AC40001 Individual Project

Product Manual

This document guides you on how to use the prototype developed by Gerardo Blanco Bernal for the AC40001 Individual Project module.

Document Identification

| Module Code	AC40001
Module Name	Individual Project
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Product Manual

This document acts as a product manual for the prototype developed by Gerardo Blanco Bernal for AC40001

This manual can be used to navigate the product features that have been developed. This document is to act as a simplistic step-by-step process for which the different functionality on the product that has been created can be used. This document isn't to act as a full explanation of how everything functions.

Telegram Bot first-time setup

Using the mobile messaging app on IOS or Android, search for @BotFather in the top search bar and press start at the bottom of the screen. Once pressed, you will be prompted to create a new bot using the '/newbot' command. After providing a suitable name for the bot and an available username, you will be given a Bot API token. Keep this token safe as you will need it in order to continue with the first time set up.
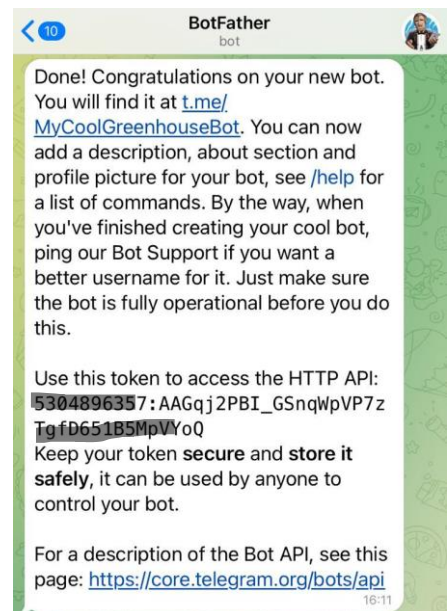
The figures above, from left to right, show the progression of the creation of the Telegram Bot. If you were to have any problems setting it up, please refer to Telegram's FAQ and customer support here.

Bot API Token Registration

Firstly, power on the Raspberry Pi. Once the display shows a greeting message, it will soon prompt you for the Bot API token.
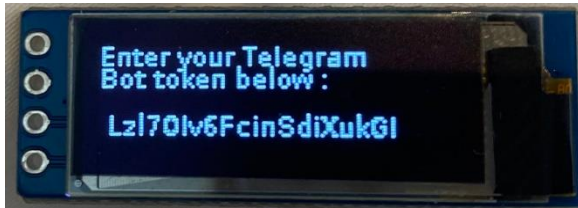
Using the multi-press buttons below the display, carefully type out your token. Make sure that all symbols and letter capitalizations are respected. If you need to delete any characters, simply use the backspace key. Once you have typed your token out correctly, press enter. If the token was provided correctly, the display will show a welcome message. At this stage, your Telegram Bot is synched with the Raspberry Pi.

If the bot token was provided incorrectly, the display will prompt you to type your token out again, so make sure you get it right the first time!

Telegram Bot Usage

Now that the bot is set up, you can now text it. The bot supports a range of commands and natural language input. For a more detailed explanation of the full characteristics and functionality of the bot, type '/help'.

If you wish to delete the registered bot token, simply reboot the system, and enter a new token when prompted. If on reboot you want to reconnect to the last used bot token, press 'Enter' and the system will reconnect to the last saved Telegram Bot API token.

Telegram Bot Queries

If you wish to query the state of any elements of the environmental control, simply ask the bot for the data you wish. If for example you wish to know the soil humidity, text the bot something along the lines of "What is the soil humidity?". Note, it does not have to be exactly this example message. Anything similar will be sufficient for the bot to understand your message.


Environmental Control Override

Although not recommended, you can use the bot to manually override the automated functionality of the prototype. Following a similar procedure to the previous section, you can text it to, for example, turn on the irrigation. Note, if you override the automated functionality, it may be the case that the system allows you to do so, however if the state of the feature you are trying to change is already at its optimal level, the system will not act upon your request. In other words, as the system checks periodically for the state of the environmental characteristics, it may be the case that you have asked to turn the irrigation on while the soil is dry and 2 minutes before the system was due to check upon the state of the soil. In this hypothetical scenario, your request will be fulfilled.

Weed Detection

If you wish to test out the weed detection capabilities, you can simply place a weed in front of the camera and wait for the bot to alert you about it.

For an example conversation with the chatbot utilizing features from the previous sections (included this one), please refer to the image below.
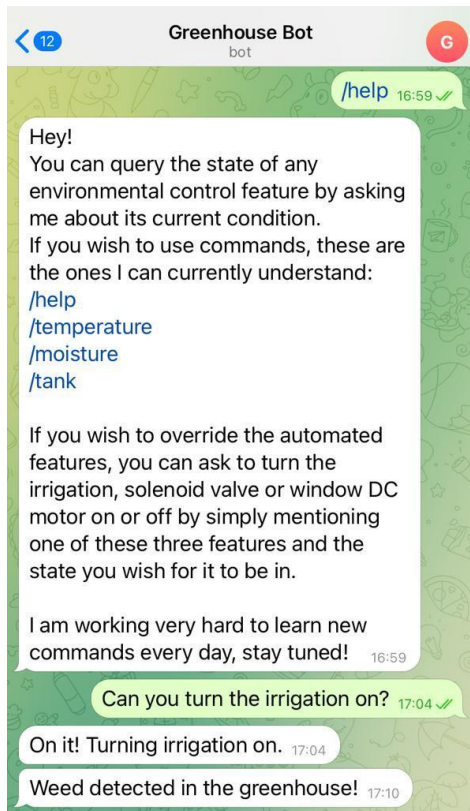
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