Home Electricity Consumption Management

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Abstract—**The growing demand for energy and the associated high costs require innovative solutions that allow for a more conscious and controlled use of energy resources. In this context, the project aims to develop an electricity consumption management system, which aims to provide users with advanced tools to monitor, analyze, and optimize their energy consumption.**

I. SCOPE

The scope of the electricity consumption management project covers from the initial design to the implementation and maintenance of an integrated system that allows users to monitor, analyze, and optimize their energy consumption.

II. OBJECTIVE

The objective of the project is to develop an integrated system that enables users to monitor the detailed electricity consumption of the device connected to the created apparatus, allowing them to identify patterns and opportunities to reduce costs and improve energy efficiency.

III. PROJECT DESCRIPTION

The project involves developing an electricity consumption management system that allows users to monitor, analyze, and optimize their energy consumption to reduce costs and improve energy efficiency. The system will be composed of different modules responsible for acquiring, storing, analyzing, presenting, and controlling consumption data.

IV. GENERAL FEATURES

The system will have the following fundamental features for its proper functioning:

- Login.
- Control panel.
- Consumption history.
- Savings goals.
- Device control.

V. CUSTOMER APPLICATION REQUIREMENTS

A. Account Access

Allow users to log in to their account created in the web system.

B. User Profile Modifications

Users will be able to modify information related to their shipping address, email, or password.

C. API Implementation

APIs are planned to be implemented for authentication, technical support, and possibly data analysis.

D. Control Panel

Present an overview of real-time electricity consumption, including consumption broken down by hour, day, month, and year.

E. Consumption History

Display the user's energy consumption history, allowing them to visualize consumption trends and patterns.

F. Savings Goals

Facilitate the establishment of personalized energy savings goals and allow tracking of progress.

G. Device Control

Enable remote control of some compatible electrical devices on the same WiFi network.

H. Notifications

Send push notifications to users to alert them about important events, such as consumption spikes.

I. Technical Support

Provide a communication channel for users to report errors in the mobile application.

J. Design

The application will be intuitive, easy to use, and visually attractive.

VI. ADMINISTRATOR APPLICATION REQUIREMENTS

A. Administrator Account Access

Allow admin users to log into their account.

B. User Management

Allow the administrator to manage user accounts, including the creation, modification and temporary suspension of accounts.

C. Shopping history

Access to the history of all purchases made by users. Purchase order management, including status tracking.

D. Stock Management

Monitoring device inventory and updating stock levels in real time to ensure availability and avoid stock outages.

Project: Domestic Electricity Consumption Management.

Team members:

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Having reviewed the proposal of the present Project, each of the undersigned professors authorizes its execution.

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