General Usage and Configurations

The following guide provides detailed instructions for setting up and configuring the WordClock-IoT project. By following these steps, you will be able to seamlessly integrate the Word Clock into your IoT network and explore its full range of features.

Step 1: Repository Cloning

Begin by cloning the WordClock-IoT repository to your local machine. This can be accomplished using Git or by downloading the repository as a ZIP file and extracting it to a suitable directory.

Step 2: Nevigating to the Project Directory

Using your preferred file explorer or command line interface, navigate to the "esp-word-clock" directory within the cloned WordClock-IoT repository. This directory contains the necessary code for configuring the ESP32 microcontroller.

Step 3: Configuring WIFI Settings

Inside the "esp-word-clock.ino" file, locate the WiFi configuration section. Here, you will need to modify the settings to match your specific WiFi network. Provide the appropriate credentials such as SSID and password to enable the ESP32 to connect to your network.

Step 4: Uploading the Code

Launch your Arduino IDE and open the modified "esp-word-clock.ino" file. Connect your ESP32 board to your computer via USB, ensuring the correct board and port are selected in the Arduino IDE. Click on the upload button to compile and upload the code to the ESP32 microcontroller. Once the upload is complete, the ESP32 is now ready for operation. You can view the ESP status through the serial port, and once it is showing as connected, copy the printed IP address and place it in the app.py esp\_ip, continue to the next step.

Step 5: Setting up the Backend Server

Navigate to the "word-clock-server" directory within the cloned repository. In this directory, execute the following command:

pip install -r requirements.txt

This command will automatically install all the required Python packages for running the backend server.

Next, execute the command:

python app.py

This command will activate the backend server, allowing communication between the ESP32 and the frontend web app.

Step 6: Preparing the Web App

Proceed to the “word-clock-app” directory. Before running the web app, ensure that Node.js and npm (Node Package Manager) are installed on your computer.

To install the necessary libraries and dependencies, run the command:

npm install

This command will fetch and install all the required libraries, enabling the web app to function correctly.

Step 7: Launching the Web App

Once the libraries have been installed successfully, execute the command:

npm start

This will start the web app, which can be accessed through a web browser on your computer. The web app provides an intuitive interface for controlling and customizing the Word Clock.

Step 8: Explore the Features:

Congratulations! You have successfully set up and configures the WordClock-IoT project. You can now enjoy the full range of features offered by the Word Clock, including customizable clock themes, dynamic lighting effects and integration with your IoT network. Take your time to explore and personalize the Word Clock according to your preferences.