



## Cover page

Project title: .....Smart Home

Academic Ye...2024-2025.....

Group Members: .....Saba Shoqo.....

Department Name: CE

Project Type Hardware

Supervisor Name: .....Dr.Hanal Abuzant.....

### Format:

- Single space, Times New Roman.
- 12 pt,
- Maximum 1 page.

### Abstract Body:

#### Items must be provided in the Abstract:

- Why do you think this project is important? Please explain the significance of this Project in brief.
- In your point of view what are the important aspects that should be covered in the project?
- Objective(s): In your view, please explain the main objectives of the project.
- Methodology: Give a brief outline of the application development process.
- Had this project been done before? Are there any similar applications available today?
- **Note:** Please deliver this abstract early to ensure that your Project has been approved by the department's projects committee. **Registration will not be done without this approval.**

### Project's Abstract:

Issue number: GP1-4



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Title :Samrt Home

This project presents a wireless smart home automation system that utilizes ESP-based microcontrollers to connect and control various sensors and devices remotely via Wi-Fi. By integrating real-time monitoring and automation, the system enhances security, energy efficiency, and convenience, allowing users to manage their home environment seamlessly through a mobile application.

The system includes LED lighting control, enabling users to adjust indoor lights remotely for energy efficiency and convenience. A temperature and humidity sensor continuously monitors environmental conditions, and an automatic cooling fan is activated if the temperature exceeds or drops below a predefined threshold to maintain a comfortable indoor atmosphere. To ensure safety, a fire detection sensor promptly alerts homeowners in case of potential fire hazards.

For enhanced security and automation, a PIR motion sensor detects movement, automatically controlling lighting and notifying users of unexpected activity.

In addition to security and comfort, the system also optimizes water resource management. A soil moisture sensor is linked to a water pump, enabling automated garden irrigation by supplying water only when necessary, preventing waste and ensuring plant health.