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Final Project

KEY LOGGER AND SECURITY

Understanding and Mitigating Keylogging Threats

AGENDA

- Introduction
- Problem Statement
- Project Overview
- End Users
- Solution and Value Proposition
- The "Wow" Factor in Our Solution
- Modelling
- Results
- Conclusion and Q&A

PROBLEM STATEMENT

- **Problem:**
  Keyloggers are a significant threat to cybersecurity, leading to unauthorized access to sensitive information, identity theft, and financial fraud.

- **Impact:**
  Affects individuals, businesses, and organizations by compromising data privacy and security.

PROJECT OVERVIEW

- **Objective:**
  Develop a comprehensive understanding of keyloggers, their types, how they work, and effective security measures to
  prevent keylogging attacks.

- **Scope:**
  Includes an analysis of hardware and software keyloggers, legal and ethical implications, security measures, and best practices.

WHO ARE THE END USERS?

- **Individuals:** Concerned about personal data security and privacy.
- **Businesses:** Need to protect corporate data and ensure compliance with security standards.
- **Organizations:** Require robust security measures to safeguard sensitive information.
- **Security Professionals:** Aim to understand and mitigate keylogging threats.

YOUR SOLUTION AND ITS VALUE PROPOSITION

To avoid keyloggers

- Use anti virus program
- Use password manager
- Use multi factor authentication
- Use a firewall
- Avoid suspicious links and downloads
- Change password periodically
- Update your system
- Use Virtual Keyboard to type passwords and
- sensitive information

PROPOSITION

- **Enhanced Security:** Reduces the risk of data breaches and identity theft.
- **User Awareness:** Educates users about keylogging threats and protection methods.
- **Compliance:** Helps businesses and organizations
- comply with data protection regulations.

THE WOW IN YOUR SOLUTION

- **Innovative Approach:** Combining technical measures with user education for comprehensive protection.
- **Demonstration:** Real-time demonstration of a simple keylogger to illustrate the threat and the effectiveness of security measures.
- **Impact:** Significant reduction in the likelihood of keylogging attacks through proactive measures.

MODELLING

Architecture Overview:

Modular Design: The keylogger code is structured into modular functions for better readability and maintenance.

Event Handling: Utilizes the pynput library to capture and handle keyboard events.

Data Logging: Implements functions to log captured data into text and JSON files.

Components:

- **Key Press Handling: Function:** *on_press(key)*
  Description: Captures and logs the pressed keys.
  Details: Appends key press events to a list and updates the JSON log file.

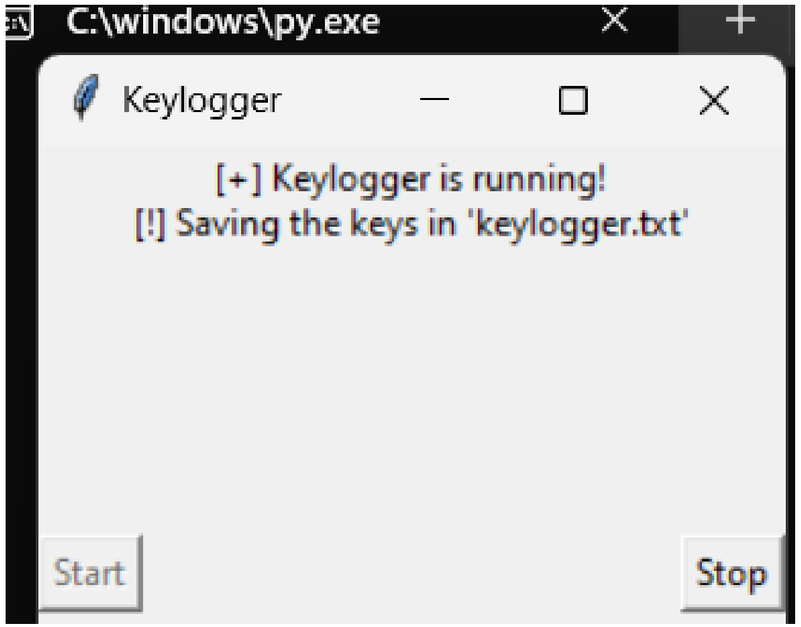
- **Key Release Handling: Function:** *on_release(key)*
  Description: Captures and logs the released keys.
  Details: Appends key release events to a list, updates the JSON log file, and accumulat
  keys for the text log.

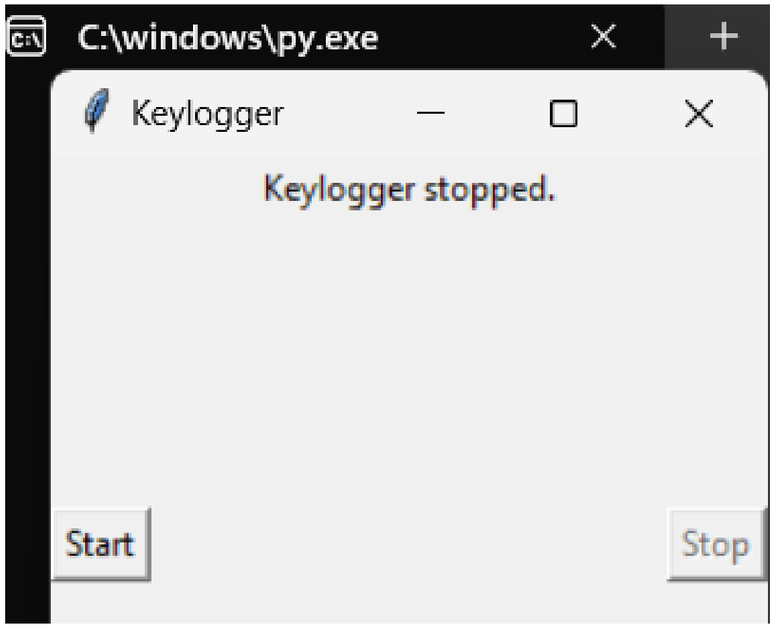
- **Logging Functions:**
  Text Logging: *generate_text_log(key)*
  Description: Writes the recorded keys to key_log.txt.
  JSON Logging: *generate_json_file(keys_used)*
  Description: Dumps the list of key events to key_log.json.

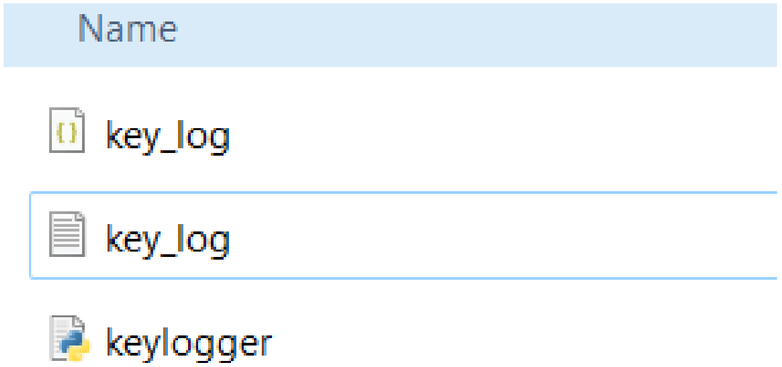
GUI Integration:

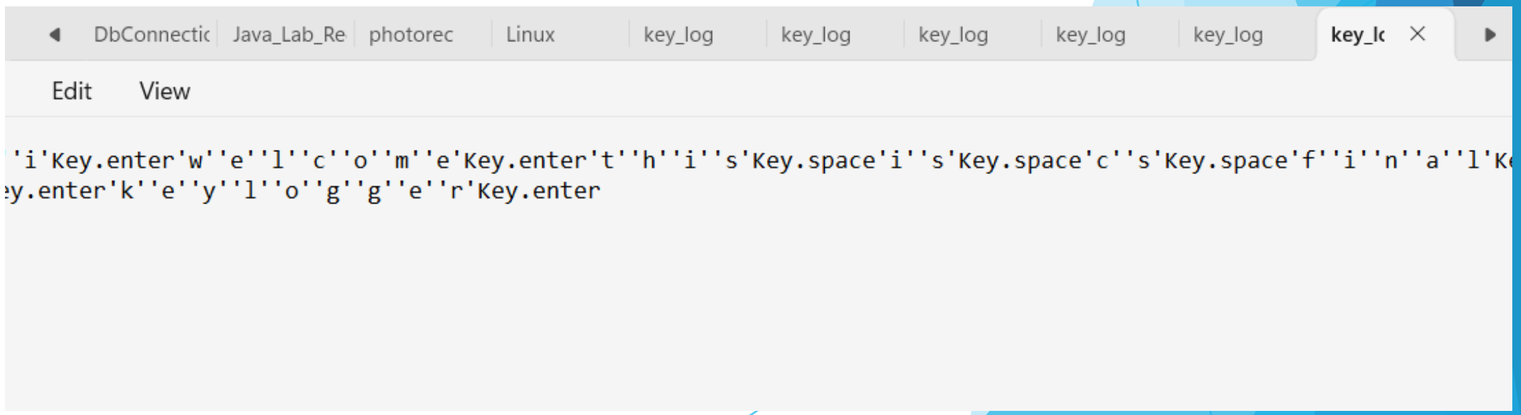
- **Tkinter Framework:** Utilizes tkinter for creating a graphical user interface.
- **User Interaction:**
  Start Button: Initiates the keylogger.
  Stop Button: Stops the keylogger.
- **Status Updates:** Provides real-time feedback on the status of the keylogger (running/stopped).

RESULTS


C:\windows\py.exe
Keylogger
[+] Keylogger is running!
[!] Saving the keys in 'keylogger.txt'
Start
Stop


C:\windows\py.exe
Keylogger
Keylogger stopped.
Start
Stop


Name
key_log
key_log
keylogger


DbConnectic
Java_Lab_Re
photorec
Linux
key_log
key_log
key_log
key_log
key_log
key_lc
Edit
View
'i'Key.enter'w''e''l''c''o''m''e'Key.enter't''h''i''s'Key.space'i''s'Key.space'c''s'Key.space'f''i''n''a''l'K
y.enter'k''e''y''l''o''g''g''e''r'Key.enter

- Successfully implemented a keylogger that captures keystrokes and records them into both text and JSON files.
- Real-time keylogging with start and stop functionality controlled via a simple GUI.
- The keylogger project demonstrated the capability to effectively capture and log keystrokes in real-time.
- The GUI provided a user-friendly way to control the keylogger, making it accessible and easy to use.
- Emphasized the ethical use of keyloggers and the importance of implementing security measures to protect against malicious use.

Thank You