# Project Report: Python-based Desktop Agent Application

## Team Members:


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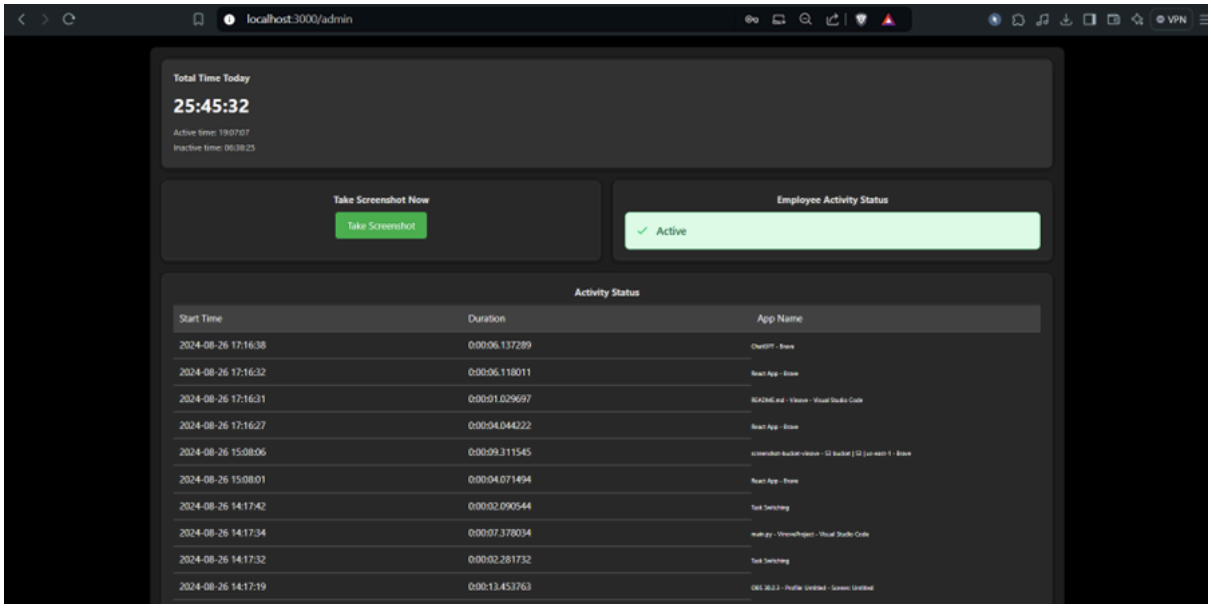
## 1. Introduction

This project involves developing a Python-based desktop agent application that tracks employee activity and securely uploads relevant data (e.g., screenshots) to Amazon S3 or a similar cloud storage service. The application is designed to monitor genuine user activity, handle configuration changes, and ensure that best practices in software development are adhered to.

## 2. Core Features

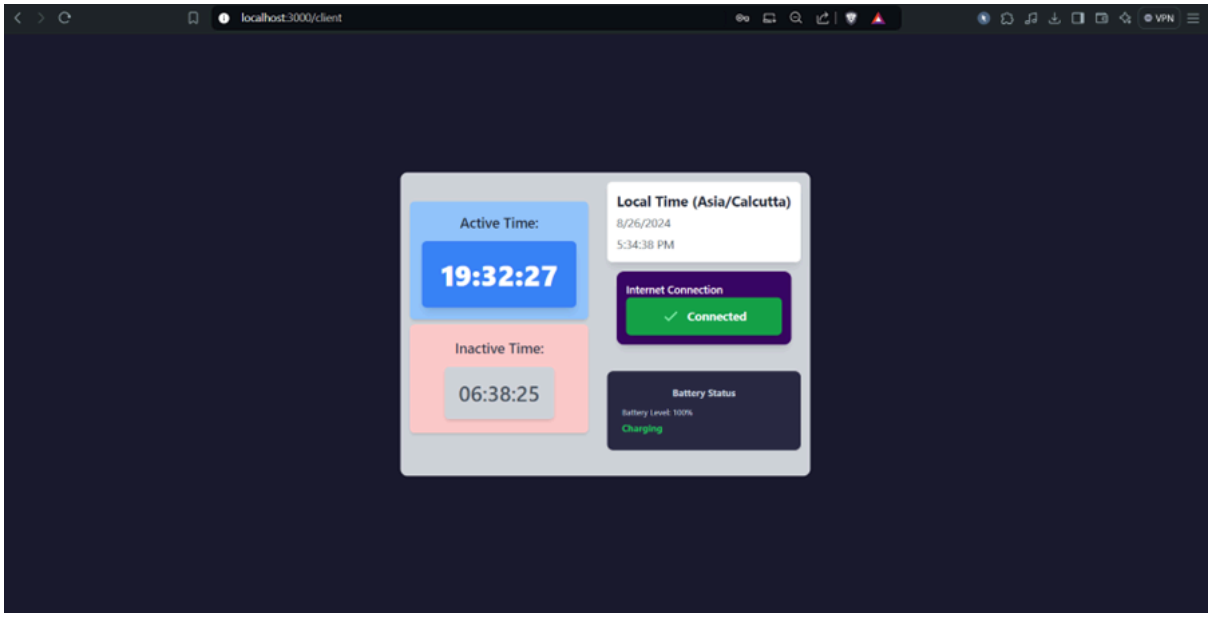
### Activity Tracking:

The agent runs in the background, continuously monitoring and capturing user activity. It differentiates between genuine user input and scripted activity by detecting irregular patterns in mouse movements or keyboard inputs.



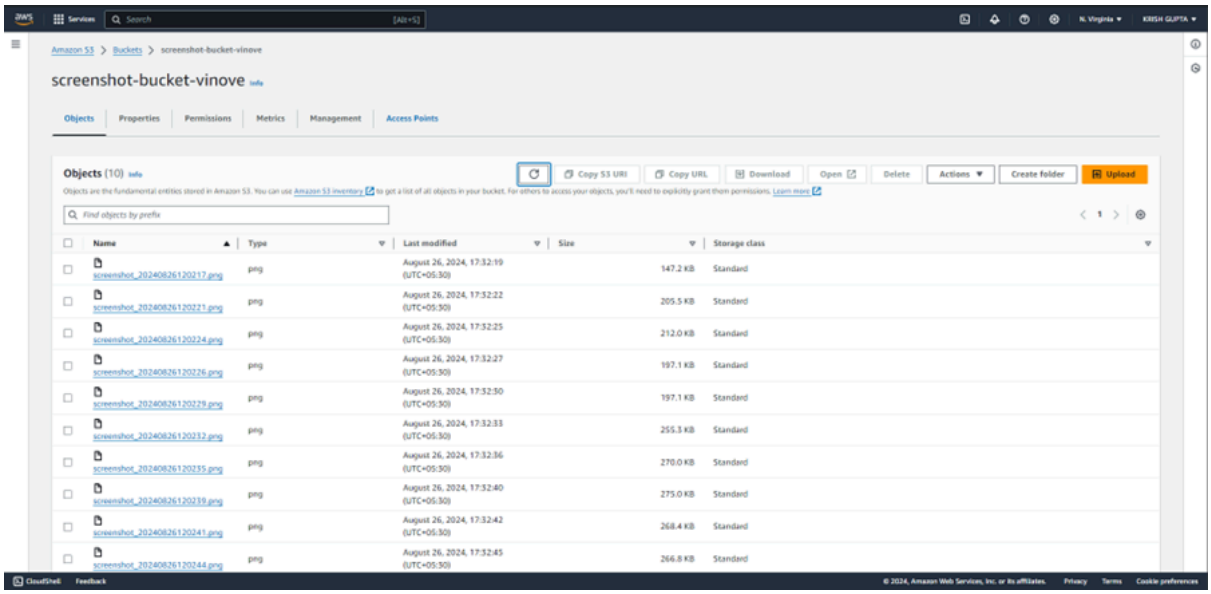

## Time Zone Management:

The agent detects time zone changes on the user's system and adjusts timestamps in the activity logs accordingly. Time zone changes are captured in real-time and reflected accurately in the logs.



## Data Upload:

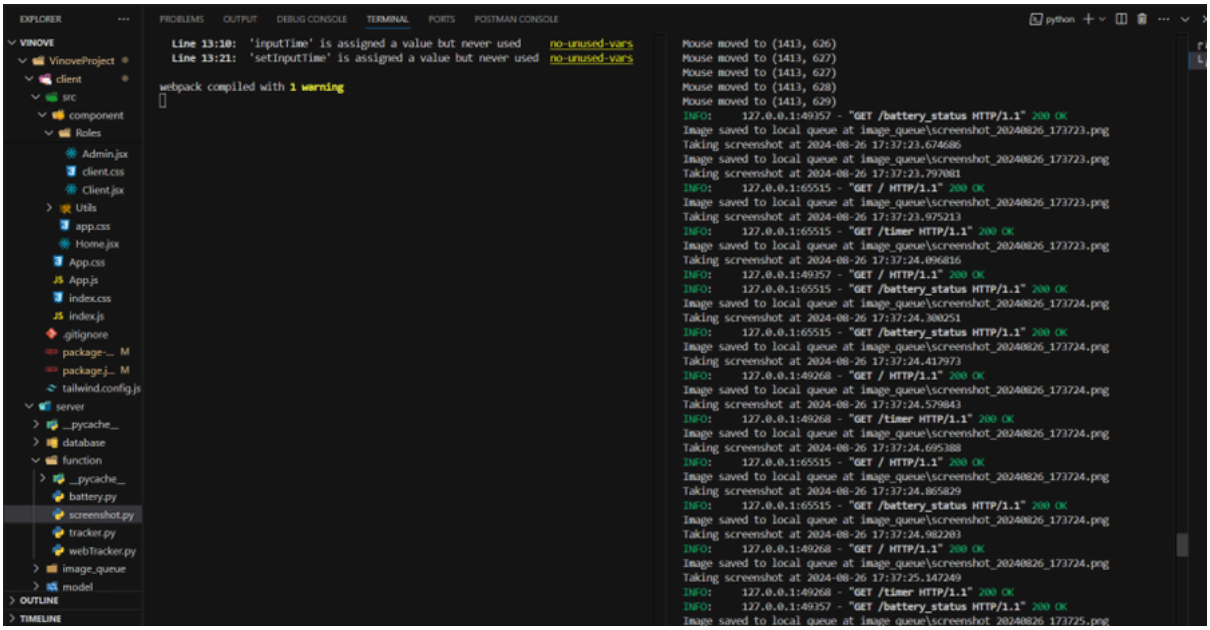
Captured screenshots and activity logs are automatically uploaded to Amazon S3 cloud storage service. The application implements mechanisms for efficient handling of large file uploads, such as chunked uploads or compression. Data is securely uploaded using encryption to ensure privacy and data integrity.




## Error Handling and Resilience:

The application includes robust error handling for scenarios such as:

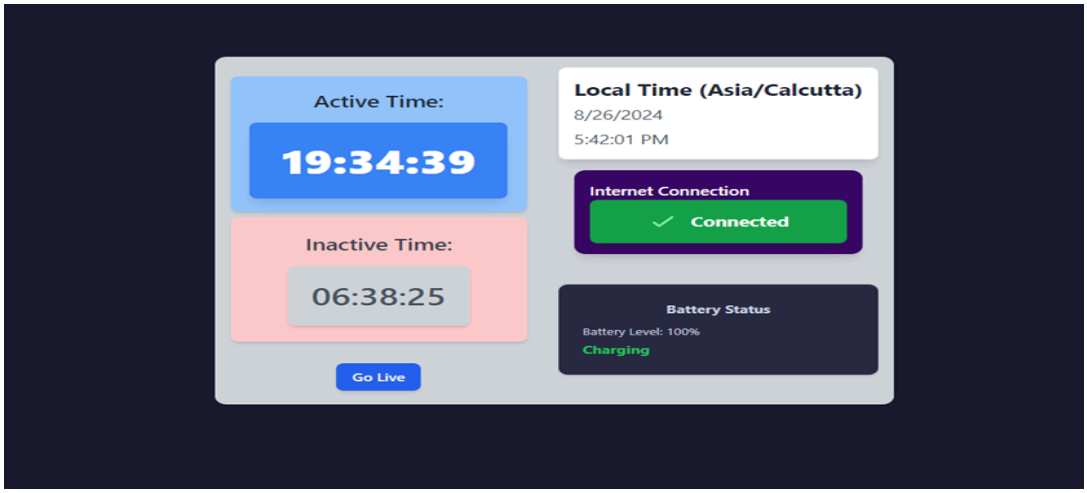
- **No Internet Connection:** Uploads are queued and retried when the connection is restored.

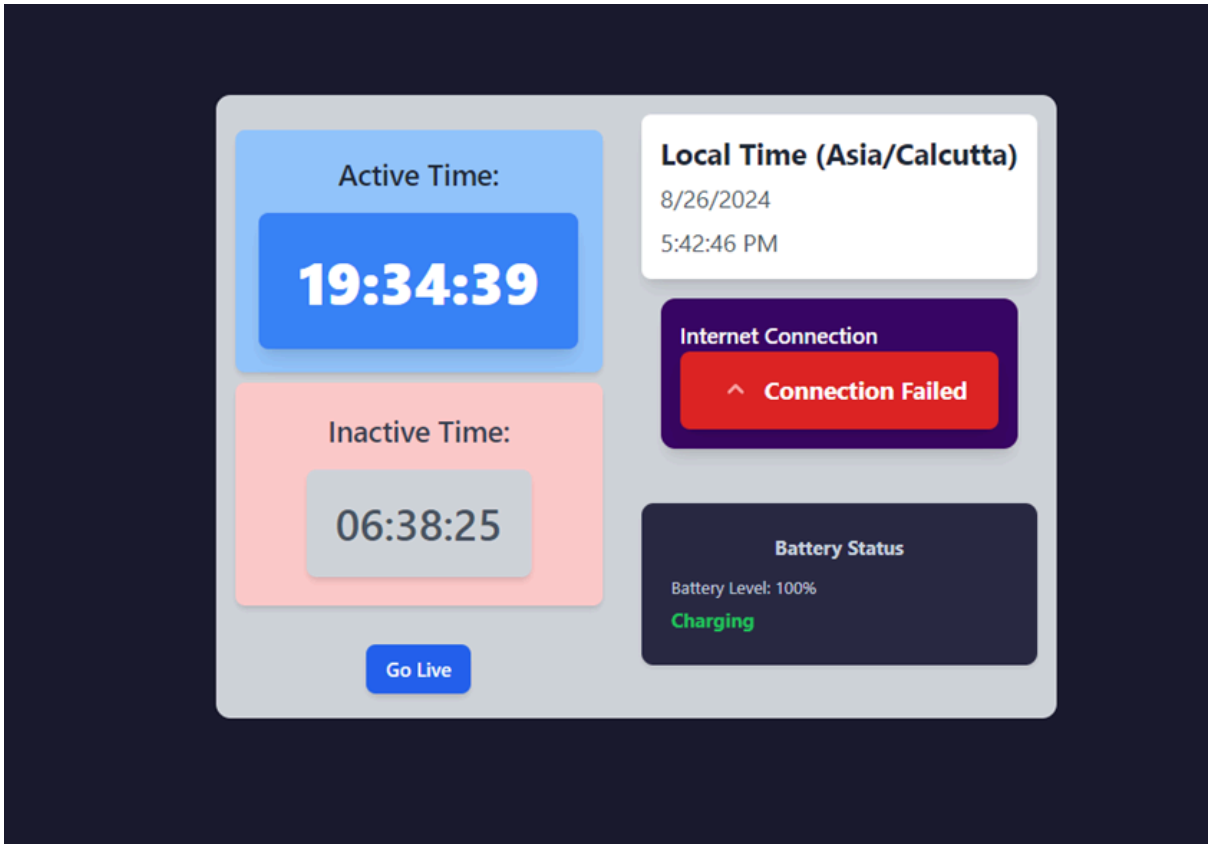



# 3. Additional Features

## Internet Connection:

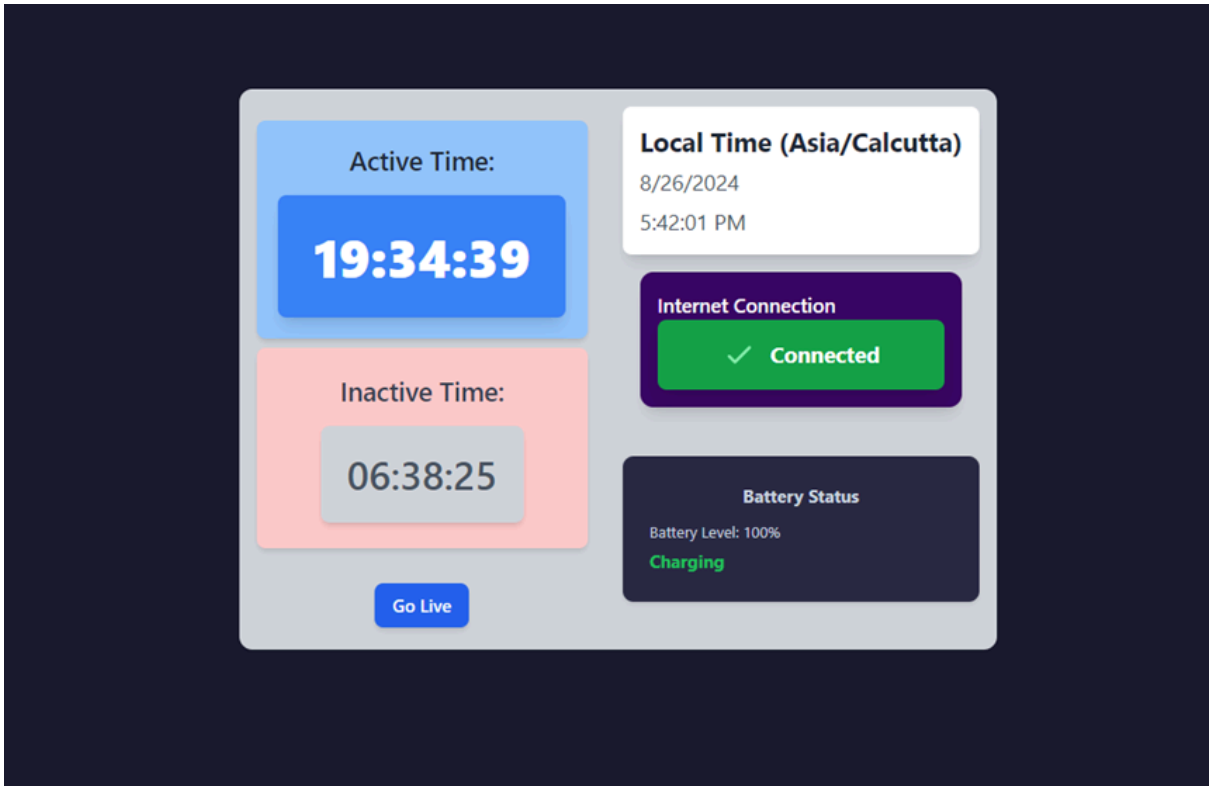
The user will be informed about their internet connection status. If the internet is properly connected, they will see 'Internet Connection (Connected)' displayed on their screen. If the connection is lost, 'Internet Connection (Not Connected)' will be shown. This ensures that users are always aware of their network status, allowing them to troubleshoot connectivity issues promptly. Additionally, the system could periodically check the connection and update the status in real-time.

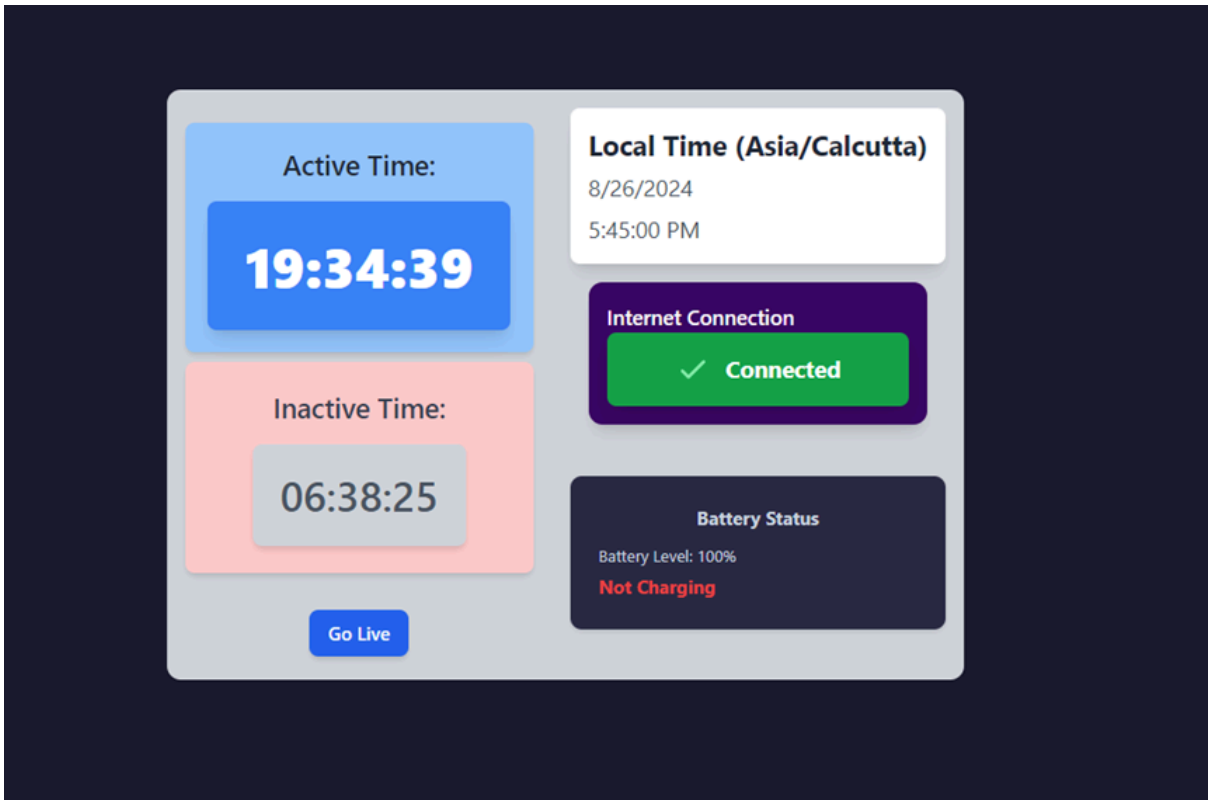





## Battery Status:

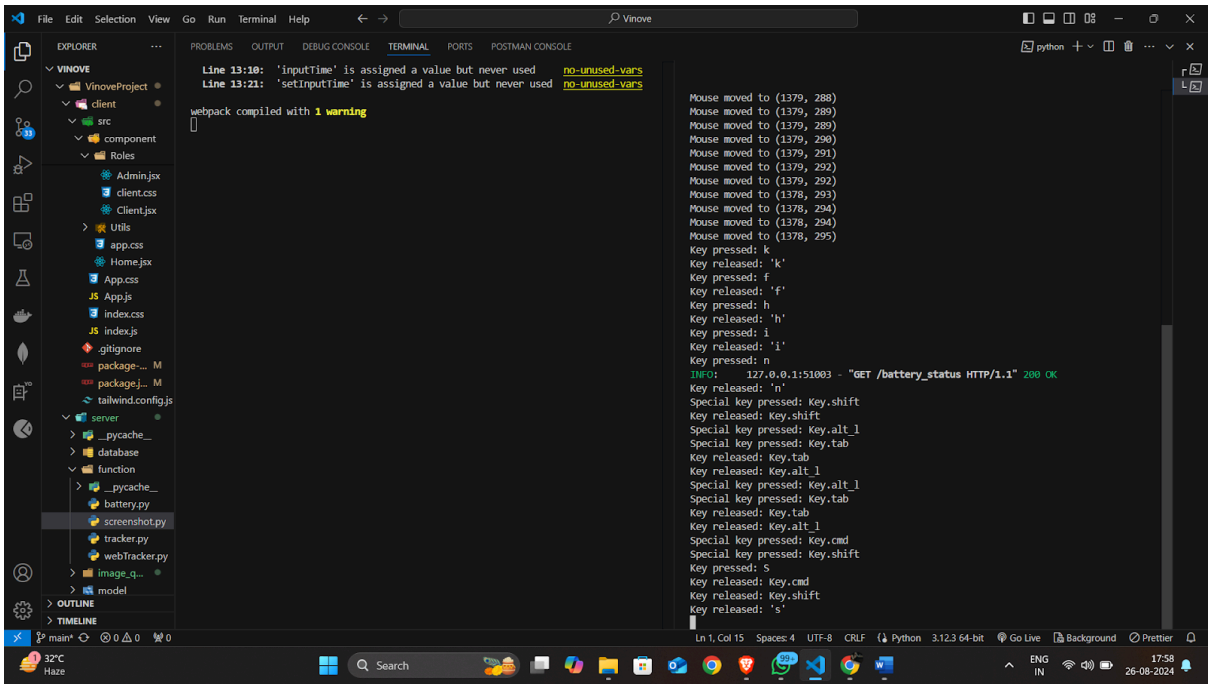
The user will be informed about their battery status. If the device is charging, they will see 'Battery Status (Charging)' displayed on their screen. If the device is not charging, 'Battery Status (Not Charging)' will be shown. This ensures that users are always aware of their battery condition, allowing them to manage power usage and charging needs effectively.


Active Time:
19:34:39
Inactive Time:
06:38:25
Go Live
Local Time (Asia/Calcutta)
8/26/2024
5:42:01 PM
Internet Connection
Connected
Battery Status
Battery Level: 100%
Charging


Active Time:
19:34:39
Inactive Time:
06:38:25
Go Live
Local Time (Asia/Calcutta)
8/26/2024
5:45:00 PM
Internet Connection
Connected
Battery Status
Battery Level: 100%
Not Charging

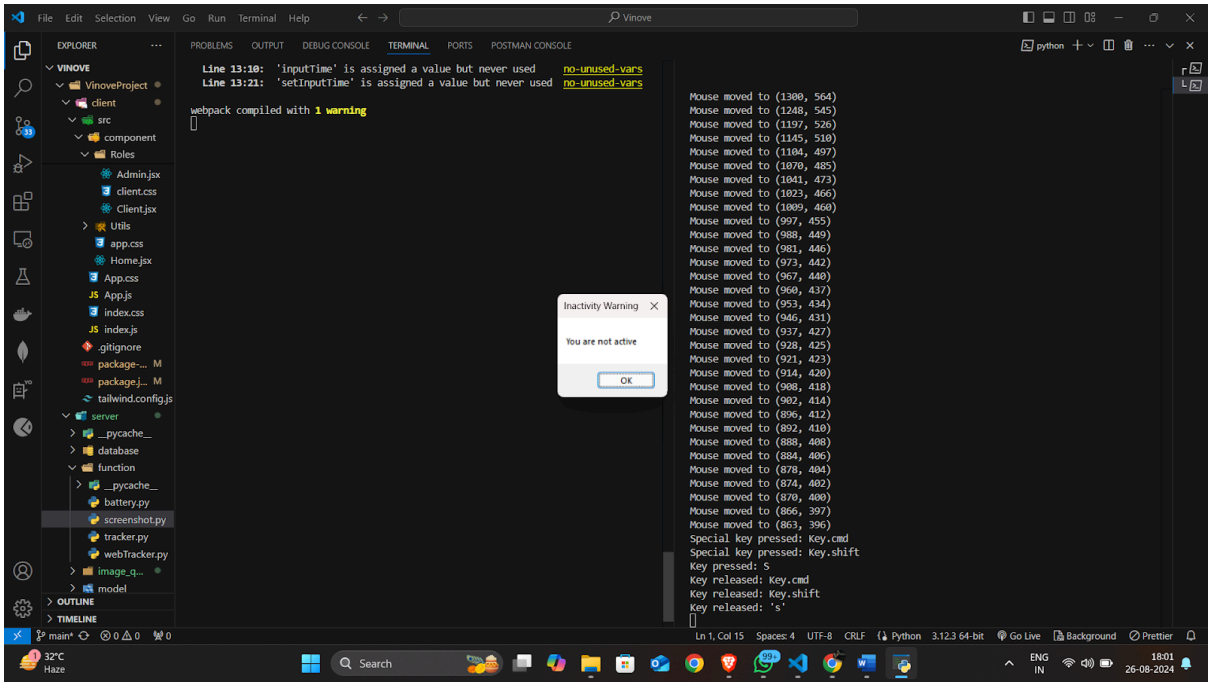
## Mouse / Keyboard Detection:

The system will detect any movement of the mouse and any key pressed on the keyboard. If the user moves the mouse, a notification will display 'Mouse Moved' to indicate the movement. Additionally, if a key is pressed on the keyboard, the specific key pressed will be shown on the screen, for example, 'Key Pressed: A'. This functionality allows for real-time monitoring of user input, ensuring that every mouse movement and keystroke is accurately recorded and displayed.




## Activity Status:

If a user remains inactive for a couple of minutes—without moving the mouse or pressing any keys—a pop-up notification will appear on the screen, stating 'You are not active.' This feature ensures that any periods of inactivity are promptly highlighted, encouraging the user to remain engaged or take necessary actions to avoid being marked as idle.




## 4. Conclusion

The Python-based desktop agent application was successfully developed with all the core features implemented as per the requirements. The application is robust, secure, and user-friendly, ensuring that employee activity is monitored accurately while maintaining data privacy and integrity.