Laboratory Activity 4 - Introduction to GUI Development using Pycharm

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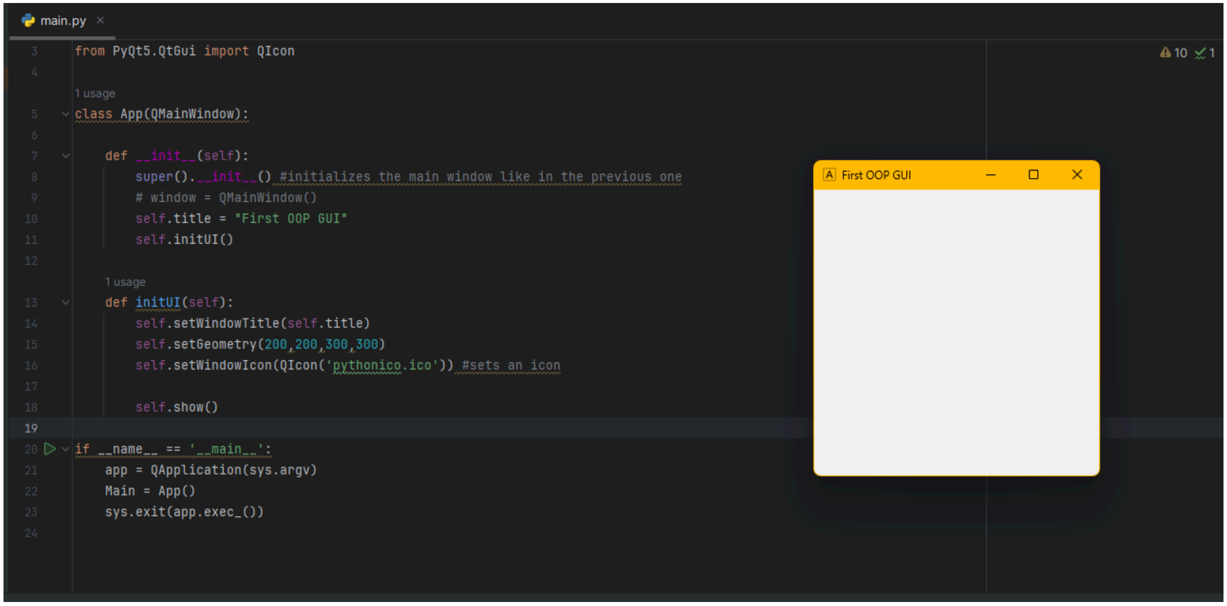
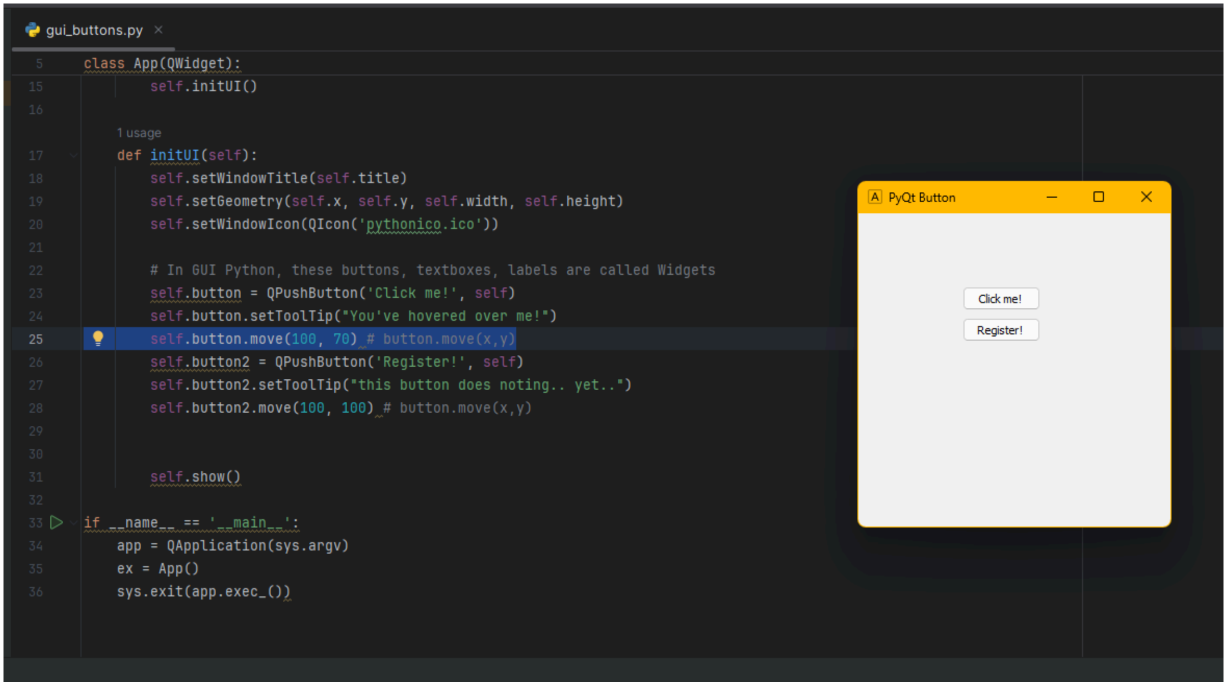
CPE009B - CPE21S4	Prof. Maria Rizette Sayo



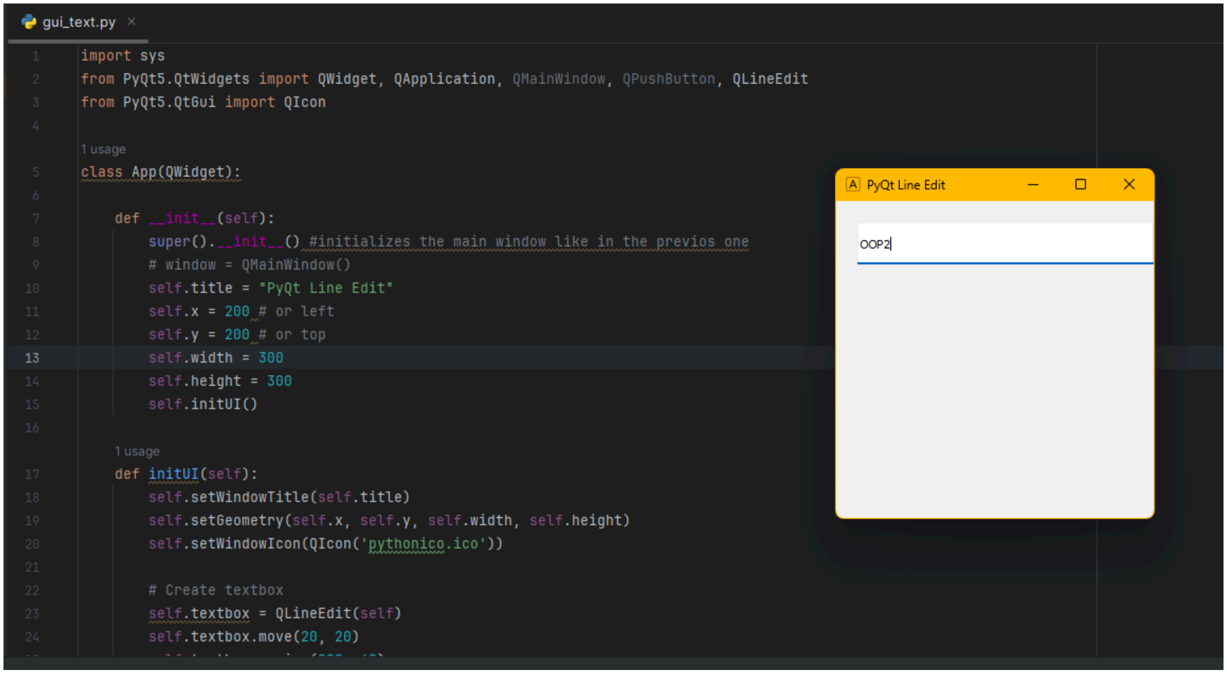
```python
from PyQt5.QtGui import QIcon

class App(QMainWindow):

    def __init__(self):
        super().__init__() #initializes the main window like in the previous one
        # window = QMainWindow()
        self.title = "First OOP GUI"
        self.initUI()

    def initUI(self):
        self.setWindowTitle(self.title)
        self.setGeometry(200,200,300,300)
        self.setWindowIcon(QIcon('pythonico.ico')) #sets an icon

        self.show()

if __name__ == '__main__':
    app = QApplication(sys.argv)
    Main = App()
    sys.exit(app.exec_())
```

gui_buttons.py



```python
class App(QWidget):
        self.initUI()

    def initUI(self):
        self.setWindowTitle(self.title)
        self.setGeometry(self.x, self.y, self.width, self.height)
        self.setWindowIcon(QIcon('pythonico.ico'))

        # In GUI Python, these buttons, textboxes, labels are called Widgets
        self.button = QPushButton('Click me!', self)
        self.button.setToolTip("You've hovered over me!")
        self.button.move(100, 70) # button.move(x,y)
        self.button2 = QPushButton('Register!', self)
        self.button2.setToolTip("this button does noting.. yet..")
        self.button2.move(100, 100) # button.move(x,y)


        self.show()

if __name__ == '__main__':
    app = QApplication(sys.argv)
    ex = App()
    sys.exit(app.exec_())
```

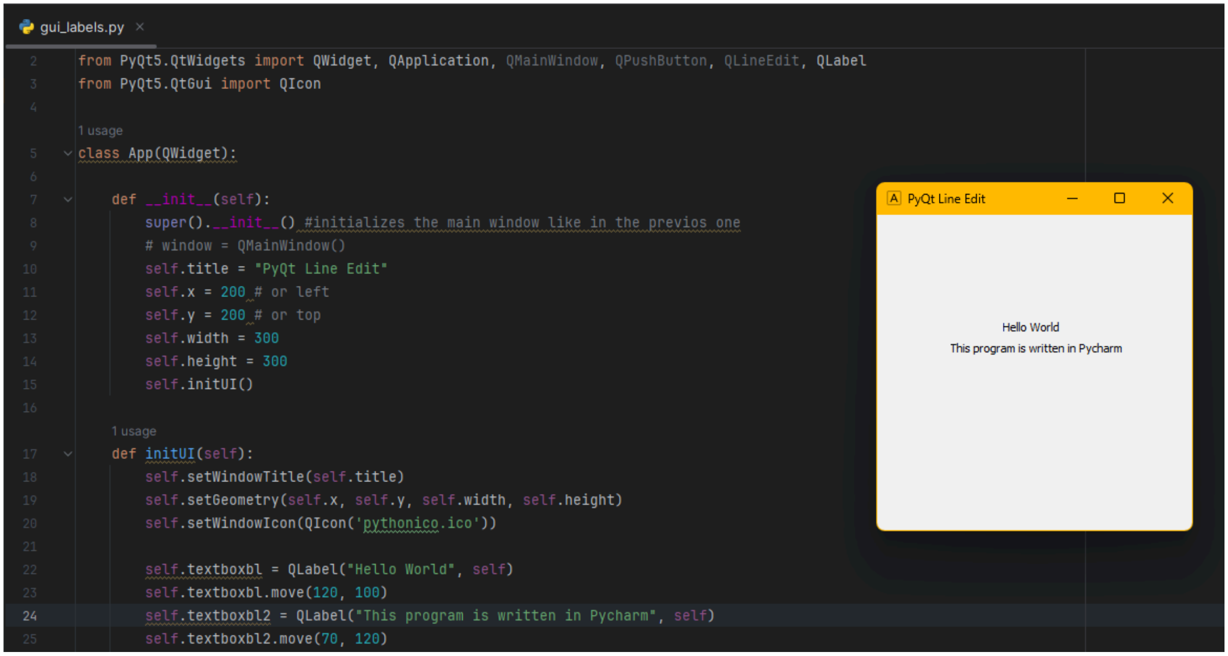
gui_text.py



```
import sys
from PyQt5.QtWidgets import QWidget, QApplication, QMainWindow, QPushButton, QLineEdit
from PyQt5.QtGui import QIcon

1 usage
class App(QWidget):

    def __init__(self):
        super().__init__() #initializes the main window like in the previos one
        # window = QMainWindow()
        self.title = "PyQt Line Edit"
        self.x = 200 # or left
        self.y = 200 # or top
        self.width = 300
        self.height = 300
        self.initUI()

    1 usage
    def initUI(self):
        self.setWindowTitle(self.title)
        self.setGeometry(self.x, self.y, self.width, self.height)
        self.setWindowIcon(QIcon('pythonico.ico'))

        # Create textbox
        self.textbox = QLineEdit(self)
        self.textbox.move(20, 20)
```

OOP2

gui_labels.py

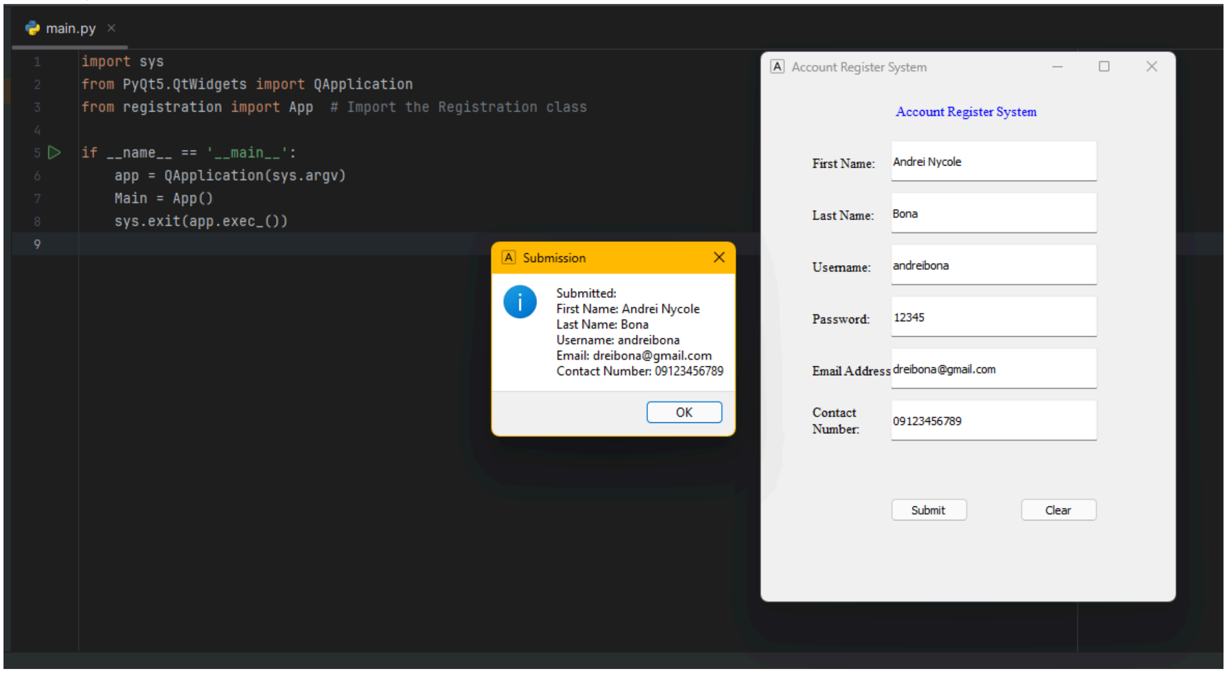


```
from PyQt5.QtWidgets import QWidget, QApplication, QMainWindow, QPushButton, QLineEdit, QLabel
from PyQt5.QtGui import QIcon

1 usage
class App(QWidget):

    def __init__(self):
        super().__init__() #initializes the main window like in the previos one
        # window = QMainWindow()
        self.title = "PyQt Line Edit"
        self.x = 200 # or left
        self.y = 200 # or top
        self.width = 300
        self.height = 300
        self.initUI()

    1 usage
    def initUI(self):
        self.setWindowTitle(self.title)
        self.setGeometry(self.x, self.y, self.width, self.height)
        self.setWindowIcon(QIcon('pythonico.ico'))

        self.textboxbl = QLabel("Hello World", self)
        self.textboxbl.move(120, 100)
        self.textboxbl2 = QLabel("This program is written in Pycharm", self)
        self.textboxbl2.move(70, 120)
```

```
Hello World
This program is written in Pycharm
```

6. Supplementary Activity:

main.py



```
import sys
from PyQt5.QtWidgets import QApplication
from registration import App  # Import the Registration class

if __name__ == '__main__':
    app = QApplication(sys.argv)
    Main = App()
    sys.exit(app.exec_())
```

Submission

Submitted:
First Name: Andrei Nycole
Last Name: Bona
Username: andreibona
Email: dreibona@gmail.com
Contact Number: 09123456789

Account Register System

Account Register System

First Name: Andrei Nycole

Last Name: Bona

Username: andreibona

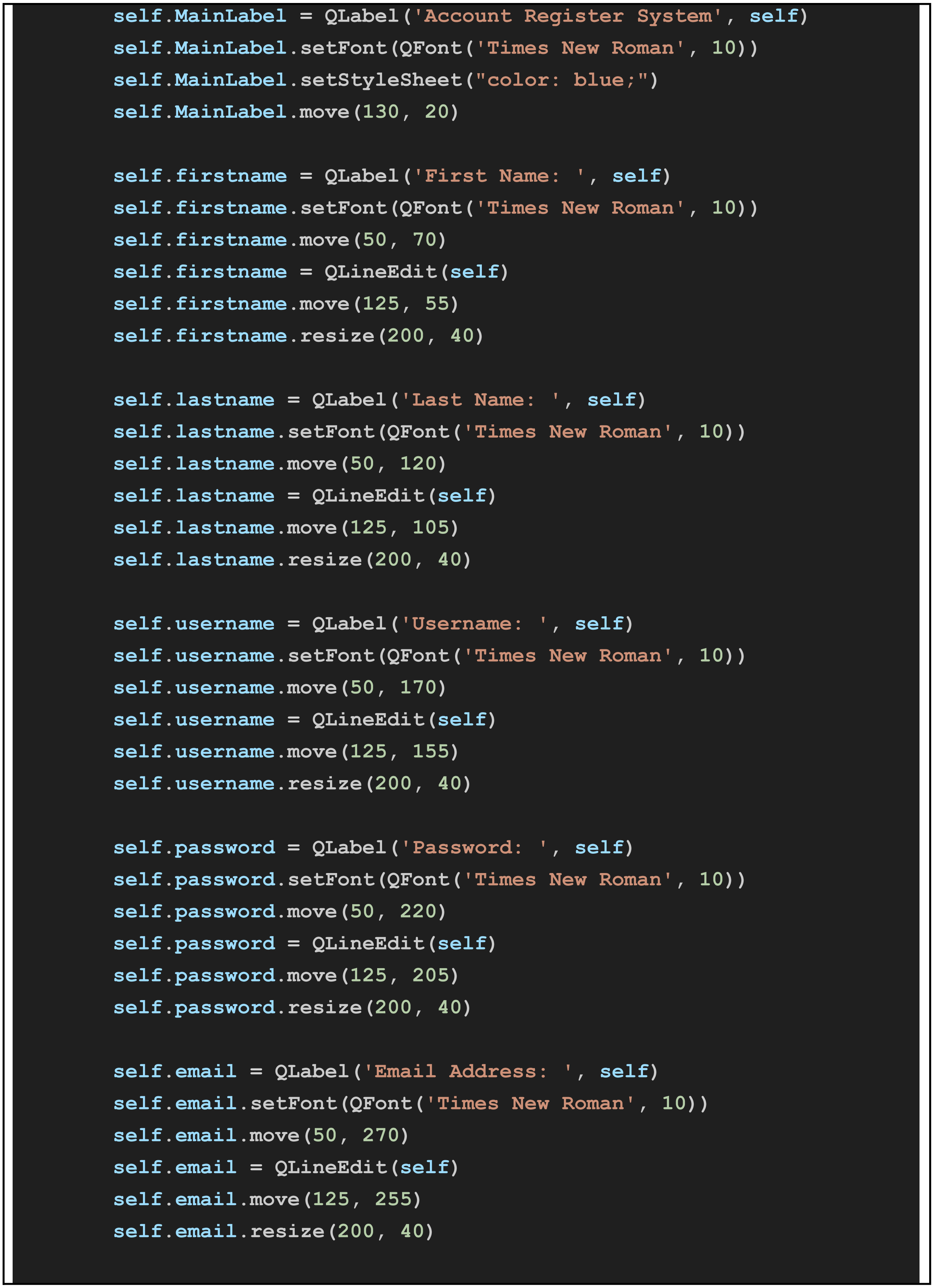
Password: 12345

Email Address dreibona@gmail.com

Contact Number: 09123456789

registration.py

```
import sys
from PyQt5.QtWidgets import QWidget, QApplication, QMainWindow,
QPushButton, QLineEdit, QLabel, QVBoxLayout, QMessageBox
from PyQt5.QtGui import QIcon, QFont

class App(QWidget):

    def __init__(self):
        super().__init__() #initializes the main window like in the
previous one
        #window = QMainWindow()
        self.title = "Account Register System"
        self.initUI()

    def initUI(self):
        self.setWindowTitle(self.title)
        self.setGeometry(200,200,400,500)
        self.setWindowIcon(QIcon('pythonico.ico')) #sets an icon
```



```
        self.MainLabel = QLabel('Account Register System', self)
        self.MainLabel.setFont(QFont('Times New Roman', 10))
        self.MainLabel.setStyleSheet("color: blue;")
        self.MainLabel.move(130, 20)

        self.firstname = QLabel('First Name: ', self)
        self.firstname.setFont(QFont('Times New Roman', 10))
        self.firstname.move(50, 70)
        self.firstname = QLineEdit(self)
        self.firstname.move(125, 55)
        self.firstname.resize(200, 40)

        self.lastname = QLabel('Last Name: ', self)
        self.lastname.setFont(QFont('Times New Roman', 10))
        self.lastname.move(50, 120)
        self.lastname = QLineEdit(self)
        self.lastname.move(125, 105)
        self.lastname.resize(200, 40)

        self.username = QLabel('Username: ', self)
        self.username.setFont(QFont('Times New Roman', 10))
        self.username.move(50, 170)
        self.username = QLineEdit(self)
        self.username.move(125, 155)
        self.username.resize(200, 40)

        self.password = QLabel('Password: ', self)
        self.password.setFont(QFont('Times New Roman', 10))
        self.password.move(50, 220)
        self.password = QLineEdit(self)
        self.password.move(125, 205)
        self.password.resize(200, 40)

        self.email = QLabel('Email Address: ', self)
        self.email.setFont(QFont('Times New Roman', 10))
        self.email.move(50, 270)
        self.email = QLineEdit(self)
        self.email.move(125, 255)
        self.email.resize(200, 40)
        self.con_number = QLabel('Contact\nNumber: ', self)
        self.con_number.setFont(QFont('Times New Roman', 10))
        self.con_number.move(50, 310)
        self.con_number = QLineEdit(self)
        self.con_number.move(125, 305)
        self.con_number.resize(200, 40)


        self.submit = QPushButton('Submit', self)
        self.submit.setToolTip("Done?")
        self.submit.move(125, 400) # button.move(x,y)
        self.submit.clicked.connect(self.submit_input)

        clear = QPushButton('Clear', self)
        clear.setToolTip("Reset?")
        clear.move(250, 400) # button.move(x,y)
        clear.clicked.connect(self.clear_input)



        self.show()

    def submit_input(self):
        first_name = self.firstname.text()
        last_name = self.lastname.text()
        username = self.username.text()
        password = self.password.text()
        email = self.email.text()
        contact_number = self.con_number.text()

        message = f"Submitted:\nFirst Name: {first_name}\nLast Name: {last_name}\nUsername: {username}\nEmail: {email}\nContact Number: {contact_number}"
        QMessageBox.information(self, "Submission", message)

    def clear_input(self):
        self.firstname.clear()
        self.lastname.clear()
        self.username.clear()
        self.password.clear()
        self.email.clear()
        self.con_number.clear()
```

Questions

1. What are the common GUI Applications that general end-users such as home users, students, and office employees use? (give at least 3 and describe each)

Common GUI applications include web browsers like Chrome and Firefox, which allow users to browse the internet; office suites such as Microsoft Office, which help create documents, spreadsheets, and presentations; and email clients like Outlook, designed for managing emails and communications.

2. Based from your answer in question 1, why do you think home users, students, and office employees use those GUI programs?

Home users, students, and office employees favor these applications because they are easy to use, streamline daily activities, and facilitate collaboration on projects.

3. How does Pycharm help developers in making GUI applications, what would be the difference if developers made GUI programs without GUI Frameworks such as Pycharm or Tkinter?

PyCharm aids developers in creating GUI applications by providing helpful features like code completion and debugging. Without GUI frameworks, developers would need to write more complex code for user interfaces, making the development process slower and more challenging.

4. What are the different platforms a GUI program may be created and deployed on? (Three is required then state why might a program be created on that specific platform)

GUI programs can be developed on various platforms. Windows is popular due to its widespread usage, making it suitable for many users. macOS is favored in creative fields, allowing for unique designs, while Linux is chosen for its open-source nature, offering customization and appealing to academic users.

5. What is the purpose of app = QApplication(sys.argv), ex = App(), and sys.exit(app.exec_())?

In the context of application development, the line app = QApplication(sys.argv) initializes the application, ex = App() creates the main window, and sys.exit(app.exec_()) starts the application and ensures it exits cleanly when finished.

7. Conclusion:

In conclusion, this supplementary activity initializes and runs a PyQt5 application for an account registration system, featuring fields for user input such as first name, last name, username, password, email address, and contact number. The application allows users to submit data and clear off fields in the form. As common GUI applications used by a home user, a student, and an office employee, like web browsers and office suites, share similar similarities of ease of use and efficiency to which this application is dedicated. It also runs cleanly without leaving any junk files in the background when closed.

8. Assessment Rubric: