Activity Name #5 - Laboratory Activity 4 - Introduction to GUI Development using Pycharm	
Fernandez, Don Eleazar T.	10/14/2024
CPE009/CPE21S4	Maria Rizette Sayo

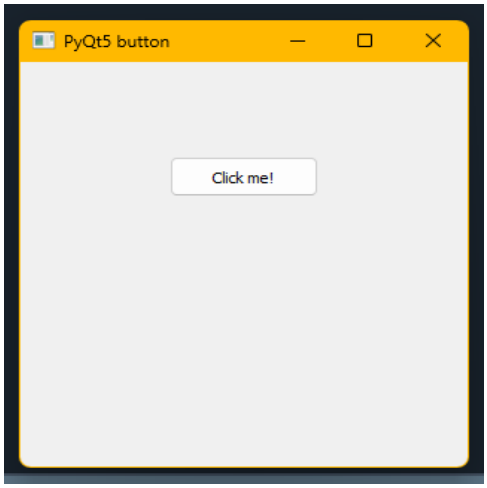
Output:

gui_first_part.py:

```python
import sys
from PyQt5.QtWidgets import QMainWindow, QApplication
from PyQt5.QtGui import QIcon

class App(QMainWindow):

    def __init__(self):
        super().__init__()

        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'))
        self.show()

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

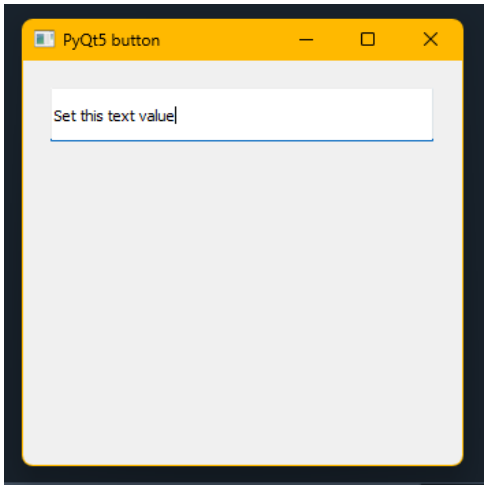
gui_buttons.py:

```python
import sys
from PyQt5.QtWidgets import QApplication, QMainWindow, QPushE
from PyQt5.QtGui import QIcon

class App(QMainWindow):

    def __init__(self):
        super().__init__()
        self.title = 'PyQt5 button'
        self.x = 200
        self.y = 200
        self.width = 300
        self.height = 300
        self.initUI()

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

        self.button = QPushButton('Click me!', self)
        self.button.setToolTip("You've hovered over me!")
        self.button.move(100, 70)

        self.show()

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



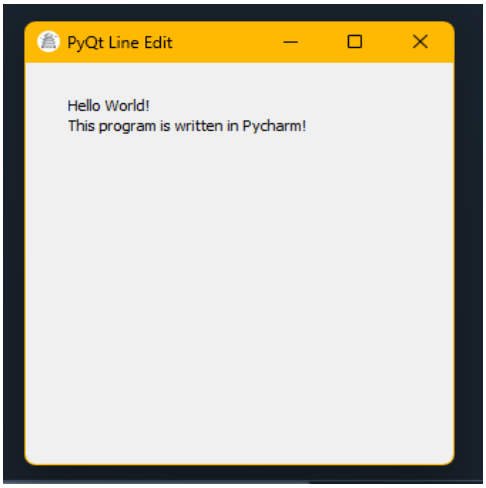
gui_text.py:

```python
import sys
from PyQt5.QtWidgets import QApplication, QMainWindow, QPushE
from PyQt5.QtGui import QIcon

class App(QMainWindow):

    def __init__(self):
        super().__init__()
        self.title = 'PyQt5 button'
        self.x = 200
        self.y = 200
        self.width = 300
        self.height = 300
        self.initUI()

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

        self.textbox = QLineEdit(self)
        self.textbox.move(20, 20)
        self.textbox.resize(280, 40)
        self.textbox.setText("Set this text value")

        self.show()

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



gui_labels.py:

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

class App(QWidget):

    def __init__(self):
        super().__init__()
        self.title = 'PyQt Line Edit'
        self.x = 200
        self.y = 200
        self.width = 300
        self.height = 300
        self.initUI()

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

        self.textbox1b1 = QLabel("Hello World!", self)
        self.textbox1b1.move(30, 25)
        self.textbox1b2 = QLabel("This program is written in Pycharm!", self)
        self.textbox1b2.move(30, 40)

        self.show()

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



Supplementary Activity:

#registration.py

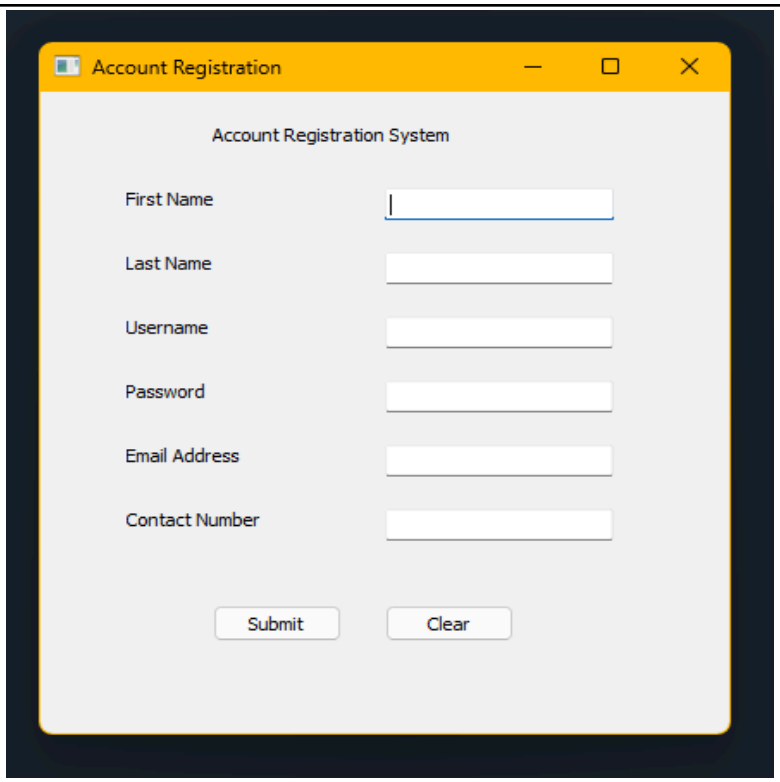
```python
import sys
from PyQt5.QtWidgets import QWidget, QApplication, QMainWindow, QLabel,
QLineEdit, QPushButton

class RegistrationWindow(QWidget):
    def __init__(self):
        super().__init__()
        self.Program()
        self.Title()
        self.Detail()
        self.Button()
        self.show()

    def Program(self):
        self.setWindowTitle('Account Registration')
        self.setGeometry(100, 100, 400, 400)

    def Title(self):
        self.title_label = QLabel('Account Registration System', self)
```

```
        self.title_label.move(100, 20)

    def Detail(self):
        self.fields = ['First Name', 'Last Name', 'Username',
'Password', 'Email Address', 'Contact Number']
        self.y_position = 60
        self.text_fields = []
        for field in self.fields:
            label = QLabel(field, self)
            label.move(50, self.y_position)
            text_field = QLineEdit(self)
            text_field.move(200, self.y_position)
            self.text_fields.append(text_field)
            self.y_position += 40

    def Button(self):
        self.submit_button = QPushButton('Submit', self)
        self.submit_button.move(100, self.y_position + 20)
        self.clear_button = QPushButton('Clear', self)
        self.clear_button.move(200, self.y_position + 20)
```

#main.py

```
import sys
from PyQt5.QtWidgets import QApplication
from registration import RegistrationWindow

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

#output



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)

   - The common GUI applications that many people use include Google Chrome, Google Mail, and Microsoft Word. The Google Chrome provides access to the internet to browse websites, watch videos, and use social media. The Google Mail lets an individual send, receive, and organize their emails easily. The Microsoft Word is an application for creating, managing, and writing documents.

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

   - It is because those GUI programs help them to accomplish their task and are efficient in doing so.

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 provides the tools and features to make the GUI application development possible, such as the supporting frameworks like Tkinter and PyQt. Without these frameworks, development would require complex, platform specific code and GUI component creation from scratch.

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)

   - The GUI programs can be developed and distributed across multiple platforms with the three primary systems, such as Windows, macOS, and Linux. The choice of platform often depends on the desired user base, with Windows operating to a broad audience, macOS focusing on design and user experience, and Linux offering flexibility and customization options.

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

   - The "app = QApplication(sys.argv)" creates the main application, the "ex = App()" sets up the main window, and the "sys.exit(app.exec_())" starts the application and keeps it running until it's closed.

Conclusion:

To conclude, the activity has taught me to create an application with “PyQt5” and design it according to the instructions provided by the activity. The supplementary part became a compilation of what has been taught in the procedure section of the laboratory manual. The troubleshooting of the program had become a challenge for me to fix, but I still managed to accomplish my task.

I affirm that I will not give or receive any unauthorized help on this activity/exam and that all work will be my own.