Project Initialization and Planning Phase

Date	18 June 2024
Team ID	739991
Project Title	Smart Home Temperature
Maximum Marks	3 Marks

Project Proposal (Proposed Solution) report

Modern homes are increasingly integrating smart technologies to improve comfort, convenience, and energy efficiency. One crucial aspect of this is temperature control. The Smart Home Temperature Control System aims to provide homeowners with an advanced solution for managing their home environment. This report details the proposed solution, its objectives, and the benefits it offers.

Project Overview	
Objective	To develop a smart thermostat that enhances home comfort, energy efficiency, and convenience by allowing remote monitoring and control, automated scheduling, and integration with smart home devices
Scope	The project includes designing and developing a smart thermostat, a mobile application, and integration with existing smart home systems. It will involve research, design, development, testing, deployment, and maintenance phases.
Problem Statement	
Description	Homeowners struggle to maintain a comfortable home temperature while minimizing energy consumption. Traditional thermostats lack flexibility and intelligence, leading to energy wastage and higher utility bills.
Impact	Inefficient temperature management results in discomfort, increased energy consumption, and higher costs for homeowners. This also contributes to a larger carbon footprint.
Proposed Solution	
Approach	Develop a smart thermostat with advanced features, including remote control via a mobile app, automated scheduling, machine learning for predictive temperature adjustments, energy monitoring, and seamless integration with smart home ecosystems.
Key Features	Remote access, automated scheduling, learning mode, energy reports, voice control, alerts and notifications.

Resource Requirements

Resource Type	Description	Specification/Allocation
Hardware		
Computing Resources	CPU/GPU specifications, number of cores	T4 GPU
Memory	RAM specifications	8 GB
Storage	Disk space for data, models, and logs	1 TB SSD
Software		
Frameworks	Python frameworks	Flask
Libraries	Additional libraries	scikit-learn, pandas, numpy, matplotlib, seaborn
Development Environment	IDE	Jupyter Notebook, visual studio code
Data		
Data	Source, size, format	Kaggle dataset,4137, csv