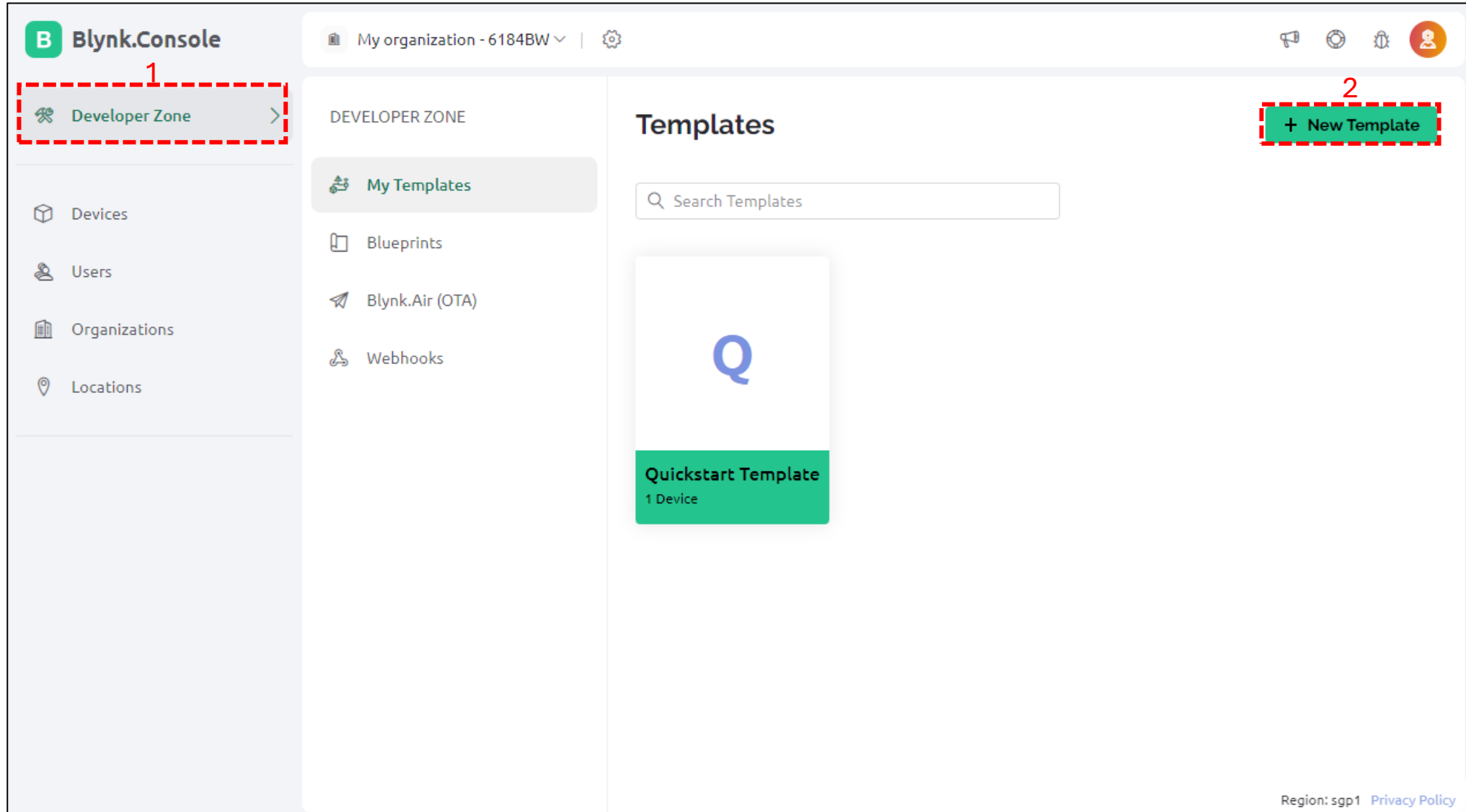


# Blynk Setup for Hands-on

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Login to Blynk at <https://blynk.cloud/dashboard/login> and click the following options



Fill in the required fields as shown and click “Done”

## Create New Template

NAME

Smart Farming

HARDWARE

ESP32

CONNECTION TYPE

WiFi

DESCRIPTION

Description

0 / 128

Cancel

Done

Click on “Datastreams”

**Blynk.Console** My organization - 6184BW

Developer Zone

Devices  
Users  
Organizations  
Locations

## Smart Farming

Cancel Save

Home **Datastreams** Web Dashboard Automations Metadata Connection Lifecycle

What's next?

- ☐ Configure template
- ☐ Set Up Datastreams
- ☐ Set up the Web Dashboard
- ☐ Add first Device

**Template settings** ESP32, WiFi

**Firmware configuration**

Template ID and Template Name should be declared at the very top of the firmware code.

```
#define BLYNK_TEMPLATE_ID  
"TMPL6kcSShRVH"  
#define BLYNK_TEMPLATE_NAME "Smart  
Farming"
```

Region: sgp1 Privacy Policy

Click on “+ New Datastream”


The screenshot shows the Blynk.Console web interface. The top header includes the Blynk.Console logo, the organization name 'My organization - 6184BW', and various utility icons. A left sidebar contains navigation links for 'Developer Zone', 'Devices', 'Users', 'Organizations', and 'Locations'. The main content area is titled 'Smart Farming' and features a tabbed interface with 'Home', 'Datastreams' (selected), 'Web Dashboard', 'Automations', 'Metadata', and 'Connection Lifecycle'. Below the tabs, a section titled 'Datastreams' provides a brief explanation: 'Datastreams is a way to structure data that regularly flows in and out from device. Use it for sensor data, any telemetry, or actuators.' A green button labeled '+ New Datastream' is prominently displayed and highlighted with a red dashed border and a red number '1' below it. The bottom right corner shows the region 'sgp1' and a link to the 'Privacy Policy'.

Click on “Virtual Pin”

The screenshot shows the Blynk.Console web interface. On the left is a sidebar with navigation links: Developer Zone, Devices, Users, Organizations, and Locations. The main area is titled 'Smart Farming' and has a tabbed interface with 'Datastreams' selected. A dropdown menu is open from the 'Datastreams' tab, listing options: Virtual Pin, Enum, Location (with an 'UPGRADE' button), Digital Pin, and Analog Pin. The 'Virtual Pin' option is highlighted with a red dashed box and the number '1'. Below the dropdown is a '+ New Datastream' button. The top right of the interface shows 'My organization - 6184BW' and user profile icons. The bottom right corner indicates 'Region: sgp1' and a 'Privacy Policy' link.

Fill in the fields as shown, enable history data and click “Create”

### Virtual Pin Datastream



NAME1

Temperature

ALIAS2

Temperature

PIN3

V0

DATA TYPE4

Double

UNITS5

Celsius, °C

MIN6

0

MAX7

100

DECIMALS

###

DEFAULT VALUE

Default Value

8

☒ Enable history data

+


 ADVANCED SETTINGS

Cancel

9Create

Add another virtual pin datastream and fill in the fields as shown and click “Create”

### Virtual Pin Datastream




NAME1

Humidity

ALIAS2

Humidity



PIN3

V1

▼

DATA TYPE4

Double

▼

UNITS

None

▼

MIN5

0

MAX6

100

DECIMALS

#.##

▼

DEFAULT VALUE

Default Value

7

☒

Enable history data

⊕

ADVANCED SETTINGS

Cancel



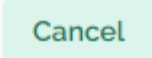
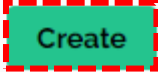
8

Create





Add another virtual pin datastream and fill in the fields as shown and click “Create”



### Virtual Pin Datastream


NAME	1	Moisture	ALIAS	2	Moisture	
PIN	3	V2	DATA TYPE	4	Integer	
UNITS		None				
MIN	5	0	MAX	6	4095	DEFAULT VALUE
						0
7		<input checked="" type="checkbox"/> Enable history data				
 ADVANCED SETTINGS						
						8
						 

Add another virtual pin datastream and fill in the fields as shown and click “Create”

### Virtual Pin Datastream


 **NAME** 1  **ALIAS** 2  

**PIN** 3   **DATA TYPE** 4  

**UNITS**  

**MIN** 5  **MAX** 6  **DEFAULT VALUE**

☐ Enable history data

 **ADVANCED SETTINGS**

7

Click on “Web Dashboard”

The screenshot displays the Blynk.Console web interface. On the left, a sidebar contains navigation links: 'Developer Zone', 'Devices', 'Users', 'Organizations', and 'Locations'. The main area is titled 'Smart Farming' and features a top navigation bar with tabs: 'Home', 'Datastreams', 'Web Dashboard' (highlighted with a red dashed box and a red number '1'), 'Automations', 'Metadata', 'Connection Lifecycle', 'Events & Notifications', and 'Mobile Dashboard'. Below the tabs, the 'Web Dashboard' section is visible, showing a 'Widget Box' on the left with controls like a 'Switch', 'Slider', 'Number Input', and 'Image Button'. The main canvas area contains a 'Device name' card with 'Online' status, 'Device Owner', 'Company Name', and a 'Show map' button. Below the card is a 'Dashboard' section with a grid of widgets and a '+ Add new widget' prompt. The bottom right corner shows 'Region: sgp1' and a 'Privacy Policy' link.

Scroll down to look for the “Gauge” widget

**Blynk.Console** My organization - 6184BW

Developer Zone

Devices  
Users  
Organizations  
Locations

**Smart Farming** [Menu] [Cancel] [Save]

Home Datastreams **Web Dashboard** Automations Metadata Connection Lifecycle Events & Notifications Mobile Dashboard

**Widget Box** 1

Label  
112 2

**Gauge**  
42  
0 100

**Radial Gauge** 42

**Alarm and Sound**

**Device name** Online  
Device Owner Company Name  
Tag X

Dashboard +

1h 6h 1d 1w 1mo 3mo

**Add new widget**  
Double click the widget on the left or drag it to the canvas

Region: sgp1 Privacy Policy

Click and drag the “Gauge” widget to place it on the dashboard

The screenshot displays the Blynk Console interface for a "Smart Farming" dashboard. On the left, a "Widget Box" contains several widgets: a "Label" widget showing "112", a "Gauge" widget showing "42" (highlighted with a red dashed box and labeled "1"), a "Radial Gauge" widget showing "42", and an "Alarm and Sound" widget. A red arrow points from the "Gauge" widget in the box to a "Gauge" widget on the dashboard, which is also highlighted with a red dashed box and labeled "3". The dashboard itself shows a "Device name" section with "Online" status, a "Device Owner" field, a "Company Name" field, and a "Show map" button. Below this is a "Dashboard" section with a time range selector (1h, 6h, 1d, 1w, 1mo, 3mo) and a grid of empty widget slots. The bottom right corner of the dashboard indicates "Region: spp1" and a "Privacy Policy" link.

Click the setup icon

The screenshot shows the Blynk.Console web interface. On the left is a sidebar with navigation links: Developer Zone, Devices, Users, Organizations, and Locations. The main area is titled 'Smart Farming' and has tabs for Home, Datastreams, Web Dashboard (selected), Automations, Metadata, Connection Lifecycle, Events & Notifications, and Mobile Dashboard. A 'Widget Box' on the left contains a Label widget (value 112), a Gauge widget (value 42), a Radial Gauge widget (value 42), and an Alarm and Sound widget. The main dashboard area shows a 'Device name' section with 'Online' status, 'Device Owner', and 'Company Name' fields. Below this is a 'Dashboard' section with a time range selector (1h, 6h, 1d, 1w, 1mo, 3mo) and a grid of widgets. A red dashed box highlights the 'Setup' icon (a gear) on a gauge widget in the grid, with a red number '1' indicating it should be clicked. The bottom right corner shows 'Region: sgp1' and a 'Privacy Policy' link.

Fill in the fields as shown and click save

### Gauge Settings

TITLE (OPTIONAL) 1

Temperature

Datastream 2

Temperature (V0)

☐ Override Datastream's Min/Max fields

LEVEL COLOR 3

☒ Change color based on value

4

Temperature (V0)

27 °C

0 100

5

Cancel Save

Click and drag the “Gauge” widget to place it on the dashboard and click the setup icon.

The screenshot displays the Blynk.Console interface for a "Smart Farming" dashboard. On the left, a "Widget Box" contains several widgets: a "Label" with the value "112", a "Gauge" (labeled 1), a "Radial Gauge", and an "Alarm and Sound" widget. A red dashed box (labeled 2) highlights the "Gauge" widget in the "Widget Box". A red dashed box (labeled 3) highlights a "Gauge" widget on the dashboard. A red dashed box (labeled 4) highlights the setup icon (a gear) on the dashboard gauge. A red arrow points from the "Gauge" widget in the "Widget Box" to the "Gauge" widget on the dashboard. The dashboard also shows a "Device name" section with "Online" status, a "Temperature (V0)" gauge showing 53 °C, and a map with "Show map" and "UPGRADE" buttons. The bottom right corner shows "Region: sgp1" and a "Privacy Policy" link.



Fill in the fields as shown and click save

### Gauge Settings

TITLE (OPTIONAL) 1

Humidity

Datastream 2

Humidity (V1)

☐ Override Datastream's Min/Max fields

LEVEL COLOR 3

☒ Change color based on value

4

5

Cancel Save

Humidity (V1)

90

0 100

Click and drag the “Gauge” widget to place it on the dashboard and click the setup icon.

The screenshot displays the Blynk Console interface for a "Smart Farming" dashboard. On the left, a "Widget Box" contains several widgets: "LED", "Label" (showing 112), "Gauge" (showing 42), and "Radial Gauge" (showing 42). The "Gauge" widget in the box is highlighted with a red dashed box and labeled with a red "1". A red dashed arrow labeled with a red "2" points from this widget to a "Gauge" widget on the main dashboard grid. This dashboard gauge is also highlighted with a red dashed box and labeled with a red "3". A red dashed box labeled with a red "4" highlights the setup icon (a gear) on the dashboard gauge widget. The main dashboard area shows device information (Device name: Online, Device Owner, Company Name), a map, and various data streams (Temperature (V0) showing 79 °C, Humidity (V1) showing 73). The bottom right corner indicates the region as "sgp1" and provides a link to the "Privacy Policy".

Fill in the fields as shown and click save

### Gauge Settings

TITLE (OPTIONAL) 1

Moisture

Datastream 2

Moisture (V2)

☐ Override Datastream's Min/Max fields

LEVEL COLOR 3

☒ Change color based on value

4

Moisture (V2)

2,218

0 4,095

Cancel Save 5


Click and drag the “Switch” widget to place it on the dashboard and click the setup icon.


The screenshot displays the Blynk Console interface for a "Smart Farming" dashboard. On the left, a "Widget Box" contains various controls. A red dashed box labeled "1" highlights the "Switch" widget in the "CONTROL" section. A red dashed arrow labeled "2" points from this widget to a red dashed box labeled "3" on the dashboard grid. Inside box "3", a red dashed box labeled "4" highlights the setup icon (a gear) next to the newly placed "Switch" widget. The dashboard itself shows a "Device name" section with "Online" status, a "Tag X" button, and a "Show map" button. Below these are three gauges for "Temperature (V0)" at 34°C, "Humidity (V1)" at 69, and "Moisture (V2)" at 3,280. The bottom right corner indicates the region is "sgp1" and provides a link to the "Privacy Policy".

Fill in the fields as shown and click save

### Switch Settings ⓘ

TITLE (OPTIONAL) 1  
Water pump

Datastream 2  
Water Pump (V3) 



ON VALUE OFF VALUE  
1 0 

3 ☒ Show on/off labels


ON LABEL OFF LABEL  
4 ON 5 OFF

LABEL POSITION  
Left **Right**

☐ Hide widget name

6  
 

Water pump (V3)

 OFF

Click and drag the “Chart” widget to place it on the dashboard and click the setup icon.

The screenshot displays the Blynk.Console interface for a 'Smart Farming' project. The left sidebar contains navigation links: Developer Zone, Devices, Users, Organizations, and Locations. The main dashboard area is titled 'Smart Farming' and includes a 'Widget Box' on the left. In the 'Widget Box', a 'Chart' widget is highlighted with a red dashed box and labeled '1'. A red arrow labeled '2' points from this widget to a 'Chart' widget on the dashboard grid, which is labeled '3'. The dashboard grid also features gauges for Temperature (V0) at 88°C, Humidity (V1) at 1, and Moisture (V2) at 1,497, along with a 'Water pump (V3)' toggle switch. A red dashed box labeled '4' highlights the 'Setup' icon (a gear) on the 'Chart' widget in the dashboard grid. The top of the dashboard shows the organization name 'My organization - 6184BW' and a 'Save' button.

Fill in the fields as shown and click save

### Chart Settings ⓘ

TITLE (OPTIONAL) **1**

Moisture History

**Datastreams**

**UPGRADE** to add more datastreams

**2**

Moisture (V2) AVG of

**CHART TYPE** **3**

**Y-AXIS** **4**

☒ Show Y-axis

☐ Autoscale

☐ Override Datastream's Min/Max fields

MINIMUM Y AXIS RANGE

Minimum Y axis range

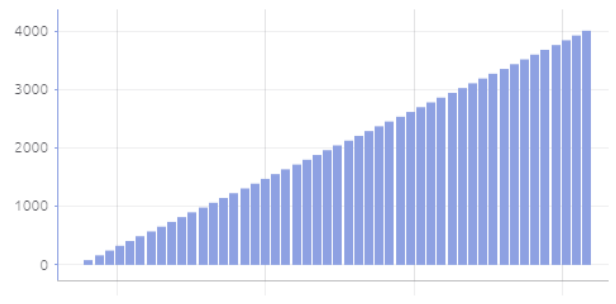
☐ Enable Zoom

☐ Show legend

**5**

Cancel Save

### Moisture History (V2)



Time	Moisture (V2)
0	0
100	100
200	200
300	300
400	400
500	500
600	600
700	700
800	800
900	900
1000	1000
1100	1100
1200	1200
1300	1300
1400	1400
1500	1500
1600	1600
1700	1700
1800	1800
1900	1900
2000	2000
2100	2100
2200	2200
2300	2300
2400	2400
2500	2500
2600	2600
2700	2700
2800	2800
2900	2900
3000	3000
3100	3100
3200	3200
3300	3300
3400	3400
3500	3500
3600	3600
3700	3700
3800	3800
3900	3900
4000	4000

Click on “Save”

The screenshot displays the Blynk.Console web interface for configuring a 'Smart Farming' dashboard. The interface includes a left sidebar with navigation options: Developer Zone, Devices, Users, Organizations, and Locations. The main content area shows the 'Smart Farming' dashboard configuration page, which is currently in edit mode. The top right corner features a 'Save' button, which is highlighted with a red dashed box and a red number '1' above it, indicating the action to be taken. The dashboard configuration includes a 'Widget Box' on the left with controls for a Switch, Slider, Number Input, and Image Button. The main dashboard area displays a 'Device name' section with an 'Online' status, a 'Show map' toggle, and an 'UPGRADE' button. Below this, there are three gauge widgets for Temperature (V0) at 65°C, Humidity (V1) at 63, and Moisture (V2) at 2,112. A 'Water pump (V3)' widget is also present, currently set to 'OFF'. At the bottom, there is a 'Moisture History (V2)' chart showing a decreasing trend over time. The bottom right corner of the interface shows the region 'sgp1' and a link to the 'Privacy Policy'.

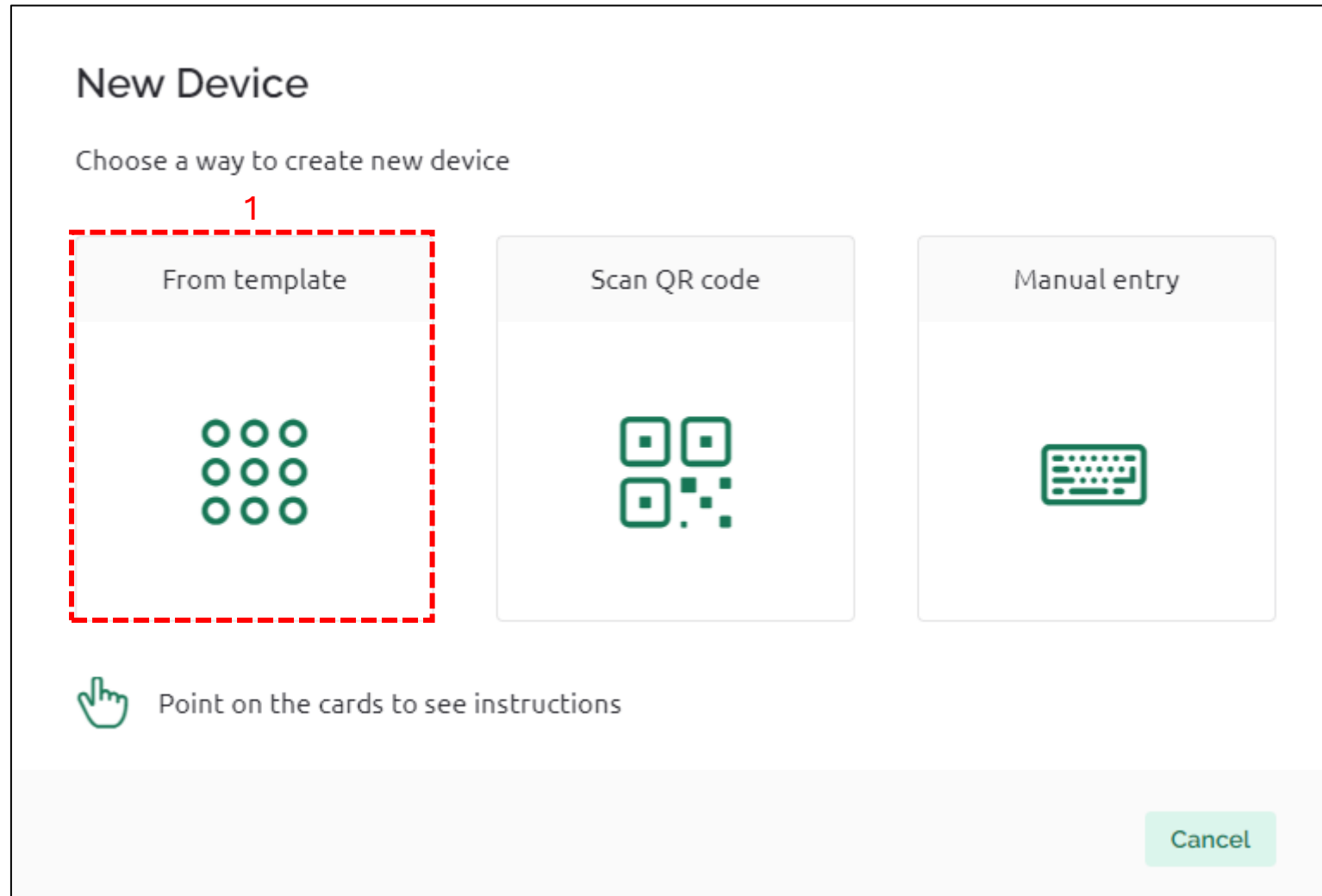


Click on “Devices” then “+ New Devices”

The screenshot shows the Blynk.Console web interface. The left sidebar contains a menu with 'Developer Zone', 'Devices' (highlighted with a red dashed box and a red '1'), 'Users', 'Organizations', and 'Locations'. The main content area is titled 'Devices' and features a search bar, tabs for 'All 1' and 'My devices 1', and a table of devices. A red dashed box labeled '2' highlights the '+ New Device' button in the top right corner of the 'Devices' section.

<input type="checkbox"/>	Name	Auth Token	Device Owner	Status	Last Reported At	Organization Name	Actions
<input checked="" type="checkbox"/>	Quickstart Device	xMTziOgG165nbSVP3SDo46Ri4kri...	wooihaw@gmail.com (you)	Inactive	2:01 PM Feb 22, 2024	My organization - 6184BW	

Click on “From template”



Fill in the required fields as shown and click “Create”

## New Device

Create new device by filling in the form below

TEMPLATE

Smart Farming

DEVICE NAME

ESP32

5 / 50

Cancel

Create

## Copy “Copy to clipboard” and paste into Arduino IDE

The screenshot shows the Blynk.Console web interface. On the left is a sidebar with navigation links: Developer Zone, Devices, Users, Organizations, and Locations. The main area displays a device named 'ESP32' with status 'Offline'. Below the device name are three gauges for Temperature, Humidity, and Moisture. The Moisture gauge shows a value of 0. A 'Water pump' toggle switch is set to 'OFF'. A 'Moisture History' section shows 'No Data'. A modal window titled 'New Device Created!' is open on the right, displaying the following code:

```
#define BLYNK_TEMPLATE_ID "TMPL6kcSshRVH"  
#define BLYNK_TEMPLATE_NAME "Smart Farming"  
#define BLYNK_AUTH_TOKEN  
"CAMxxFPUG32d5yu0uxBXICNGZ1wKE0Ab"
```

Below the code, a note states: 'Template ID, Template Name, and AuthToken should be declared at the very top of the firmware code.' At the bottom of the modal are two buttons: 'Documentation' and 'Copy to clipboard'. The 'Copy to clipboard' button is highlighted with a red dashed box and a red number 3.

Region: sgp1 [Privacy Policy](#)