Project Initialization and Planning Phase

Date	10 July 2024
Team ID	Team-739815
Project Title	Power Consumption Analysis For Households
Maximum Marks	3 Marks

Project Proposal (Proposed Solution) template

This project proposal outlines a solution to address a specific problem. With a clear objective, defined scope, and a concise problem statement, the proposed solution details the approach, key features, and resource requirements, including hardware, software, and personnel.

Project Overview	
Objective	The objective of this project is to design and implement a structure tableformat for conducting power consumption analysis in households. This table will serve as a tool to systematically capture, organize, and interpret data related to energy usage within residential settings.
Scope	Explore data from smart meter readings, demographic factors, and weather conditions. Include modeling for predictive insights and anomaly detection.
Problem Statement	
Description	Variability in household power consumption poses challenges for utility planning and management.
Impact	This variability can lead to inefficiencies in energy distribution and higher operational costs for utilities. Understanding these patterns is crucial for optimizing energy resources and improving service reliability
Proposed Solution	
Approach	The approach involves designing a structured table format that systematically captures and analyzes power consumption data for households. This format will facilitate organized data entry, effective analysis, and visualization of energy usage patterns.

Key Features	• **Parameter Categories:** The table will categorize data by appliance type, including kitchen appliances, electronics, heating and cooling systems, lighting, and others. • **Usage Metrics:** Columns will capture important metrics such as power rating (in watts or kilowatts), usage duration (hours per day), and frequency (daily, weekly, monthly). • **Cost Analysis:** Incorporate columns for cost calculations based on current electricity rates, providing insights into financial implications of energy usage. • **Energy Efficiency Ratings:** Include a column for energy efficiency ratings (e.g., Energy Star ratings) where applicable, aiding in identifying energy-efficient appliances.

Resource Requirements

Resource Type	**Description**	**Specification/Allocation**
Hardware		
Computing Resources	CPU/GPU specifications, number of cores	e.g., 2 x NVIDIA V100 GPUs
Memory	RAM specifications	e.g., 8 GB
Storage	Disk space for data, models, and logs	e.g., 1 TB SSD
Software		
Frameworks	Python frameworks	e.g., Flask
Libraries	Additional libraries	e.g., tensorflow
Development Environment	IDE, version control	e.g., Jupyter Notebook, Git
Data		
Data	Source, size, format	e.g., Kaggle dataset, 10,000 images