***SYNOPSIS***

**Team 2.**

**Topic:- Automating applications using python.**

**Interpretation:-** Picture a laptop that guards your privacy by discreetly changing its screen when someone else, not you, enters the room. Crafted with finesse – a hidden motion sensor, vigilant microcontroller, and a smart Python script – it’s a privacy protector in action. Redefine your tech interactions with this marvel, ensuring your screen shifts only for unexpected guests. It’s not just innovation; it’s a personalized privacy solution.

Applications:-

The application of this project extends to various scenarios where privacy and convenience intersect:

1. Shared Workspaces: In coworking spaces or shared offices, individuals can maintain their privacy while collaborating with others. The laptop screen automatically adjusts when someone other than the owner enters the space.
2. Home Offices: When working from home, the system ensures privacy during virtual meetings or work sessions. Family members or housemates entering the room won’t inadvertently view sensitive information on the screen.
3. Student Dorms: In shared living spaces like dormitories, students can maintain privacy while studying or working on assignments. The laptop screen adapts to the presence of roommates or visitors.
4. Public Spaces: In cafes or libraries, users can safeguard their privacy while using their laptops. The screen changes when someone approaches, providing added security in potentially crowded environments.
5. Entertainment Areas: In living rooms or entertainment spaces, the system ensures that personal content remains private during gatherings or movie nights. The screen adjusts when guests enter the room, maintaining the owner’s privacy.

Overall, the project enhances privacy and convenience in various settings where multiple individuals share a common space.

Implementation:-

Implementing this project involves several steps:

1. Hardware Setup:

- Acquire a motion sensor (e.g., PIR sensor), microcontroller (e.g., Arduino or Raspberry Pi), and necessary cables.

- Connect the motion sensor to the microcontroller following the hardware specifications.

2. Microcontroller Programming:

- Write code for the microcontroller to detect motion using the motion sensor.

- Program the microcontroller to send a signal to the laptop when motion is detected by someone other than the owner.

3. Laptop Scripting:

- Develop a script on the laptop to receive signals from the microcontroller.

- Write code to detect the signal indicating someone else’s presence and trigger the screen switch accordingly.

4. Communication Setup:

- Establish communication between the microcontroller and the laptop. This can be done via USB, Bluetooth, or other appropriate communication protocols.

5. Screen Switching Mechanism:

- Implement system-specific commands to control the laptop screen. This may involve using built-in utilities like DisplaySwitch.exe on Windows or xrandr on Linux.

6. Testing and Calibration:

- Test the system in a controlled environment to ensure proper functionality.

- Calibrate the sensitivity of the motion sensor and adjust delay settings to optimize performance.

7. Deployment:

- Install the hardware components in the desired location, ensuring proper placement for motion detection.

- Run the laptop script and ensure seamless operation in real-world scenarios.

8. Monitoring and Maintenance:

- Monitor the system for any issues or false triggers.

- Perform periodic maintenance to ensure continued reliability, including checking connections and updating software if necessary.

By following these implementation steps, you can create a system that automatically adjusts the laptop screen based on the presence of individuals other than the owner, enhancing privacy and convenience in shared spaces.

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**HARDWARE REQUIREMENTS:-**

**Arduino R3 x 2**

**NRF24L01 x 2**

**Ping Sensor x 1**

**Breadboard x 1**

**F to M and M to M jumper wires**

**9V battery + Battery snap**

**SOFTWARE REQUIREMENTS:-**

**VS CODE.**

**ARDUINO.**