# Abstract

The **Smart** Home subsystem aims to enhance daily life by providing targeted settings for room temperature, soil humidity, and rain sensors. The system uses a development board as a control center to monitor and manage sensors, allowing users to apply smart preferences. The system was developed using the second-generation Raspberry Pi and the Debian Linux operating system, using C and Python programming languages and open source software. As the demand for smart solutions increases, it is crucial to develop systems that accurately monitor indoor conditions. The final project will design a smart home monitoring system using Raspberry Pi 4B, offering high performance and various GPIO ports for real-time environmental monitoring. The collected data is displayed on an OLED display and automatically uploaded to a host computer for storage and analysis. A buzzer is provided to alarm when indicators exceed the set PMV threshold, and a web interface allows users to view data and perform controls.

**Keyword:** monitoring system; Raspberry Pi; data acquisition;,Smart home;ARM; Linux