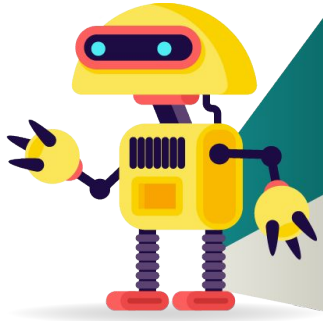


WOOD-KIT

WoodKit-04 with Mblock 5

- PiBox

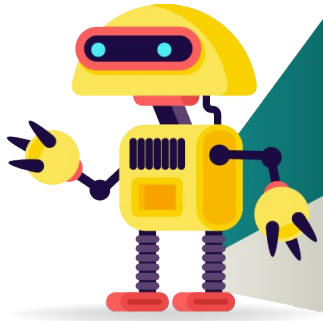




Outlook

What will the final look of our set be like?

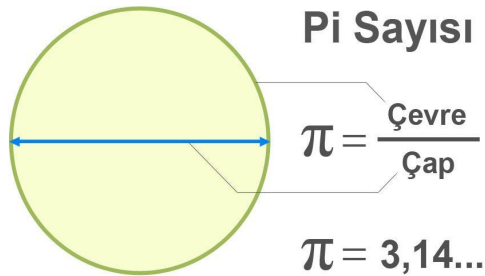




Pi

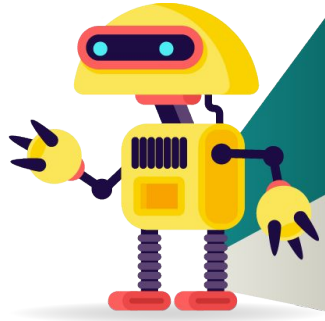
3.14159265358979323846264338327950288...

- It is an irrational mathematical constant obtained by dividing the circumference of a circle by its diameter. It takes its name from π , the first letter of the Greek word $\pi\epsilon\rho\acute{\iota}\mu\epsilon\tau\rho\nu$ (environment).



- Every year, March 14 is commemorated as Pi Day. The reason for this is that this day is 3.14 in the American date format.



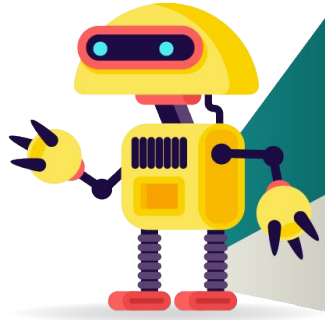


Pi Box

Goal of the Project

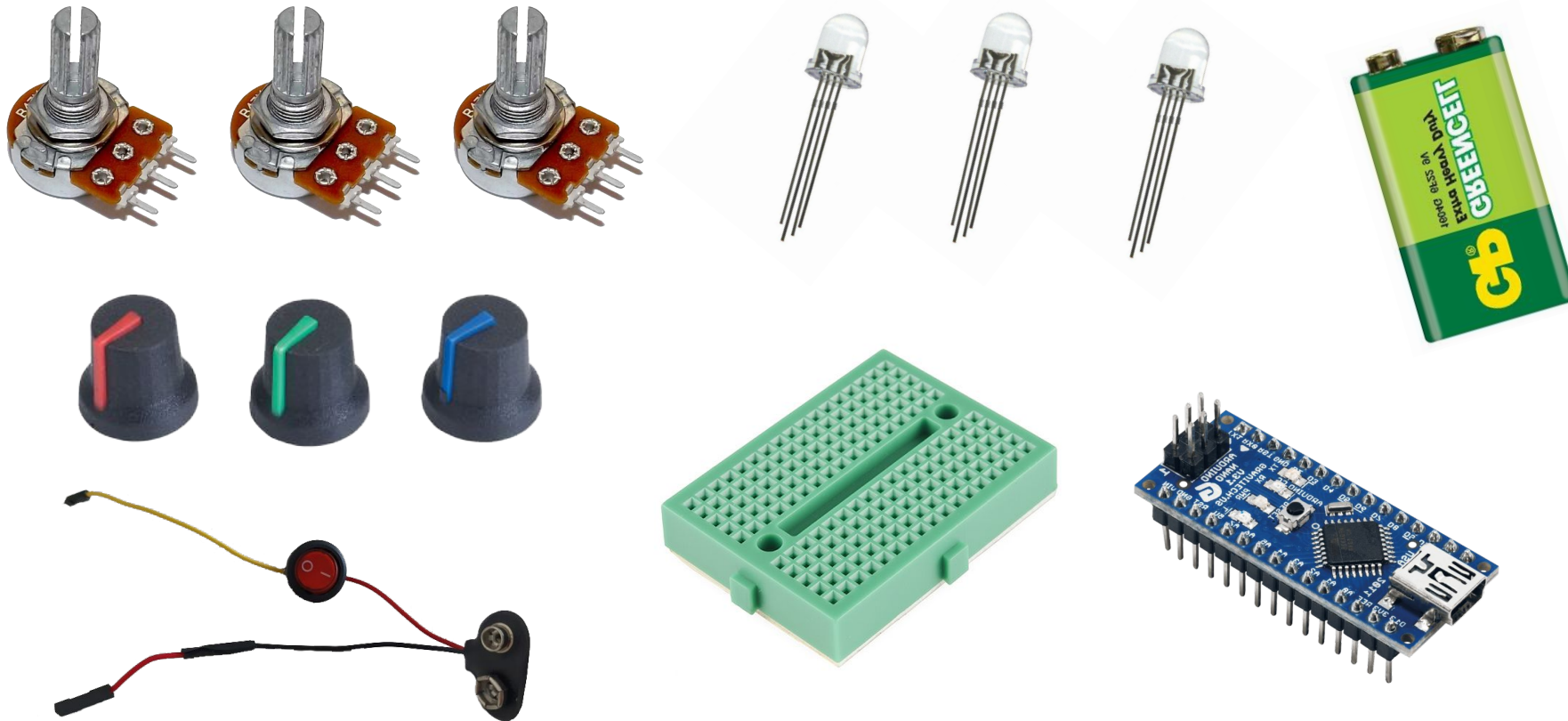
- It is desired to make a night lamp with the number of Pi.
- It is aimed that this night lamp will produce more than one color and allow the colors to be set optionally with potentiometers.





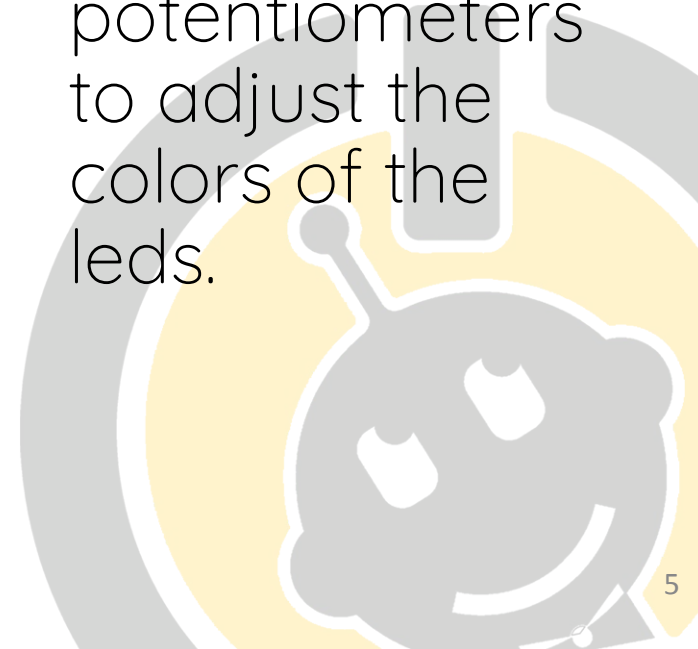
Components we use

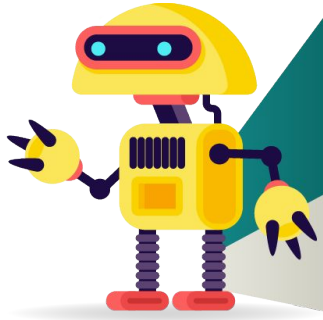
What are those?



www.red-kit.com

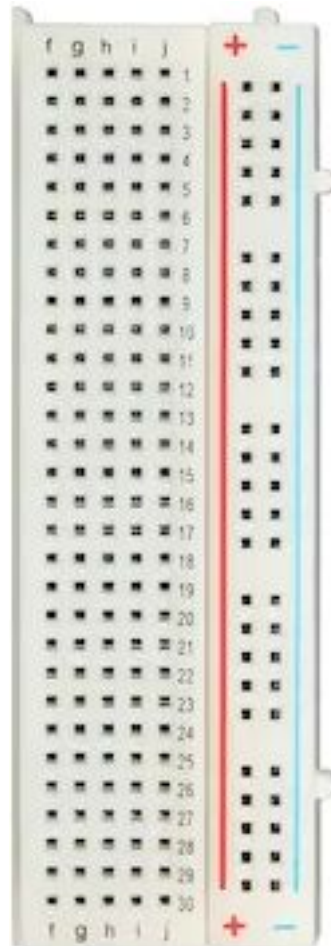
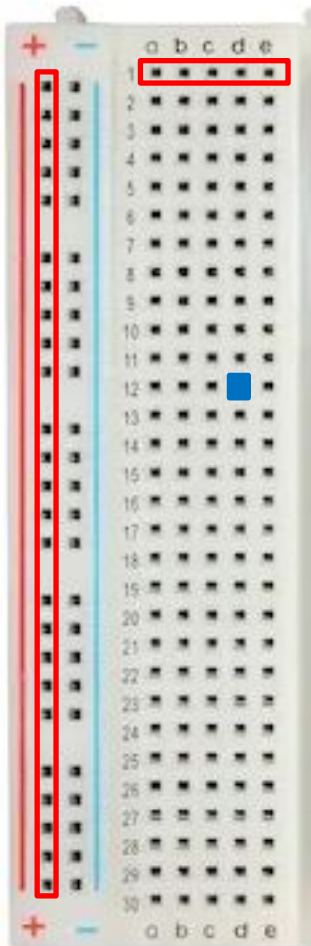
- We will need an RGB led for different colored lights and 3 potentiometers to adjust the colors of the leds.



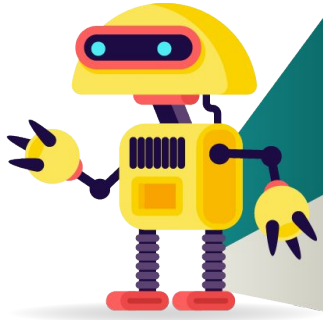


Breadboard

What is this?

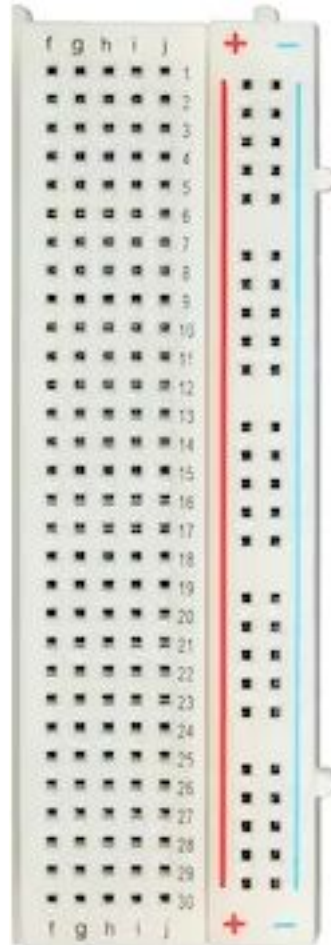
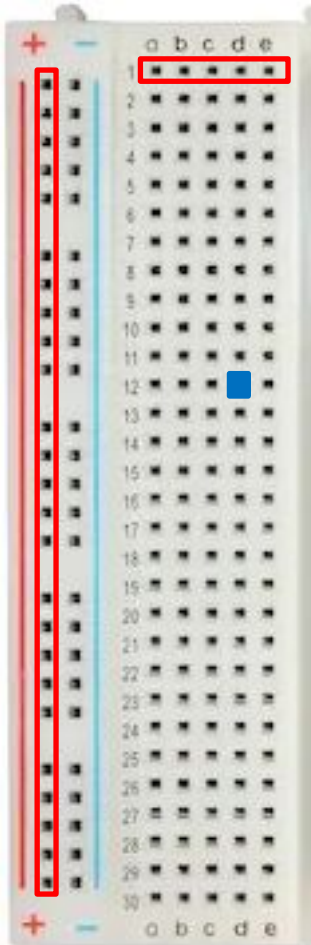


- Breadboard consists of two parts symmetrical to each other.
- All features on one part also apply to the other part and are completely independent of each other.
- Each pin on the breadboard is named according to the intersection of its rows and columns.
- For example, because the pin in the blue box on the side is in column d and line 12 we named it **d12**.
- It consists of 30 rows numbered 1 to 30 and 5 columns named a to e.
- There are also 2 more special columns named + and -.

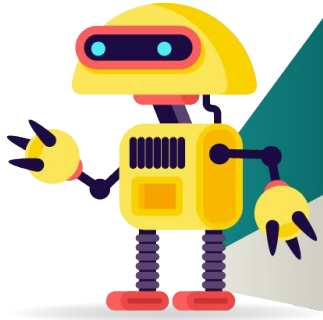


Breadboard

What is it?

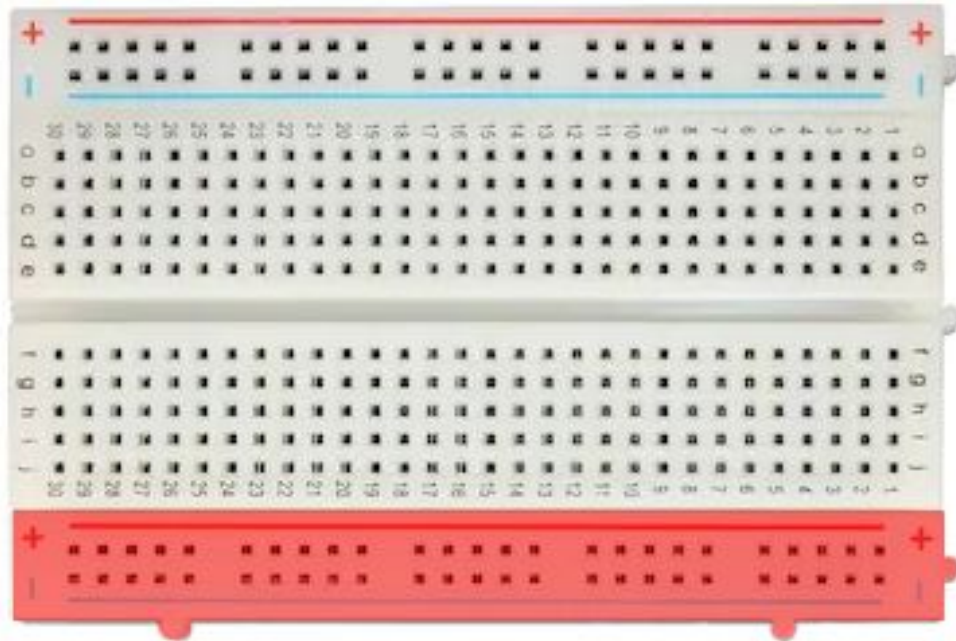


- Each line on the breadboard is structurally connected to each other.
- For example, when you energize pin a1 with 5V, you also energize pins b1,c1,d1 and e1 with 5V.
- The + and - columns are connected to each other as columns.
- For example, when you connect any pin of the - column to GND, you can use the other 29 pins as GND.
- Breadboards can be separated according to the project you use. You can separate the + and - columns shown in the figure by your hand.



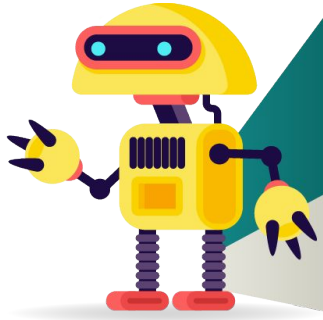
Pi Box

What is this?



- Separate the part where the + and - channels of the medium-sized breadboard with your hands as shown in the figure.

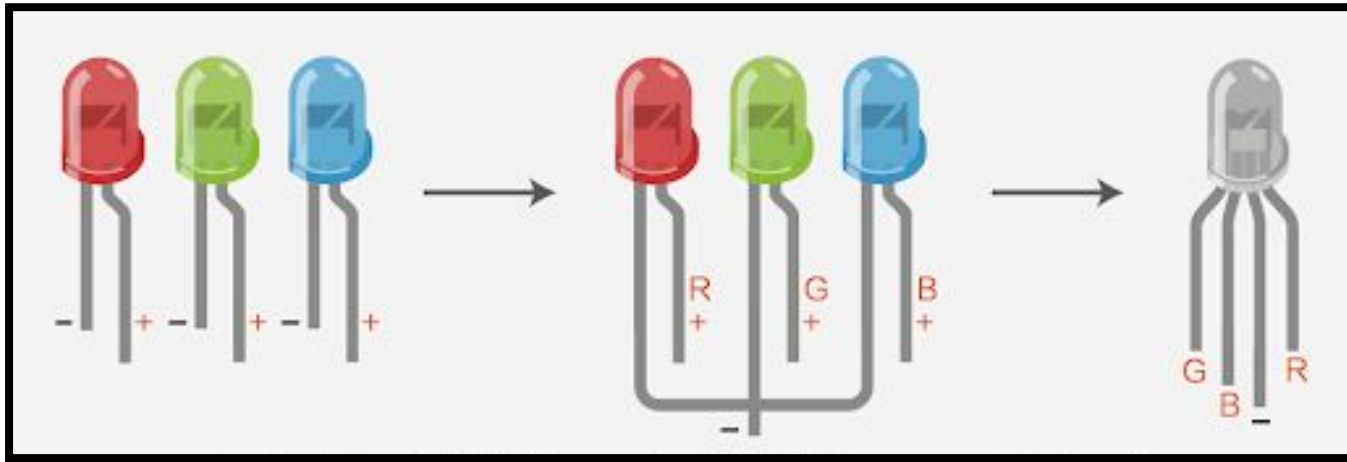


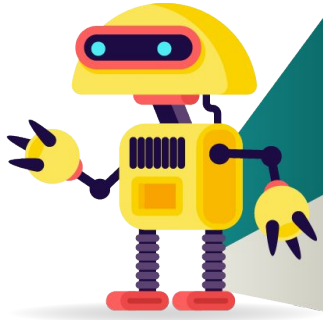


RGB LED

What is this?

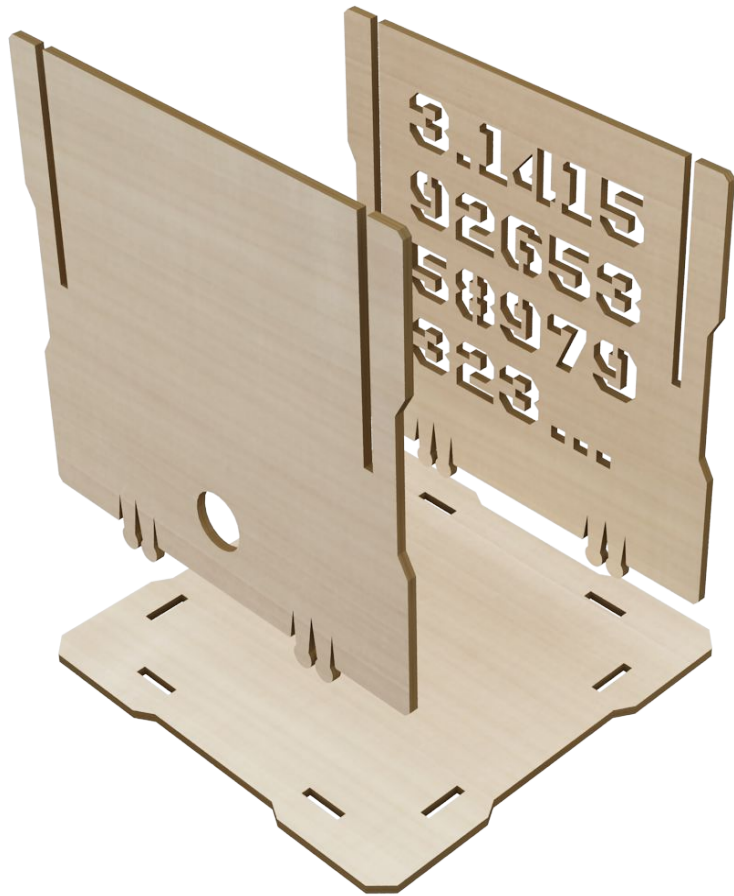
- RGB LEDs, unlike normal LEDs, contains 3 different colors (red, green, and blue) LEDs in a single package.





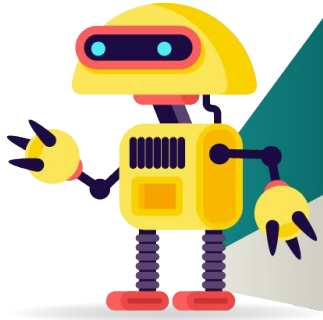
Pi Box

Assembly Steps



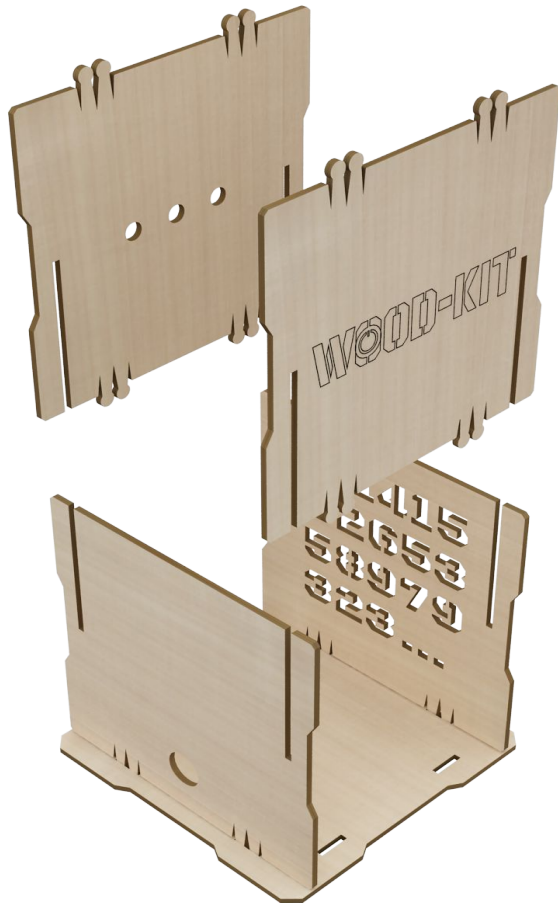
- Place piece G1 on a flat surface.
- Place piece G2 on top of D1 with the text facing out.
- Place piece G3 on top of G1 with the text facing out.





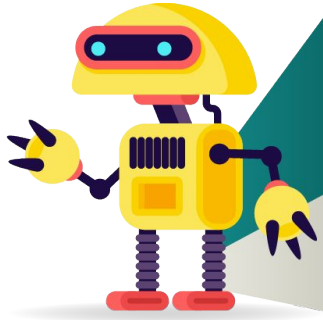
Pi Box

Assembly Steps



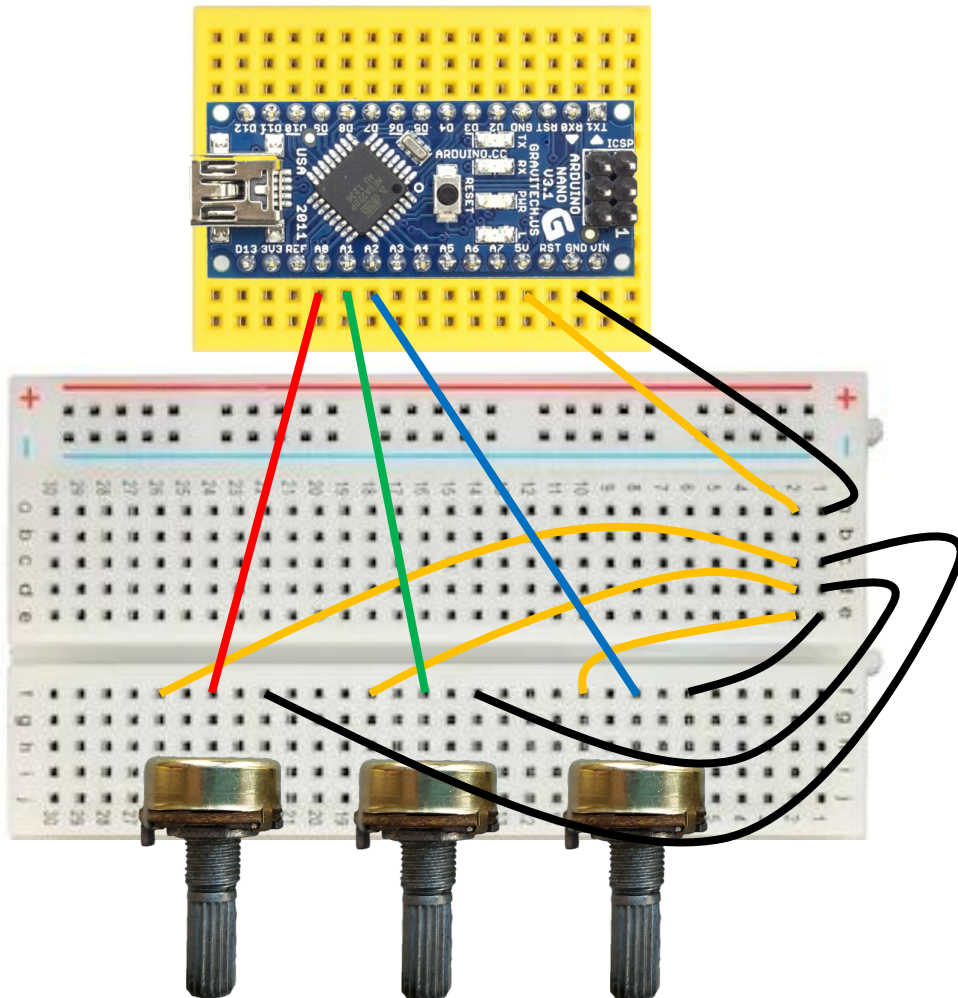
- Place the piece G4 over G1 by passing it over G2 and G3 with the text facing out.
- Place piece G5 over G1 by passing it over G2 and G3, with the text facing out.



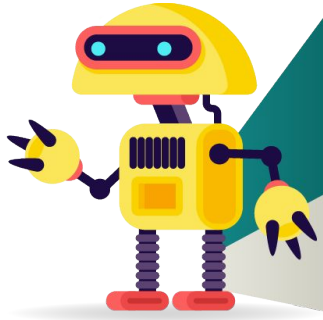


Pi Box

Circuit Diagram

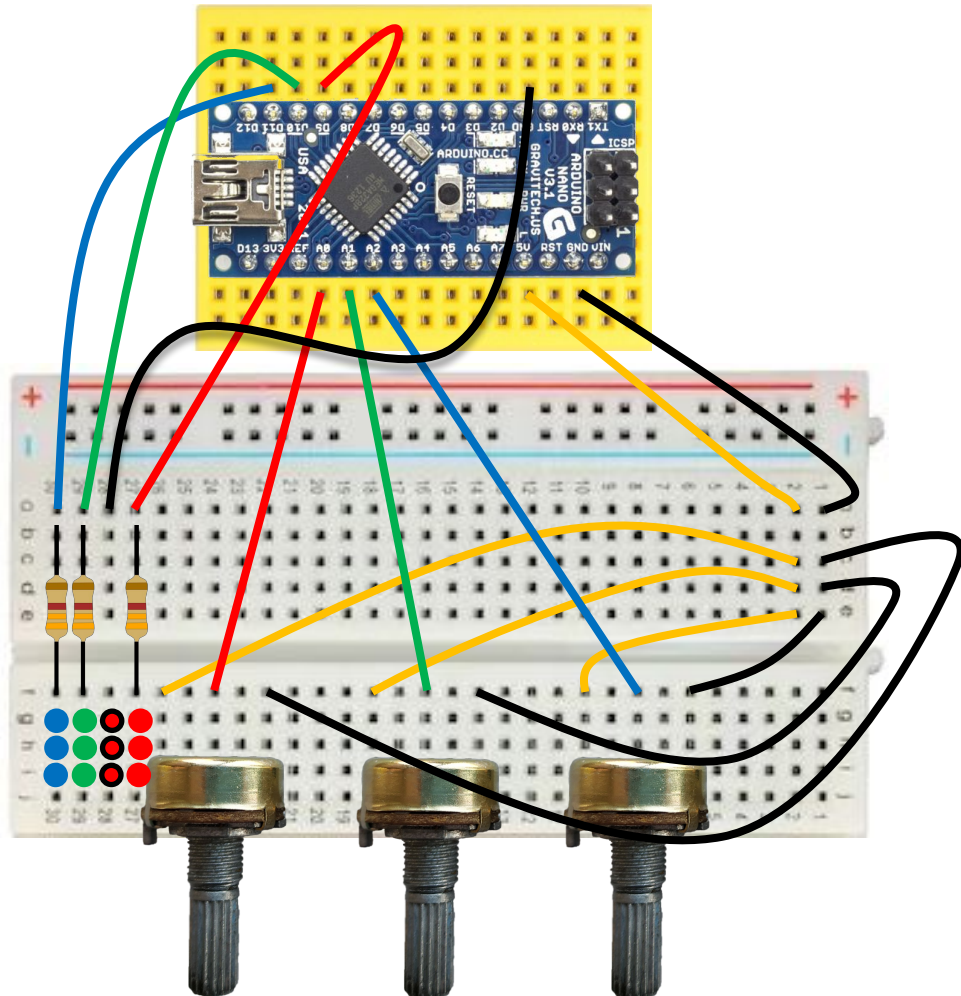


- Place the potentiometers as follows, considering the pin numbers on the breadboard.
 - **Pot1:** j26 – j24 – j22
 - **Pot2:** j18 – j16 – j14
 - **Pot3:** j10 – j8 – j6
- Connect the Arduino's GND pin to the breadboard's a1 pin.
- Connect the Arduino's 5V pin to the breadboard's a2 pin.
- From the Potentiometers;
 - Connect the right legs to the 5V pin on the breadboard.
 - Connect their left legs to the GND pin on the breadboard.
 - Connect the middle legs to the analog pins A0, A1 and A2 respectively.

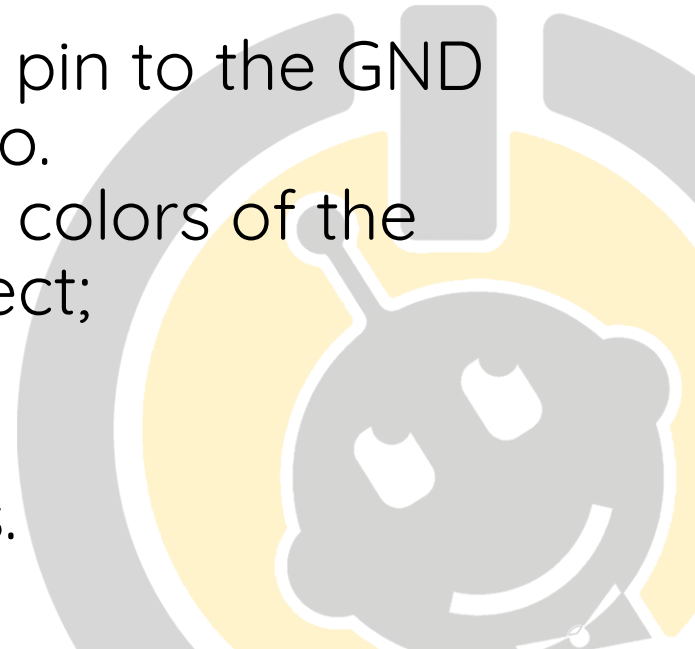


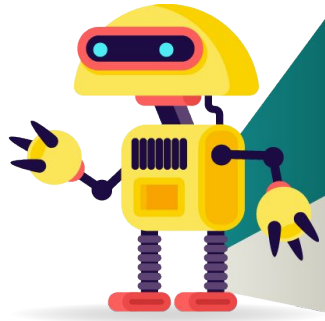
Pi Box

Circuit Diagram



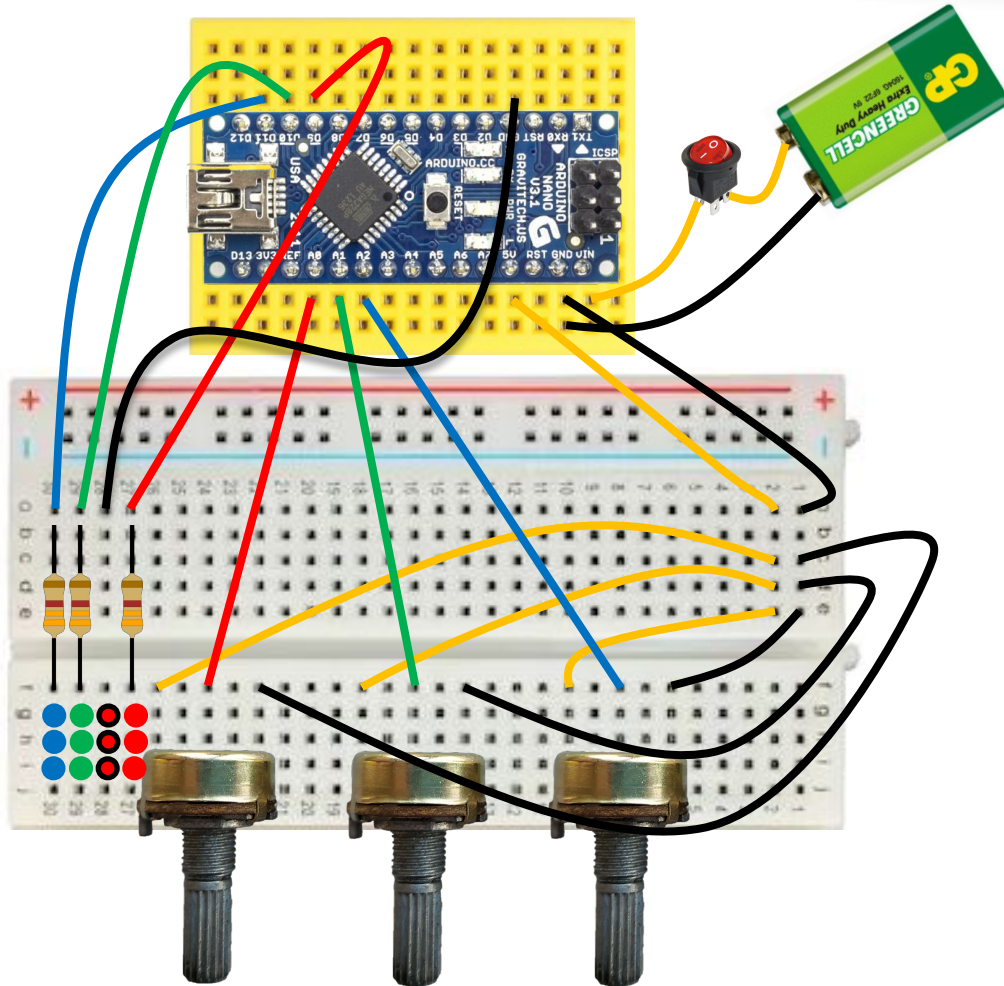
- Place an RGB LED with the long leg coming up with c26. Connect the other RGB LEDs to the d and e rows in the same way.
- Connect the C26 pin to the GND pin of the arduino.
- According to the colors of the other pins, connect;
 - **Red:** D9
 - **Green:** D10
 - **Blue:** D11 pins.



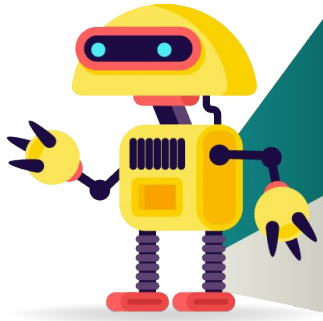


Pi Box

Circuit Diagram



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- According to the colors of the other pins, connect;
 - Red: D9
 - Green: D10
 - `|||UNTRANSLATED_CONTENT_START|||Mavi: D11 pinlerine bağlayın.|||UNTRANSLATED_CONTENT_END|||`



Pi Box

Code Blocks

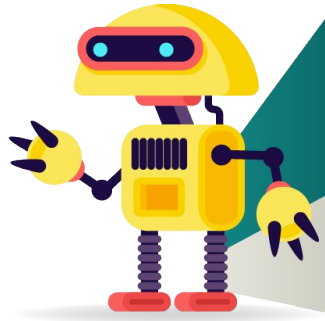
define Light Open

```
set PWM 9 output as pot1 / 4
set PWM 10 output as pot2 / 4
set PWM 11 output as pot3 / 4
```

define Pot Read

```
set pot1 to read analog pin (A) 0
set pot2 to read analog pin (A) 1
set pot3 to read analog pin (A) 2
```

- We create a function named '**Pot Reading**'
- We create three variables named '**pot1,pot2,pot3**' .
- We assigned the values read from the potentiometers into the variables we created.
- We created a function named '**Turn on the light**'
- We assigned the 4th part of the values read from our potentiometers to the pwm pins that we connected the legs of our RGB, respectively.
- In our main code block, we call our functions that we created '**Pot Reading**' and '**Turn on the light**' .



Pi Box

Code Blocks

when Arduino Uno starts up

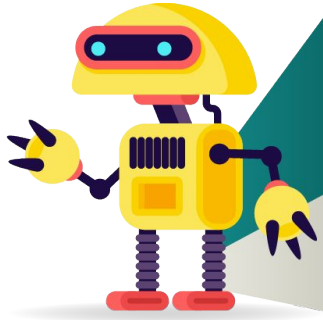
forever

Light Open

Pot Read

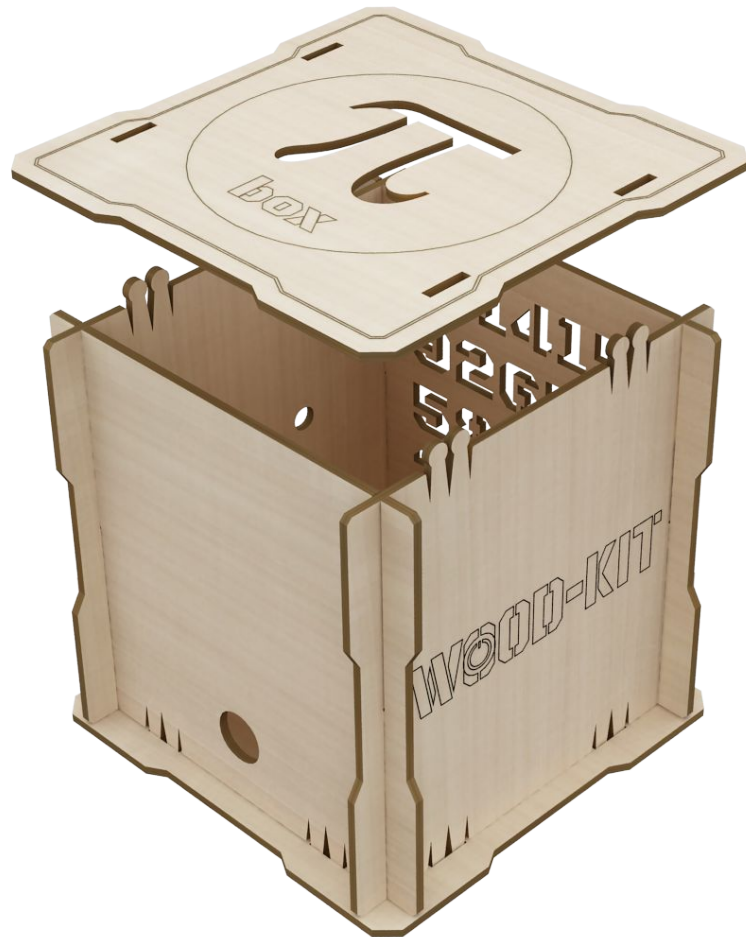
- We call our functions Pot Read and Light Open.





Pi Box

Final Look



- After completing the circuit diagram and placing it in the box, close the box with piece number D6.





ROBOTİK BİLİM
“Hayal et & Kodla”

WOOD-KIT

Thank you!

