STRUCTURED PROGRAMMING

Lecture

Prepared by: Jayrome Ignacio
BTVTED-CP-4A

PRAY ER

Checking of Attendanc

Time for review!

Time for review!

1. What is File handling?
2. What is Exception handling?

Let’s have an Activity

FOUR PICS ONE WORD

FOUR PICS ONE WORD

Four Pics One Word Instructions:

Objective:

Find the common word connecting all four pictures.

How to Play:

Examine each picture carefully.
Identify the shared theme or concept.

LET’S START

1

INSTALLATION

2

DESIGN
ER

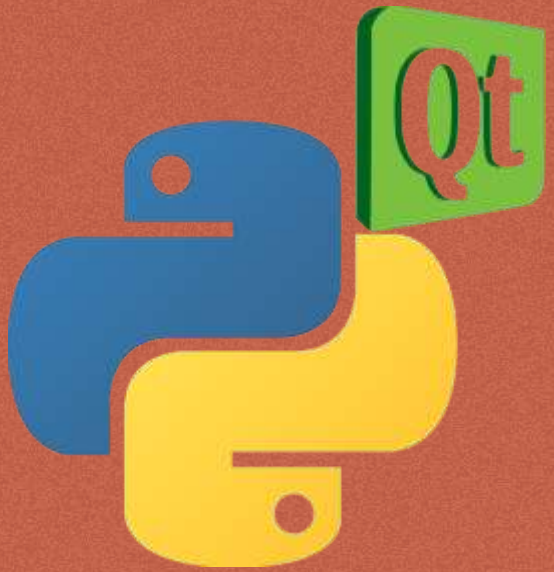
3

Sr.No.	Tool	Name of Tool
1.		
2.		
3.		

TOOLS

4

INTERFACE


Qt

PYQT5

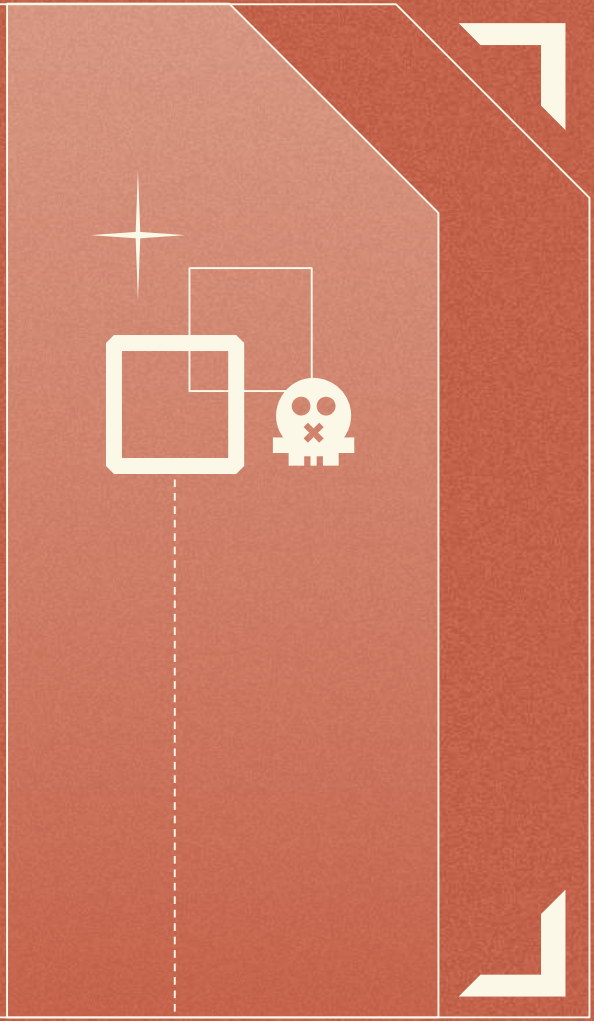
PyQt is a GUI widgets toolkit. It is a Python interface for Qt, one of the most powerful, and popular cross-platform GUI libraries. PyQt was developed by RiverBank Computing Ltd.

GUI

PYQTY5

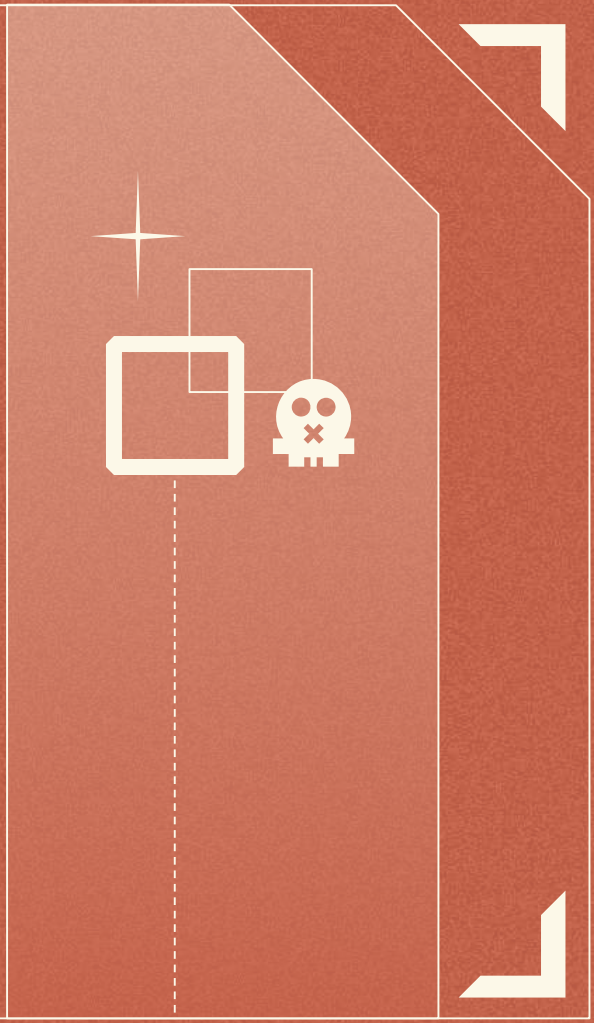
There are so many options provided by Python to develop GUI application and PyQt5 is one of them. PyQt5 is cross-platform GUI toolkit, a set of python bindings for Qt v5.

One can develop an interactive desktop application with so much ease because of the tools and simplicity provided by this library. A GUI application consists of Front-end and Back-end.



PYQTY5

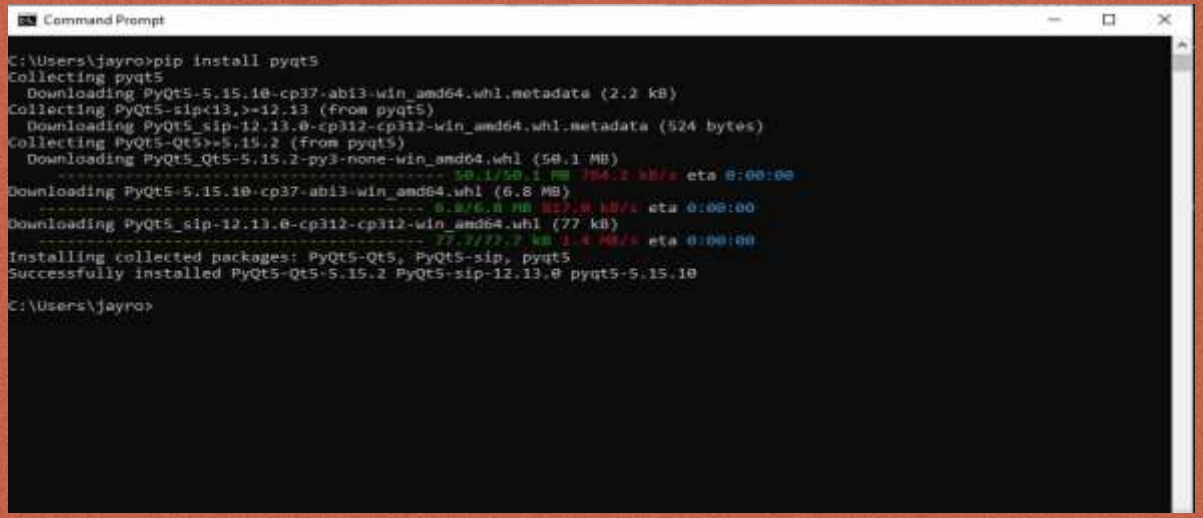
PyQt5 has provided a tool called ‘QtDesigner’ to design the front-end by drag and drop method so that development can become faster, and one can give more time on back-end stuff.



Installation: First, we need to install PyQt5 library. For this, type the following command in the terminal or command prompt:

pip install pyqt5

```
pip install pyqt5
```



PyQt5 provides lots of tools and QtDesigner is one of them. For this run

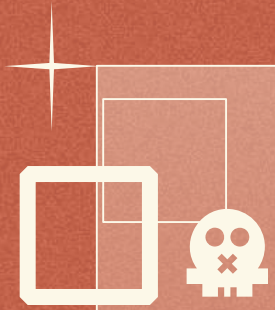
```
pip install PyQt5-tools
```

Alternative:

```
pip install PyQt5Designer
```

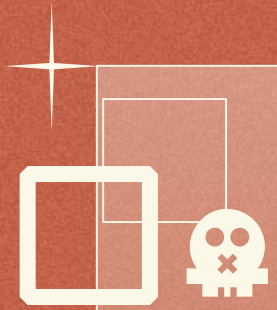
```
C:\Users\jayro>pip install PyQt5Designer
Collecting PyQt5Designer
  Downloading PyQt5Designer-5.14.1-py3-none-win_amd64.whl (40.8 MB)
     ---------------------------------------- 40.8/40.8 MB 1.9 MB/s eta 0:00:00
Installing collected packages: PyQt5Designer
Successfully installed PyQt5Designer-5.14.1

C:\Users\jayro>
```



Checking if your installation is complete. For this, type the following command in the terminal or command prompt: pip show PyQt5

```
C:\Users\jayro>pip show PyQt5
Name: PyQt5
Version: 5.15.10
Summary: Python bindings for the Qt cross platform application toolkit
Home-page: https://www.riverbankcomputing.com/software/pyqt/
Author: Riverbank Computing Limited
Author-email: info@riverbankcomputing.com
License: GPL v3
Location: C:\Users\jayro\AppData\Local\Programs\Python\Python312\Lib\site-packages
Requires: PyQt5-Qt5, PyQt5-sip
```

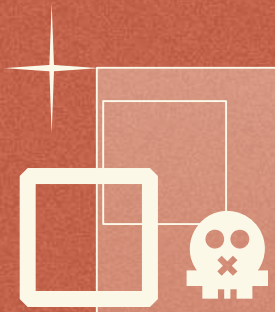


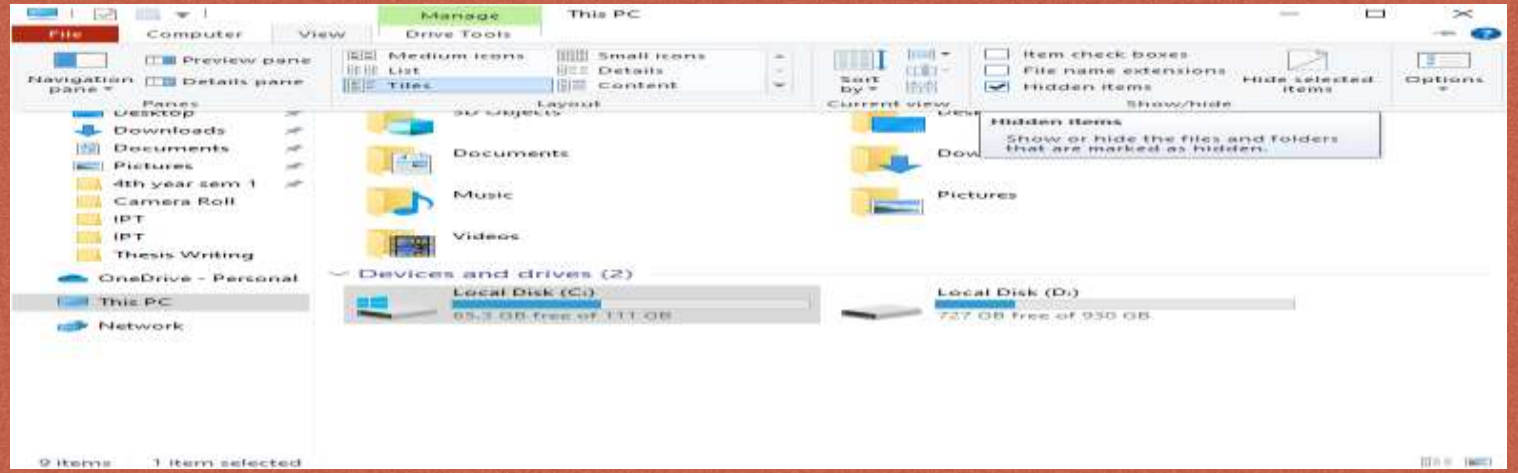
Locating Designer File:

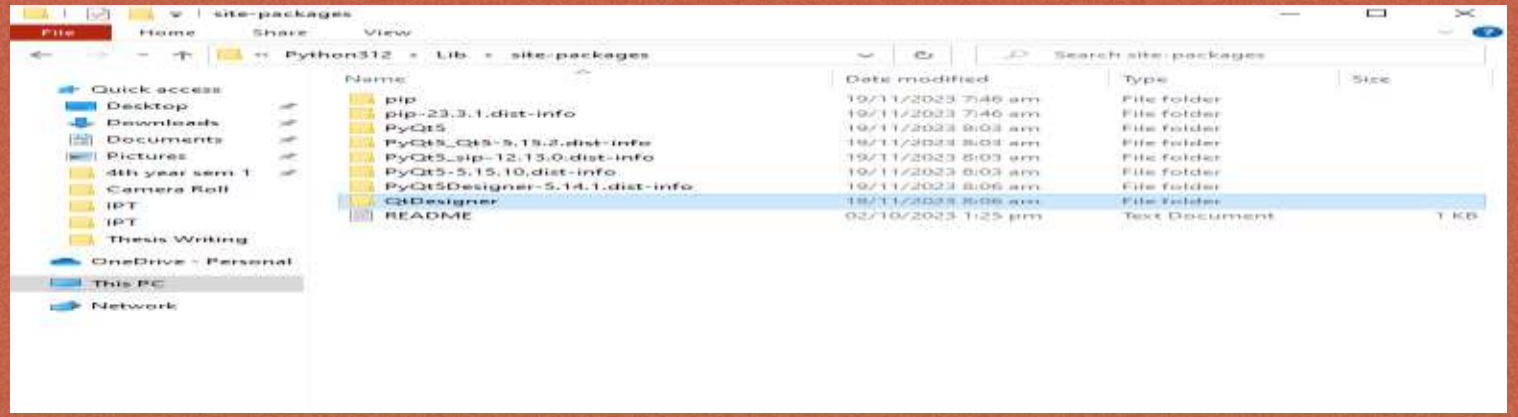
Locate the program directory and create a shortcut on your Desktop for easy access. Below is the typical location of the application. Make sure that show the hidden files before locating the program.

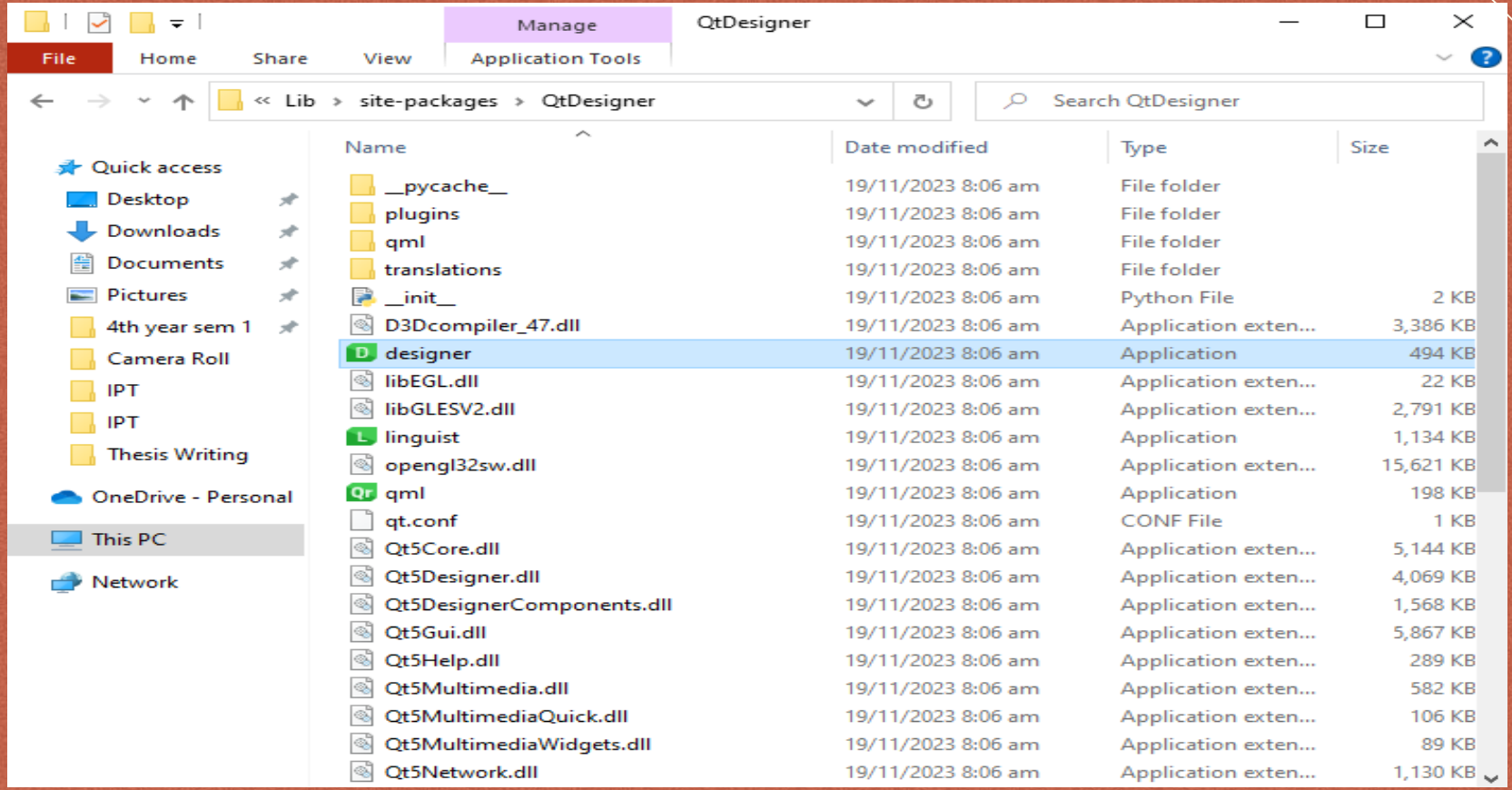
C:\Users\UserName\AppData\Local\Programs\Python\Python39\Lib\site-packages\QtDesigner

C:\Users\UserName\AppData\Local\Programs\Python\Python39\Lib\site-packages\qt5_applications\Qt\bin

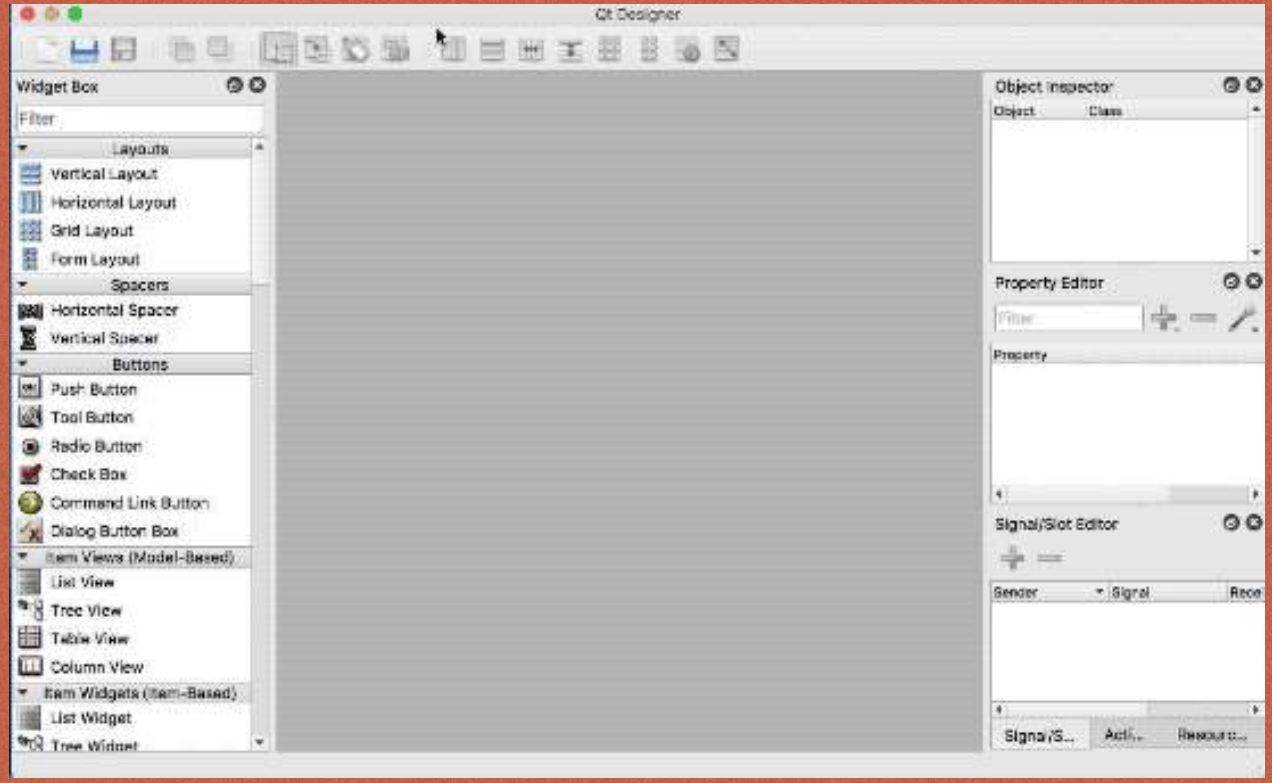



This PC
Manage
Drive Tools
File
Computer
View
Preview pane
Details pane
Navigation pane
Panes
Medium icons
Small icons
List
Details
Tiles
Content
Layout
Sort by
Current view
Item check boxes
File name extensions
Hidden items
Hide selected items
Show/hide
Options
Hidden items
Show or hide the files and folders that are marked as hidden.
Desktop
Downloads
Documents
Pictures
4th year sem 1
Camera Roll
IPT
IPT
Thesis Writing
OneDrive - Personal
This PC
Network
Documents
Music
Videos
Pictures
Devices and drives (2)
Local Disk (C:)
65.3 GB free of 111 GB
Local Disk (D:)
727 GB free of 930 GB
9 items
1 item selected

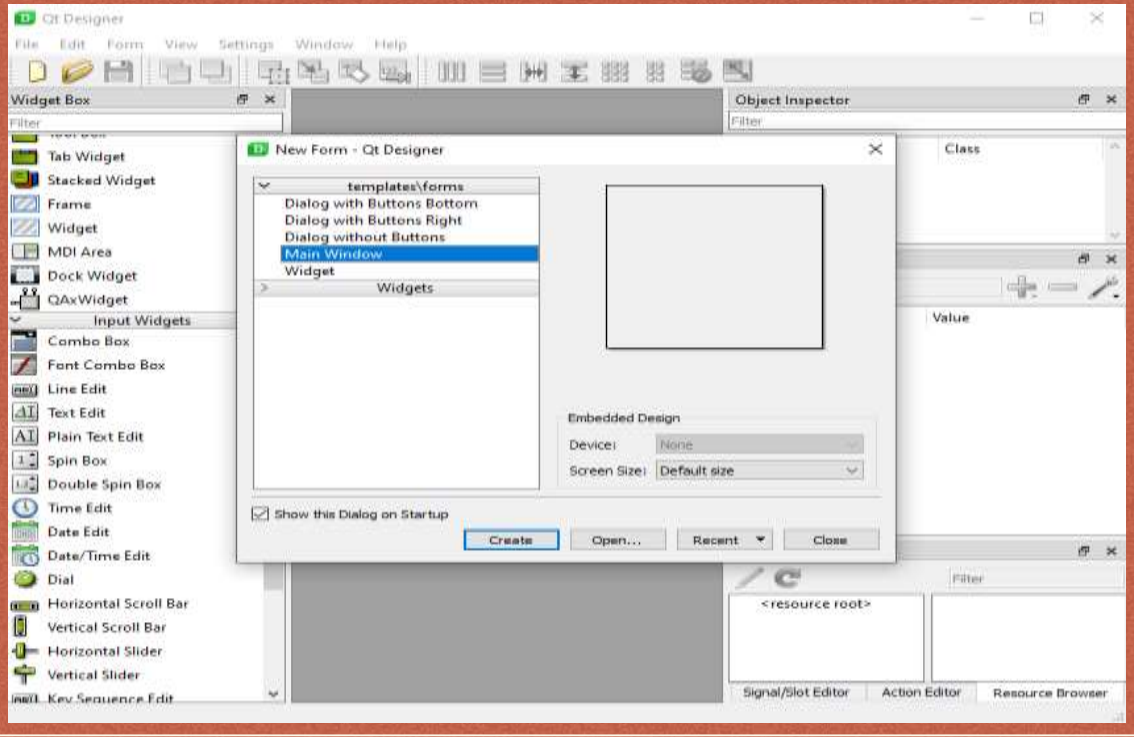

site-packages
File
Home
Share
View
Python312
Lib
site-packages
Search site-packages
Quick access
Desktop
Downloads
Documents
Pictures
4th year sem 1
Camera Roll
IPT
IPT
Thesis Writing
OneDrive - Personal
This PC
Network
Name
Date modified
Type
Size
pip
pip-23.3.1.dist-info
PyQt5
PyQt5_Qt5-5.15.2.dist-info
PyQt5_sip-12.13.0.dist-info
PyQt5-5.15.10.dist-info
PyQt5Designer-5.14.1.dist-info
QtDesigner
README
19/11/2023 7:46 am
19/11/2023 7:46 am
19/11/2023 8:03 am
19/11/2023 8:03 am
19/11/2023 8:03 am
19/11/2023 8:03 am
19/11/2023 8:06 am
19/11/2023 8:06 am
02/10/2023 1:25 pm
File folder
File folder
File folder
File folder
File folder
File folder
File folder
File folder
Text Document
1 KB


Manage
QtDesigner
File
Home
Share
View
Application Tools
Lib › site-packages › QtDesigner
Search QtDesigner
Quick access
Desktop
Downloads
Documents
Pictures
4th year sem 1
Camera Roll
IPT
IPT
Thesis Writing
OneDrive - Personal
This PC
Network
Name
Date modified
Type
Size
__pycache__ 19/11/2023 8:06 am File folder
plugins 19/11/2023 8:06 am File folder
qml 19/11/2023 8:06 am File folder
translations 19/11/2023 8:06 am File folder
__init__ 19/11/2023 8:06 am Python File 2 KB
D3Dcompiler_47.dll 19/11/2023 8:06 am Application exten... 3,386 KB
designer 19/11/2023 8:06 am Application 494 KB
libEGL.dll 19/11/2023 8:06 am Application exten... 22 KB
libGLESV2.dll 19/11/2023 8:06 am Application exten... 2,791 KB
linguist 19/11/2023 8:06 am Application 1,134 KB
opengl32sw.dll 19/11/2023 8:06 am Application exten... 15,621 KB
qml 19/11/2023 8:06 am Application 198 KB
qt.conf 19/11/2023 8:06 am CONF File 1 KB
Qt5Core.dll 19/11/2023 8:06 am Application exten... 5,144 KB
Qt5Designer.dll 19/11/2023 8:06 am Application exten... 4,069 KB
Qt5DesignerComponents.dll 19/11/2023 8:06 am Application exten... 1,568 KB
Qt5Gui.dll 19/11/2023 8:06 am Application exten... 5,867 KB
Qt5Help.dll 19/11/2023 8:06 am Application exten... 289 KB
Qt5Multimedia.dll 19/11/2023 8:06 am Application exten... 582 KB
Qt5MultimediaQuick.dll 19/11/2023 8:06 am Application exten... 106 KB
Qt5MultimediaWidgets.dll 19/11/2023 8:06 am Application exten... 89 KB
Qt5Network.dll 19/11/2023 8:06 am Application exten... 1,130 KB

The window in the foreground is Qt Designer's New Form dialog. The window in the background is Qt Designer's main window.

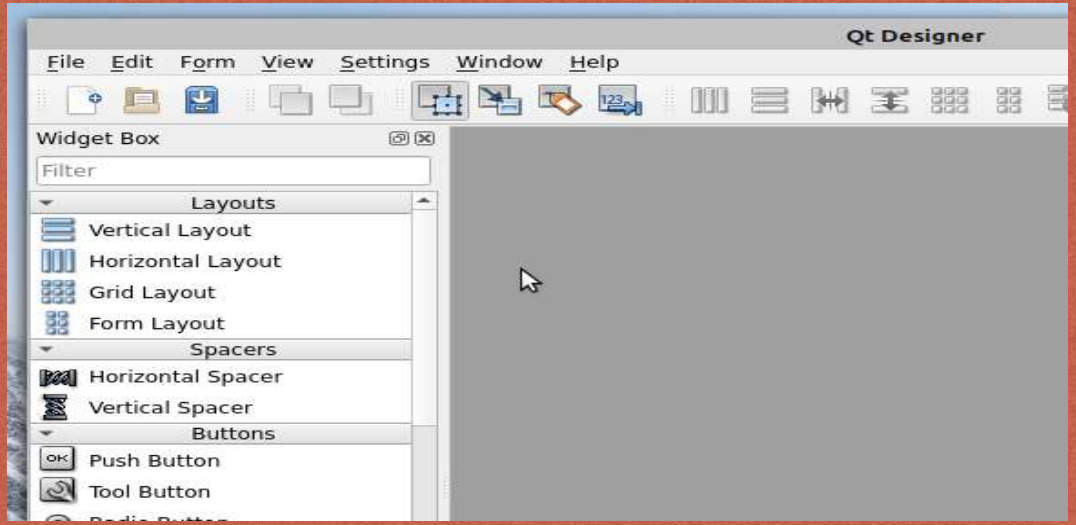


To create a new and empty form using a Qt Designer template, you just need to select the desired template from the New Form dialog and then click Create or press Alt+N on your keyboard.



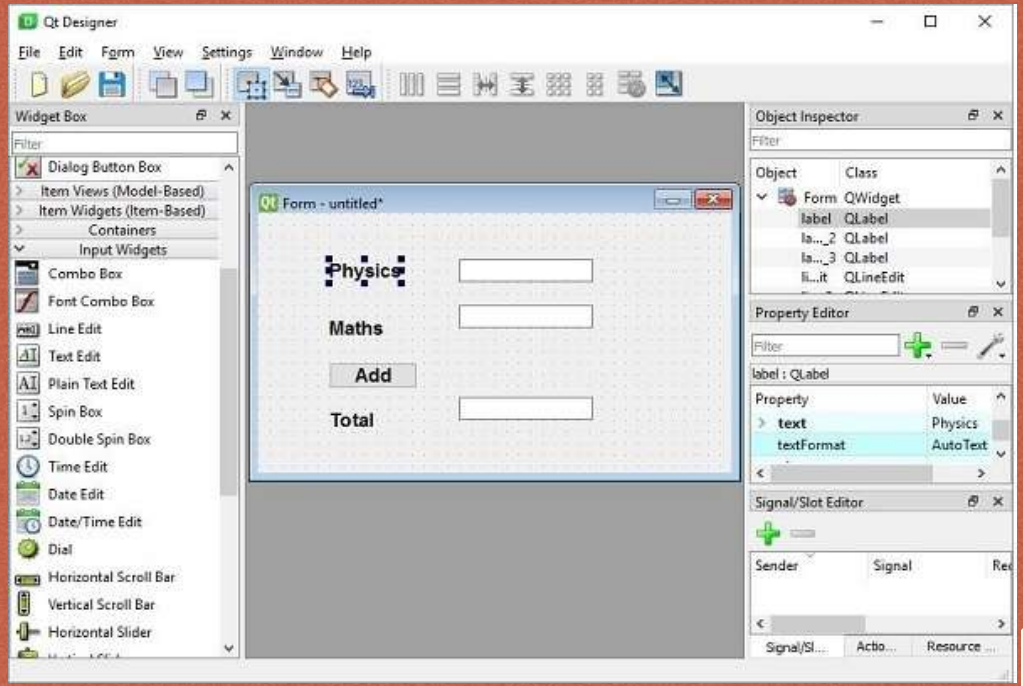
Working With Qt Designer's Main Window

Qt Designer's main window provides a menu bar with options for saving and managing forms, editing forms, and changing the edit mode, laying out and previewing forms, and for tuning the application's settings and accessing its help documentation:



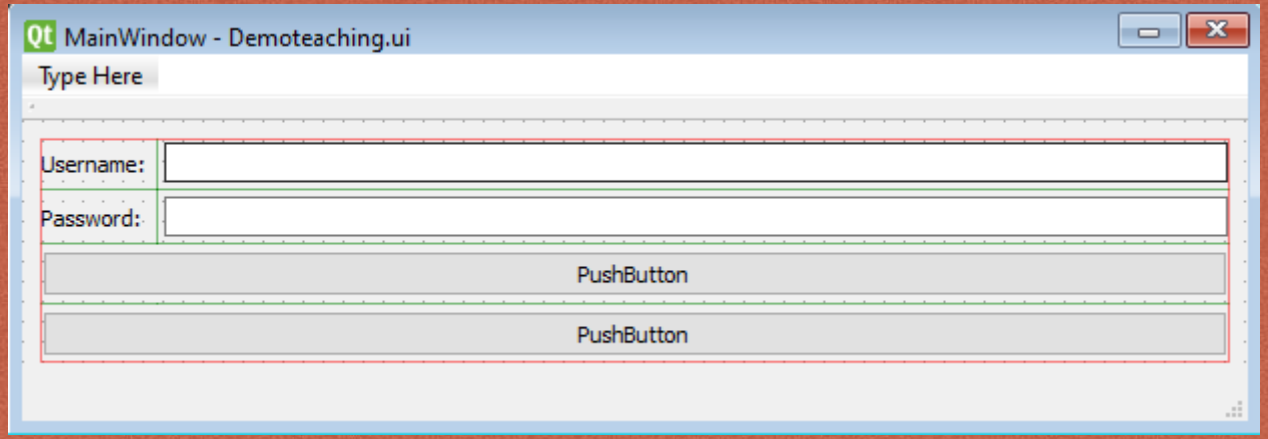
The Widget Box provides a selection of layout managers, spacers, standard widgets, and other objects that you can use to create a GUI for your dialogs and windows:

The Widget Box provides a filter option at the top of the window. You can type the name of a given object or widget and get quick access to it.



GROUP ACTIVITY

Instruction: The class needs to create a 4 groups that consists of 2 groups that have (6) members and 2 groups that have (5) members. Then a group needs to present a design where they need to have two buttons, two labels and two line edit functions in their design.



QUIZ

Instruction: Answer the given question using the provided sheet, and make sure to respond to each question comprehensively.

GOODLUCK!

SET A. Matching Type Test

Direction: Match Column A with Column B.

Column A	Column B
1. What is PyQt5?	**a.** A cross-platform GUI toolkit and a set of Python bindings for Qt v5.
2. What is QtDesigner?	**b.** A tool provided by PyQt5 for designing the front-end of GUI applications using a drag and drop method.
3. Where is the typical location of the QtDesigner application?	**c.**C:\Users\UserName\AppData\Local\Programs\Python\Python39\Lib\site-packages\QtDesigner
4. What is the purpose of the 'Qt Designer's New Form' dialog?	**d.** The foreground window in Qt Designer, used for creating a new form.
5. How do you create a new and empty form using a Qt Designer template?	**e.** Select the desired template from the New Form dialog and then click Create or press Alt+N on your keyboard.

Set B. Multiple Choice

Direction: Write the correct answer.

1. **What is PyQt5 primarily used for?**
   a) Web development
   b) Mobile app development
   c) Desktop applications with GUI
   d) Database management

2. PyQt5 has provided a tool called ‘ ’ to layout the front-end by drag and drop method
   a) Qt Widgets Module
   b) Qt Network Module
   c) Qt Designer
   d) Qt GUI

3.GUI stands for?
   a) Graphical User Interface
   b) Graphic User Interface
   c) Graphics User Interaction
   d) Graphical User Interaction

4. provides a selection of layout managers, spacers, standard widgets, and other objects that you can use to create a GUI for your dialogs and windows.
   a) Widget Tools
   b) Widget Box
   c) Widget Objects
   d) Widget Layout

5.PyQt was developed by?
   a) CodeCraft Solutions, Inc.
   b) ByteForge Technologies
   c) RiverBank Computing Ltd.
   d) Nexus Dev Labs

ANSWER KEY SET A:

1. A. A cross-platform GUI toolkit and a set of Python bindings for Qt v5.
2. B. A tool provided by PyQt5 for designing the front-end of GUI applications using a drag and drop method.
3. C. C:\Users\UserName\AppData\Local\Programs\Python\Python39\Lib\site-packages\QtDesigner
4. D. The foreground window in Qt Designer, used for creating a new form.
5. E. Select the desired template from the New Form dialog and then click Create or press Alt+N on your keyboard.

ANSWER KEY SET B:

1. C. Desktop applications with GUI
2. C. Qt Designer
3. A. Graphical User Interface
4. B.Widget Box
5. C. RiverBank Computing Ltd.

Assignment

ASSIGNMENT

ASSIGNMENT

Instruction: In this assignment, you will focus on the design phase of your python program. Proper design is crucial for creating efficient, maintainable, and scalable software. This assignment aims to enhance your skills in structuring your code and planning your program before implementation.

- ❑ Design the user interface of your program. Create sketches or wireframes that illustrate how users will interact with your application. Consider usability and aesthetics.
- ❑ Prepare a brief document that explains your design choices. Justify your decisions regarding UI design. This documentation should provide a clear overview of your design rationale.

Assignment

ASSIGNMENT

Deadline and Submission:

- Submission is on next meeting, Monday, December 11, 2023, until 11:59 am only.
- Submit your file in .zip format and name it SURNAME_GUI.

Assignment

ASSIGNMENT

Advance

Create your Code:
Instruction: Building upon the design phase, this assignment guides you through the implementation of your program using the PyQt5 library for creating graphical user interfaces (GUIs) in Python. The goal is to bring your design to life and create a functional prototype of your program.

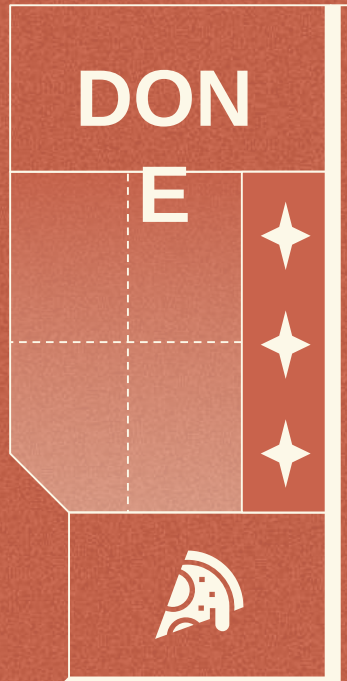
Reference/s Needed to do Assignments.

https://nitratine.net/blog/post/how-to-import-a-pyqt5-ui-file-in-a-python-gui/

REFERENCES

Python Tutorial. (n.d.). https://pythonbasics.org/install-pyqt/

Python | Introduction to PyQt5. (n.d.). https://www.geeksforgeeks.org/python-introduction-to-pyqt5/

Python, R. (2023, March 12). QT Designer and Python: Build your GUI applications faster. https://realpython.com/qt-designer-python/#:~:text=pyqt5%20installs%20PyQt%20and%20a,qt5_applications%2FQt%2Fbin%2Fdesigner

THANK YOU!