

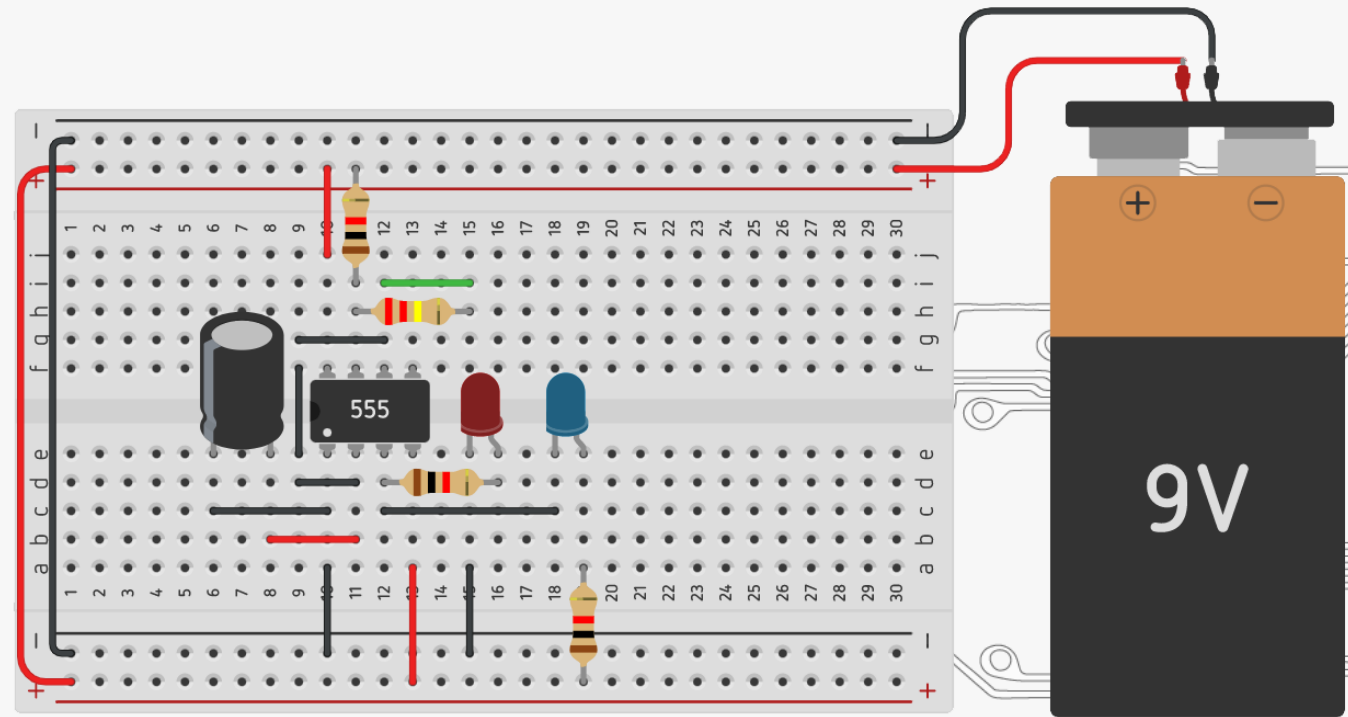
LED Chaser

Basic LED chaser circuit with 555 timer

recap,

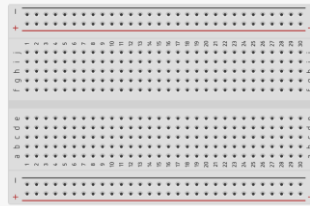
Introduction

LED chaser using 555 timer



Required Components

- Breadboard
- 555 Timer
- LED
- Resistor
- Snap Connector
- Jumper Wires
- Battery 9v



Breadboard



555 Timer



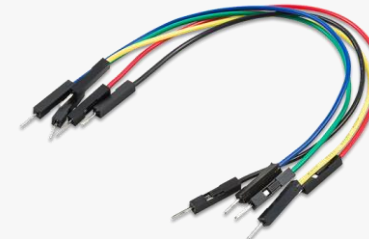
LED



Resistor



Snap Connector



Jumper Wires



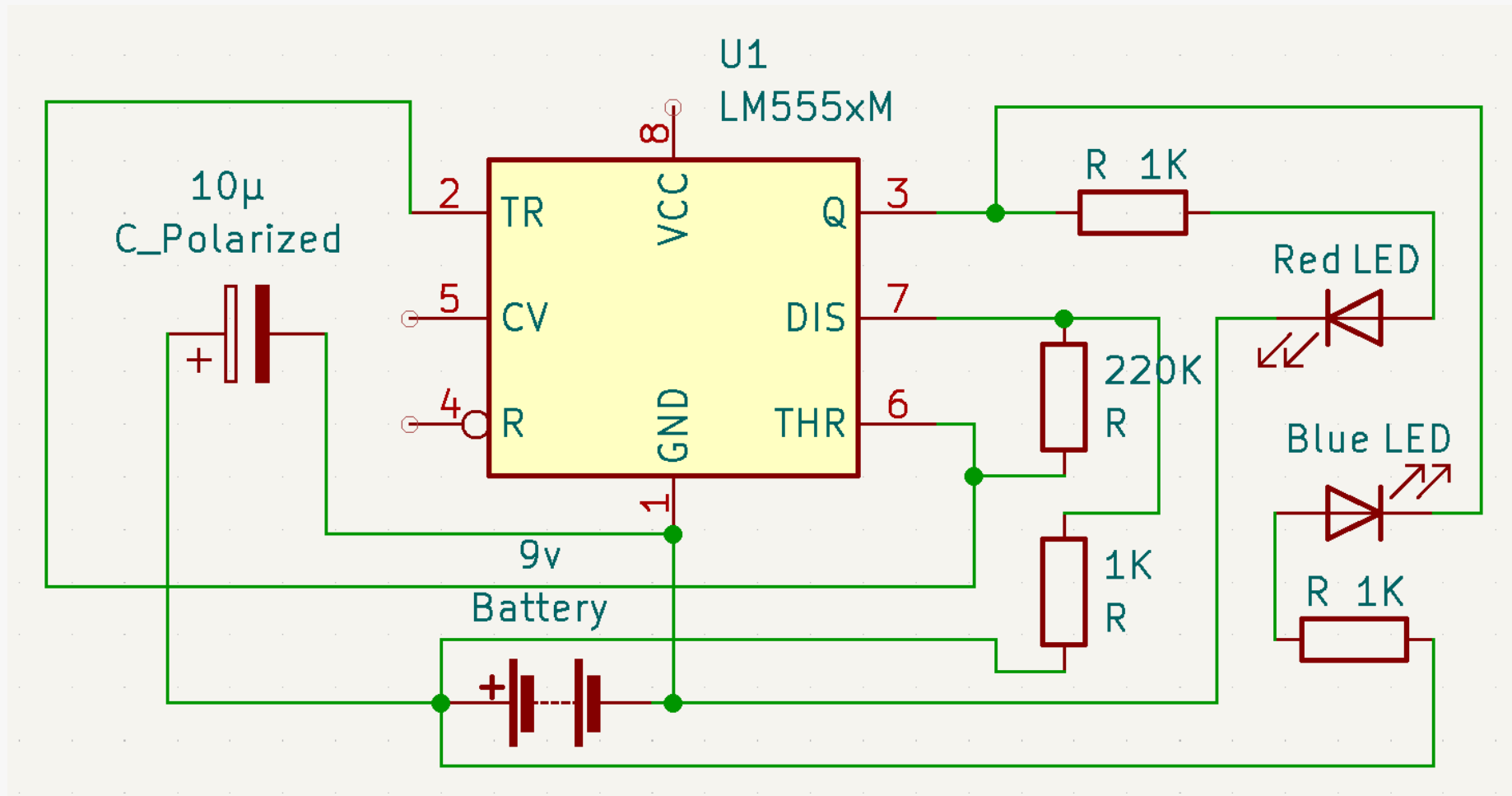
Battery 9v



Procedure

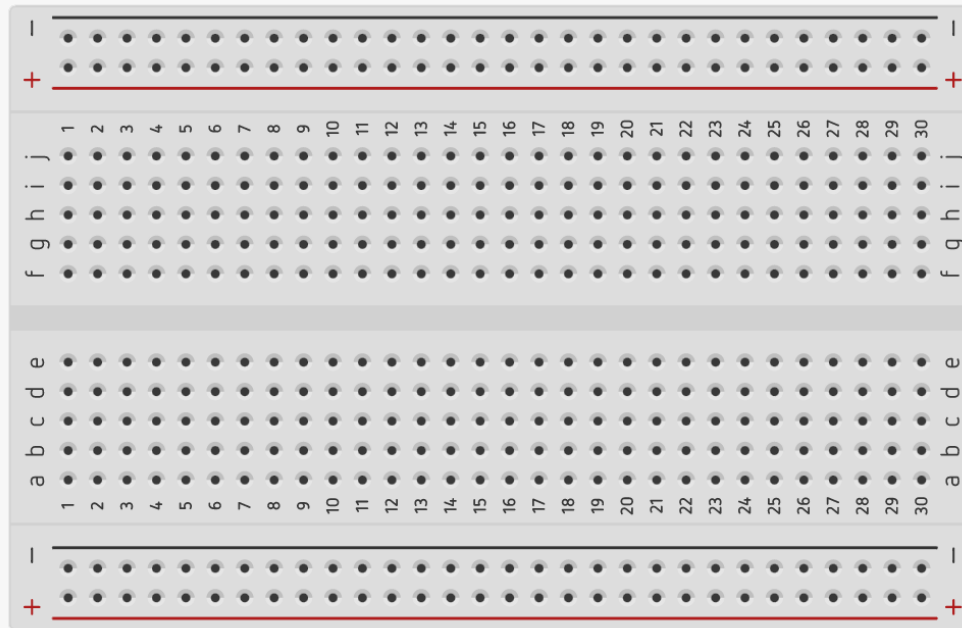
Connection Steps

Circuit diagram



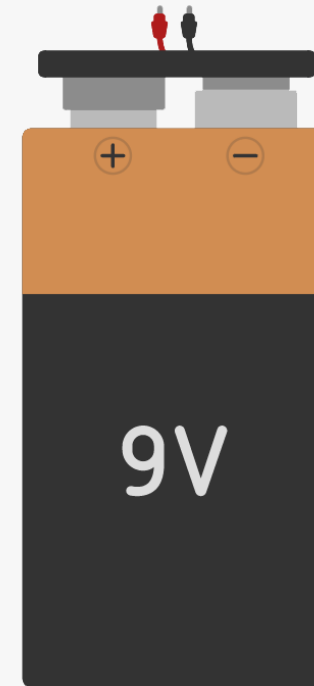
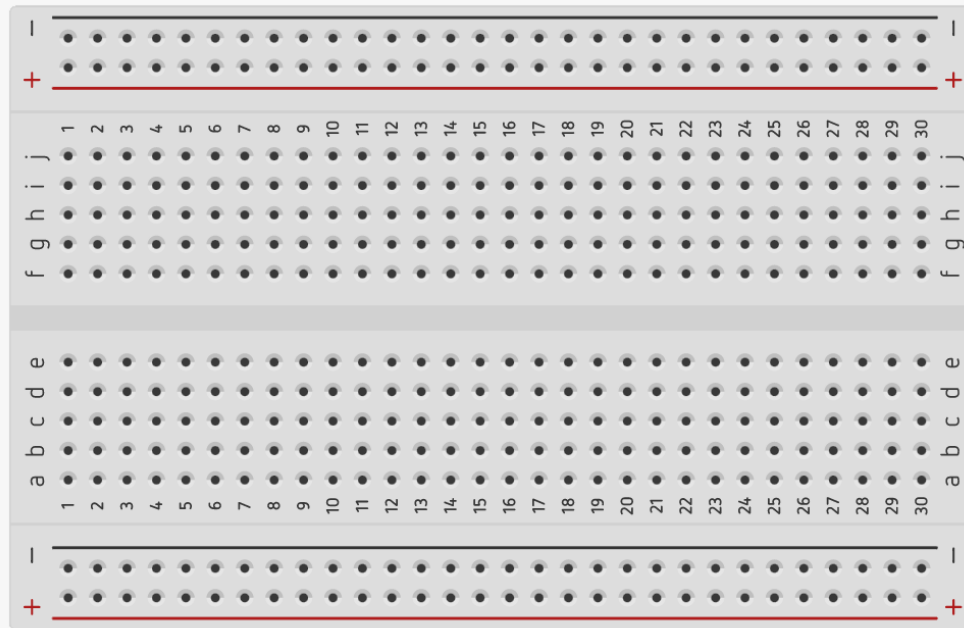
Connection Step 1

- Place breadboard



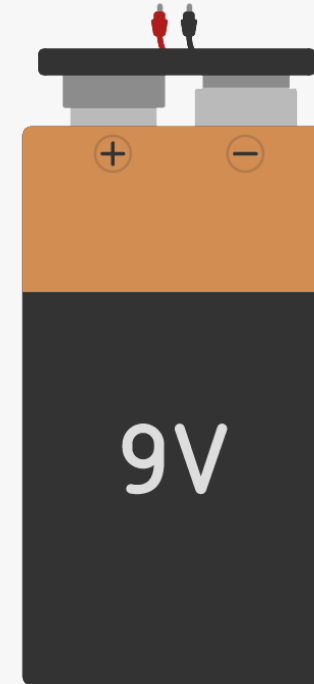
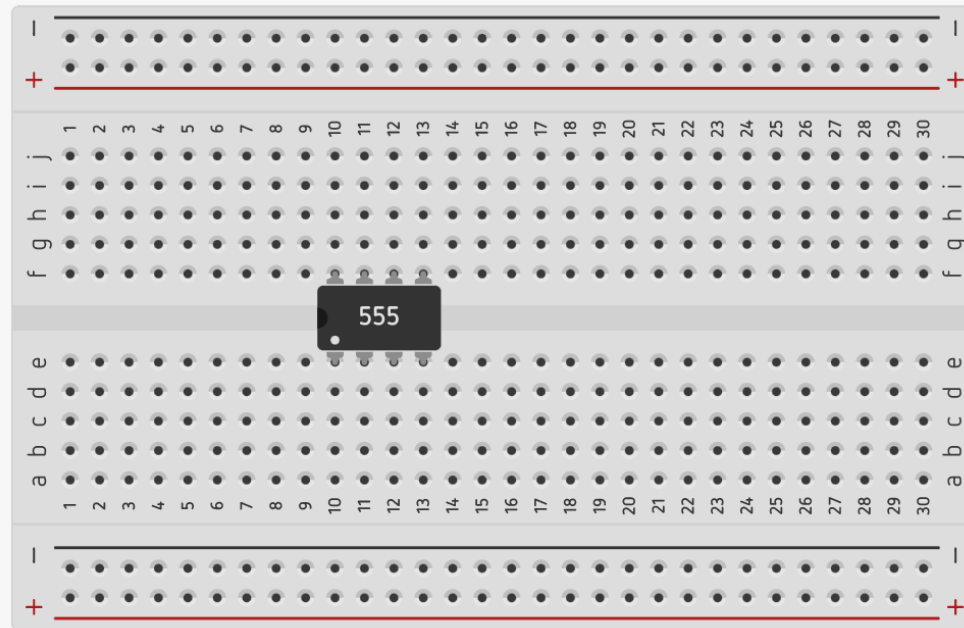
Connection Step 2

- Place battery



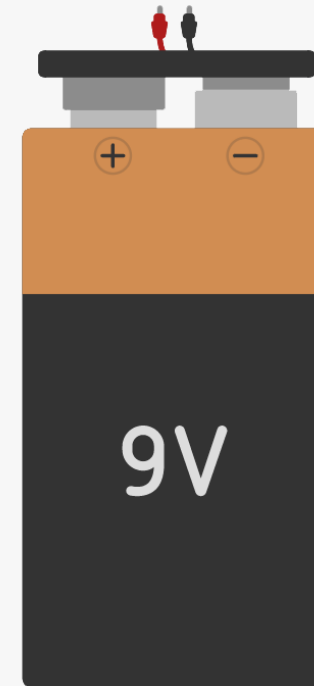
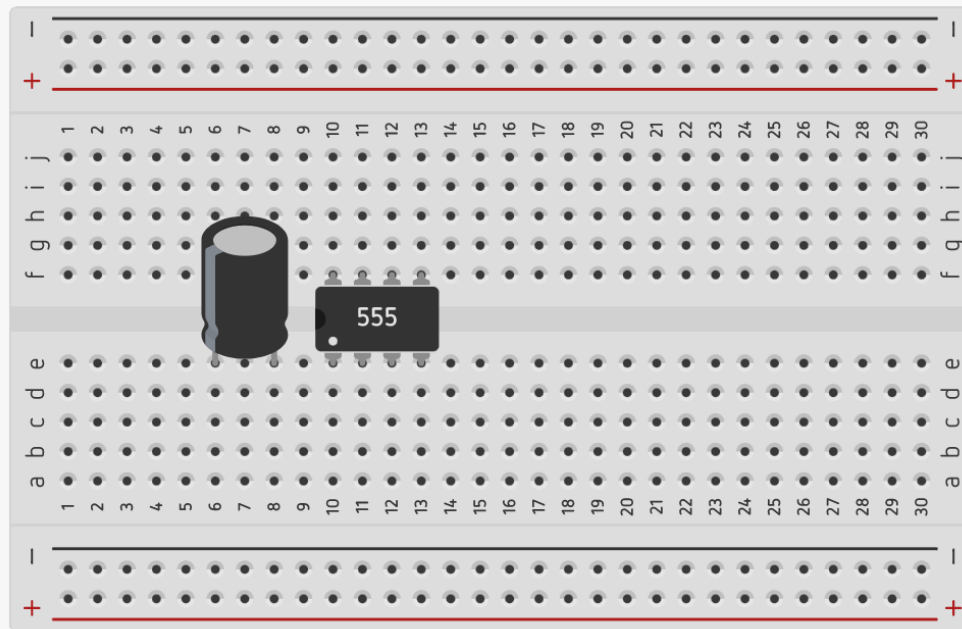
Connection Step 3

- Insert 555 timer in breadboard



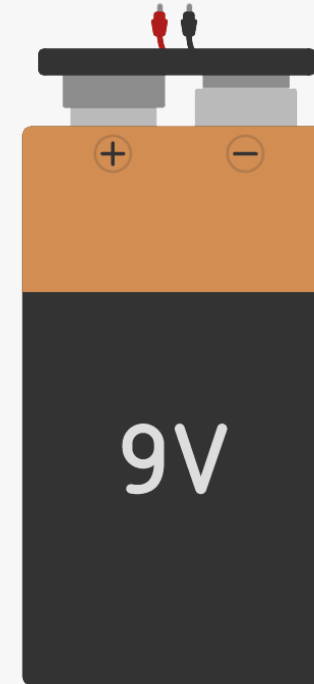
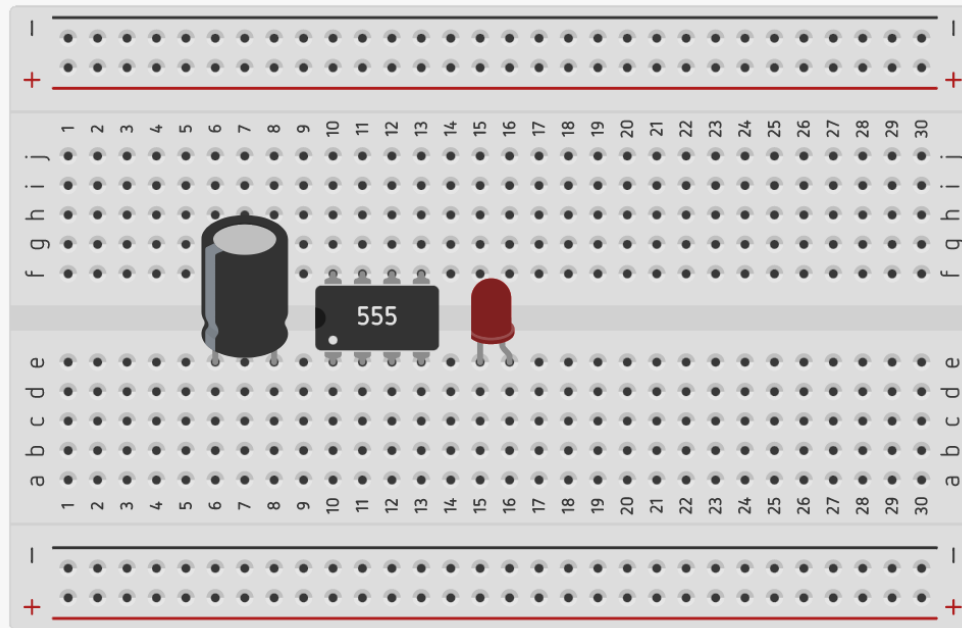
Connection Step 4

- Insert capacitor in breadboard



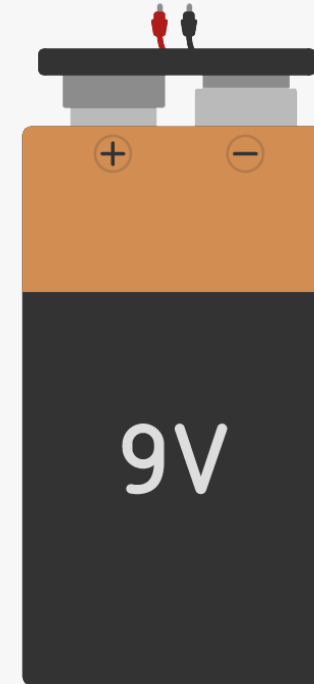
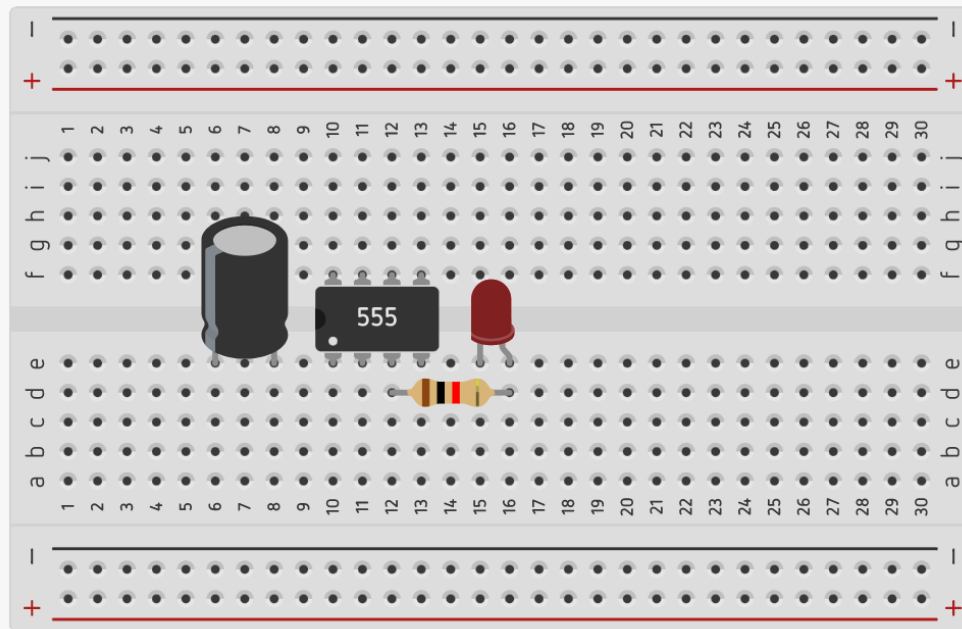
Connection Step 5

- Insert LED in breadboard



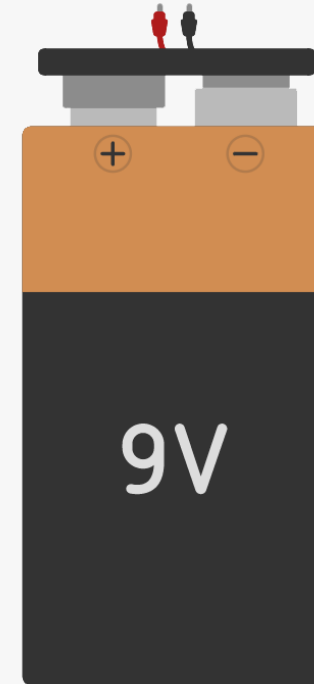
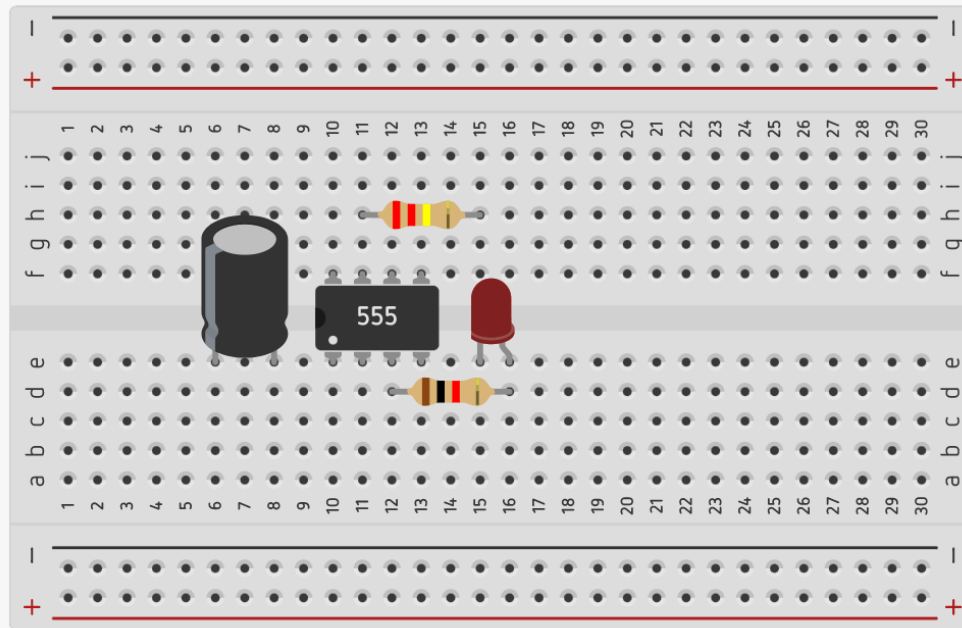
Connection Step 6

- Connect OUT (pin 3) of 555 timer to the anode terminal of LED using a resistor as shown in the diagram.



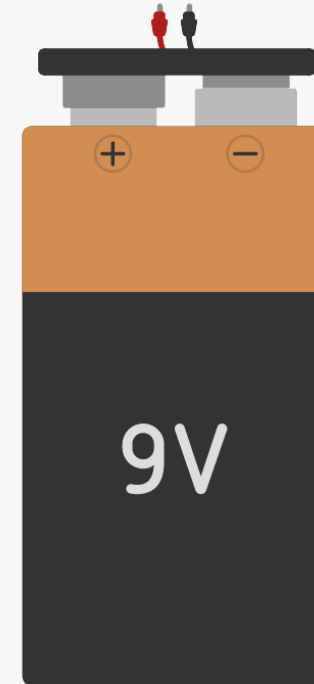
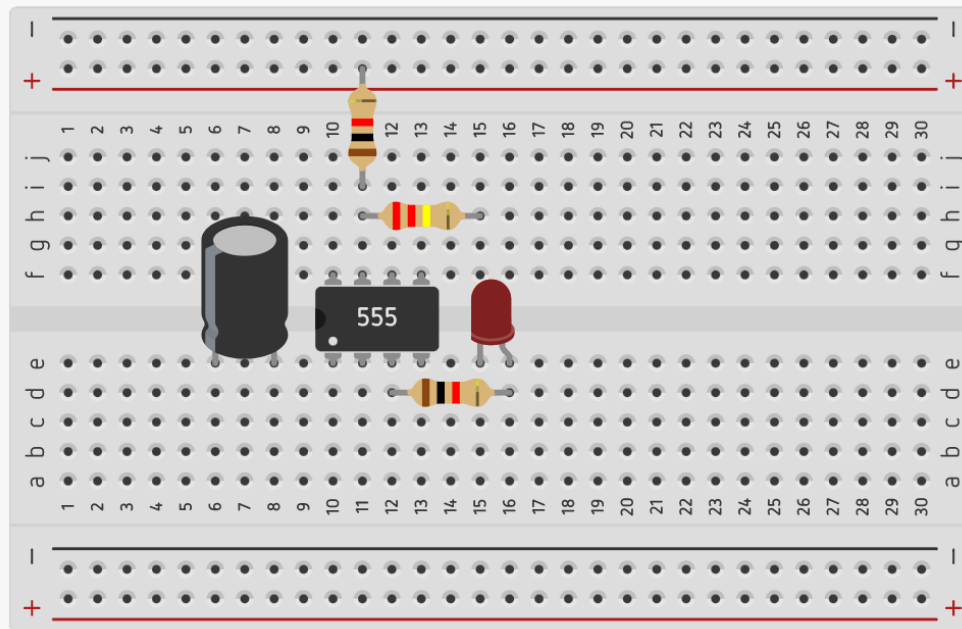
Connection Step 7

- Connect a resistor on DIS(pin 7) of 555 timer IC as shown in the diagram.

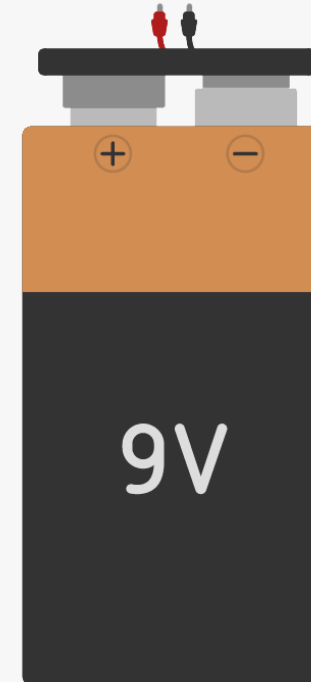


Connection Step 8

- Connect another resistor on DIS(pin 7) of 555 timer IC and other end of the resistor in the (+) power rail of breadboard as shown in the diagram.

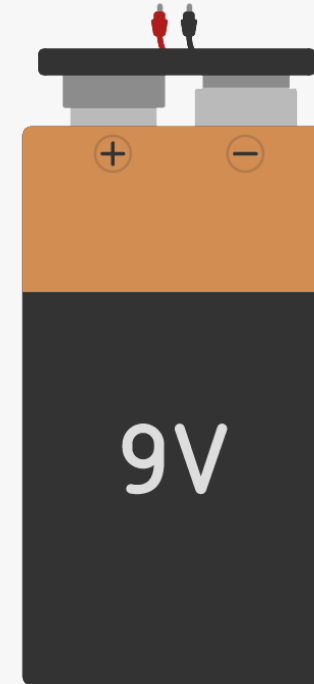
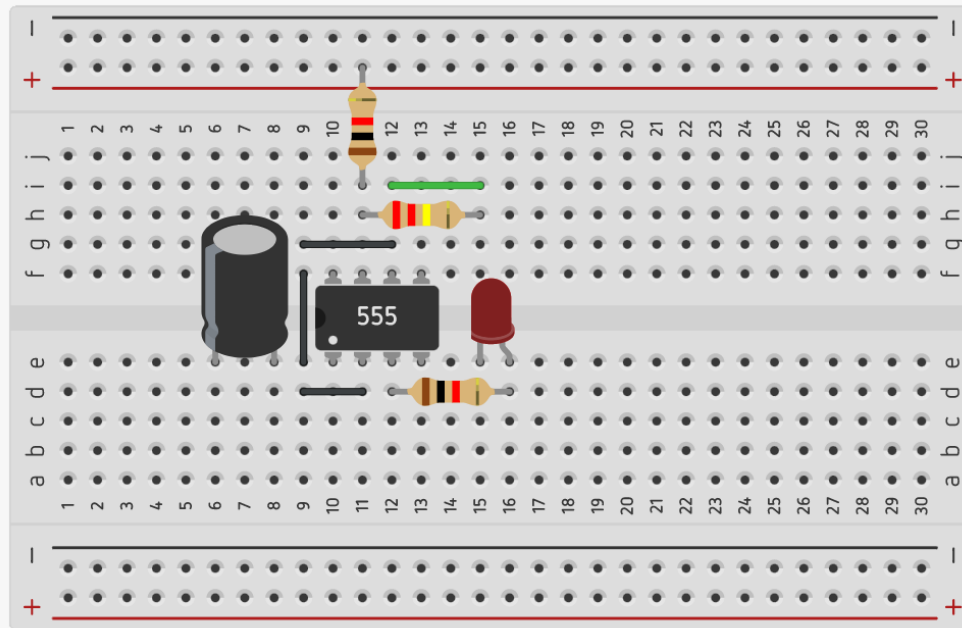


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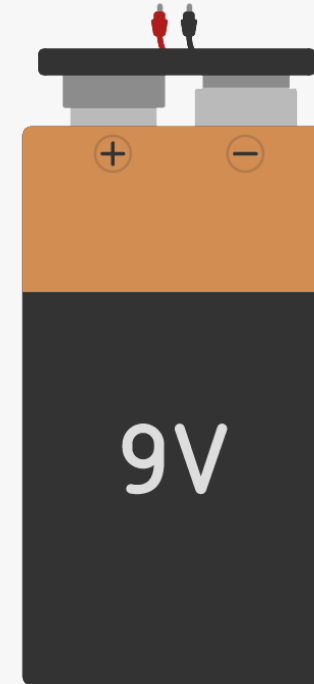
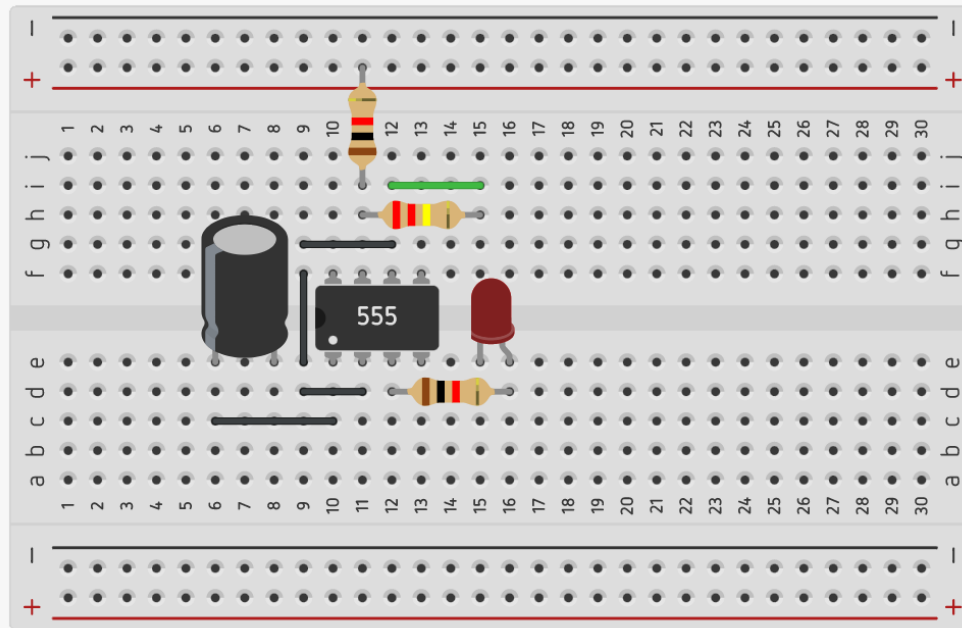
Connection Step 10

- Connect THR pin of 555 timer to the resistor open end as shown in the diagram.



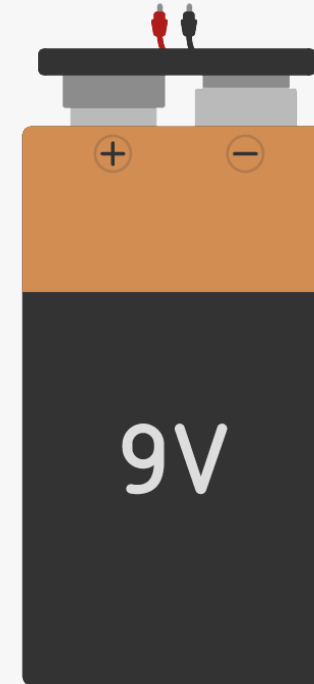
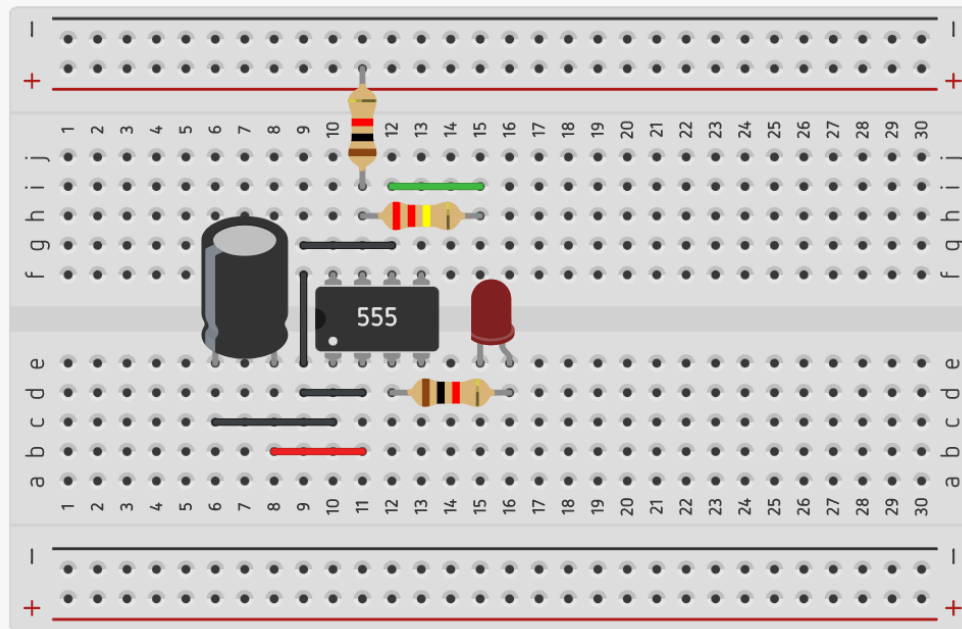
Connection Step 11

- Connect negative(-) terminal of capacitor to the GND pin of 555 timer as shown in the diagram.



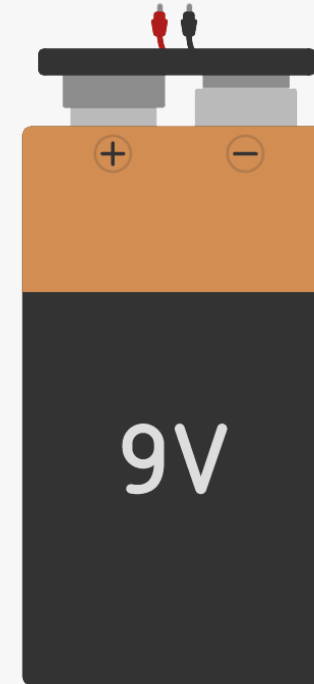
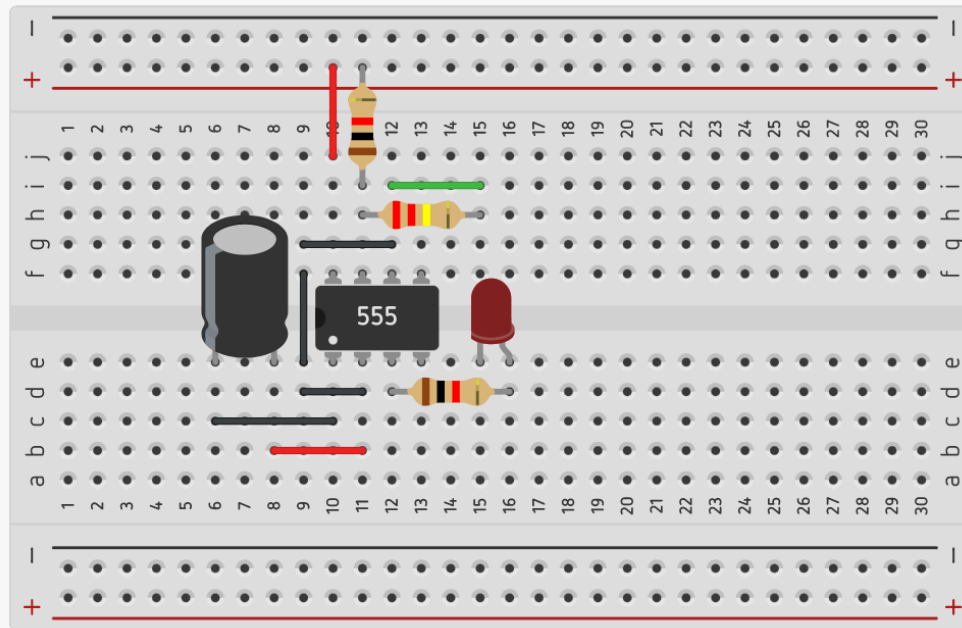
Connection Step 12

- Connect positive(+) terminal of the capacitor to the TRIG pin of the 555 timer as shown in the diagram.



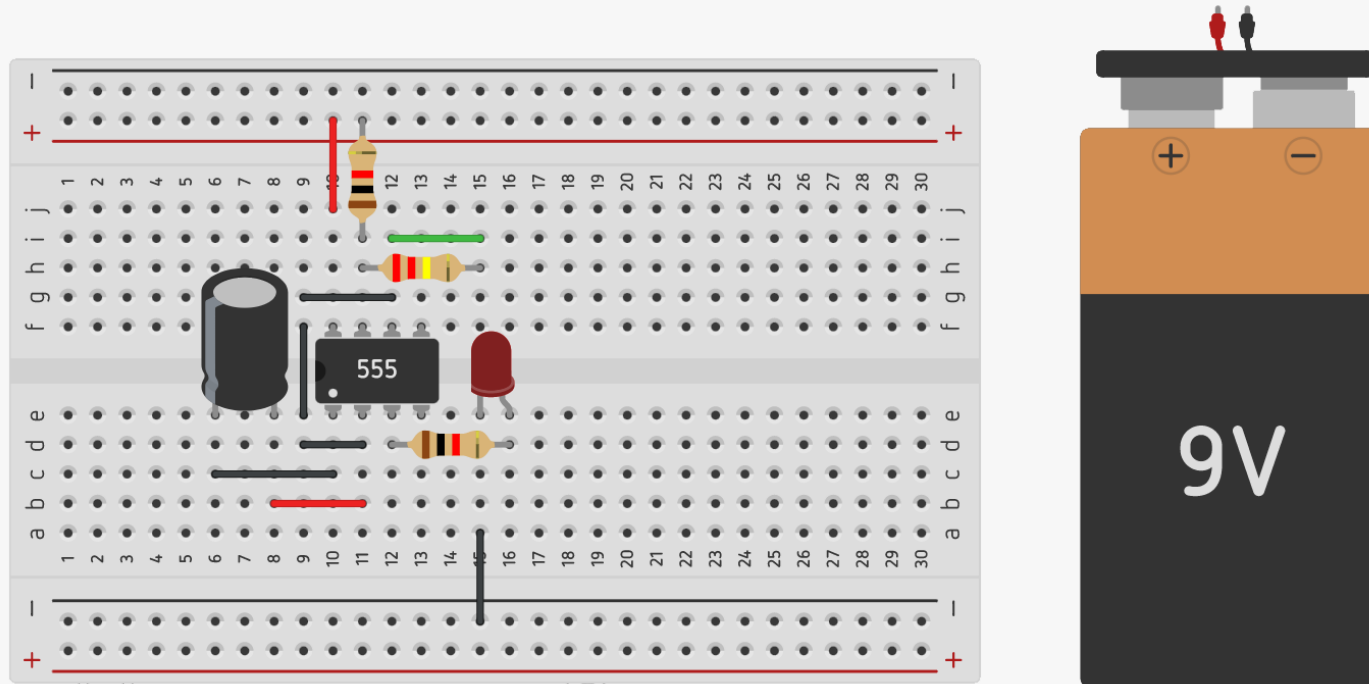
Connection Step 13

- Connect Vcc of 555 timer to the positive(+) power rail of the breadboard as shown in the diagram.



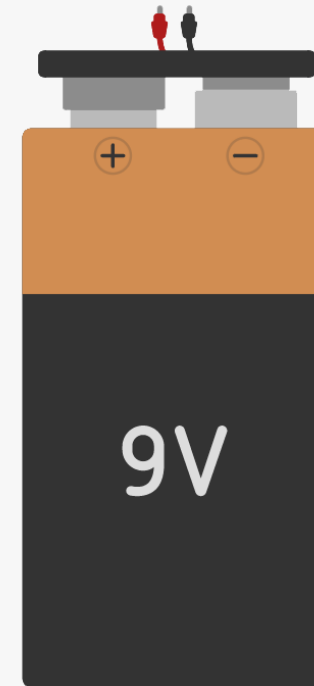
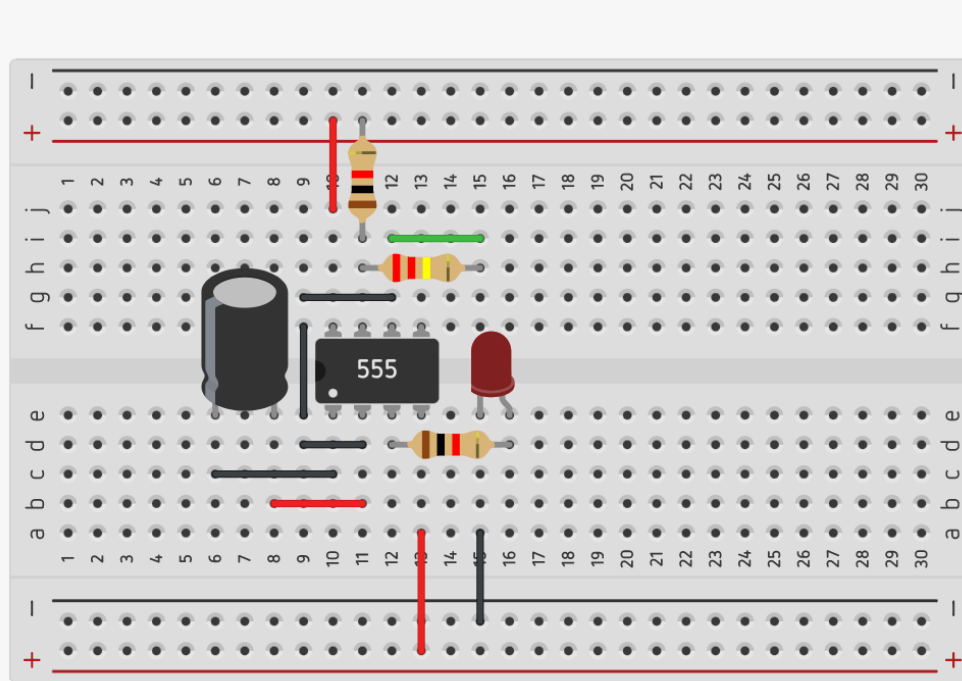
Connection Step 14

- Connect cathode(-) terminal of the LED to the negative(-) terminal of breadboard power rail as shown in the diagram.



Connection Step 15

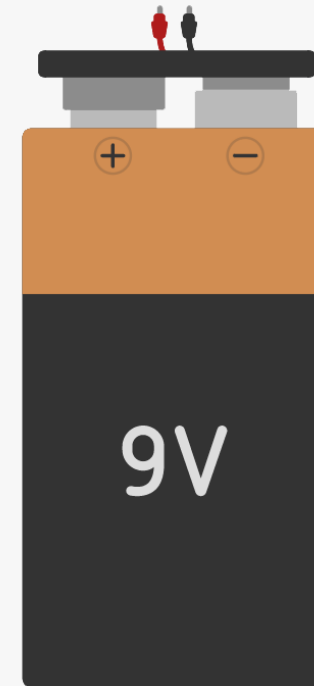
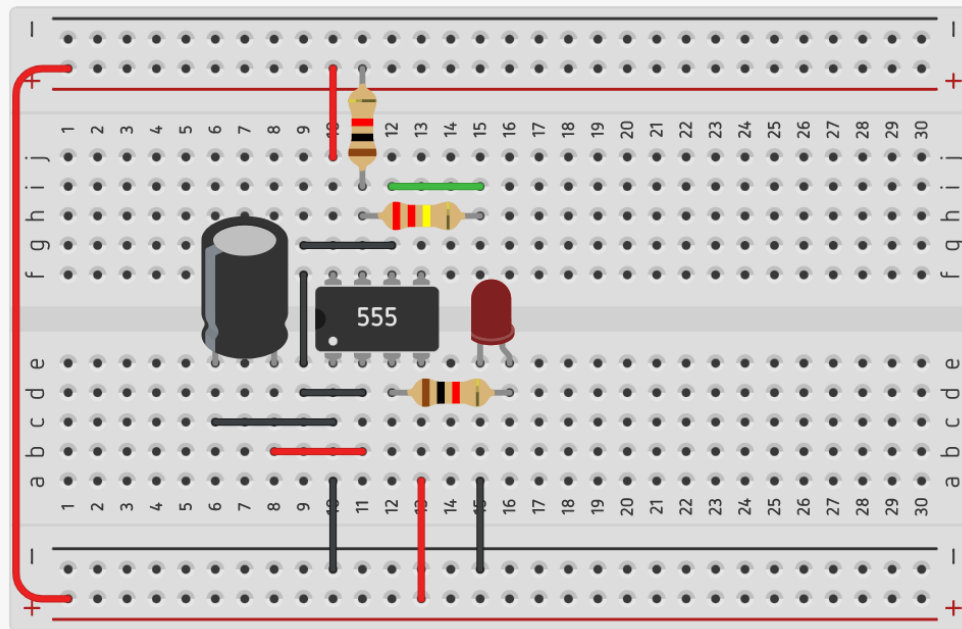
- Connect RESET(pin 4) of the 555 timer to the positive(+) power rail of the breadboard as shown in the diagram.



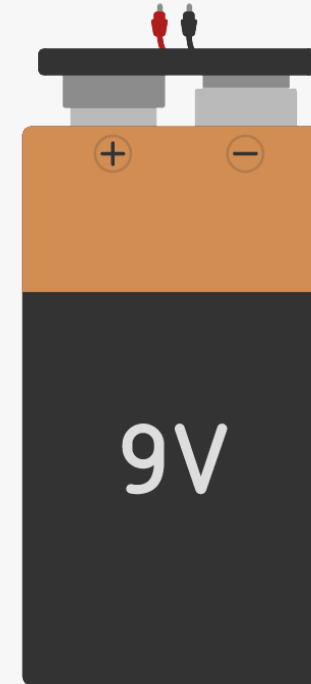
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Connection Step 17

- Connect one side of positive(+) power rail to the another side of the power rail as shown in the figure.

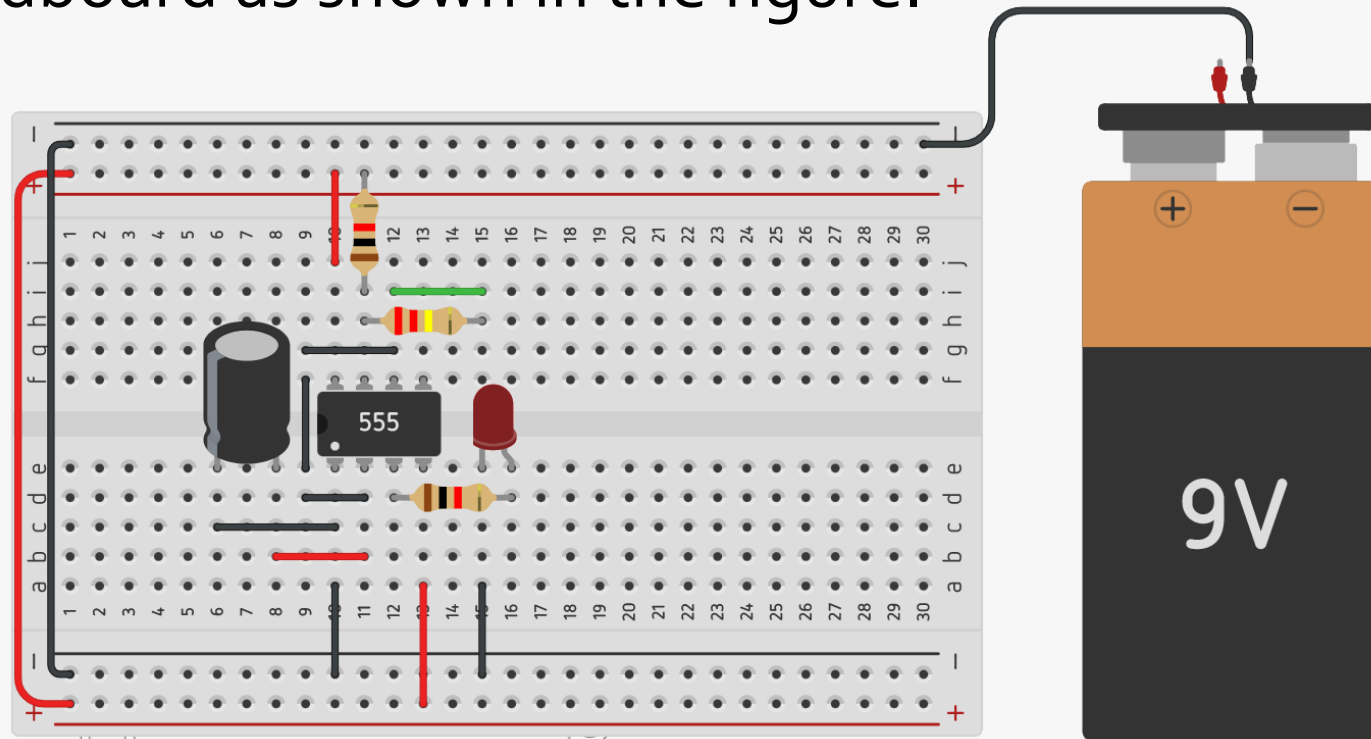


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- The breadboard circuit diagram illustrates a 555 timer configured as a monostable multivibrator. The components and their connections are as follows:
- 555 Timer IC:** The central component, labeled "555".
 - Resistors:**
 - A 10kΩ resistor (brown, black, orange, gold) connected between pin 1 and the ground rail.
 - A 100kΩ resistor (brown, black, brown, gold) connected between pin 5 and the ground rail.
 - Capacitors:**
 - A 10μF electrolytic capacitor (black) connected between pin 4 and the positive power rail.
 - A 100nF ceramic capacitor (red) connected between pin 5 and the ground rail.
 - LED:** A red LED connected between pin 8 and pin 9. The anode is at pin 8.
 - Power Rails:** The breadboard has two main power rails. The top rail is labeled with letters 'a' through 'i' and numbers 1 through 30. The bottom rail is also labeled with letters 'a' through 'i' and numbers 1 through 30. Red lines indicate the positive (+) and negative (-) power connections.



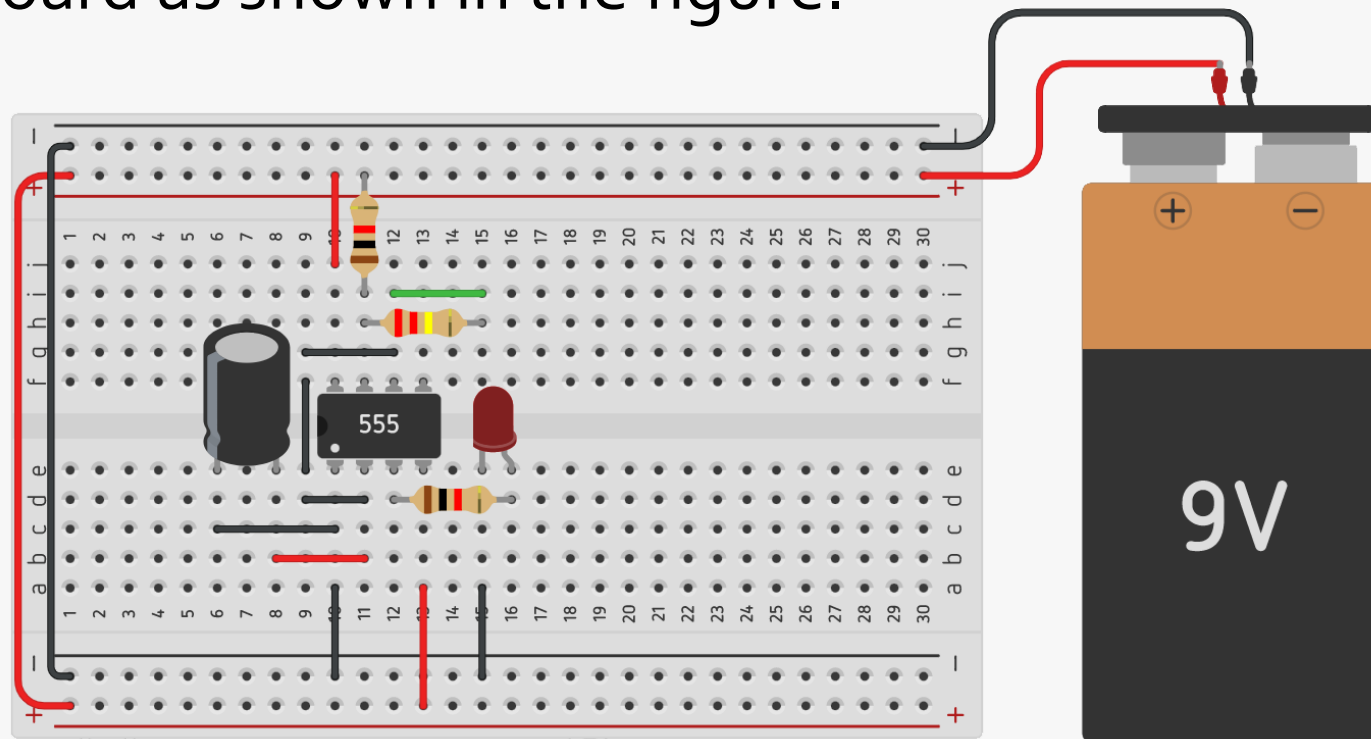
Connection Step 19

- Connect cathode(-) terminal of battery to the negative(-) power rail of the breadboard as shown in the figure.



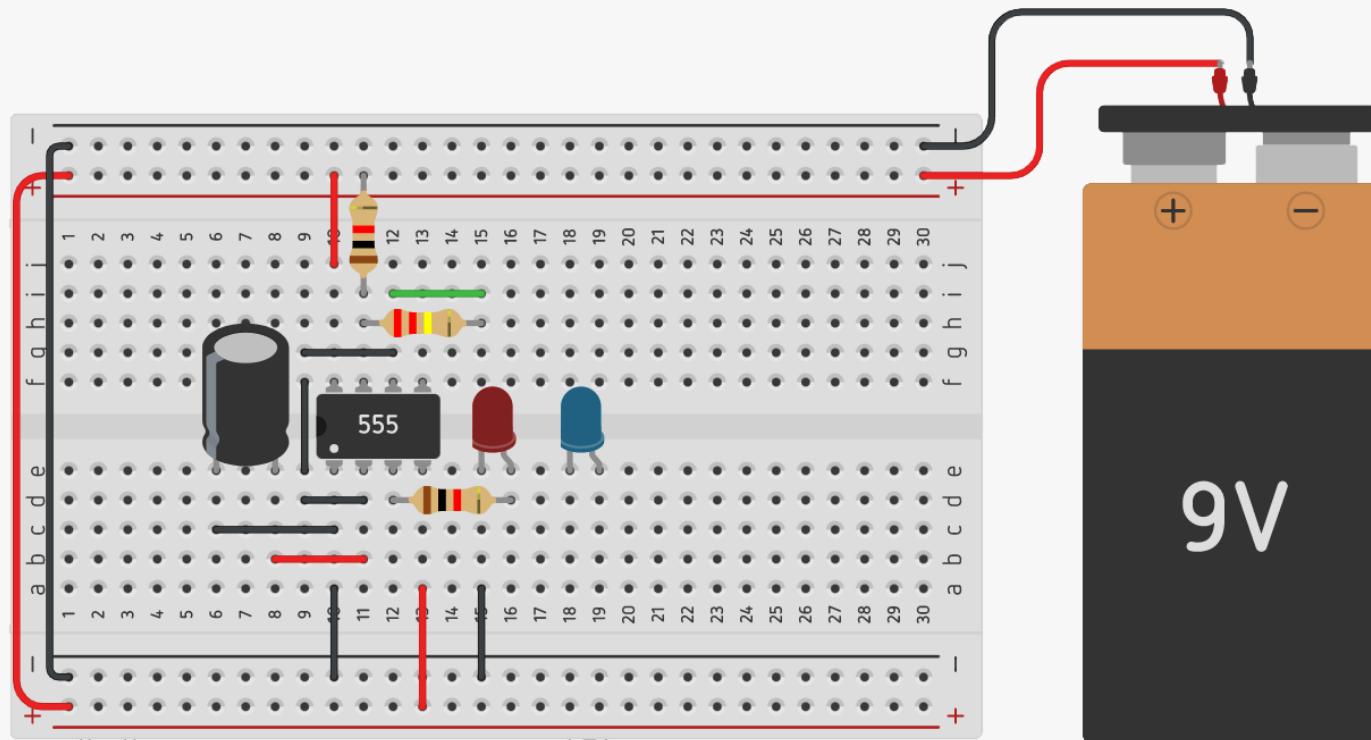
Connection Step 20

- Connect anode(+) terminal of battery to the positive(+) power rail of the breadboard as shown in the figure.



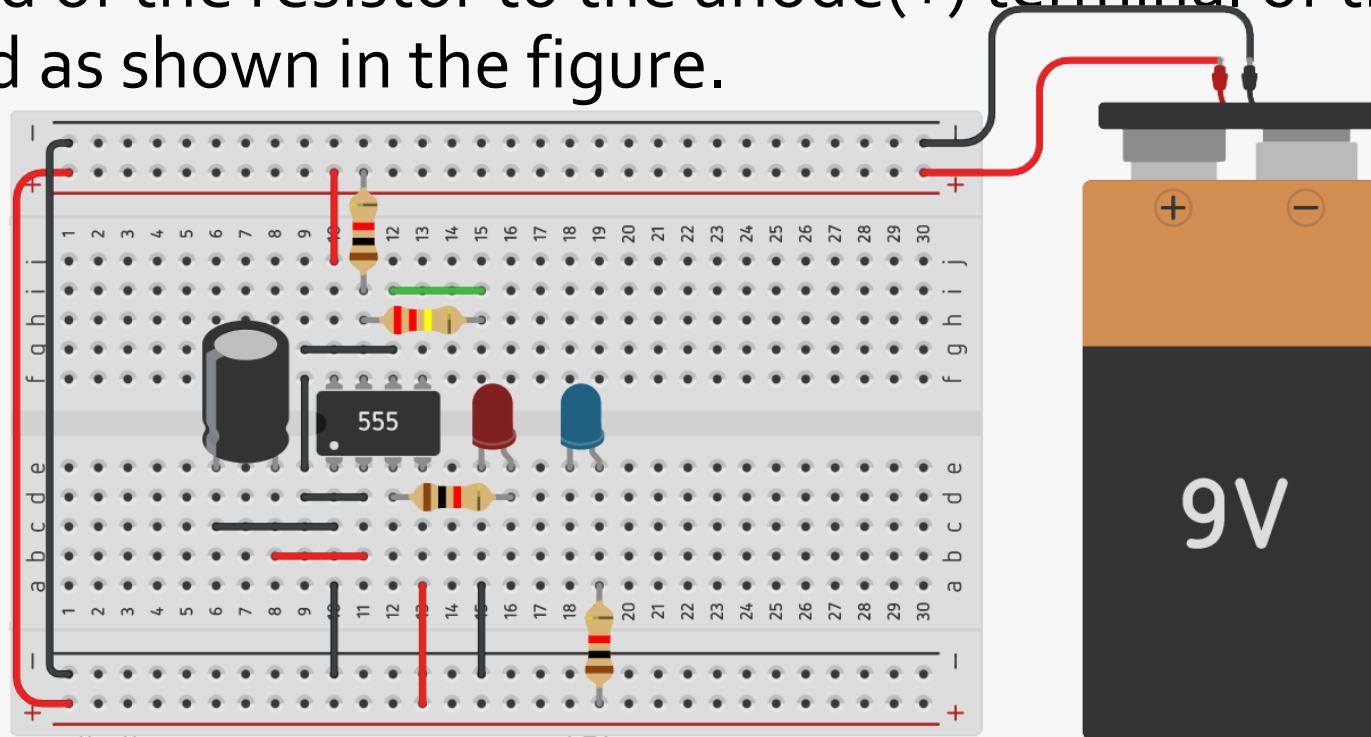
Connection Step 21

- Insert another LED in the breadboard as shown in the figure.



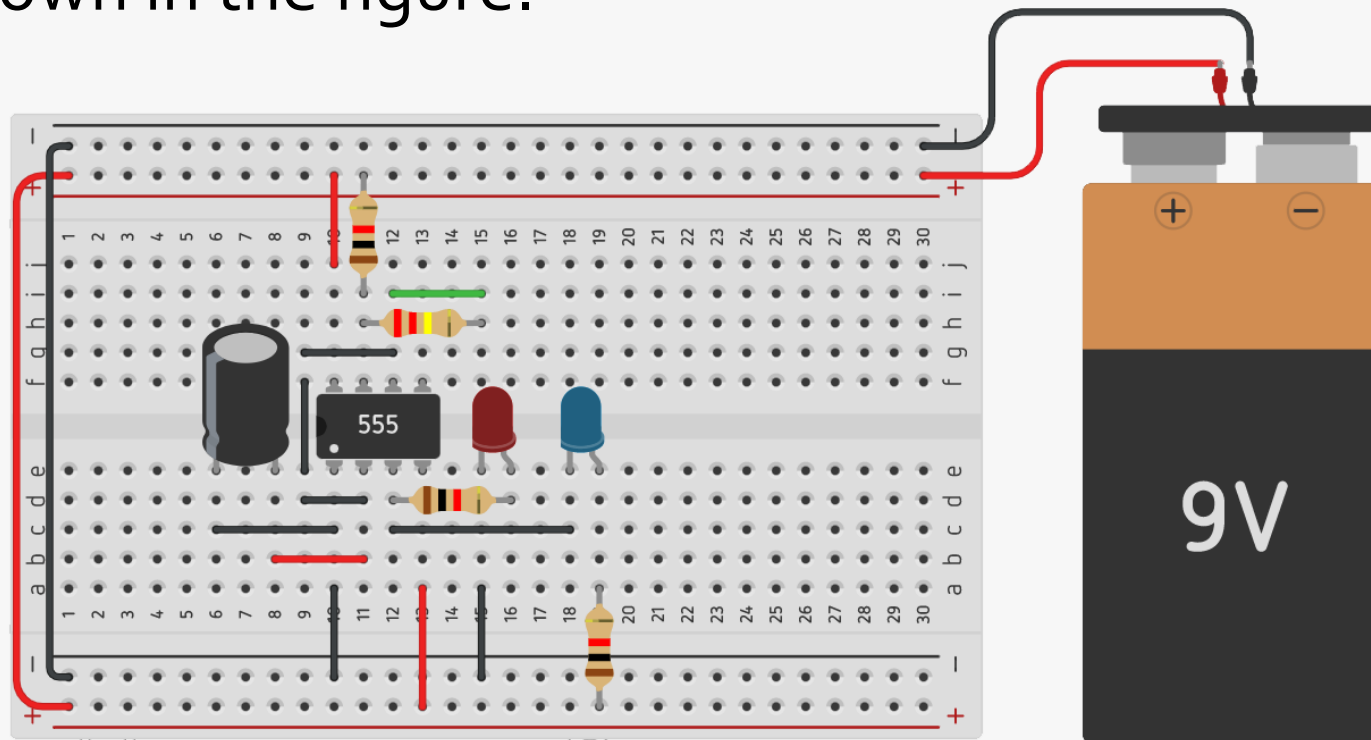
Connection Step 22

- Insert one resistor in the positive(+) power rail of breadboard and another end of the resistor to the anode(+) terminal of the LED in the breadboard as shown in the figure.



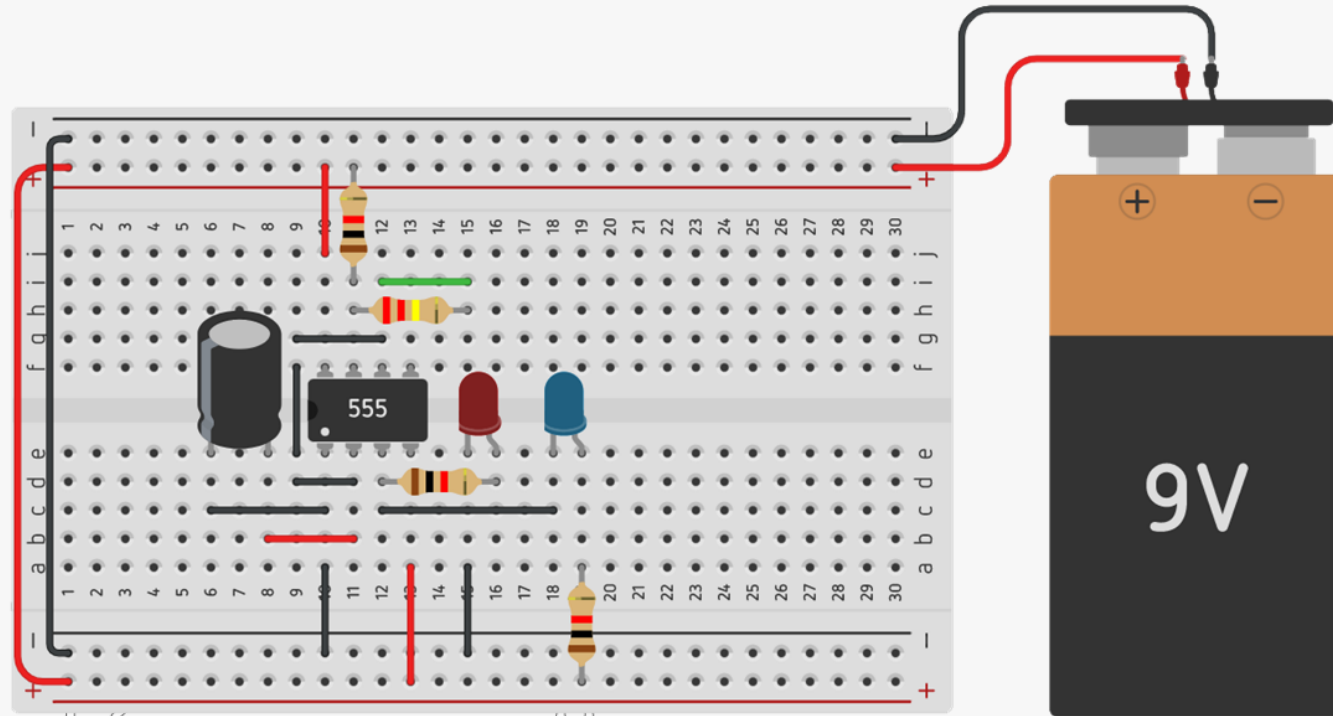
Connection Step 23

- Connect cathode(-) terminal of the LED to the OUT(pin 3) of the 555 timer as shown in the figure.



Connection Diagram

- Make sure your connections are made as per the diagram



Data & Outcomes

Learning from the activity

Data

- Use of 555 timer
 - How to make a chaser
- Generate pulse

Learning from the activity

- How to use 555 timer
- How to make chaser using 555 timer

Assessment



Thank you