**Smart Home Automation System**

**Project Definition:**

**The Smart Home System is an AI-driven home automation platform designed for modern homeowners and families seeking a convenient, secure, and energy-efficient living environment. It integrates control of lighting, appliances, climate, and security into a unified system accessible through mobile and voice interfaces. Unlike traditional or fragmented smart devices, this platform uses real-time monitoring and AI-based learning to adapt to user habits, automate daily routines, reduce energy waste, and enhance comfort and safety. It supports secure multi-role access, remote control, real-time alerts, device status analytics, and easy integration of new devices, while ensuring high performance, reliability, usability, security, and portability.**

**Vision Statement:**

**For** modern homeowners and families, **who** need a convenient, secure, and energy-efficient living environment, the **Smart Home System** is an intelligent home automation platform **that** seamlessly integrates control of lighting, appliances, climate, and security through AI-driven personalization and real-time monitoring. **Unlike** traditional manual systems or disconnected smart devices, **our product** provides a unified, adaptive, and scalable solution that learns user preferences, reduces energy waste, and enhances daily living with intuitive automation.

**Functional Requirements:**

* Authenticate users securely with multi-role access.
* Enable real-time control of connected smart devices.
* Learn user habits to automate daily routines.
* Manage and optimize home climate and energy use.
* Integrate and monitor home security devices.
* Provide mobile and voice-based system access.
* Send real-time alerts based on custom triggers.
* Allow secure remote access and device control.
* Display device status and usage analytics in a dashboard.
* Support easy integration of new smart devices

**Non-Functional Requirements:**

* Performance Requirements
* Reliability Requirements
* Security Requirements
* Usability Requirements
* Maintainability and Supportability
* Portability Requirements