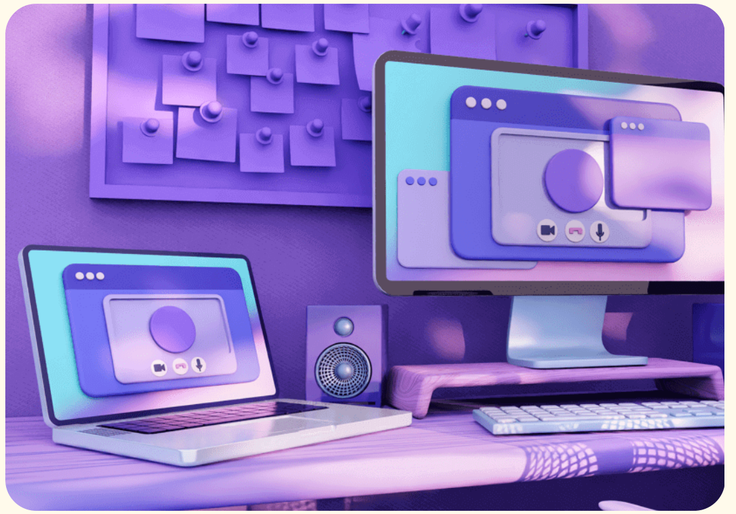
PCSII Project

SpaceLink



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Overview

01 About This Project

02 Features

03 User Authentication

05 Screen Mirroring

04 Terminal Commands

06 Contribution

SpaceLink Project

- Our setup involves a server that's hosted on a main computer. Clients connect to this server. They can control their mouse from a distance and see what's displayed on the main computer's screen.

- Clients can send instructions to move the mouse remotely and get snapshots of what's on the main computer's screen. Additionally, they can also synchronize their mouse movements with the server's mouse

SpaceLink Features

01

Password Protected

02

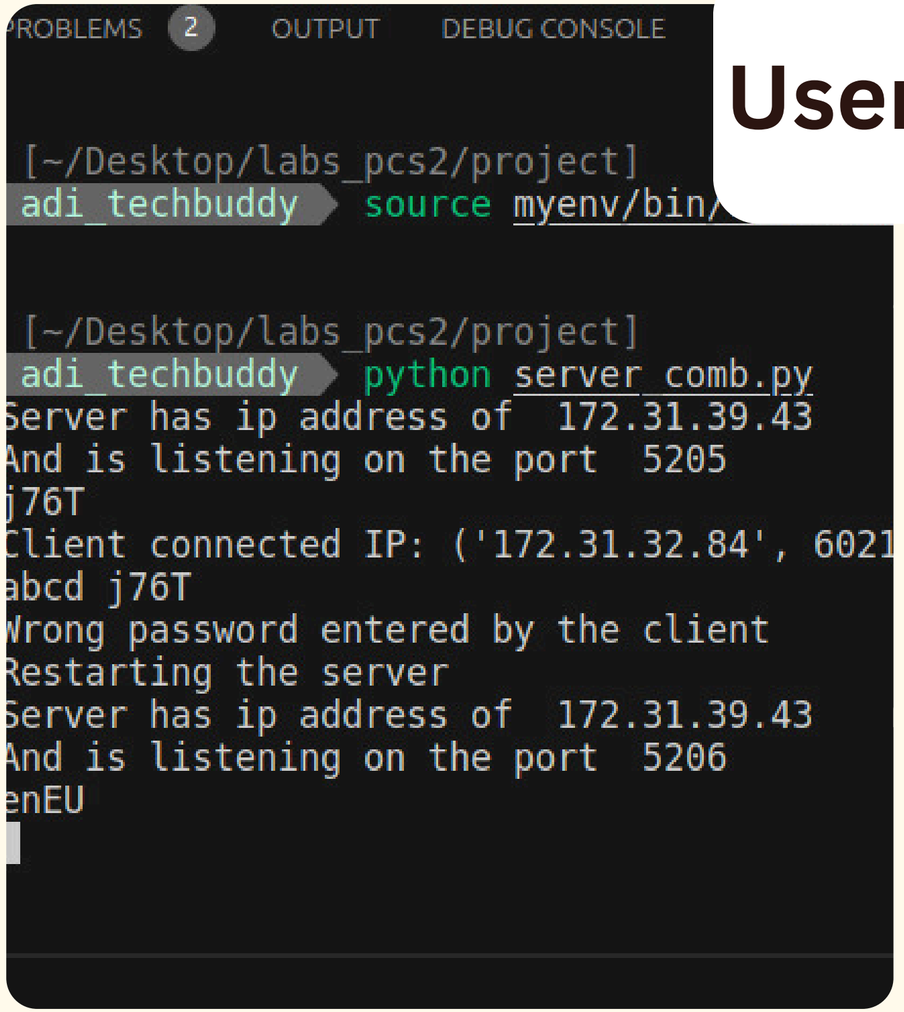
Screen Sharing

03

Mouse Mirroring

04

Terminal Commands



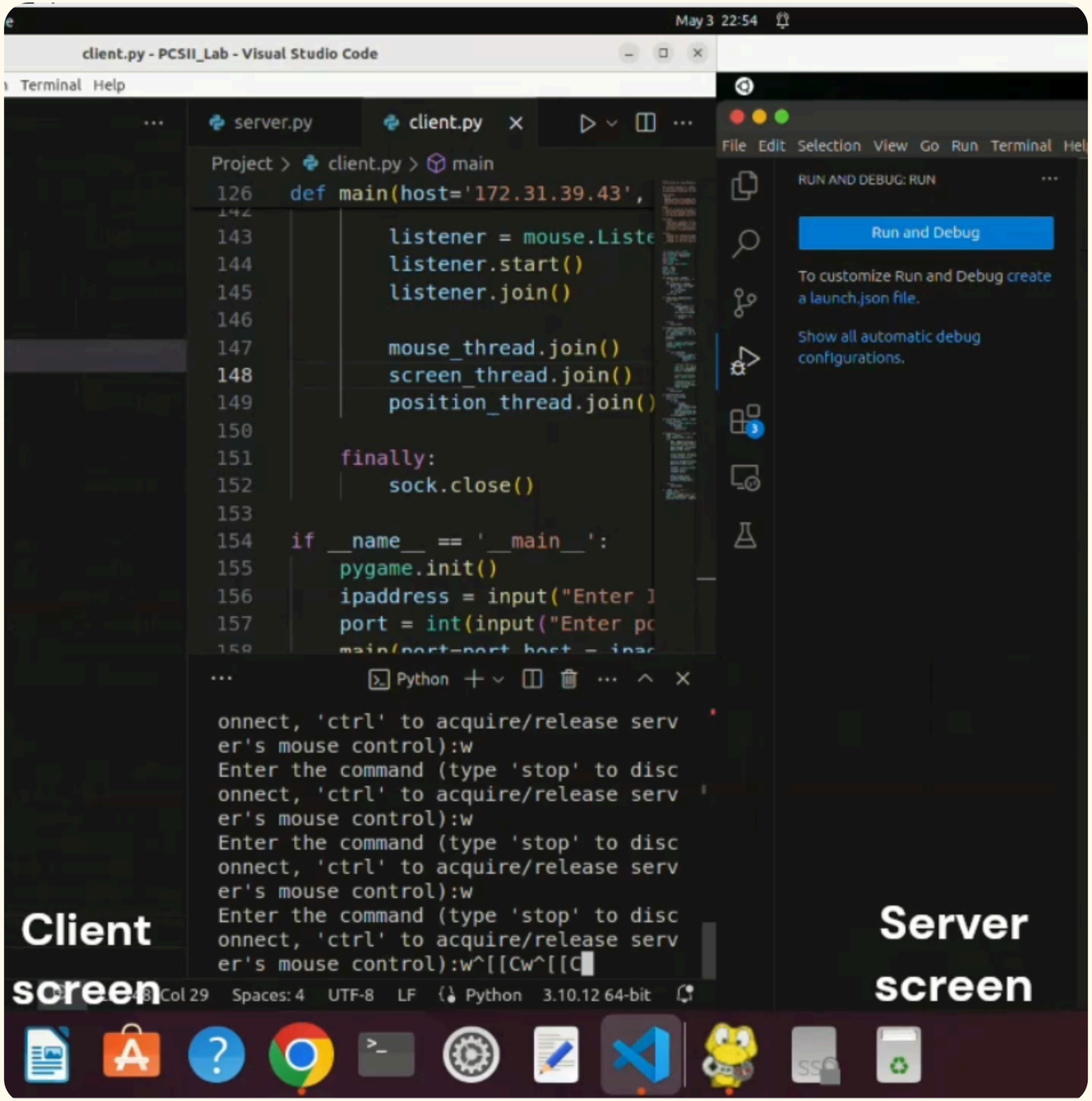
User Authentication

Socket Programming

When the person sharing their system runs the server code, the IP address and port number will appear in the terminal. Using these details, clients can connect to the server by entering them.

Password Secure

The server generates a random 4-character password for the user. Clients need to enter this password to access real-time screen sharing and mouse control. If the password is incorrect, the server ends the connection and restarts with a new password and port number.



Screen Mirroring

Real-time screen sharing

Our software offers a powerful screen sharing feature, allowing users to view and interact with another computer's screen in real-time.

How it works

- **“mss”** library used for capturing screenshots efficiently on the server side.
- Sends:
  - size of the compressed pixels length,
  - followed by the actual pixels length,
  - finally sends the compressed pixels data over the network to the client.

Terminal Commands

Mouse Control

Once the user (client) is verified, they can control the server's mouse operations like moving mouse by user specified pixels by typing 'w s a d' commands and mouse clicking by typing 'c' command in the terminal.

Typing commands to control mouse of shared screen

"ctrl" command

Clients have the option to enter the "ctrl" command to either give or release direct mouse control from the server to the client's mouse. When enabled, the server's mouse mirrors the client's mouse movements and clicks.

"stop" command

The user (client) can enter the "stop" command to disconnect the server and client socket connection. However, client can again reconnect to the server using a valid password.

Contributions

Aditya Rathor
B22AI044

- Socket Programming - Server code
- Screen sharing using mss lib.
- Multi-threading implementation - screen sharing & client communication.
- Report Making
- Video Editing

Vishesh Sachdeva
B22AI050

- Socket Programming - Client code
- Controlling mouse operations using pyautogui lib.
- Enabling mouse mirroring feature
- Readme file
- Slides for SpaceLink Features

Thank You