Hands-on: Keylogger

Python and necessary packages

- I assume each of you have a python distribution installed
- In Windows I have used the package `keyboard` to manage the keyboard
- But you may also enjoy with:
  - Pillow to manage images
  - pyperclip to manage the clipboard
  - …

- For instructions on the packages you may look at https://pypi.org/
- Install the package with:
  - `pip install keyboard`
  - `pip install Pillow`
  - `Pip install pyperclip`
- Note that the packages have many functionalities, we will see only very few of them

The keyboard library

keyboard is a small python library that provides full control of the keyboard.

It can:

- hook global events,
- register hotkeys,
- record keyboard activity,
- block keys,
- simulate key presses …
- … and much more.

It works on both windows and linux operating system.

Using the keyboard library

```
# Using Keyboard module in Python
import keyboard

# It writes the content to output
keyboard.write("GEEKS FOR GEEKS\n")

# It writes the keys r, k and endofline
keyboard.press_and_release('shift + r, shift + k, \n')
keyboard.press_and_release('R, K')

# it blocks until ctrl is pressed
keyboard.wait('Ctrl')
```

Import the library for keyboard management

Simulate keyboard writing

Simulates press and release of characters

Waits until somebody presses ctrl buttom...

For more information on the library:
https://www.geeksforgeeks.org/keyboard-module-in-python/

Using the keyboard library

```
import keyboard

def exit_me():
    print("the end.")
    fine=False

keyboard.add_hotkey('ctrl+d', exit_me)

fine=True
while fine:
    event = keyboard.read_event(suppress=False)
    # only grab key-up events
    if event.event_type == keyboard.KEY_UP:
        key_list.append(event.name)
        if event.name.isdigit():
            print("digit")
```

Import the library for keyboard management

Invoked when the user press ctrl+d (just for the exercise...)

Create a callback to exit_me when user presses ctrl+d

Reads an event from keyboard...

... and when the key is released...

... analyses the key pressed

This is a very simple code, however you may use a `try-except` to get exceptions when reading from the keyboard, to make the code more robust, or to analyse differently the key pressed

Exercises

Create a «trojan horse» that:

- remains hidden reading from the keyboard
- when a user inserts a sequence of digits, potentially the digits of a credit card, let's say only 6 digits, saves the sequence in a text file

To this purpose you may create a file and append in a new line the sequence of numeric digits intercepted

You may then consider the following variants:

- to take the content of the clipboard (in case the user is copying and pasting the credit card number). In this case you may capture the sequence of events ctrl+c and ctrl+v and then make a copy of the clipboard and save it somewhere;
- as the user may not be inserting a credit card number but he may be doing something different, you may takes a snapshot of the screen and saves the snapshot in a file (maybe giving it a name taken from the current date and hour), and save the file in a hidden directory;
- to send the intercepted digits to a server somewhere else;
- when the user digits 'ciao', it generates the writing of an annoying quote in the document the user is writing