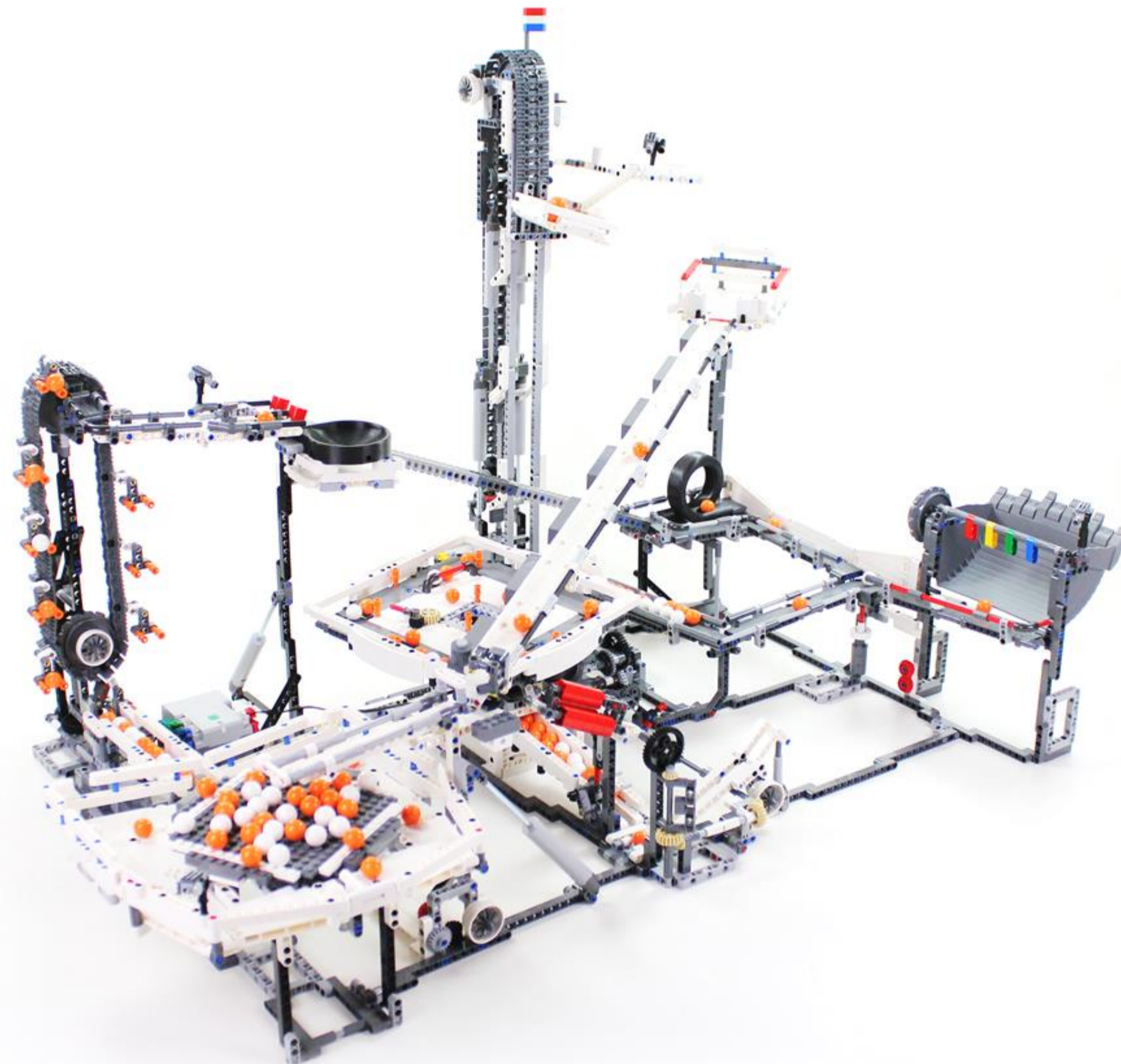


# Software - LEGO Powered Up App

## GBC 45 Stunt Circus – 42100 Alternate Build

---



Open the LEGO Powered Up app on your smart device.  
Complete the steps in the correct order by following the numbers.



First click on the gear icon to go to settings (1).



1

Play

Create



1 minute ago  
GBC 45



1 minute ago  
GBC 41



Click on the “Default Palette Level” button (1) and select on “Advanced” (2).  
Once selected, go back via arrow icon (3).



3

Language

**Settings**

About

Help

3.7.0

# Settings

Auto-Connect



Never time out



Default Palette Level

1

2

ADVANCED

Delete All Projects



Click on the "Create" button (1) and tap on the + sign (2).



Play

Create

1



1 minute ago  
GBC 45



1 minute ago  
GBC 41



Enter a name for your project.



01 — 03

NAME YOUR PROJECT

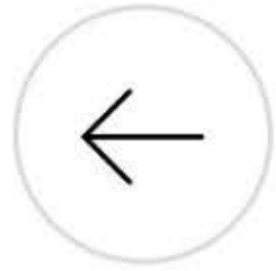


1



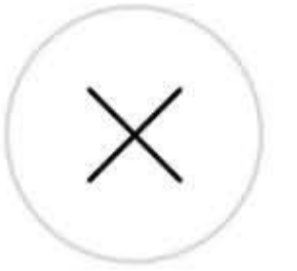
2

Select the controller type.

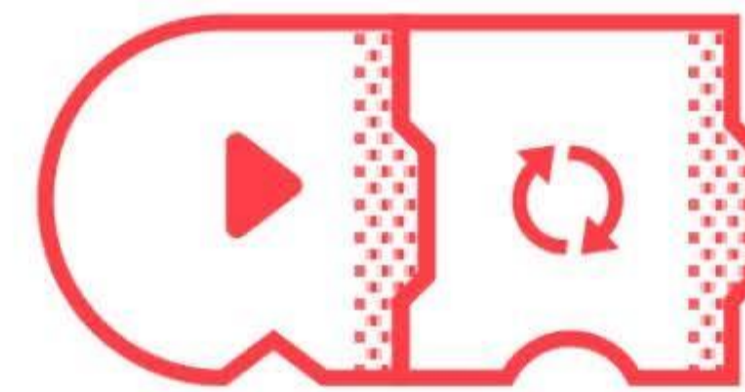


02 — 03

CHOOSE PROJECT TYPE

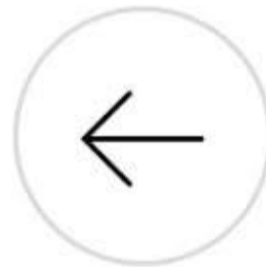


Controller



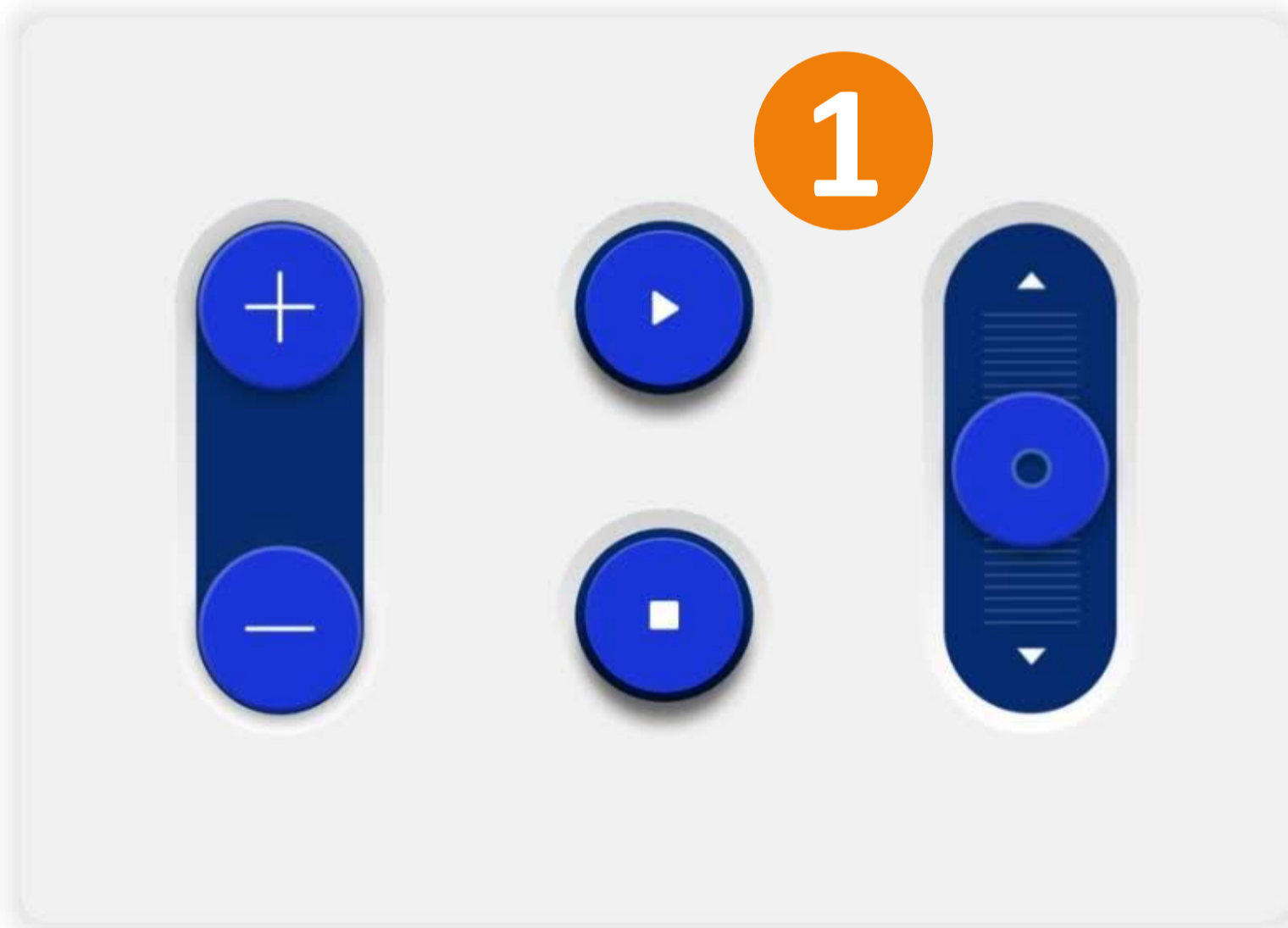
Coding

Select the correct controller interface.



03 — 03

CHOOSE CONTROLLER





Click on the + sign to add your first widgets/buttons.



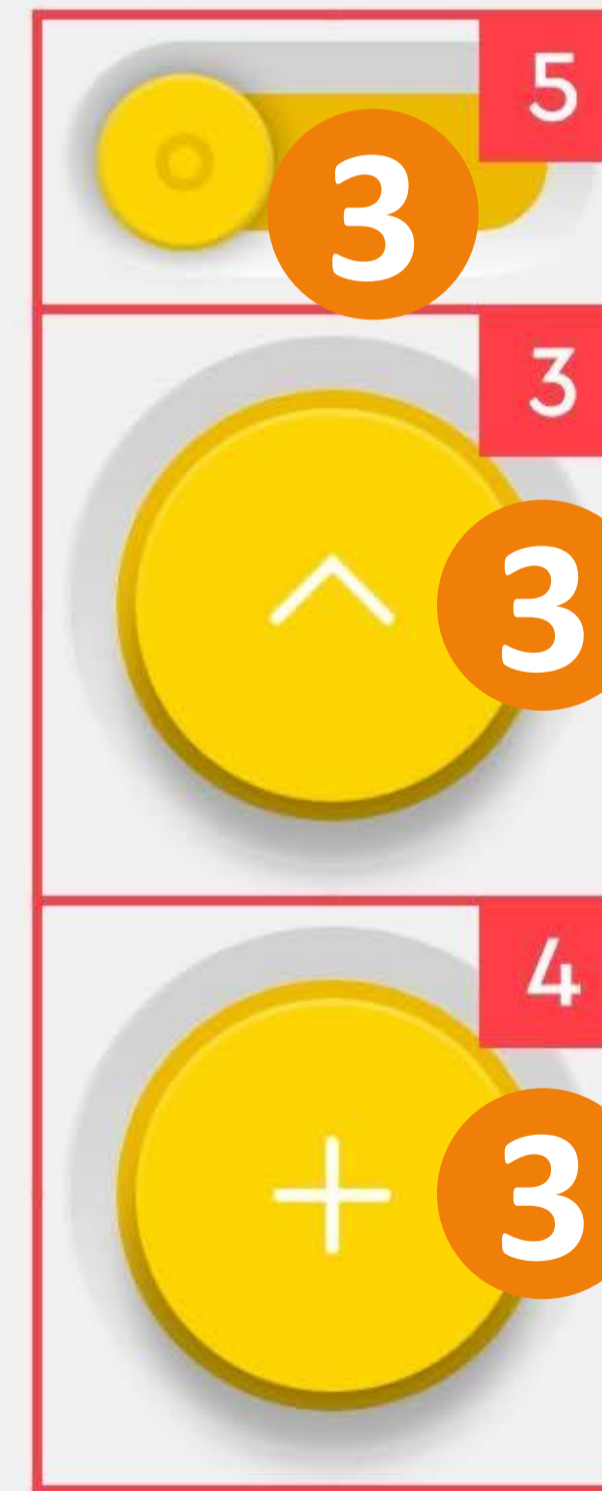
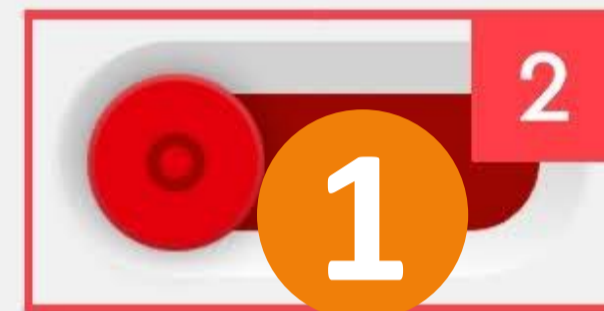
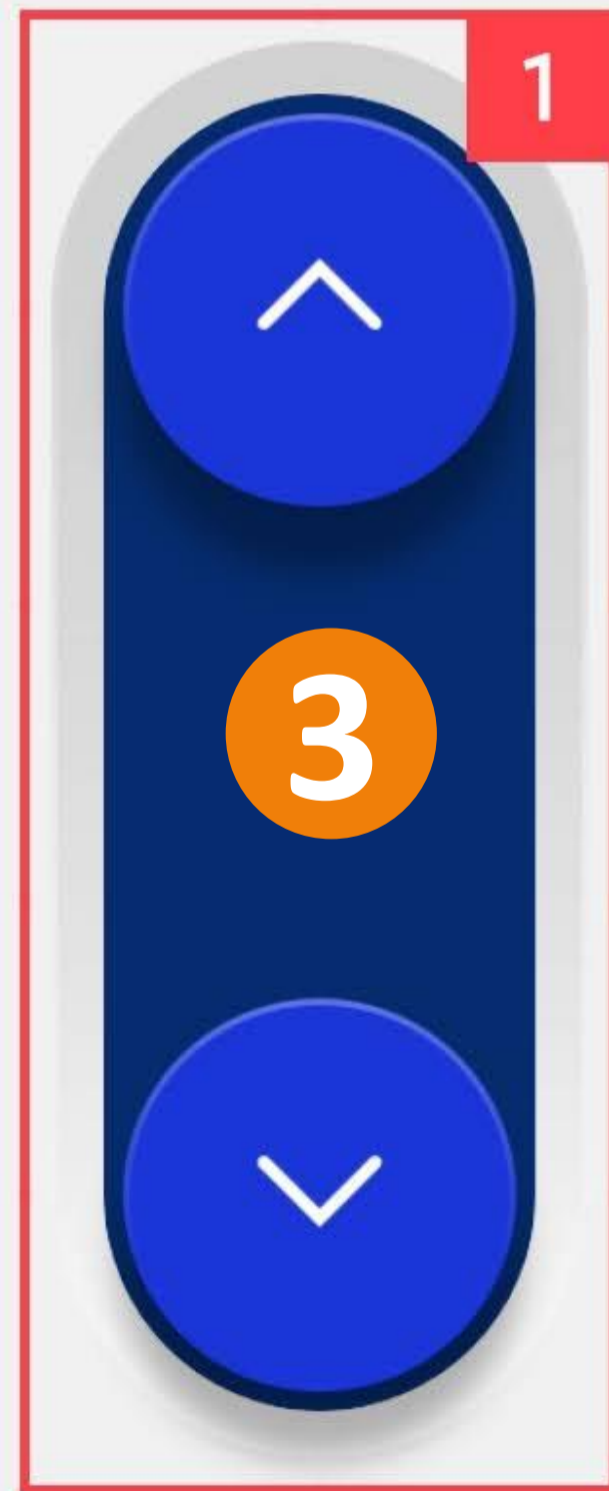
Add your first widget

Add the following colored buttons (1) (2). You can select more buttons simultaneously. Scroll up and down to find all the buttons. Click “Add Widgets” to proceed (3).



Rearrange the 2 buttons as shown below (1). Click the + sign (2) and add all the other buttons in the correct color (3). Scroll up and down to find all the buttons. You can select more buttons simultaneously in the add widget screen.

Don't pay attention yet to the icons inside the buttons. We will add these later.

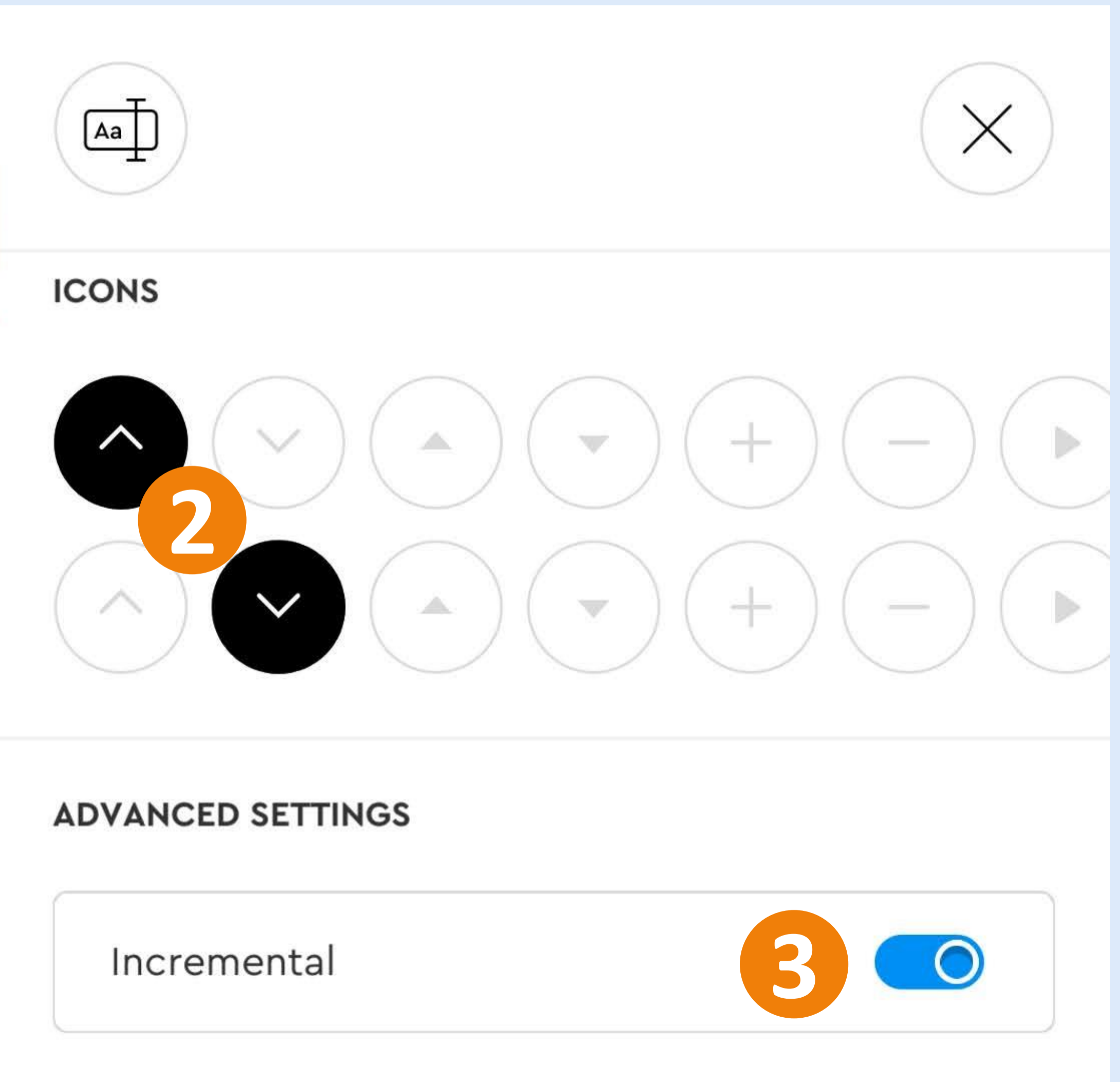
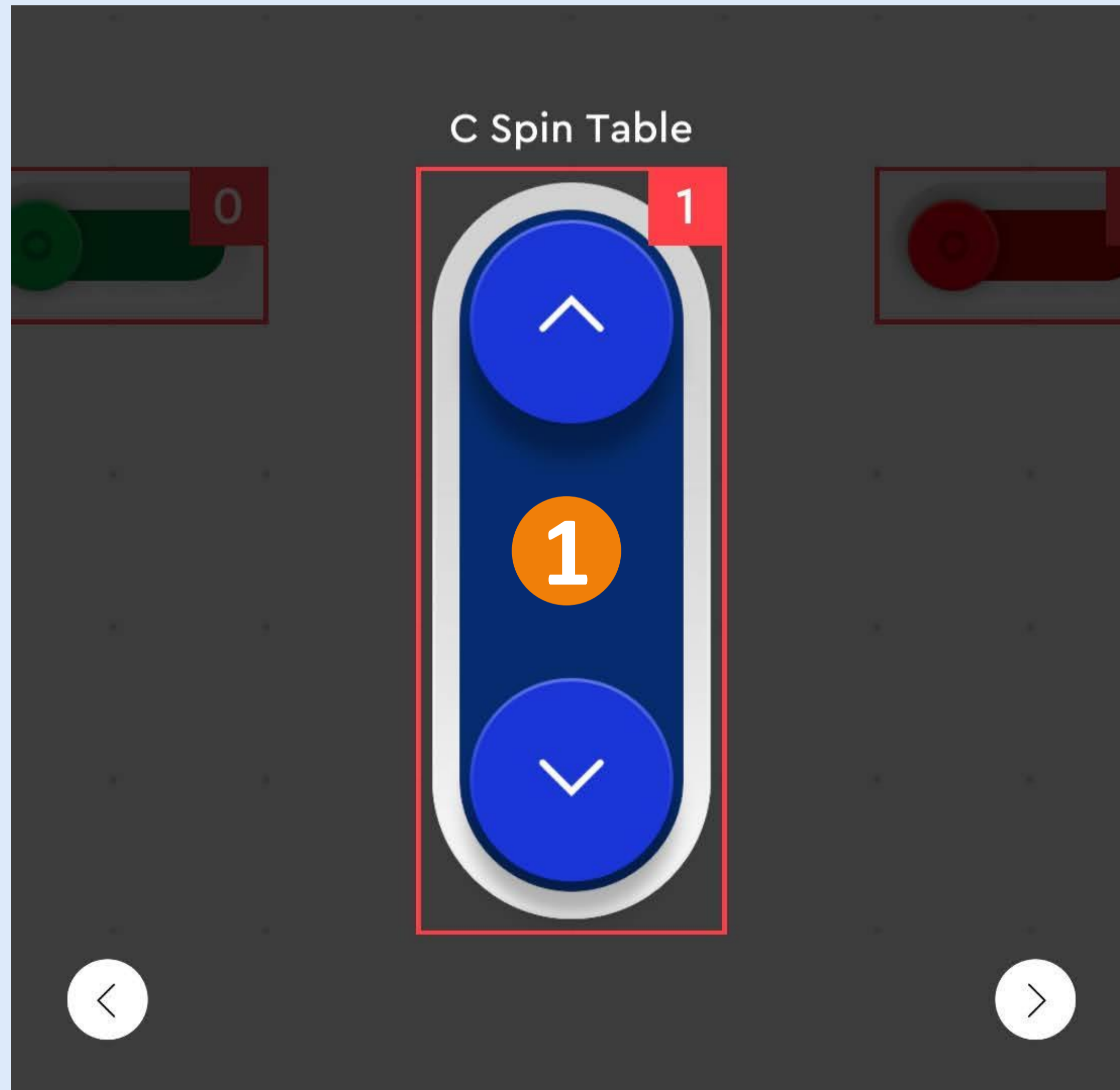


Click on each button (1) and change the address (2) as shown below in the red square (3).  
See previous step for all the correct addresses.

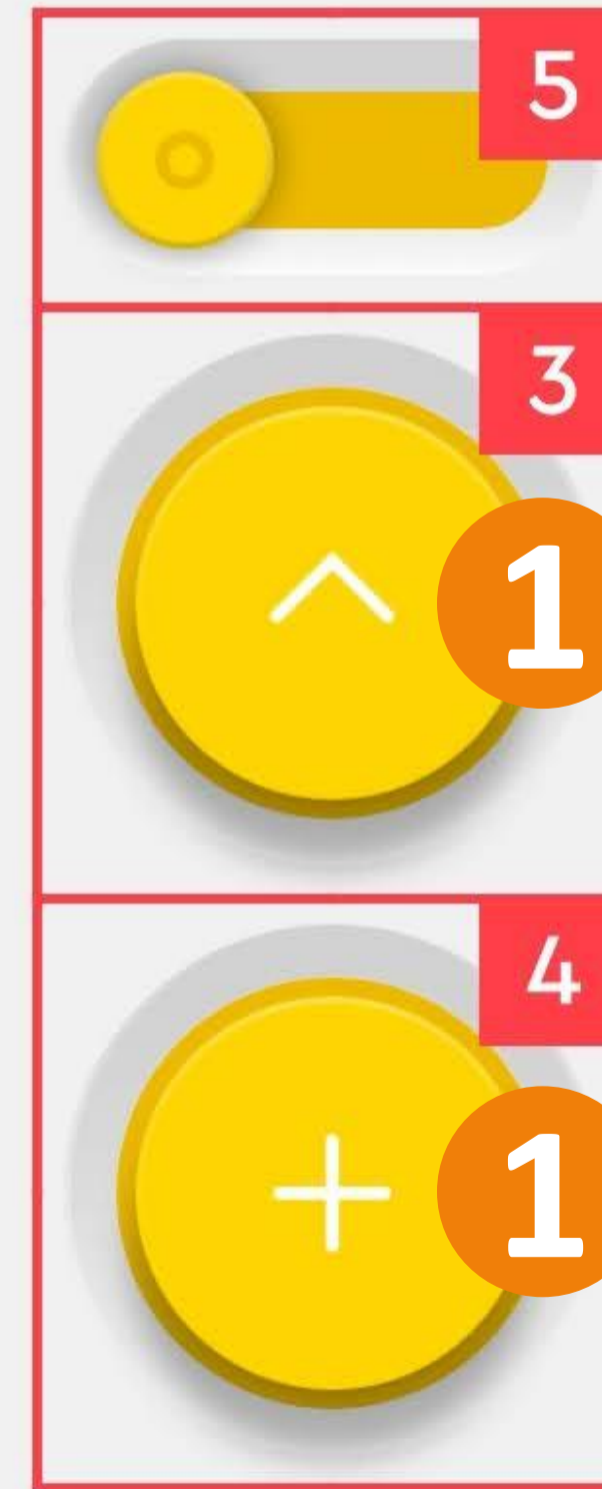
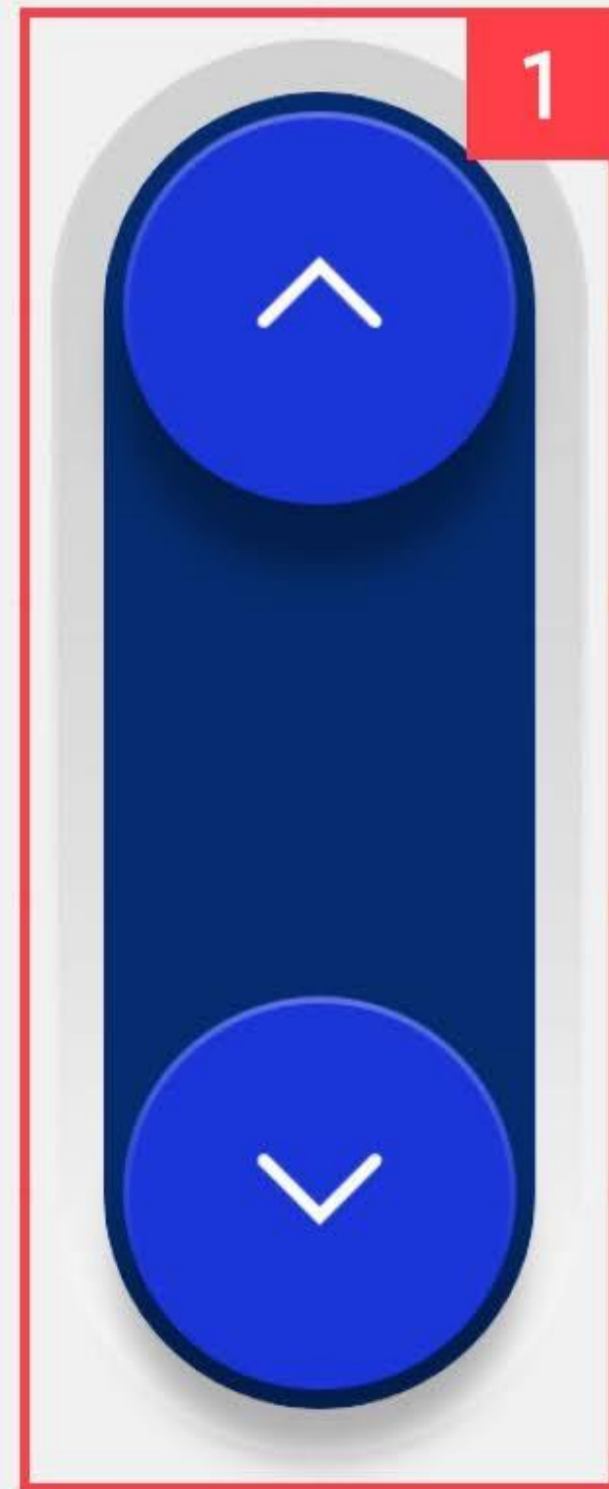


The image shows a mobile application interface. On the left, a control panel features a green slider button with a white circle in the center, highlighted by a red square and labeled with a white '1' in an orange circle. To its right is a red square containing the number '0', labeled with a white '3' in an orange circle. Below these is a dark blue vertical bar with a white upward arrow and a white rightward arrow. On the right, a settings menu is open, showing a top bar with a text icon (labeled 'Aa') and a close icon (an 'X'). Below this is a 'COLOR' section with seven circular color swatches: green, blue, red, purple, pink, olive, and teal. The first green swatch is highlighted with a white border. Below the color section is an 'ADDRESS' section with seven circular buttons labeled '0' through '6'. The '0' button is highlighted with a white border and labeled with a white '2' in an orange circle. At the bottom left of the control panel is a white left arrow button.

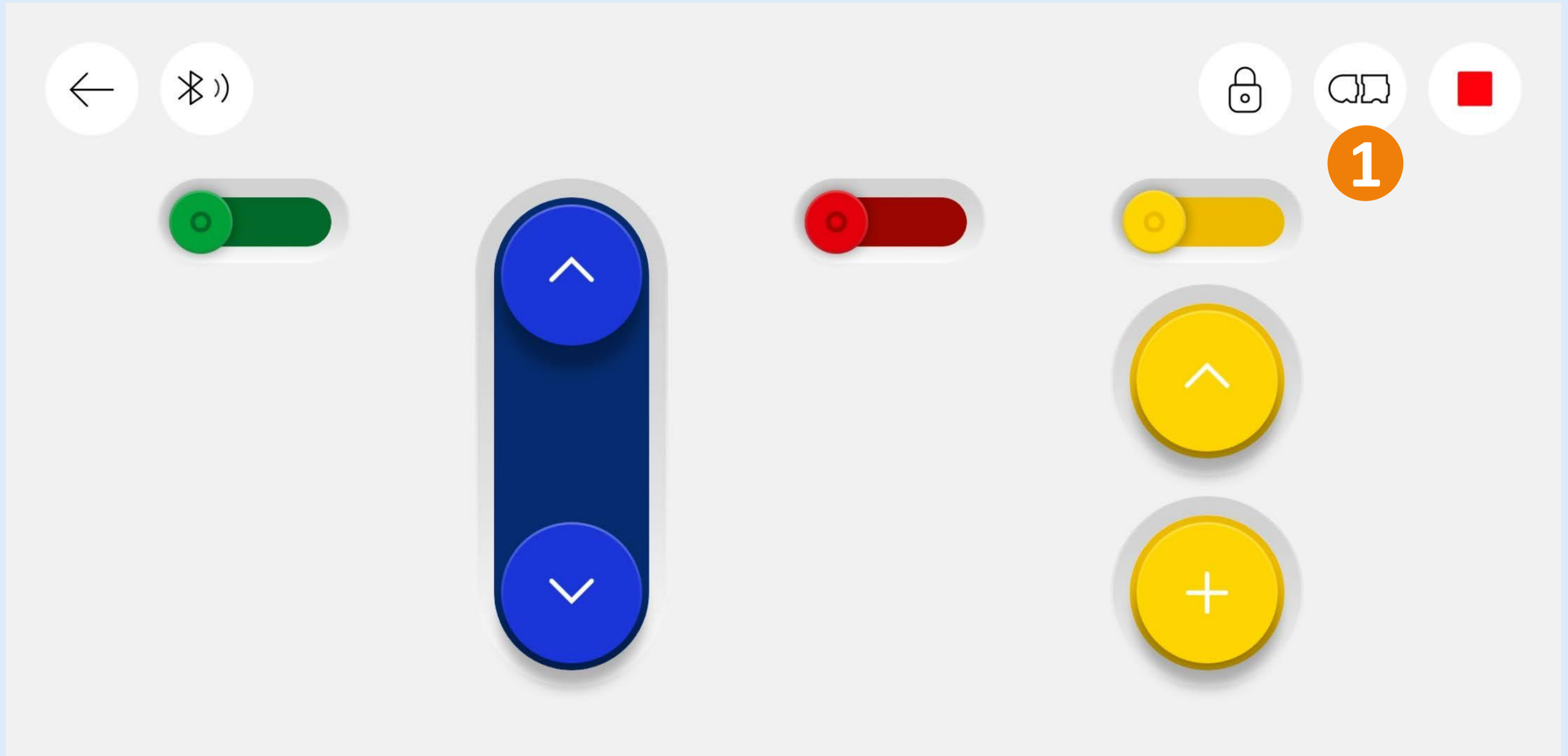
Click on the blue button (1) and change the icons (2) as shown below.  
Next you have to turn on the "Incremental" toggle.



Also change the icons for the 2 yellow buttons (1).  
Double check all the addresses in the red squares!  
Click on the lock icon to confirm and lock the buttons (2).



You should now see this interface. Click on the code icon to proceed (1).



This is the code interface which should still be blank by now. In the next steps we are going to build this step by step in the order shown below. You can zoom in and out on the code interface by pinching your fingers.



The image displays a Scratch code editor interface with a sequence of six numbered steps (1-6) illustrating the construction of a code block. The interface includes navigation icons (back, Bluetooth, play, game controller) and a toolbar with various Scratch icons. A palette of code blocks is shown at the bottom.

**Step 1:** A yellow code block with a green flag icon and a 'when green flag clicked' block.

**Step 2:** A yellow code block with a green flag icon and a 'when green flag clicked' block.

**Step 3:** A yellow code block with a green flag icon and a 'when green flag clicked' block.

**Step 4:** A yellow code block with a green flag icon and a 'when green flag clicked' block.

**Step 5:** A yellow code block with a green flag icon and a 'when green flag clicked' block.

**Step 6:** A yellow code block with a green flag icon and a 'when green flag clicked' block.



This code is for the Paternoster Lift Module. You can find all the blocks in the library of the same color (0). Drag them into the project one by one on the code interface. Start from the left and work from the outside in. So first get the yellow start block (1) followed by a loop block (2). Inside this loop block you have to place a toggle block (3) which are triggered by button 0 (4). Then add the motor blocks (5) and set the correct speed (6). Make sure to select Hub 1 and output A for both motors (7).



The screenshot displays the Scratch code editor interface. The main workspace shows a script with the following blocks: a yellow 'when green flag clicked' block (1), a yellow 'loop forever' block (2), a yellow 'toggle on/off' block (3) triggered by a yellow 'when button 0 pressed' block (4), two yellow 'set motor speed to 100' blocks (6) each preceded by a yellow 'turn motor on for 1 second' block (5), and a yellow 'set speed to 0' block (6). The motor blocks are configured for 'HUB1' and 'A'. The Scratch library at the bottom shows various yellow blocks, including 'when green flag clicked', 'when button 0 pressed', 'toggle on/off', 'set motor speed to 100', 'turn motor on for 1 second', and 'when green flag clicked'.

This code is for the Spinning Table Module. Again get the yellow start block (1) followed by a loop block (2). Then add the motor block (3) and connect the incremental button to it (4). Make sure it has address 1. Make sure to select Hub 1 and output C (5).



The screenshot displays a block-based programming environment. The main workspace contains a sequence of blocks: a yellow start block (1) with a green play button, a loop block (2) with a circular arrow and an infinity symbol, a motor block (3) with a motor icon, and an incremental button block (4) with a button icon. A pink block (5) is connected to the bottom of the motor block, labeled 'HUB1' and 'C'. The interface includes navigation icons (back, Bluetooth, play, game controller), a toolbar with various icons, and a palette of available blocks at the bottom.

This code is for the Tilting Turning Table Module and Shooter Module. Get another yellow start block (1) followed by a loop block (2). Inside this loop block you have to place a toggle block (3) which are triggered by button 0 (4). Then add the motor blocks (5) and set the correct speed (6). Make sure to select Hub 1 and output D for both motors (7). You can change the speed of the motor by changing the 100 value.

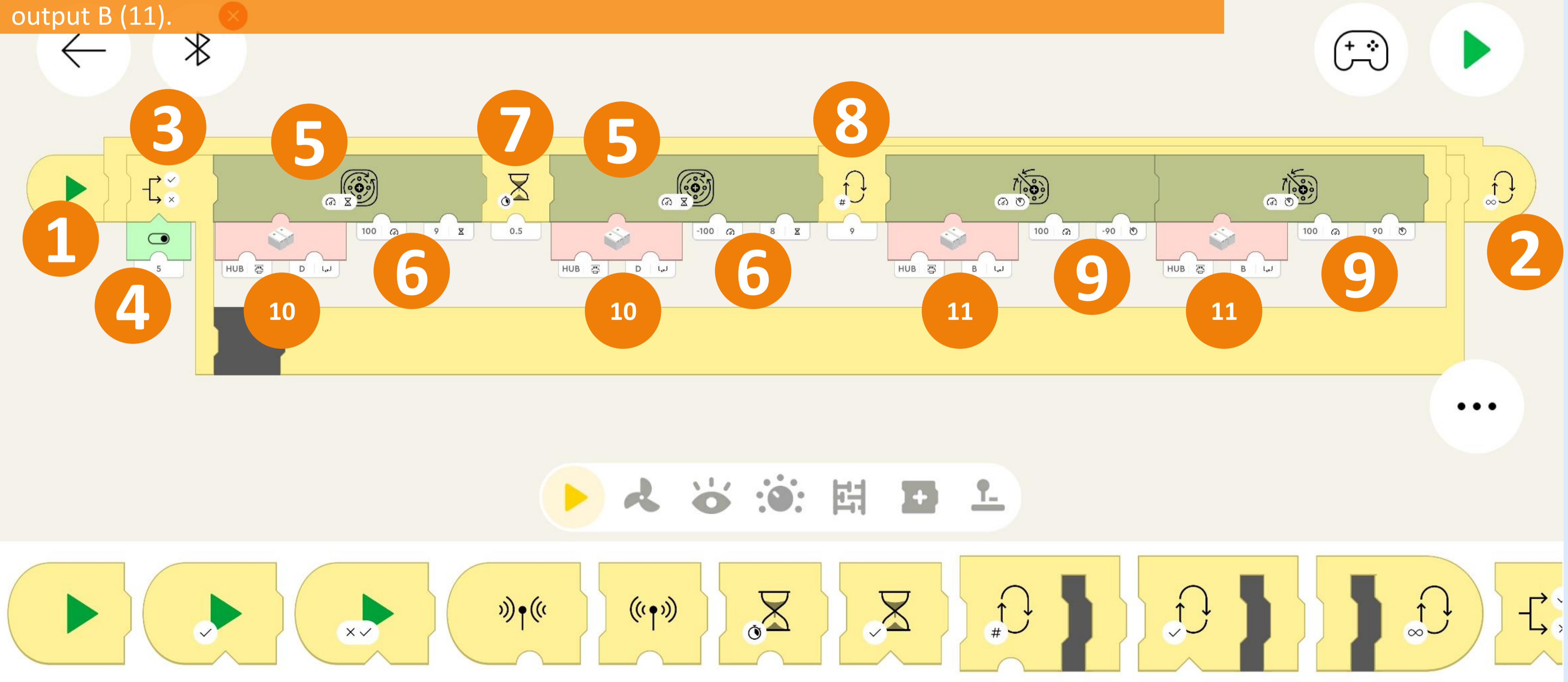


The image shows a Scratch code editor interface. The main workspace contains a script with the following blocks:

- Block 1: A yellow 'when green flag clicked' block.
- Block 2: A yellow 'loop forever' block.
- Block 3: A green 'toggle on/off button 2' block.
- Block 4: A yellow 'when button 0 pressed' block.
- Block 5: A green 'motor on' block for 'HUB1 D' with a speed of 100.
- Block 6: A green 'motor on' block for 'HUB1 D' with a speed of 0.
- Block 7: A '7' is placed below the second motor block.

The Scratch palette at the bottom shows various blocks including 'when green flag clicked', 'loop forever', 'toggle on/off button 2', 'when button 0 pressed', 'motor on', and 'motor off'.

This code is for the Elevator Module in auto mode. Get another yellow start block (1) followed by a loop block (2). Inside this loop block you have to place a toggle block (3) which are triggered by button with address 5 (4). Then add 2 motor blocks (5) and set the correct speed and time (6). Add a waiting block of 0.5 seconds in between the motor blocks (7). Next add a loop block and set the count value to 9 (8). Inside the loop block add 2 motor blocks and set the correct speed and rotation degree (9). Make sure to select Hub 2 and output D for the left 2 motors (10). The right 2 motors should be on Hub 2 and output B (11).



The loop counter determines how many GBC Balls are being loaded onto the Elevator Module (1). Default is 9. If the elevator doesn't reach its top completely you can adjust the timing settings (2).



This code is for the Elevator Module in manual mode. Again get the yellow start block (1) and make it trigger on button with address 3 (2). Then add 2 motor blocks (3). Put a waiting block of 1 second in between (4). Set the correct speeds and times (5). Make sure to select Hub 2 and output D (6). If the elevator doesn't reach its top, you can adjust the timings (5).



The screenshot displays a block-based programming environment. The main workspace contains a sequence of blocks: a yellow start block (1), a green button block (2) with address 3, a motor block (3) with speed 100 and time 8, a yellow waiting block (4) with 1 second, another motor block (5) with speed -100 and time 8, and a pink hub block (6) with HUB 2 and output D. The blocks are connected in a sequence. The interface includes navigation icons (back, forward, home, play), a toolbar with various icons, and a palette of blocks at the bottom. The palette contains various blocks including start blocks, button blocks, motor blocks, waiting blocks, and hub blocks.

This code is for the loading mechanism for Elevator Module in manual mode. Again get the yellow start block (1) and make it trigger on button with address 4 (2). Then add 2 motor blocks (3). Set the correct speeds and rotation degrees (4). Make sure to select Hub 2 and output B (6).



The screenshot displays a block-based programming environment. The main workspace contains a sequence of blocks:

- Block 1:** A yellow 'Start' block.
- Block 2:** A green 'Button' block with the address '4'.
- Block 3:** A motor block with a speed of 100 and a rotation of -90 degrees.
- Block 4:** A motor block with a speed of 100 and a rotation of 90 degrees.
- Block 5:** A motor block with a speed of 100 and a rotation of 90 degrees.
- Block 6:** A motor block with a speed of 100 and a rotation of 90 degrees.

The motor blocks (3, 4, 5, 6) are connected to a 'HUB' and 'B' output. The interface includes a toolbar at the bottom with icons for play, undo, redo, zoom, and other functions. A bottom bar shows a selection of available blocks.

The end result should look like this. You should have 6 individual starting blocks followed by code.



The screenshot displays a programming environment with a light beige background. At the top left, there are navigation icons: a back arrow and a Bluetooth symbol with a red 'X' above it. At the top right, there are icons for a game controller and a play button. The main workspace contains two columns of blocks. The left column has three starting blocks (yellow with a green play button) and two code blocks (green with a motor icon). The right column has a long yellow starting block followed by a code block. Below the workspace is a toolbar with icons for play, undo, redo, zoom in, zoom out, and a plus sign. At the bottom, there is a palette of blocks including a play button, a checkmark, a checkmark with an 'X', a radio tower, a radio tower with a checkmark, an hourglass, an hourglass with a checkmark, a loop block with a '#' symbol, a loop block with a checkmark, a loop block with an infinity symbol, and a code block.



Now we have to set the LEGO Powered Up hubs in the correct order. Click on the Bluetooth Icon and turn both hubs on (1). The left hub (With 3 motors connected to it) should be the top one. If this is not the case you have to drag them via the hamburger menu on the right (2). You can optionally rename them clicking on the pencil icon (3). Close the Bluetooth menu if all is exactly like shown below (4).



## Connect



01



Hub 1 (Left)



02



Hub 2 (Right)



3

2

You are all set! Switch to the controller interface to control the machine (1).  
Feel free to explore the code and add your own functionality.  
We can't wait to see all your cool inventions!



The image displays a graphical user interface for a robot programming environment. At the top left, there are navigation icons: a back arrow and a Bluetooth symbol with a red 'X' indicating it is disabled. The main workspace contains a yellow robot and a large yellow block with a black notch, along with several smaller green blocks containing various icons like a play button, a checkmark, and a gear. On the right side, there is a large orange circle with the number '1' and a play button icon. At the bottom, there is a toolbar with icons for play, undo, redo, zoom in, zoom out, and a plus sign. Below the toolbar is a row of block thumbnails, including a play button, a checkmark, a gear, a Bluetooth symbol, an hourglass, a play button with a checkmark, a play button with a hash symbol, a play button with a checkmark, a play button with an infinity symbol, and a play button with a gear.

The green toggle switch (1) powers the Paternoster Lift Module. The blue up and down buttons (2) control the speed and direction of the Spinning Table Module. The red toggle switch (3) powers the Tilting Turning Table and Shooter Module. The Elevator Module can be controller manually or automatically. The yellow toggle switch activates the auto mode. Button 5 sends the elevator manually up and button 6 loads 1 GBC Ball at a time into the elevator.

