STEMpedia

Touch Switchboard

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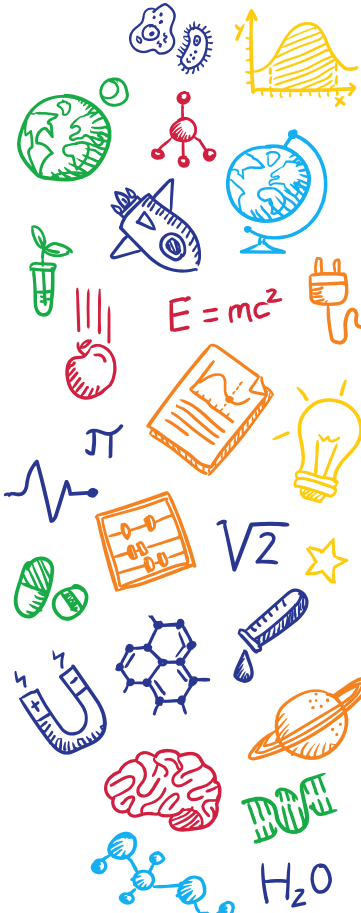
- In this activity, you will make a switchboard which will control a light bulb by touching the touchpad. If you touch the touchpad, switch bulb will start glowing, and if you touch it again bulb will be off.
- For this project you will need: evive, a relay, a bulb circuit, a bulb and jumper wires.
- You can connect any object to the capacitive touch pin to convert it into switch like fruits and vegetables.



Bulb Circuit

- We will use the same assembly of the bulb and relay we have made in the Relay activity.

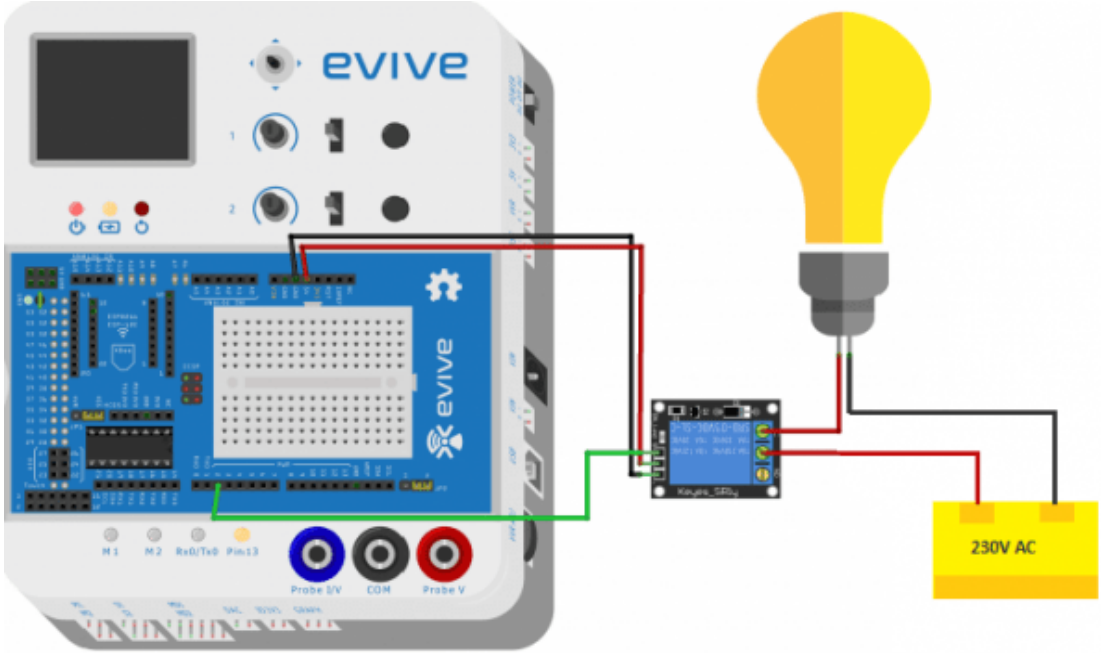
Circuitry

Relay Module

- A relay is a switch that is operated through an electrical signal.
- They are mainly used in controlling high power circuit with a low power signal. For example, with the help of a relay, you can control an AC bulb with evive.

Circuit Diagram

- Connect the relay to evive: GND to GND, VCC to 5V and Signal pin of the relay to the digital pin 2 of evive.



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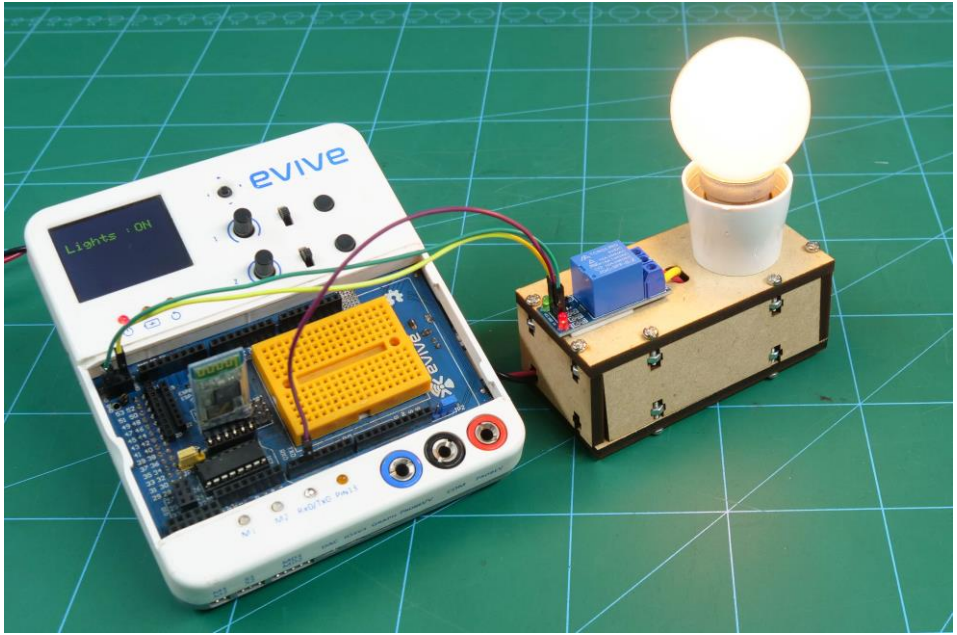
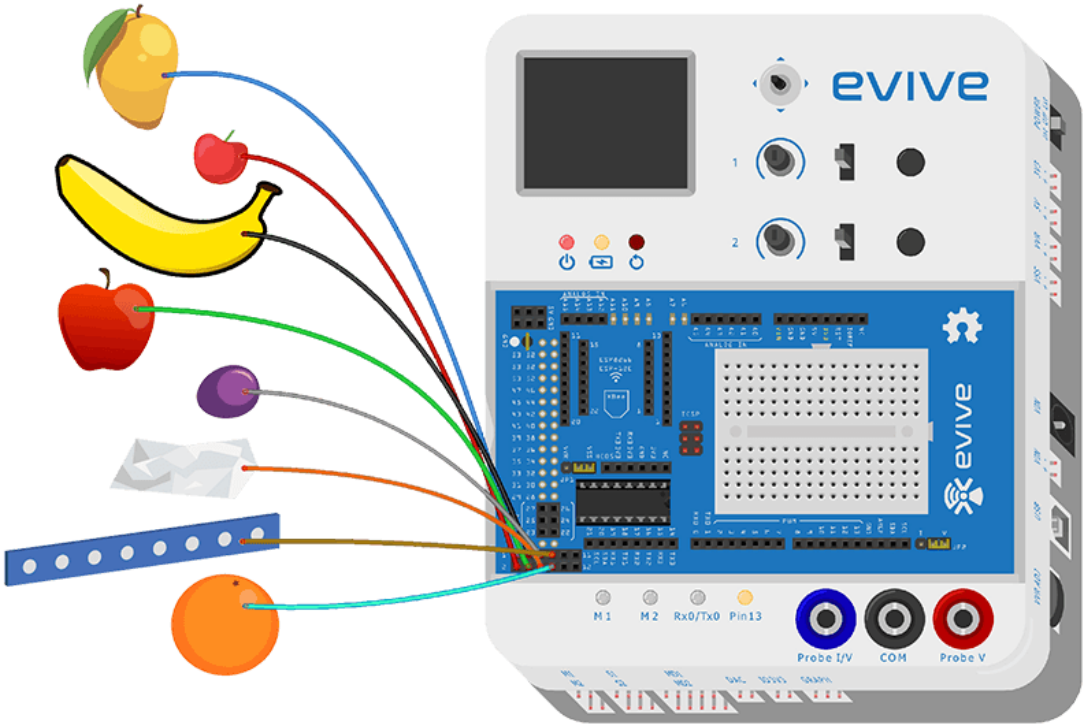


Circuit Diagram

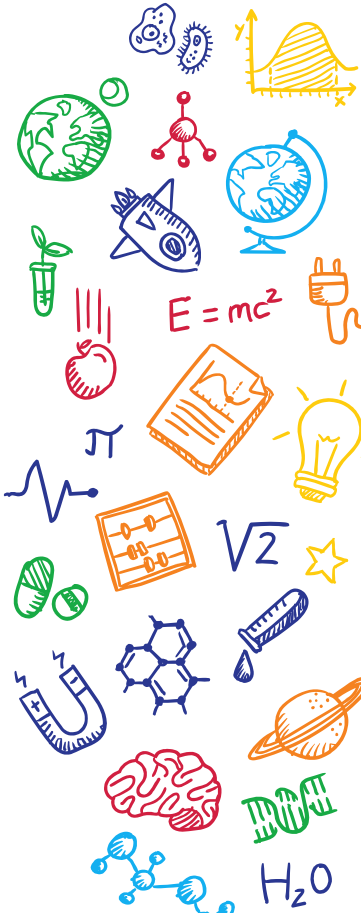
- Connect any conductive object to touch channel 1.



Logic

Logic

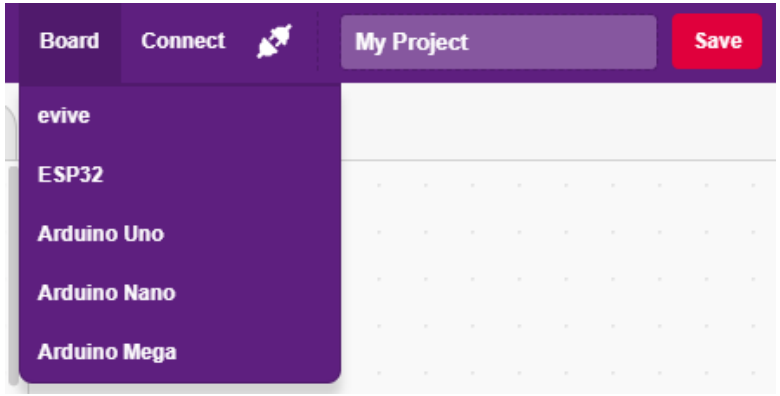
- The logic is simple. We will remember the state of the bulb at all time and will trigger the state is the touch pin is touched.
- So if the bulb was OFF, after touching the switch, the blub will turn ON.
- If the bulb was ON, after touching the switch, the blub will turn OFF.



PictoBlox Program

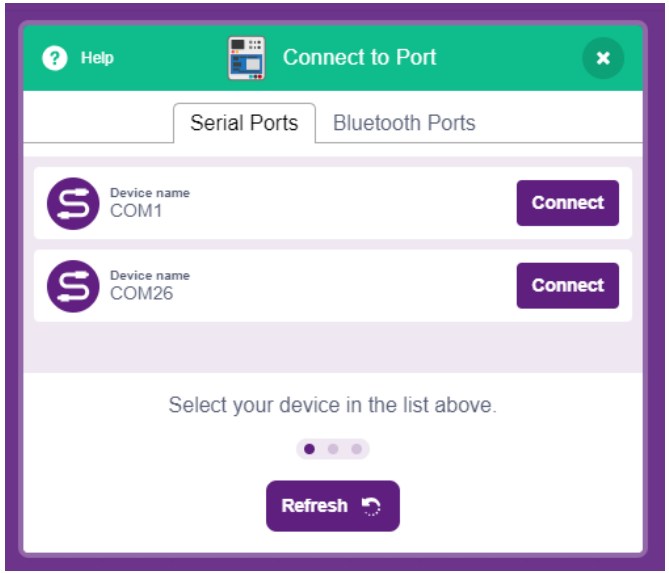
Interfacing evive with PictoBlox

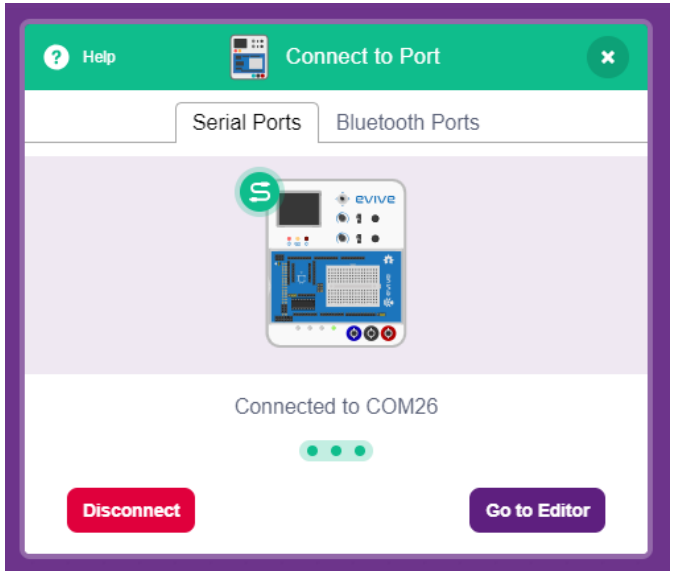
- Connect evive to your laptop/PC and open PictoBlox.
- In PictoBlox, go to the menu and click on the Boards Select the evive.



Interfacing evive with PictoBlox

- Once you've selected the board, click on the Connect tab and connect the board.





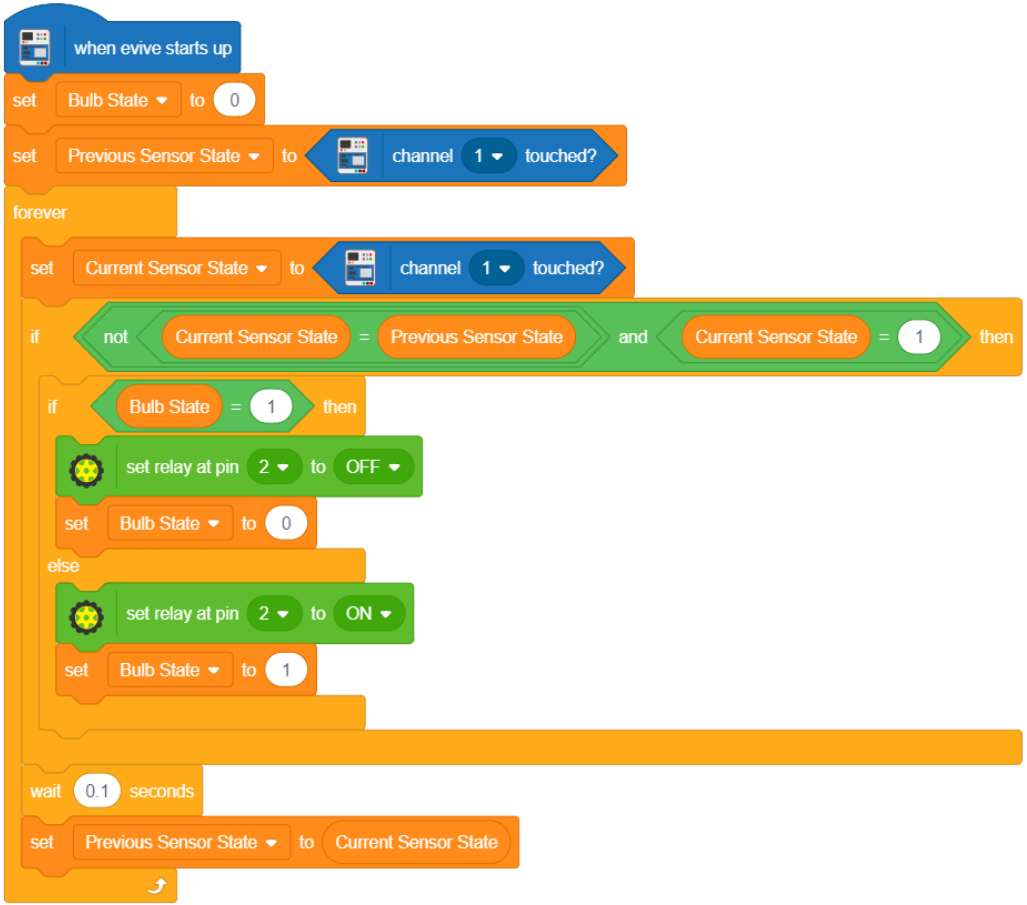
Blocks

- **channel () touched?** block is a Boolean block. evive have 12 capacitive touch inputs, where you can sense if the pin is touched or not.
- If the specified channel is touched, the block returns "**True**", else it returns "**False**".

PictoBlox Program

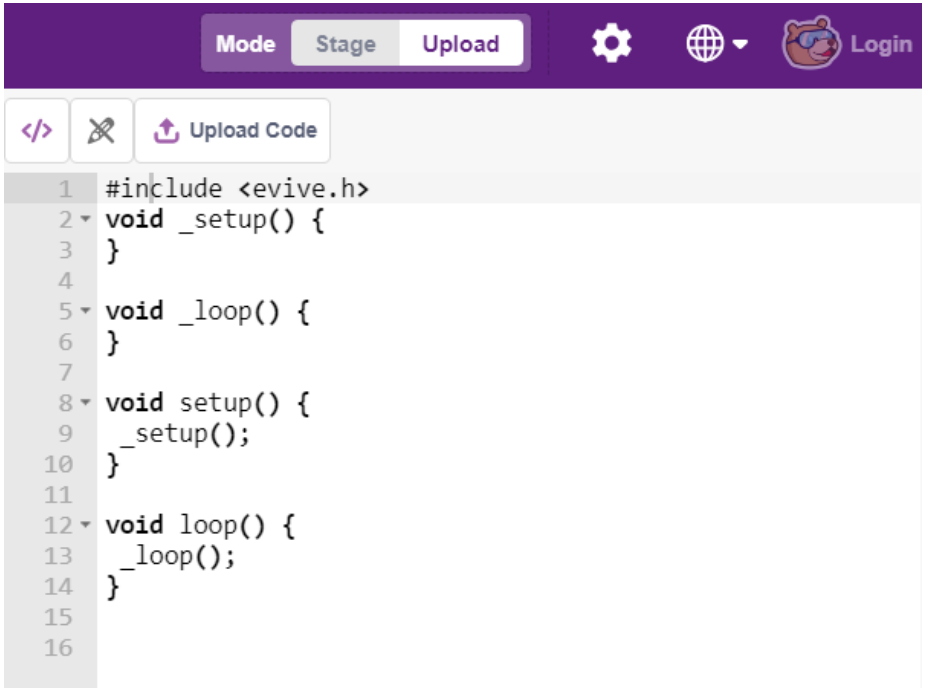
- Make two variables to store the current and previous value of the sensor and one to store the state of bulb.
- The state of bulb will only change when the previous state and the current state of the sensor are not equal and the current state if HIGH or sensor is touched.
- If the above condition is true, then the state of the bulb will be changed.
- Try to make this program by yourself first.

PictoBlox Program



PictoBlox Script

- Upload the code onto evive by clicking on the Upload Code Button:



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