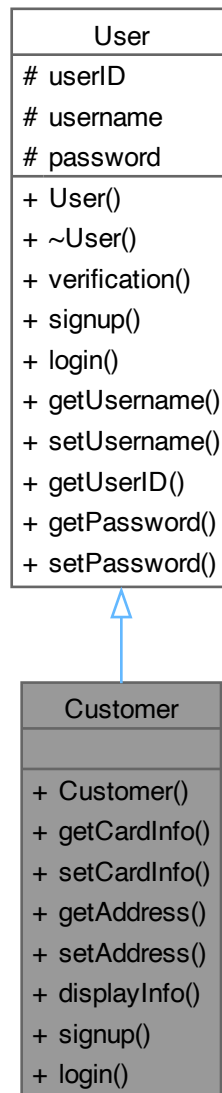
Public Member Functions

- Customer (const QString &name, const QString &pwd)

  Constructor for the Customer class.
- QString getCardInfo () const

  Gets the customer's card information.
- void setCardInfo (const QString &newInfo)

  Sets new card information for the customer.
- QString getAddress () const

  Gets the customer's address.
- void setAddress (const QString &add)

Sets the customer's address.
- void **displayInfo** () const
- void signup () override

    signup function is overriden from User class
- void login () override

    login function is overriden from User class

Public Member Functions inherited from User

- User (const QString &name, const QString &pwd)

    Constructor for the User class.
- virtual ∼**User** ()

    Virtual destructor for the User class.
- bool verification (const QString &name, const QString &pwd) const

    Verifies the user's credentials.
- QString getUsername () const

    Gets the username.
- void setUsername (const QString &name)

    Sets the username.
- int getUserID () const

    Gets the user ID.
- QString getPassword () const

    Gets the user's password.
- void setPassword (const QString &pwd)

    Sets a new password for the user.

Additional Inherited Members

Protected Attributes inherited from User

- int **userID**
- QString **username**
- QString **password**

5.1.1 Detailed Description

Derived class representing a customer in the system.

5.1.2 Constructor & Destructor Documentation

5.1.2.1 Customer()

```
Customer::Customer (
            const QString & name,
            const QString & pwd)
```

Constructor for the Customer class.

Parameters

name	Username for the customer.
pwd	Password for the customer.

5.1.3 Member Function Documentation

5.1.3.1 getAddress()

```
QString Customer::getAddress () const
```

Gets the customer's address.

Returns

> The address as a QString.

5.1.3.2 getCardInfo()

```
QString Customer::getCardInfo () const
```

Gets the customer's card information.

Returns

> The card information as a QString.

5.1.3.3 login()

```
void Customer::login ()  [override], [virtual]
```

login function is overriden from User class

Implements User.

5.1.3.4 setAddress()

```
void Customer::setAddress (
            const QString & add)
```

Sets the customer's address.

Parameters

add	The new address to set.

5.1.3.5 setCardInfo()

```
void Customer::setCardInfo (
            const QString & newInfo)
```

Sets new card information for the customer.

Parameters

newInfo	The new card information to set.

5.1.3.6 signup()

```
void Customer::signup ()  [override], [virtual]
```
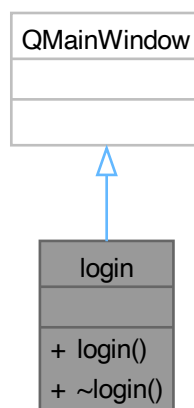
signup function is overriden from User class

Implements User.

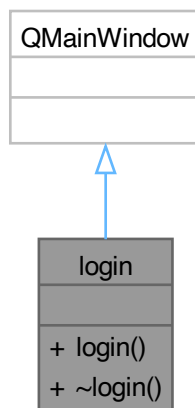The documentation for this class was generated from the following files:

- /Users/siladolas/Downloads/Customer.h
- /Users/siladolas/Downloads/Customer.cpp

5.2 login Class Reference

Inheritance diagram for login:

Collaboration diagram for login:

```
                    ┌─────────────────┐
                    │  QMainWindow    │
                    ├─────────────────┤
                    │                 │
                    ├─────────────────┤
                    │                 │
                    └─────────────────┘
                             △
                             │
                    ┌─────────────────┐
                    │      login      │
                    ├─────────────────┤
                    │                 │
                    ├─────────────────┤
                    │  + login()      │
                    │  + ~login()     │
                    └─────────────────┘
```

Public Member Functions

- **login** (QWidget ∗parent=nullptr)

The documentation for this class was generated from the following files:

- /Users/siladolas/Downloads/login.h
- /Users/siladolas/Downloads/login.cpp

5.3 MainWindow Class Reference

Inheritance diagram for MainWindow:

```
                    ┌─────────────────┐
                    │  QMainWindow    │
                    ├─────────────────┤
                    │                 │
                    ├─────────────────┤
                    │                 │
                    └─────────────────┘
                             △
                             │
                    ┌─────────────────┐
                    │   MainWindow    │
                    ├─────────────────┤
                    │                 │
                    ├─────────────────┤
                    │  + MainWindow() │
                    │  + ~MainWindow()│
                    └─────────────────┘
```

Collaboration diagram for MainWindow:

Public Member Functions

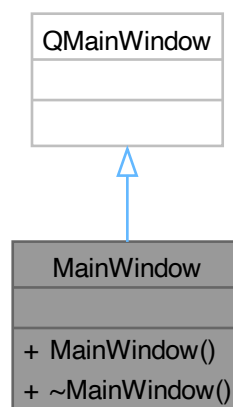- **MainWindow** (QWidget ∗parent=nullptr)

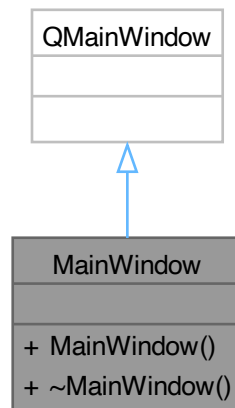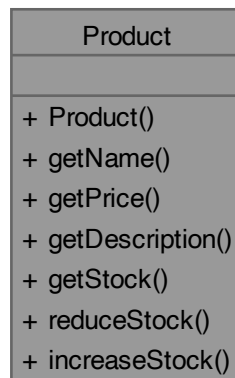The documentation for this class was generated from the following files:

- /Users/siladolas/Downloads/mainwindow.h
- /Users/siladolas/Downloads/mainwindow.cpp

5.4 Product Class Reference

Collaboration diagram for Product:

Public Member Functions

- **Product** (const std::string &name, double price, const std::string &description, int stock)
- std::string **getName** () const
- double **getPrice** () const
- std::string **getDescription** () const
- int **getStock** () const
- void **reduceStock** (int quantity)
- void **increaseStock** (int quantity)

The documentation for this class was generated from the following files:
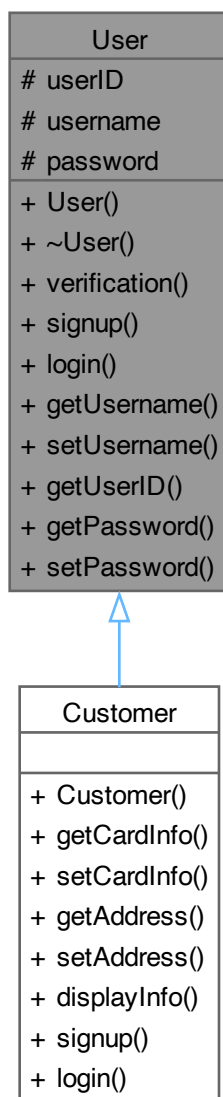
- /Users/siladolas/Downloads/Product.h
- /Users/siladolas/Downloads/Product.cpp

5.5 User Class Reference

Base class representing a user in the system.

```
#include <User.h>
```

Inheritance diagram for User:

Collaboration diagram for User:

```
┌─────────────────────┐
│        User         │
├─────────────────────┤
│ # userID            │
│ # username          │
│ # password          │
├─────────────────────┤
│ + User()            │
│ + ~User()           │
│ + verification()    │
│ + signup()          │
│ + login()           │
│ + getUsername()     │
│ + setUsername()     │
│ + getUserID()       │
│ + getPassword()     │
│ + setPassword()     │
└─────────────────────┘
```

Public Member Functions

- User (const QString &name, const QString &pwd)

  Constructor for the User class.
- virtual ∼**User** ()

  Virtual destructor for the User class.
- bool verification (const QString &name, const QString &pwd) const

  Verifies the user's credentials.
- virtual void signup ()=0

  Virtual method for signing up. To be implemented by derived classes.
- virtual void login ()=0

  Virtual method for logging in. To be implemented by derived classes.
- QString getUsername () const

  Gets the username.
- void setUsername (const QString &name)

  Sets the username.
- int getUserID () const

  Gets the user ID.
- QString getPassword () const

  Gets the user's password.
- void setPassword (const QString &pwd)

  Sets a new password for the user.

Protected Attributes

- int **userID**
- QString **username**
- QString **password**

5.5.1 Detailed Description

Base class representing a user in the system.

5.5.2 Constructor & Destructor Documentation

5.5.2.1 User()

```
User::User (
            const QString & name,
            const QString & pwd)
```

Constructor for the User class.

Parameters

name	Username of the user.
pwd	User's password.

5.5.3 Member Function Documentation

5.5.3.1 getPassword()

```
QString User::getPassword () const
```

Gets the user's password.

Returns

The password as a QString.

5.5.3.2 getUserID()

```
int User::getUserID () const
```

Gets the user ID.

Returns

The user ID as an integer.

5.5.3.3 getUsername()

```
QString User::getUsername () const
```

Gets the username.

Returns

> The username as a QString.

5.5.3.4 login()

```
virtual void User::login ()  [pure virtual]
```

Virtual method for logging in. To be implemented by derived classes.

Implemented in Customer.

5.5.3.5 setPassword()

```
void User::setPassword (
            const QString & pwd)
```

Sets a new password for the user.

Parameters

pwd	New password to set.

5.5.3.6 setUsername()

```
void User::setUsername (
            const QString & name)
```

Sets the username.

Parameters

name	New username to set.

5.5.3.7 signup()

```
virtual void User::signup ()  [pure virtual]
```

Virtual method for signing up. To be implemented by derived classes.

Implemented in Customer.

5.5.3.8 verification()

```
bool User::verification (
            const QString & name,
            const QString & pwd) const
```

Verifies the user's credentials.

Parameters

name	Username to verify.
pwd	Password to verify.

Returns

True if credentials match, false otherwise.

The documentation for this class was generated from the following files:

- /Users/siladolas/Downloads/User.h
- /Users/siladolas/Downloads/User.cpp

Chapter 6

File Documentation

6.1   /Users/siladolas/Downloads/Customer.h

```
00001 #ifndef CUSTOMER_H
00002 #define CUSTOMER_H
00003
00004 #include "User.h"
00005 #include <QVector>
00006 #include <QString>
00007 #include <QFile>
00008 #include <QTextStream>
00009 #include <QDebug>
00010
00014 class Customer : public User {
00015 private:
00016     QString cardInfo;
00017     QString address;
00018
00019 public:
00025     Customer(const QString& name, const QString& pwd);
00026
00031     QString getCardInfo() const;
00032
00037     void setCardInfo(const QString& newInfo);
00038
00043     QString getAddress() const;
00044
00049     void setAddress(const QString& add);
00050
00051     void displayInfo() const;
00052
00056     void signup() override;
00057
00061     void login() override;
00062 };
00063
00064 #endif // CUSTOMER_H
```

6.2   /Users/siladolas/Downloads/login.h

```
00001 #ifndef LOGIN_H
00002 #define LOGIN_H
00003
00004 #include <QMainWindow>
00005 #include <QLineEdit>
00006 #include "Customer.h"
00007
00008 QT_BEGIN_NAMESPACE
00009 namespace Ui {
00010 class login;
00011 }
00012 QT_END_NAMESPACE
00013
00014 class login : public QMainWindow
00015 {
00016     Q_OBJECT
00017
```

```
00018 public:
00019     login(QWidget *parent = nullptr);
00020     ~login();
00021
00022 private slots:
00023     void on_btnlogin_clicked();
00024     void openMainWindow();
00025     void on_result_cursorPositionChanged(int arg1, int arg2);
00026
00027 private:
00028     Ui::login *ui;
00029 };
00030 #endif // LOGIN_H
```

6.3 /Users/siladolas/Downloads/mainwindow.h

```
00001 #ifndef MAINWINDOW_H
00002 #define MAINWINDOW_H
00003
00004 #include <QMainWindow>
00005 #include <QListWidget>
00006 #include <QMessageBox>
00007 #include "Product.h"
00008 #include <vector>
00009
00010 QT_BEGIN_NAMESPACE
00011 namespace Ui { class MainWindow; }
00012 QT_END_NAMESPACE
00013
00014 class MainWindow : public QMainWindow {
00015     Q_OBJECT
00016
00017 public:
00018     explicit MainWindow(QWidget *parent = nullptr);
00019     ~MainWindow();
00020 private slots:
00021     void onAddToCart();
00022     void onRemoveFromCart(); // Slot for Remove from Cart button
00023     void onApplyDiscount();
00024     void updateTotalLabel();
00025     void onProductSelected();
00026
00027 private:
00028     Ui::MainWindow *ui;
00029
00030     std::vector<Product> availableProducts; // Store available products
00031     std::vector<Product> cartItems;
00032     void populateProductList(); // Function to populate the product list
00033
00034 };
00035
00036 #endif // MAINWINDOW_H
```

6.4 /Users/siladolas/Downloads/Product.h

```
00001 #ifndef PRODUCT_H
00002 #define PRODUCT_H
00003
00004 #include <string>
00005
00006 class Product {
00007 private:
00008     std::string name;
00009     double price;
00010     std::string description; // New field for product description
00011     int stock;
00012
00013 public:
00014     Product(const std::string& name, double price, const std::string& description, int stock);
00015     std::string getName() const;
00016     double getPrice() const;
00017     std::string getDescription() const; // Getter for description
00018     int getStock() const;
00019     void reduceStock(int quantity);
00020     void increaseStock(int quantity);
00021 };
00022
00023 #endif // PRODUCT_H
```

6.5 /Users/siladolas/Downloads/User.h

```
00001 #ifndef USER_H
00002 #define USER_H
00003
00004 #include <QString>
00005
00009 class User {
00010 protected:
00011     int userID;
00012     QString username;
00013     QString password;
00014
00015 public:
00021     User(const QString& name, const QString& pwd);
00022
00026     virtual ~User();
00027
00034     bool verification(const QString& name, const QString& pwd) const;
00035
00039     virtual void signup() = 0;
00040
00044     virtual void login() = 0;
00045
00050     QString getUsername() const;
00051
00056     void setUsername(const QString& name);
00057
00062     int getUserID() const;
00063
00068     QString getPassword() const;
00069
00074     void setPassword(const QString& pwd);
00075 };
00076
00077 #endif // USER_H
```