Project Status report

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Community (UN SD goal):	**Individual participation/Serving a context community:** Members of residences in Canada who wish to track and manage their household energy consumption to adopt sustainable practices. Goal(s) 7 and 11
MVP #	1
Sprint cycle dates:	October 22, 2023 - October 31, 2023

Project Name	EconergyCalc – Home Energy Calculator Application
Blurb	This project aims to build an interactive web application where users can add or log the electrical appliances they use regularly in their household and receive their total energy consumption. The application will also provide users with weekly/yearly energy consumption predictions and give actionable recommendations, such as providing more sustainable or eco-friendly alternatives for appliances that use more energy than they should. In line with UN Sustainable Development Goals 7 (Affordable and Sustainable Energy) and 11 (Sustainable Cities and Communities), this project addresses the pressing global challenge of household energy consumption.
For Week Ending	October 31, 2023
Project Status	Yellow
Status Description	**Reasons for Yellow Status:** ☐ Adapting to the MERN technology stack is proving to be more time-consuming than initially anticipated. ☐ Comprehensive research into the necessary APIs for actionable recommendations is still in progress. **Planned Actions to Return to Green Status:** ☐ **MERN Technology Stack:** Allocate more dedicated hours for hands-on practice and utilize online resources, forums, and tutorials to address specific challenges. If necessary, consider seeking guidance from peers or instructors familiar with the stack. ☐ **API Research:** Prioritize the identification and study of the key APIs by setting specific goals and interim deadlines. Allocate dedicated time slots for focused research.

Activities—During the past sprint cycle

- ☐ **Front-end Development** – Implemented the following pages:
  - **Login/Sign Up Page:** Designed and added forms for user to enter their information.
  - **Add New Appliance Form**: This included creating input fields tailored to capture appliance-specific details
  - **Dashboard**
- ☐ **Back-end Development**:
  - **MongoDB Configuration:** Successfully set up the MongoDB database. This involved:
    - Initializing a new database instance.
    - Setting up collections and schemas for users and appliances.

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Project Issues

- None

Project Changes

List any project changes that were approved since the last report/discussion.

- **Scope Adjustment:**
  - The project focus has been narrowed down **exclusively to kitchen appliances**. This decision was made to streamline the application's functionality given the time constraint, ensuring better user engagement and more precise data collection.
- **Feature Enhancement:**
  - Add the **usage logging feature** where users can now log their appliance usage on a daily or weekly basis.
- **Usability Improvement:**
  - Integrated toggles for appliance status. Users can now easily "tag" their appliances as either active (in use) or inactive (not in use). This straightforward tagging system enhances the user experience by allowing quicker updates and provides a clearer overview of active vs. inactive appliances at a glance as well as provide more accurate energy consumption calculation.

Activities—Planned for Next Week

- **Backend and Frontend Integration:**
  - System Linkage: Finalize the connections between the front-end and back-end systems, ensuring seamless data exchange and functionality.
  - Error Handling: Implement error-catching mechanisms to gracefully handle potential issues arising from the front-end and back-end integration.
- **Completion of MVP #1:**
  - User Authentication:
    - Implement secure user registration and login processes, ensuring password encryption and protection against potential threats.
  - User Appliance Management:
    - Enable logged-in users to easily add appliances to their accounts.
    - Ensure that the added appliance data is securely stored, associated with the user's account, and is retrievable for display and analysis.
  - Energy Consumption Analysis:
    - Develop a function to compute the total energy consumption and the associated cost for the appliances added by users, taking into account the logged usage data.
    - Introduce mechanisms for users to input cost-per-unit of energy to get a tailored cost calculation.
- **Initiation of MVP #2:**
  - Enhanced Dashboard Analytics:
    - Incorporate features on the Dashboard to visually represent the daily, weekly, and monthly energy consumption trends of the appliances.
    - Utilize intuitive charting and graphing tools to enhance user comprehension of their consumption patterns.
    - Begin research on optimal visualization techniques to maximize user understanding and engagement.

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Reflection

Do you feel "on track"?

- Currently, I feel slightly behind schedule. While progress has been made, it's been slower than anticipated, primarily due to the challenges of adapting to a new technology stack and the limited time available for researching necessary APIs.

What progress do you particularly feel good (great) about?

- I'm pleased with the advancements on the front-end side. Most of the pages required for MVP #1 have been completed, which provides a strong foundation for integrating with the backend and implementing the required logic.

What barriers (if any) do you feel is/are a current impediment to success?

- The most significant barriers at the moment are:
  - The time constraint, given the steep learning curve associated with the MERN stack.
  - The need for in-depth research into the required APIs, which also demands time.

What help (if any) do you require to move positively forward?

- None

What questions or concerns do you have (if any)?

- None