Pemrograman Desktop 2

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Signal dan Slot

- Signal: notifikasi yg dikirim oleh komponen User Interface ketika sesuatu/event terjadi
  - Contoh event: clicked(), editingFinished(), dll
  - Contoh komponen User Interface: Button, Radio Button, Check Box, Spin Box, dll
- Slot: Penerima signal, biasanya berupa fungsi yang hendak dijalankan ketika terjadi event

First Program

```python
from PyQt6.QtWidgets import QApplication, QWidget, QPushButton
import sys

class demowind(QWidget):
    def __init__(self, parent=None):
        QWidget.__init__(self, parent)
        self.setGeometry(300, 300, 350, 100)
        self.setWindowTitle('Demo window')
        self.button = QPushButton('Close', self)
        self.button.setGeometry(10, 10, 70, 40)
        self.button.clicked.connect(self.close)

if __name__ == '__main__':
    app = QApplication(sys.argv)
    window = demowind() # Create a QWidget, which will be our window.
    window.show()  # IMPORTANT!!!!! Windows are hidden by default.
    app.exec() # Start the event loop.
```

Signal: button quit di-klik
Slot: self.close

Modifikasi Program 1: print tulisan

```
class DemoWind(QWidget):
    def __init__(self, parent=None):
        QWidget.__init__(self, parent)
        self.setGeometry(300, 300, 350, 100)
        self.setWindowTitle('Demo window')
        self.button = QPushButton('Close', self)
        self.button.setGeometry(10, 10, 70, 40)
        self.button.clicked.connect(self.button_clicked)

    def button_clicked(self):
        print("Button clicked")
```

Dimodifikasi sehingga Slot yang dipanggil adalah fungsi Button_clicked

Fungsi button_click print tulisan di terminal

Modifikasi Program 1: print tulisan

- Ketika dijalankan, akan muncul tulisan "Button clicked" tiap kali tombol ditekan

Modifikasi Program 1: Slot kedua

```python
class DemoWind(QWidget):
    def __init__(self, parent=None):
        QWidget.__init__(self, parent)
        self.setGeometry(300, 300, 350, 100)
        self.setWindowTitle('Demo window')
        self.button = QPushButton('Close', self)
        self.button.setCheckable(True)
        self.button.setGeometry(10, 10, 70, 40)
        self.button.clicked.connect(self.button_clicked)
        self.button.clicked.connect(self.button_toggled)

    def button_clicked(self):
        print("Button clicked")

    def button_toggled(self, checked):
        print("Checked?", checked)
```
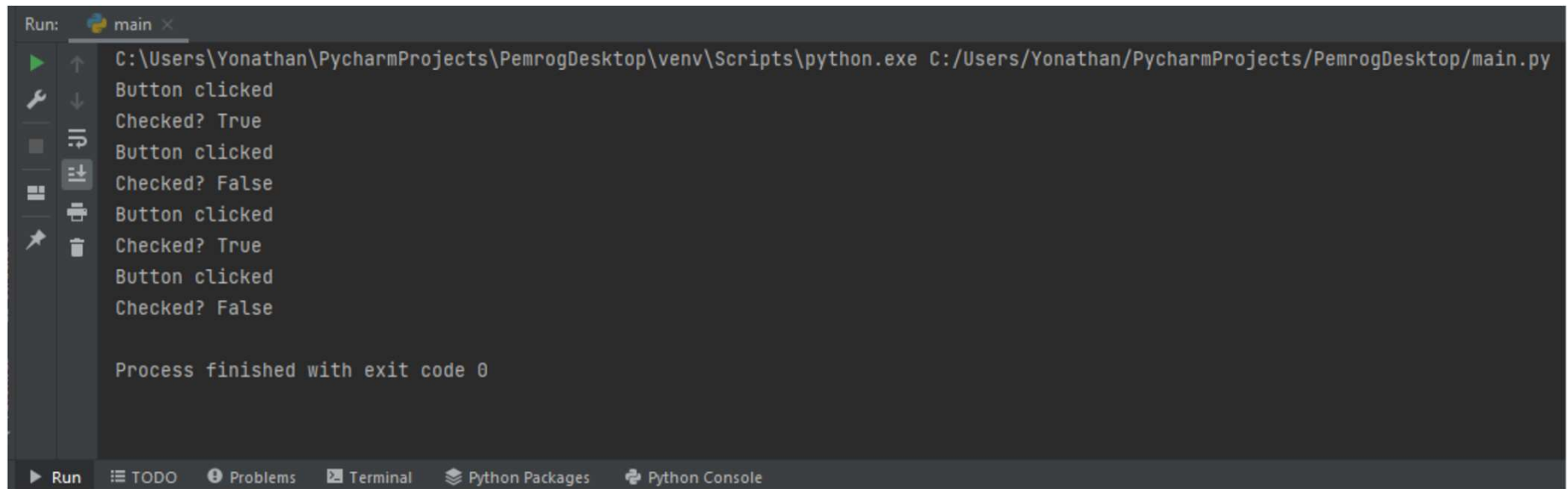
Signal kedua ← `self.button.clicked.connect(self.button_toggled)`

Slot kedua ← `def button_toggled(self, checked):`

Modifikasi Program 1: Slot kedua

- Ketika dijalankan, akan muncul tambahan tulisan "Checked? True/False" tiap kali tombol ditekan. Nilai True/False bergantung kondisi button

Modifikasi Program 1: Modifikasi Judul

```python
class DemoWind(QWidget):
    def __init__(self, parent=None):
        QWidget.__init__(self, parent)
        self.setGeometry(300, 300, 350, 100)
        self.setWindowTitle('Demo window')
        self.button = QPushButton('Close', self)
        self.button.setCheckable(True)
        self.button.setGeometry(10, 10, 70, 40)
        self.button.clicked.connect(self.button_clicked)
        self.button.clicked.connect(self.button_toggled)

    def button_clicked(self):
        print("Button clicked")
        self.setWindowTitle("My Button App")      ⟵  Modifikasi judul aplikasi

    def button_toggled(self, checked):
        print("Checked?", checked)
```