**Lab Exercise 1 – Overview of PyQt and PySide Python Libraries**

**Objective**

This lab introduces the PyQt and PySide libraries, explaining their differences, installation, and basic usage for building GUI applications in Python.

**Prerequisites**

* Basic knowledge of Python
* Python installed on your system (preferably Python 3.7+)
* pip installed

**Part 1: Understanding PyQt and PySide**

**Key Differences**

1. **PyQt** is developed by Riverbank Computing and uses a GPL/commercial license.
2. **PySide** is developed by The Qt Company and uses an LGPL license.

**Installation**

Install both libraries:

pip install PyQt6 PySide6

**Part 2: Creating a Basic GUI**

**Step 1: Writing a Simple PyQt Application**

Create a file pyqt\_app.py:

from PyQt6.QtWidgets import QApplication, QLabel, QWidget

import sys

app = QApplication(sys.argv)

window = QWidget()

window.setWindowTitle("PyQt Example")

label = QLabel("Hello, PyQt!", parent=window)

window.show()

sys.exit(app.exec())

Run:

python pyqt\_app.py

**Step 2: Writing a Simple PySide Application**

Create a file pyside\_app.py:

from PySide6.QtWidgets import QApplication, QLabel, QWidget

import sys

app = QApplication(sys.argv)

window = QWidget()

window.setWindowTitle("PySide Example")

label = QLabel("Hello, PySide!", parent=window)

window.show()

sys.exit(app.exec())

Run:

python pyside\_app.py