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07/24/2025
CIS-30A Summer

CIS30A Project Documentation Guide

In the documentation, provide 1 – 2 pages (single-space) that contains the following components of your course project. Total 100 points

1. Your name
2. Project Information and details: (60 points)
    - What problems are you solving in this project?
    - What solutions are you implementing in the project?
    - Provide explanation of algorithm implementation.
    - What are the program objectives?
    - Explain how your program is interacting with the user and its purpose.
    - What are the limitations of the program?
    - Provide a recommendation on improving the limitations of the program.
3. Pseudocode. (40 points)
    - Write the pseudocode for the program, from start to finish. Be sure to include decision-making branching, and/or iteration.

Project Information

In this project, I am solving the problems of (a) ignorance about keyloggers and their prevalence and (b) not knowing the patterns of one's input onto their keyboard and mouse. Laptops are used frequently by the average person, utilized for work, leisure, and everyday questions and interests. However, people hardly ever know the patterns of their Internet usage, such as what keys they often press or where they keep their mouse.

I plan to implement the solution of a key logger program that shows the user exactly what they have typed and the position of their mouse. It will include keys like tab and shift.

I will implement this algorithm by using outside libraries such as Listener API and Pynput Library to have the necessary functions to monitor the device and create data logs. I will also utilize text files, classes, loops, and a list to make data sorting and storage easier.

The program's objectives are to monitor, store, and display in an organized manner the interactions between the user and their mouse and keyboard.

The program is interacting with the user by inputting all of the user's actions into a file and letting the user access the file. Its purpose is to inform the user of their keyboard and mouse history, with a wider purpose of educating the user on the existence of keyloggers and how easy they are to make and fall victim to.

The limitations of the program are that it cannot extend to connected devices like a real mouse and it does not track keys F1-F12. It also does not count each usage of a key and store the data in a chart, which may better show typing and moving patterns.

A recommendation on improving the limitations of the program is for other developers to use a different library that can track all keys on the keyboard and develop an algorithm to track each individual key.

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Pseudocode

```
from pynput import mouse, keyboard
Import keylog_control
Import keylog_mouse

Function start_keyboard:
        On key press, run keylog_control.write
        Join keys

Function start_mouse:
        On mouse move, run keylog_mouse.write
        Join data

print(welcome message)
print(explanation)

Class Run:
        Function display(self, log):
                print("Displaying log…")
                Try:
                        Open log ("r")
                        Print log
                Except FileNotFoundError:
                        print("Log not found")
        Function clear_logs(self):
                Open log & mog ("w")
                print("Logs cleared")
        Function mouse_tp(self):
                imported function to move mouse to random location

Commands = {
        "A": "Display Keyboard Log",
        "B": "Clear Logs",
        "C": "Display Mouse Log",
        "D": "Mouse Teleportation",
        "E": "Kill Program"
}

For all items in commands:
```

```
        Print item

run = Run()
While True:
        Choice = input(command user wants to run)
        If choice is A:
                Run display log function
        If choice is B:
                Run clear log function
        If choice is C:
                Run display mog function
        If choice is D:
                Run mouse_tp function
        If choice is E:
                End program
        Else:
                print(“Invalid input”)

--- keylog control file

From pynput import keyboard, mouse
Import random

Function ctrl_mouse:
        Mouse is assigned as Controller()
        Mouse.position is a (random int, random int)

Function ctrl_keyboard:
        Keyboard = Controller()
        Keyboard.type(word)

function write(key):
   letter = (key)
   Letter = letter without “”
   if letter == “space” :
      letter = ' '
   if letter == “enter”:
      letter = “\n”
   if letter == "shift":
      letter = “”
```

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```
    global key_press_count
    key_press_count += 1

----- keylog mouse file

from pynput import mouse

function writetomog(x,y):
    Open mog.txt (“a”)
        write("Position of current mouse: {position}”)

With Listener recording mouse moving:
    listener.join()
```