sprint 1

The project aims to develop a web application that enables users to select moods and control cabin features such as temperature, lighting, and sound using a Raspberry Pi Pico W. This system enhances the cabin experience by allowing users to customize their environment based on their preferences.

Key Features:

- **Mood Selection:** Users can choose from predefined moods (e.g., Relaxing, Romantic, Cozy, Energizing, Sleep Mode), each associated with specific settings for temperature, lighting, and sound.
- **Temperature Control:** Adjust the cabin's temperature to match the selected mood, ensuring comfort throughout the stay.
- **Lighting Control:** Modify lighting settings, including brightness and color, to create the desired ambiance.
- **Sound Control:** Play ambient sounds or music that complement the chosen mood, enhancing the overall experience.

Technical Implementation:

- **Backend Development:** Utilize MicroPython to program the Raspberry Pi Pico W, enabling it to handle HTTP requests and control hardware components based on user inputs.
- **Frontend Development:** Create an intuitive web interface.
- **Sensor Integration:**

Raspberry Pi Pico W

Temperature and Humidity Sensor

leds in pico

fan : Controls cabin ventilation to adjust temperature settings.

buzzer: Emits sounds to imitate the mood experience

Sprint 1

- **Form the Project Team**
  - **Team Members**:
    - Project Manager : Andrei
    - Software: Vladislav
    - Frontend : Amina
    - Backend : Oskari
    - Hardware : Artem Suzi
- **Set Up the Project Repository and Collaboration Tools**
  - **Version Control System**: https://github.com/IIP-Project/General_cabin_IOT
  - **Collaboration Platform**: WhatsApp group
- **Define Project Scope and Goals**
  - **Objectives**: developing a mood-based cabin experience using IoT technologies.
  - **Deliverables**:
    - Integration of IoT sensors for temperature, lighting, and sound control.
    - A user-friendly interface for guests to customize their cabin environment.
    - develop web app on a small scale

- **Establish Milestones and Deadlines**
  - **Timeline**:
    - **Week 1-2**: Planning and Initial Development
    - **Week 3-4**: building a demo
    - **Week 5-6**: turning demo into usable product
    - **Week 7-8**: Integration, Testing, and Finalisation

- **Assign Roles and Responsibilities**
  - **Role Allocation**:
    - **Pico setup : Artem**
    - Design and implement for the user interface. : Amina
    - server setup: Andrei
    - Implement the Mood Selection Feature: Vladislav
    - connection between app and server : Oskari

- **Conduct Preliminary Research**
  - **Sensor Technologies**r temperature, lighting, and sound control.
  - **Data Analysis Methods**: influx
  - **Security Protocols**: Access protocols TCP/IP

- **Define Testing Protocols**
  - **Testing Phases**:
    - **Unit Testing**
    - **Integration Testing**
    - **System Testing**