

Software Requirements Specification for Ecometer

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I. INTRODUCTION

A. Purpose

The purpose of the web application Ecometer is to measure energy efficiency in homes through sensors, providing users with detailed information on energy consumption and suggestions for improving efficiency.

B. Scope

The system will include features for real-time data collection, energy consumption analysis, and reporting to users of high consumption.

II. OVERALL DESCRIPTION

A. Product Perspective

Ecometer will be an interactive web application that connects with sensors installed in homes to collect data on energy consumption. Data will be stored in a database for further analysis and presentations on dashboards.

B. Product Features

1) Registration

- Users can register on the web application easily.
- Easy to use user interface for navigating.

2) Data Collection

- Sensors will collect real-time data on energy consumption in different areas of the home.
- Detailed data, such as consumption per device and per hour.

3) Energy Consumption Analysis

- The application will perform analysis on the collected data.
- The dashboards will show key data for decision making.

4) Customized Reports

- Generation of notifications if the consumption reaches high levels.
- Visual and easy-to-understand information, including charts and comparisons.

C. User Classes and Characteristics

- **Residential Users:** Homeowners who wish to monitor and improve energy efficiency.
- **System Administrators:** Responsible for maintaining and updating the platform.

III. SPECIFIC REQUIREMENTS

A. Functional Requirements

1) Registration:

- Users should be able to see new sensors associated with their account.

2) Data Collection:

- Sensors should send real-time data to the application.
- Secure storage of data in the system's database.

3) Energy Consumption Analysis:

- The application will perform statistical analysis on the collected data.
- Identification of consumption patterns and habits.

4) Customized Reports:

- Users can generate personalized notifications on their energy consumption.
- Visual and easily understandable information, including charts and comparisons.

B. Non-functional Requirements

1) Performance:

- The application adapts to different devices.
- Response time for viewing reports should not exceed 5 seconds.

2) Security:

- All user and consumption data must be stored securely.
- The database will create backups daily in case of any security breach or data loss.

IV. CONSTRAINTS

- The application must be compatible with modern browsers such as Chrome, Firefox, and Safari.
- Development will be carried out using web development technologies, such as Laravel and MYSQL.

V. APPROVAL

The stakeholders involved in the project confirm that this Software Requirements Specification accurately reflects the needs and expectations of the users for the Ecometer project.