Star Tech

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HAND GESTURE CONTROL APP

About Us

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Objective

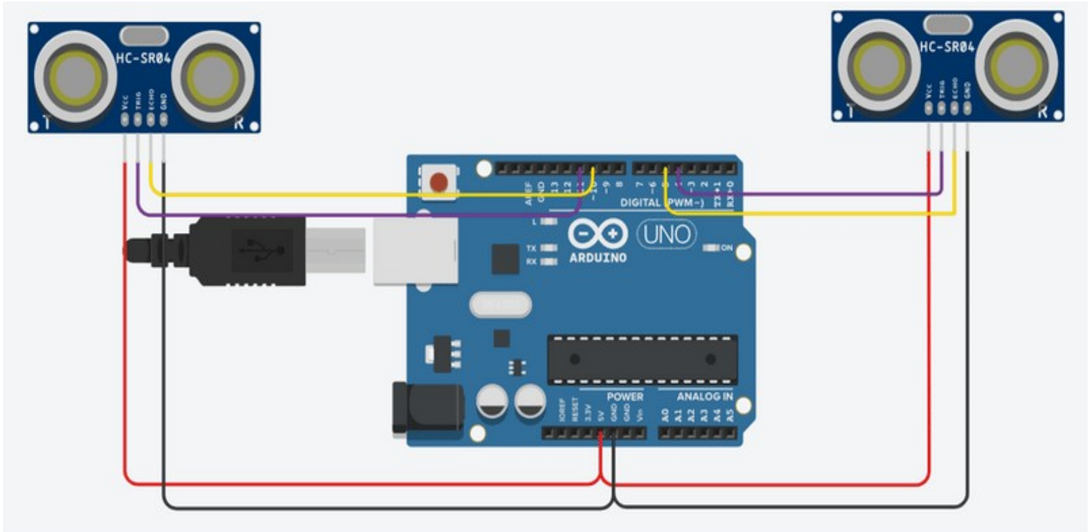
- ***Hand Gesture Recognition for Improved Human-Computer Interaction***: The objective is to develop an application that utilizes hand gestures as an alternative input method for controlling a laptop.

- ***Efficiency and Convenience:*** With this innovative solution, you can perform basic tasks on your computer, such as controlling media playback, navigating a slideshow, and scrolling web pages, without the need for traditional input devices such as a keyboard or mouse.

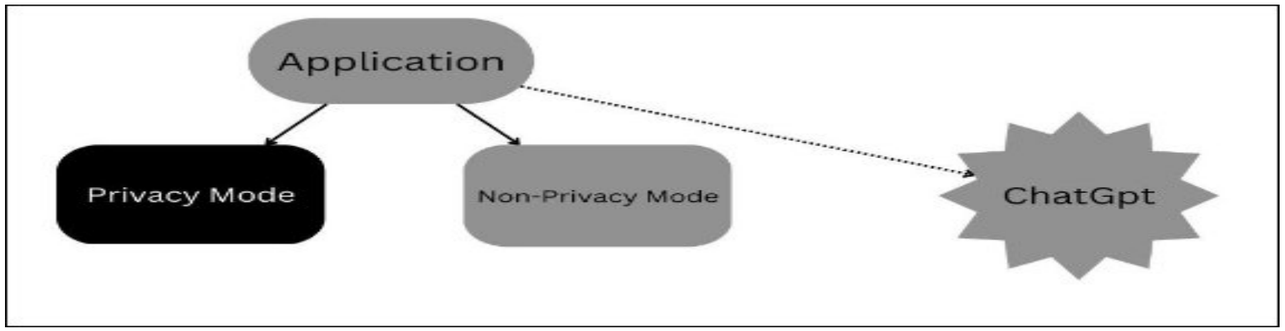
- ***Advancing the User Interface:*** This project aims to promote a more intuitive and user-friendly interface by incorporating advanced gesture recognition technology into everyday computing.

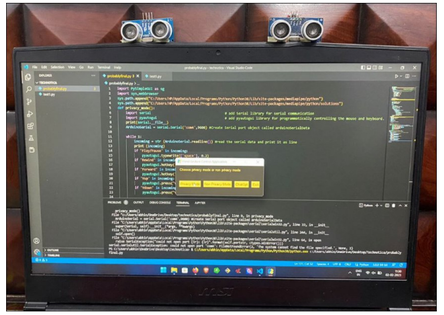
Our Solutions

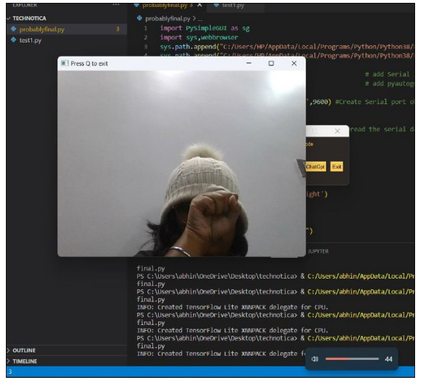
Circuit diagram of system



Flowchart







Privacy Mode

1. The project leverages the capability of two ultrasonic sensors (HC-SR04) and the technology of Arduino and Python to create a simple and effective solution.

2. The sensors are placed on top of a laptop screen, measuring the distance between the hand and the sensor, and the information is sent to Python through the serial port.

3. Python then reads the information and performs the designated actions, providing an alternative method of controlling a computer without traditional input devices.

Non Privacy Mode

- Gesture recognition uses camera and computer vision tools to identify and process human gestures as inputs.

- The technology requires a webcam or built-in camera, and a functional computer, along with computer vision tools such as OpenCV and a media pipeline for recognition.

Chat-GPT

- ***ChatGPT***: A Generative Pre-trained Transformer Model by OpenAI.
- ***Language Generation:*** Utilizing transformer architecture and pre-training techniques, ChatGPT generates human-like responses to given prompts or questions, adapting to contextual information through fine-tuning on task-specific data.

APPLICATIONS

Gesture recognition technology processes non-verbal information from humans for various applications.

Improved Gaming: Gesture recognition enhances the gaming experience by allowing control of gaming consoles through gestures.

Versatile Input: Facial gesture recognition provides precise control and serves as an alternative to traditional input devices, allowing for control through gestures and speech recognition.

Convenient Control: Gesture recognition technology can also be applied to control medical devices and household appliances through hand gestures.

REFERENCES

R. Mukherjee, P. Swethen, R. Pasha, and S. Singh Rawat. "Hand Gesture Controlled Laptop Using Arduino." International Journal of Management, Technology, and Engineering, vol. 8, pp. 1037-1043, Oct. 2018.

THANK YOU