

Using the Blynk IoT application with NodeMCU ESP8266

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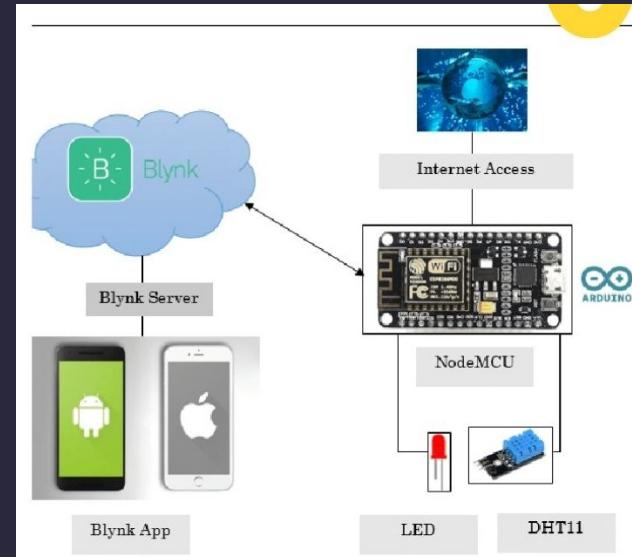
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Blynk Application



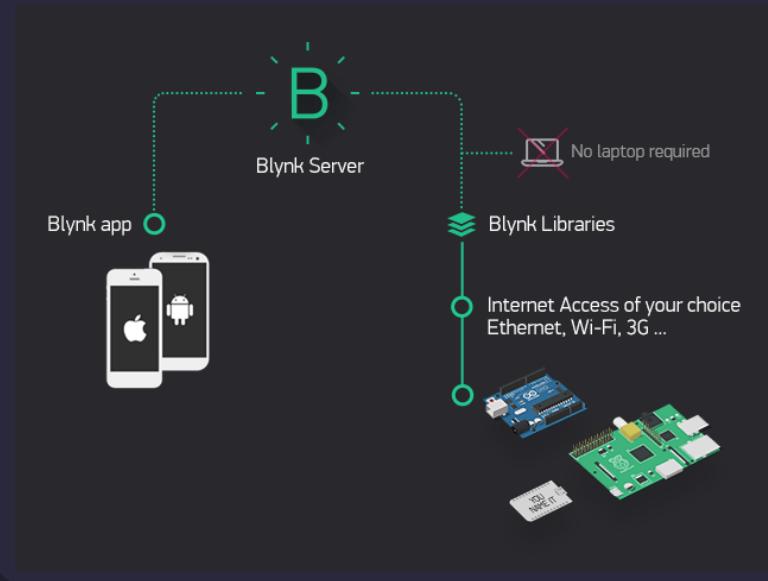
→ **Blynk Application**

Blynk is a ready-made Internet of Things (IoT) application that offers an interesting feature: easy programming without the need to develop your own app. It allows real-time interactions and straightforward connections between various devices and the internet. You can easily connect hardware like Arduino, ESP8266, ESP32, NodeMCU, Raspberry Pi, and more to the internet. What's even better is that Blynk is free and compatible with both iOS and Android systems.

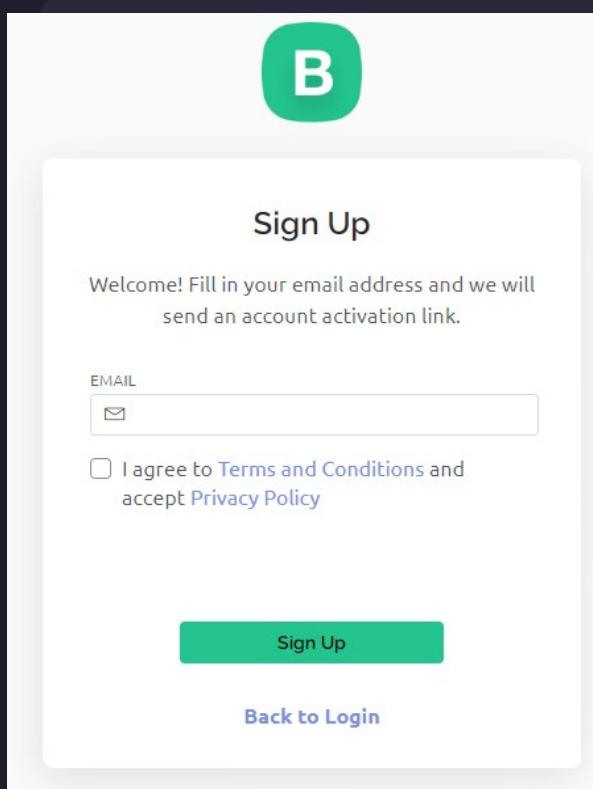
With Blynk, anyone can connect their hardware to the cloud, create iOS, Android, and web apps without writing a single line of code, analyze real-time and historical data from devices, and control them remotely from anywhere in the world. Blynk also offers important features like receiving critical notifications and much more.



The structure of connecting to the Blynk Server

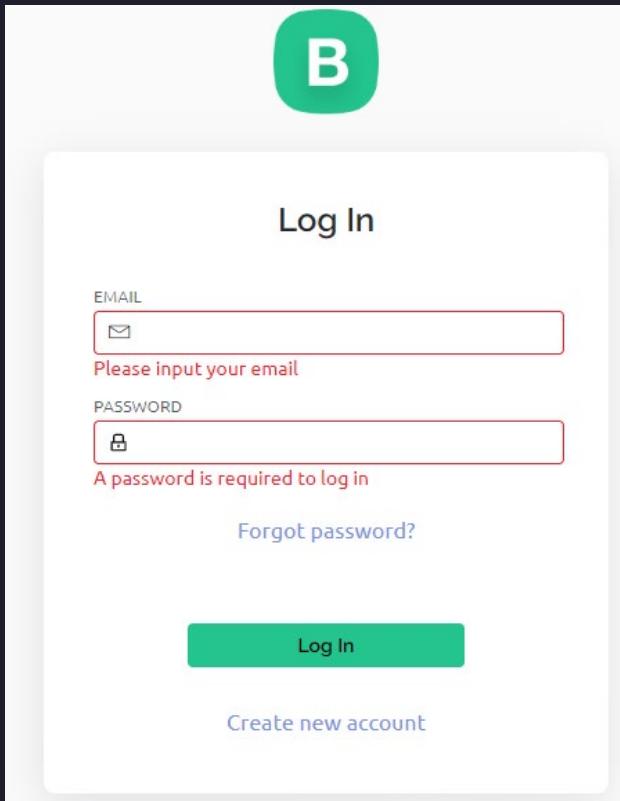


Registering for Blynk



1. Go to the website <https://blynk.cloud/dashboard/register>, enter a valid email address, then click on "I agree to Terms and Conditions and accept Privacy Policy" and finally, click on the "Sign Up" button as shown in the image.
2. Check your email inbox that you provided during registration. Look for an email with the subject "Welcome to Blynk.Console." Inside this email, there should be a link or option to "Create Password." Click on that link or option to set up your password for accessing Blynk Console on your own.

Create a Template



1. Go to the website <https://blynk.cloud/dashboard/login>, enter your email and password, then click on "Log In."
2. Select "New Template."

A screenshot of the Blynk dashboard. On the left, there are sections for 'DEVICES', 'LOCATIONS', and 'USERS', each with sub-options like 'My devices', 'All', etc. On the right, a callout box highlights the 'New Template' button. The text inside the box reads: 'Start by creating your first template. Template is a digital model of a physical object. It is used in Blynk platform as a template to be assigned to devices.'

Start by creating your first template
Template is a digital model of a physical object. It is used in Blynk platform as a template to be assigned to devices.

+ New Template

Create a Template

3 . In the window, select the data as shown in the image. Once done, click on "Done."

The image shows two side-by-side screenshots of the CAMT software interface.

Left Screenshot (Main View): This view shows the 'LED Control' template configuration. It includes:

- Template Image (Optional):** A placeholder for an image with a 'Add image' button.
- Firmware Configuration:** A code editor containing the following C code:

```
#define BLINK_TEMPLATE_ID "TMPL3terZX1b"
#define BLINK_TEMPLATE_NAME "LED Control"
```

A note below says: "Template ID and Device Name should be included at the top of your main firmware".
- Hardware:** Set to "ESP8266" and "WiFi".
- Description:** "First time experience product".
- Template ID:** "TMPL3terZX1b".
- Manufacturer:** "Blynk".
- Offline Ignore Period:** "00 hrs 00 mins 00 secs".
- Hotspot Prefix:** "Hotspot Prefix".

Right Screenshot (Modal Dialog): This is a detailed view of the template creation dialog. It shows the following fields:

- TEMPLATE NAME:** "LED Control".
- HARDWARE:** "ESP8266".
- CONNECTION TYPE:** "WiFi".
- DESCRIPTION:** "First time experience product".
- TEMPLATE ID:** "TMPL3terZX1b".
- MANUFACTURER:** "Blynk".

The "HARDWARE", "CONNECTION TYPE", and "DESCRIPTION" fields are highlighted with a red rounded rectangle.

Create Data Stream

1. In the Template page, click on the Datastreams tab, then select "New Datastream" and choose "Virtual Pin."

The screenshot shows the 'LED Control' template page. On the left is a sidebar with icons for Info, Metadata, Datastreams, Events, Automations, Web Dashboard, and Mobile Dashboard. The 'Datastreams' icon is highlighted with a green box. The main content area has a title 'Datastreams' and a description: 'Datastreams is a way to structure data that regularly flows in and out from device. Use it for sensor data, any telemetry, or actuators.' Below this is a button labeled '+ New Datastream'. A dropdown menu is open, listing 'Digital', 'Analog', 'Virtual Pin', 'Enumerable', and 'Location'. The 'Location' option is followed by a red 'UPGRADE' button.

LED Control

Info Metadata **Datastreams** Events Automations Web Dashboard Mobile Dashboard

...

Cancel Save

Datastreams

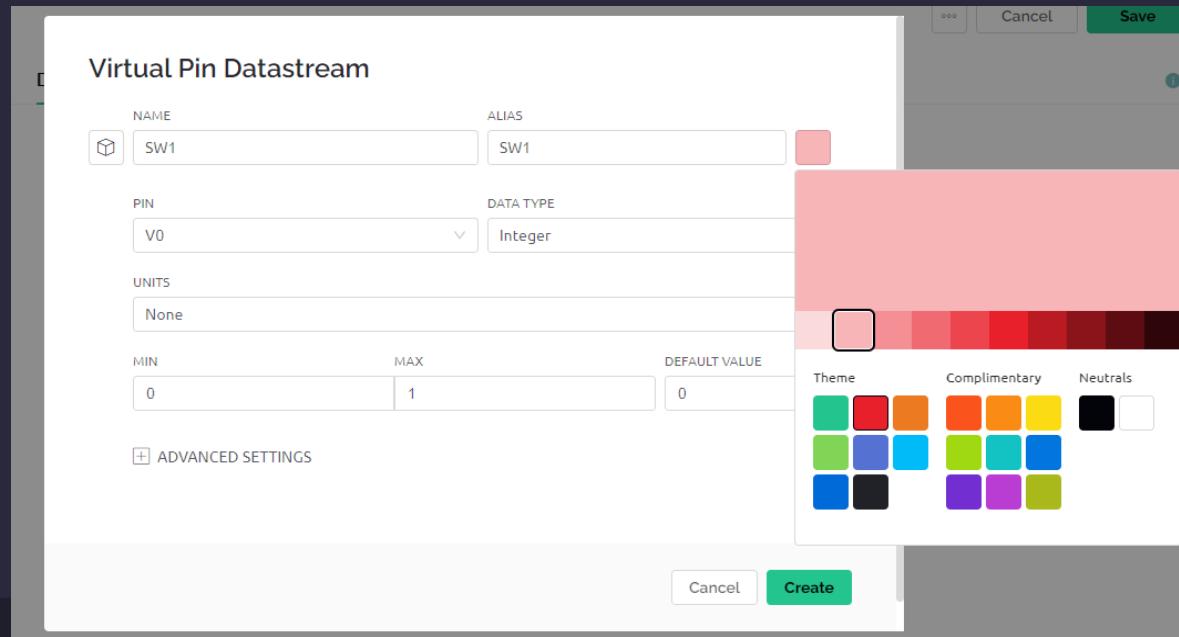
Datastreams is a way to structure data that regularly flows in and out from device. Use it for sensor data, any telemetry, or actuators.

+ New Datastream

Digital
Analog
Virtual Pin
Enumerable
Location **UPGRADE**

Create Data Stream

2 . In the Virtual Pin Datastream window, fill in the information as shown in the image below, then click "Create."



Create Data Stream

3 . Click on the Home menu, and then click on Add first Device. Enter the Device name and press the Create button.

The screenshot shows the CAMT Home interface. At the top, there's a navigation bar with tabs: Home (which is underlined), Datasreams, Web Dashboard, Automations, Metadata, Events, and Mobile Dashboard. Below the navigation bar, there's a section titled "What's next?" with three options: "Configure template", "Set up the Web Dashboard", and "Add first Device". The "Add first Device" option is highlighted with a red rectangular border. Underneath this section, there's a "Done:" section with a green checkmark next to "Set Up Datasreams".

The screenshot shows a "New Device" dialog box. It has a title "New Device" at the top. Below it is a "DEVICE NAME" field containing the text "New Device". At the bottom right of the dialog box are two buttons: "Cancel" and "Create".

Create Data Stream

4 . Click to enter the Device that we've created.

LED Control



Home Datastreams Web Dashboard Automations Metadata Events Mobile Dashboard

1 Devices [+ New Device](#)

Device name	Status	Authtoken
LED Test	Offline	tWIJ - **** - **** - ****

Create Data Stream

5. When you click in, go to the Device info menu, copy the code under FIRMWARE CONFIGURATION, and save it.

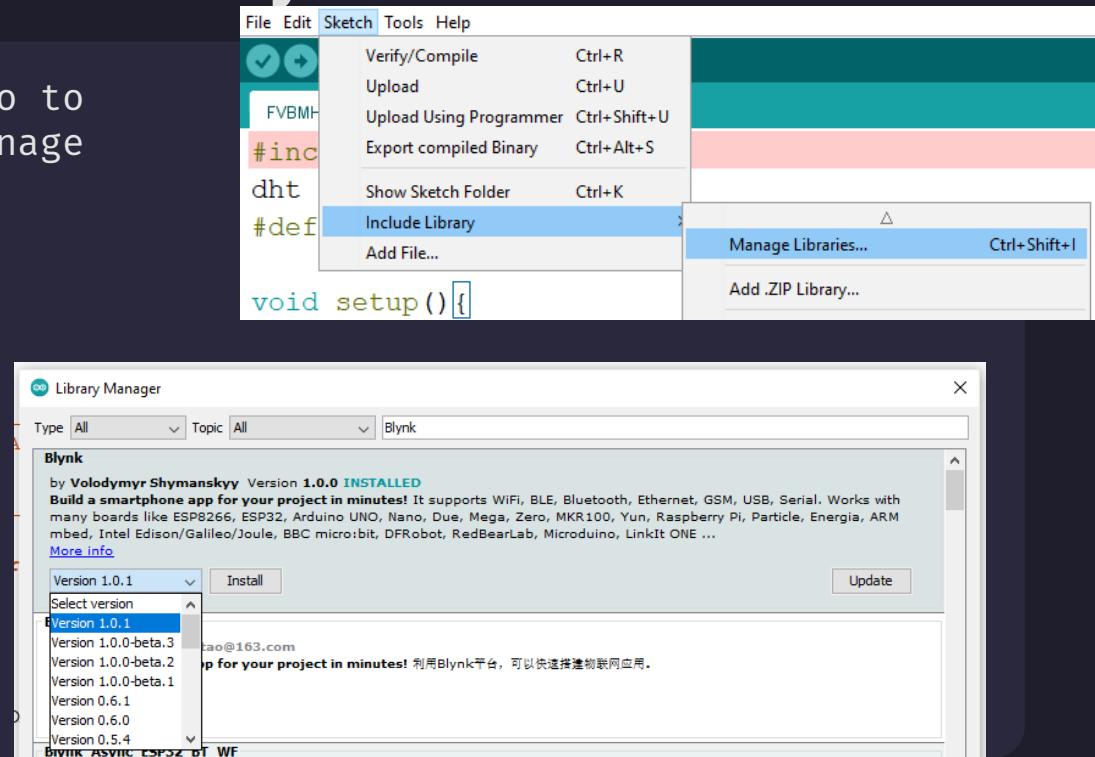
The screenshot shows the Device Info page for a device named "LED Test". The device is currently Offline. The user is Supakorn, and the organization is My organization - 5162OJ. There is an "Add Tag" button. The page has tabs for Dashboard, Timeline, Device Info (which is selected), Metadata, and Actions Log. In the Device Info section, there are two rows of information: STATUS (Offline) and LAST UPDATED (12:46 PM Today). Below that, DEVICE ACTIVATED (12:46 PM Today) and ORGANIZATION (My organization - 5162OJ) are listed. On the right side, under the heading "FIRMWARE CONFIGURATION", there is a block of code:

```
#define BLYNK_TEMPLATE_ID "TMPL6s8IV0QfL"
#define BLYNK_TEMPLATE_NAME "LED Control"
#define BLYNK_AUTH_TOKEN "g5QZ0zXrL08odX0ahfF4rns7tBclbAXu"
```

A red box highlights this code block. A note below it states: "Template ID, Device Name, and AuthToken should be declared at the very top of the firmware code."

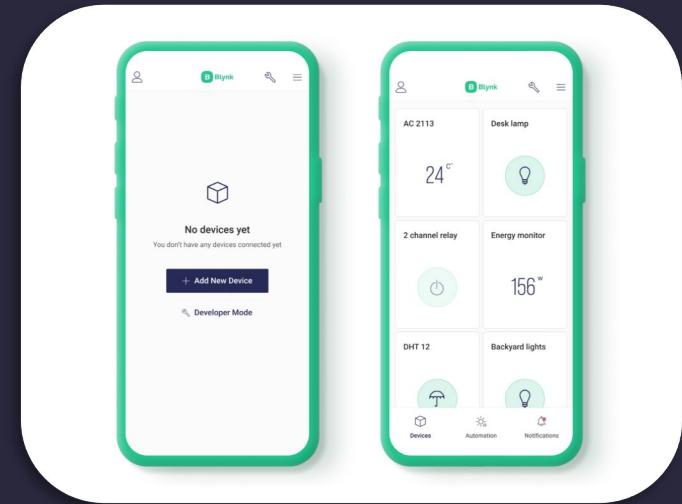
To install the Blynk library

1. Open Arduino IDE and go to Sketch>Include Library>Manage Libraries
2. Type "Blynk" in the "Filter your search..." box to search for the Blynk library. The Blynk library should appear in the list of available libraries. You can then click the "Install" button to install it.



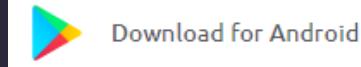
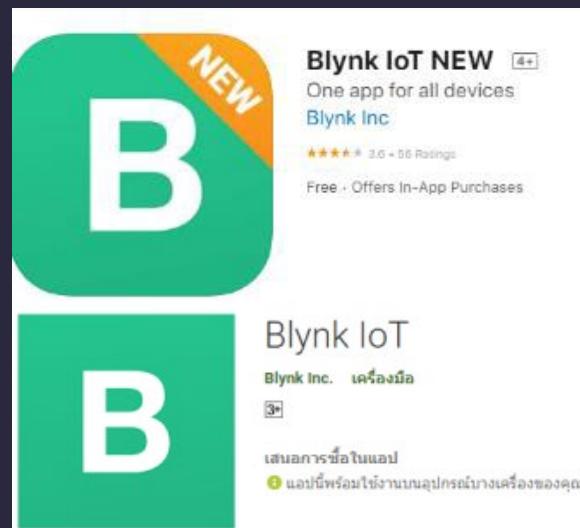
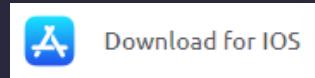
/02

/Creating a Mobile Dashboard (Device)



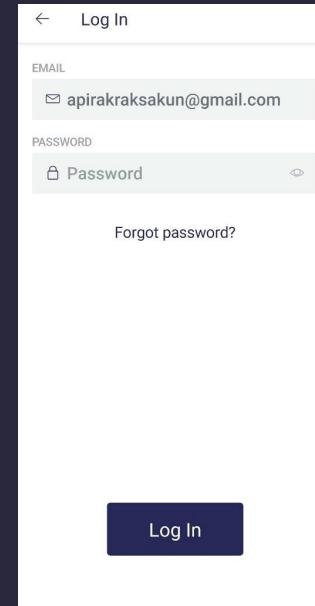
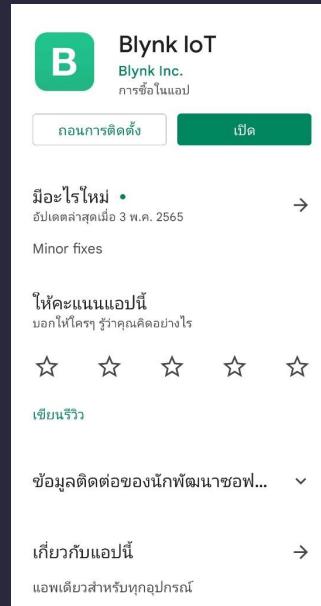
Creating a Mobile Dashboard (Device)

1. Install the "Blynk IoT" application on your mobile phone.



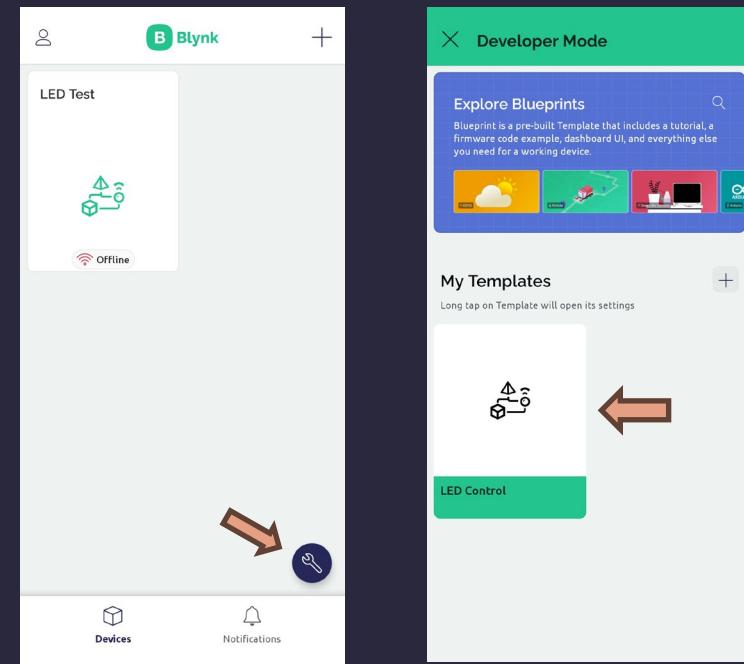
Creating a Mobile Dashboard (Device)

2. Log in using the email and password you registered with earlier.



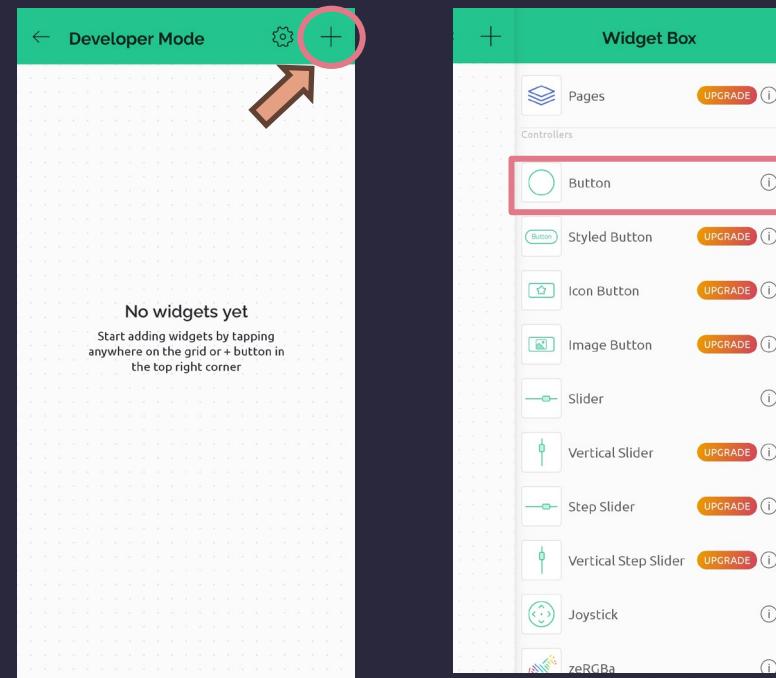
Creating a Mobile Dashboard (Device)

3 . Click on the wrench icon to access the Developer Mode. Then, select the Templates section in the Dashboard, where you've previously created your templates.



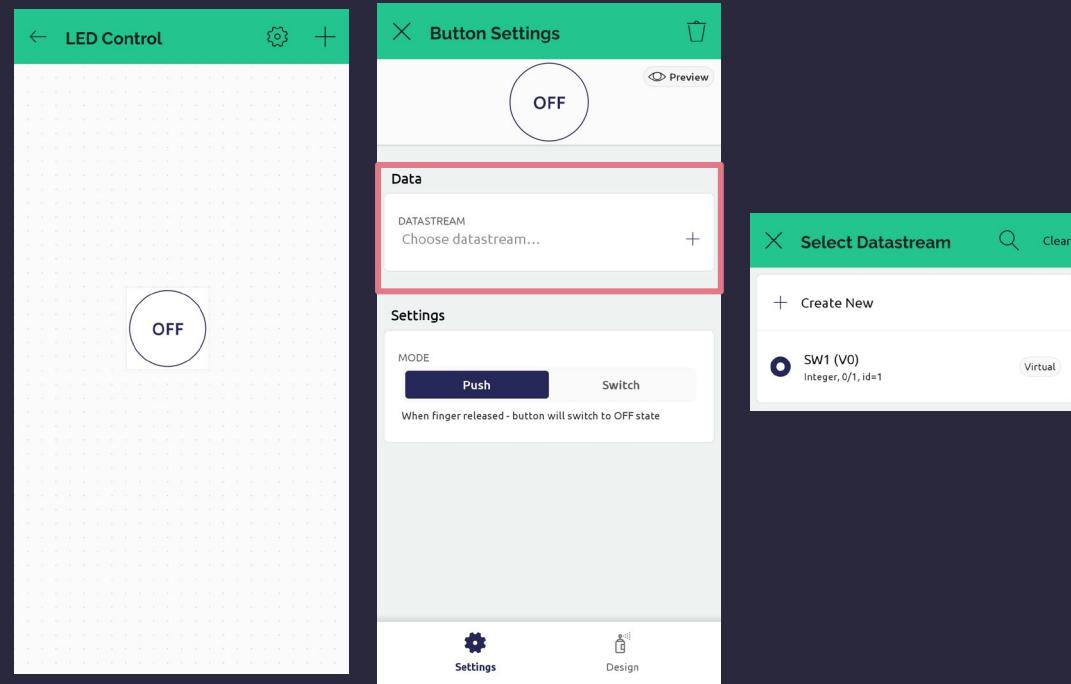
Creating a Mobile Dashboard (Device)

4. When you enter Developer Mode, click on the "+" symbol and then select Button in order to add a Button.



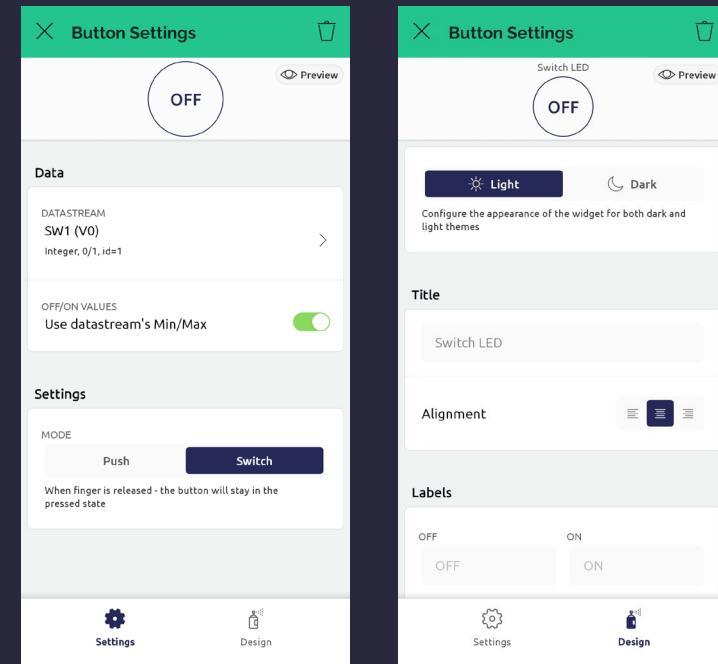
Creating a Mobile Dashboard (Device)

5. Once you've created the button, click on it to enter its settings. Under the Data section, click and select the Virtual Pin you previously created.



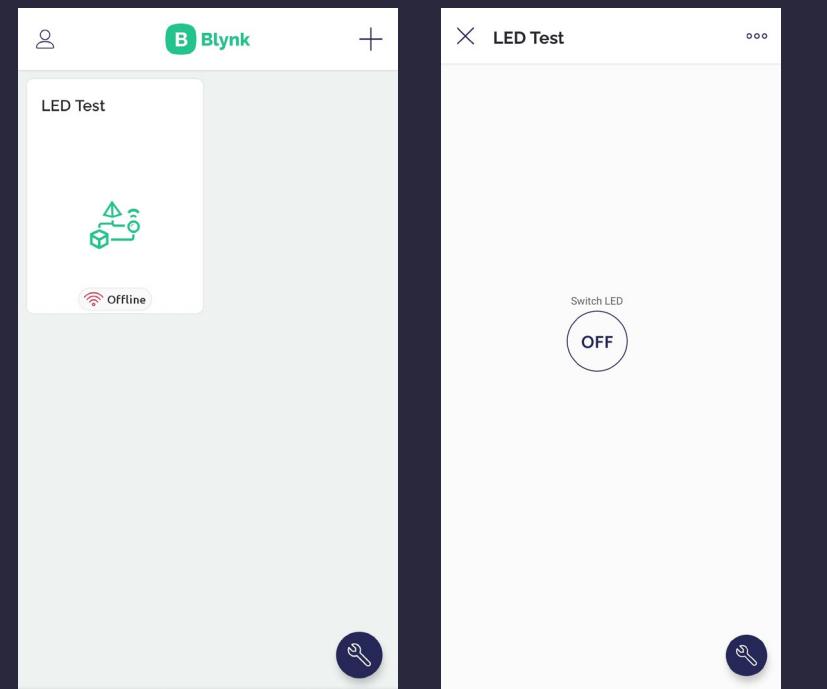
Creating a Mobile Dashboard (Device)

6. On the button's configuration page, you can set the button type and customize its design. You can edit the button's text or change its color, among other design options.



Creating a Mobile Dashboard (Device)

7. When you go back to the "Device" page, click on your device, and you will find the button you created.



Q/A

