**Project Overview: Smart Home Automation System**

This project aims to develop a smart home automation system that utilizes various sensors and actuators to enhance comfort, security, and efficiency within a home environment. The system is designed to respond to environmental changes and user preferences, automating specific tasks for a more convenient and intelligent living experience.

**Key Features:**

* **Rain Detection and Response:** A rain sensor detects precipitation and triggers a series of actions:
  + **Window Control:** A servo motor opens windows to allow for ventilation and prevent moisture buildup.
  + **Plant Watering:** Another servo motor moves potted plants to a designated watering area, ensuring proper hydration.
  + **Sinampay Protection:** A servo motor retracts a sinampay (clothesline) to prevent clothes from getting wet.
* **Sound Detection:** A sound sensor monitors for turning on the light automatically.
* **Soil Moisture Monitoring:** A soil moisture sensor monitors the moisture levels in potted plants, providing real-time data for optimal watering.

**Target Audience:**

This project is intended for individuals seeking to automate tasks in their homes, enhance comfort, and improve energy efficiency. It is particularly relevant for homeowners who desire a more intelligent and responsive living environment.

Help the Aged People to make things easy.

**Project Scope:**

This project focuses on the development and implementation of the core functionalities described above. It includes the design, assembly, and programming of the hardware and software components required to achieve the desired automation. Future iterations may explore additional features and integrations for a more comprehensive smart home system.

**Bills of Materials (BOM)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Component** | **Quantity** | **Description** | **Price** | **Link** |
| Arduino Uno KIt | 1 | Microcontroller Kit | ₱ 490 | <https://shorturl.at/ik8HS> |
| Servo SG90 | 4 | Servo motors for window, plant, and sinampay control |  |  |
| Rain Sensor | 1 | Detects precipitation |  |  |
| Sound Sensor | 1 | Detects ambient noise levels | Included in Arduino Kit | |
| LED Light | 1 | Provides illumination | Included in Arduino Kit | |
| Soil Moisture Sensor | 1 | Monitors soil moisture levels | Included in Arduino Kit | |
| Male and female jumper wire | 2 set | Wires for the modules | ₱ 115 | <https://shorturl.at/r4HIv> |