

REMOTE MOUSE



What is our GOAL for this CLASS?

In this class, we have learned to access other PCs on their LAN by turning their PC into a remote mouse

What did we ACHIEVE in the class TODAY?

- Understand about Remote Mouse
- Building Socket & Client Connection

Which CONCEPTS/ CODING BLOCKS did we cover today?

- We used the libraries, pynput, screeninfo, autopsy
- We used methods thread(),socket(),bind() etc

How did we DO the activities?

1. Install libraries

Go to Command prompt

- pip install pynput
- pip install screeninfo
- pip install autopsy

```
C:\Users\Tamanna>pip install pynput
Requirement already satisfied: pynput in c:\users\tamanna\appdata\local\programs\python\python38-32\lib\site-packages (1.7.3)
Requirement already satisfied: six in c:\users\tamanna\appdata\local\programs\python\python38-32\lib\site-packages (from pynput) (1.15.0)

C:\Users\Tamanna>pip install screeninfo
Requirement already satisfied: screeninfo in c:\users\tamanna\appdata\local\programs\python\python38-32\lib\site-packages (0.6.7)

C:\Users\Tamanna>pip install autopsy
Requirement already satisfied: autopsy in c:\users\tamanna\appdata\local\programs\python\python38-32\lib\site-packages (4.0.0)
```

2. Import **socket** into **server.py** for creating socket, import the **Thread** library for the server and client to communicate simultaneously.

```
import socket
from threading import Thread
```

3. Import the essential libraries in the file

```
from pynput.mouse import Button, Controller
from screeninfo import get_monitors
import autopsy
```

4. Create the global variables

```
SERVER = None
PORT = 8000
IP_ADDRESS = input("Enter your computer IP ADDR : ").strip()
screen_width = None
screen_height = None
```

5. Create the function **setup()** to setup the server.

```
def setup():
    print("\n\t\t\t\t\t*** Welcome To Remote Mouse ***\n")

    global SERVER
    global PORT
    global IP_ADDRESS

    SERVER = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
    SERVER.bind((IP_ADDRESS, PORT))

    SERVER.listen(10)

    print("\t\t\t\t\tSERVER IS WAITING FOR INCOMING CONNECTIONS...\n")

setup()
```

6. Create a function **acceptConnections()** and call the same in our server **setup()** function

```
def acceptConnections():
    global SERVER

    while True:
        client_socket, addr = SERVER.accept()

        print(f"Connection established with {client_socket} : {addr}")
```

```
def setup():
    print("\n\t\t\t\t\t*** Welcome To Remote Mouse ***\n")

    global SERVER
    global PORT
    global IP_ADDRESS

    SERVER = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
    SERVER.bind((IP_ADDRESS, PORT))

    SERVER.listen(10)

    print("\t\t\t\tSERVER IS WAITING FOR INCOMING CONNECTIONS...\n")

    acceptConnections()

setup()
```

7. Use a variable **mouse** to store the information we get from the pynput mouse controller

```
mouse = Controller()
```

8. Create a function **getDeviceSize()** and call it in server **setup()** function

```
def getDeviceSize():
    global screen_width
    global screen_height
    for m in get_monitors():
        screen_width = int(str(m).split(",")[2].strip().split('width=')[1])
        screen_height = int(str(m).split(",")[3].strip().split('height=')[1])
```

```
def setup():
    print("\n\t\t\t\t\t*** Welcome To Remote Mouse ***\n")

    global SERVER
    global PORT
    global IP_ADDRESS

    SERVER = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
    SERVER.bind((IP_ADDRESS, PORT))

    SERVER.listen(10)

    print("\t\t\t\tSERVER IS WAITING FOR INCOMMING CONNECTIONS...\n")
    getDeviceSize()
    acceptConnections()

setup()
```

9. Create a function `recvMessage()`

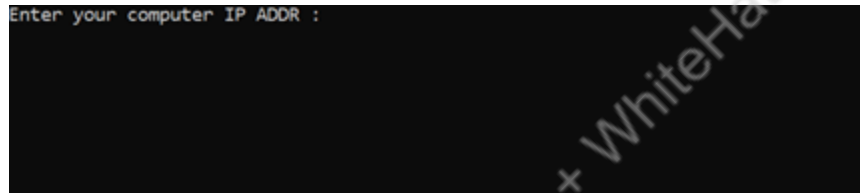
```
def recvMessage(client_socket):
    global mouse

    while True:
        try:
            message = client_socket.recv(2048).decode()
            if(message):
                new_message = eval(message)
                if(new_message["data"] == 'left_click'):
                    mouse.press(Button.left)
                    mouse.release(Button.left)
                    mouse.press(Button.right)
                    mouse.release(Button.right)
                else:
                    xpos = new_message["data"][0] * screen_width
                    ypos = screen_height * (1 - (new_message["data"][1] - 0.2) / 0.6 )
                    mouse.position = (int(xpos), int(ypos))
            except Exception as error:
                pass
```

10. Create a thread in `acceptConnection()` and this time target will be our `recvMessage()`, pass arguments `client_socket`. Then start the thread using `start()` method.

```
def acceptConnections():  
    global SERVER  
  
    while True:  
        client_socket, addr = SERVER.accept()  
  
        print(f"Connection established with {client_socket} : {addr}")  
  
        thread1 = Thread(target = recvMessage, args=(client_socket,))  
        thread1.start()
```

11. Run the server file.



```
Enter your computer IP ADDR :
```

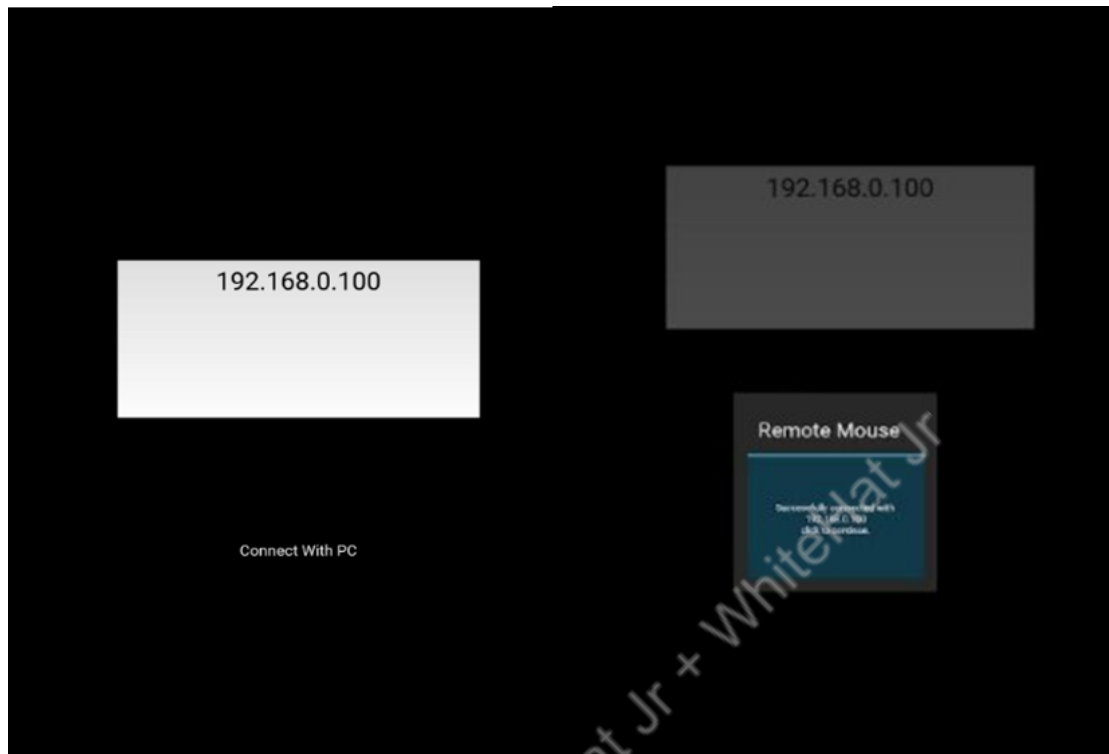
12. It will ask for IP ADDRESS. Go to command prompt type ipconfig, ipconfig command gives the details of the ip address.



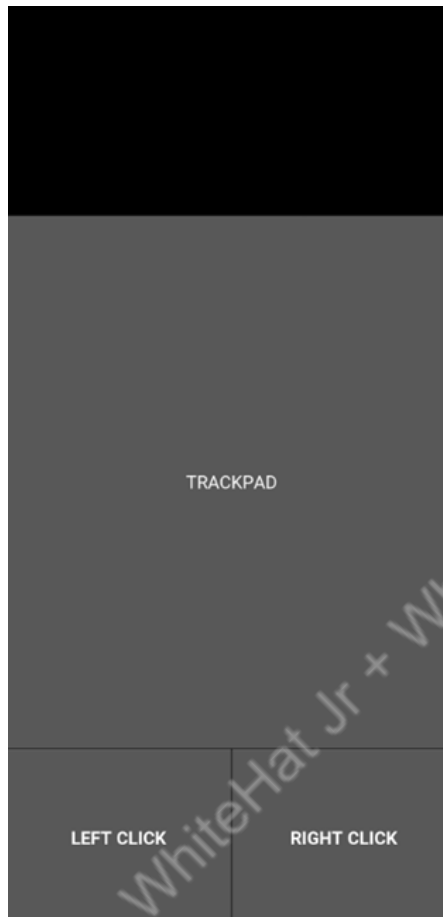
```
Enter your computer IP ADDR : 192.168.0.100  
  
*** Welcome To Remote Mouse ***  
  
SERVER IS WAITING FOR INCOMING CONNECTIONS...
```

13. Download the main.py file from student activity 2

- Upload the file in Mobile
- Download the Pydroid Py3 from playstore
- Open the Pydroid app
- Click on rectangle type box
- Click on open
- Upload the main.py file(Check Phone download section)
- Click on the yellow shaped triangle icon at the right bottom corner.
- Enter the IP address of your computer. This should be the same one we used in the server side
- Click on "Connect With PC"



14. You will be able to see the following output on the mobile.



We have successfully learned to access other PCs on their LAN by turning their PC into a remote mouse

What's NEXT?

In the next class _____

Expand Your Knowledge

You can read more about computer mouse [here](#)