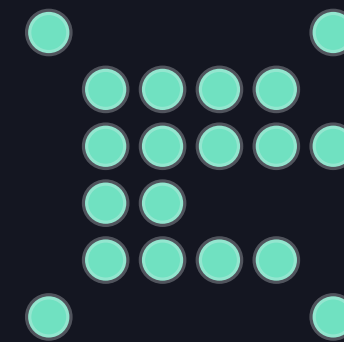
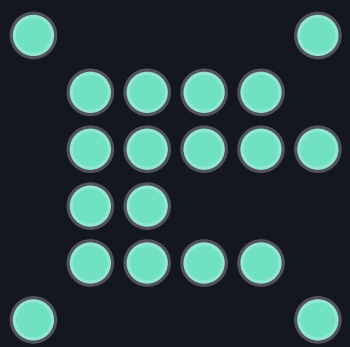




Remote Turret



PROJECT: MOVE MOTOR

2

You will learn What is a servomotor and how to control it using remote.

You will make Your board move a motor when you press a button on the IR remote.

You will need Pico W / Pico 2 W · SG90 / MG90S Servomotor · Infrared Remote

Use what you learned

Challenge

Use what you learned in the previous module to find the button codes for **Left, Right, Up, and Down**.

We will use these button codes to move the motor when you press buttons on the remote.



8



90

01 / HARDWARE

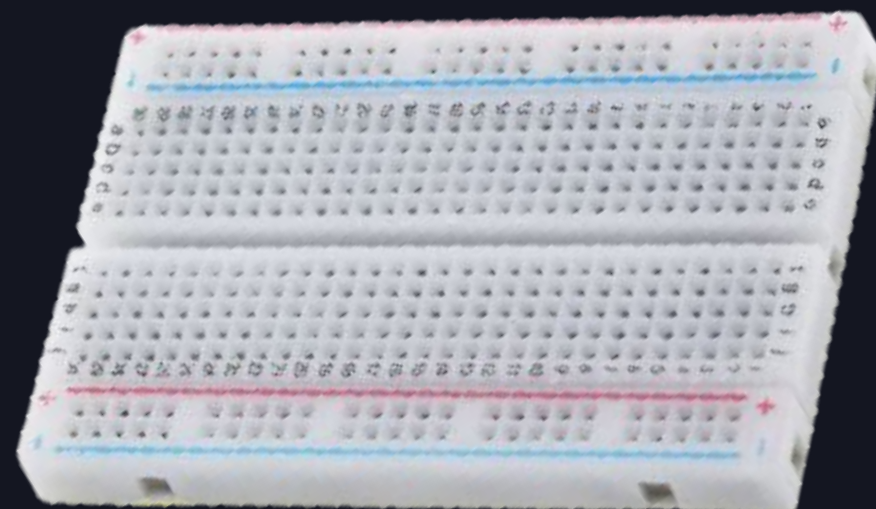
Safety: Use components within their specified limits and double-check all connections. Incorrect wiring may cause damage. Children should work with adult supervision.

About 15 minutes

Preparing Hardware

We will use:

Raspberry Pi Pico/Pico 2 - SG90 / MG90S Servomotor - IR Remote - Accessories



Let's learn about servomotors

Preparing Hardware



Unlike a normal motor that simply spins, a servomotor is a motor that can move to a **specific position**.

Rotation Range: 180°

01 / HARDWARE

ASSEMBLING THE CIRCUIT

About 15 minutes



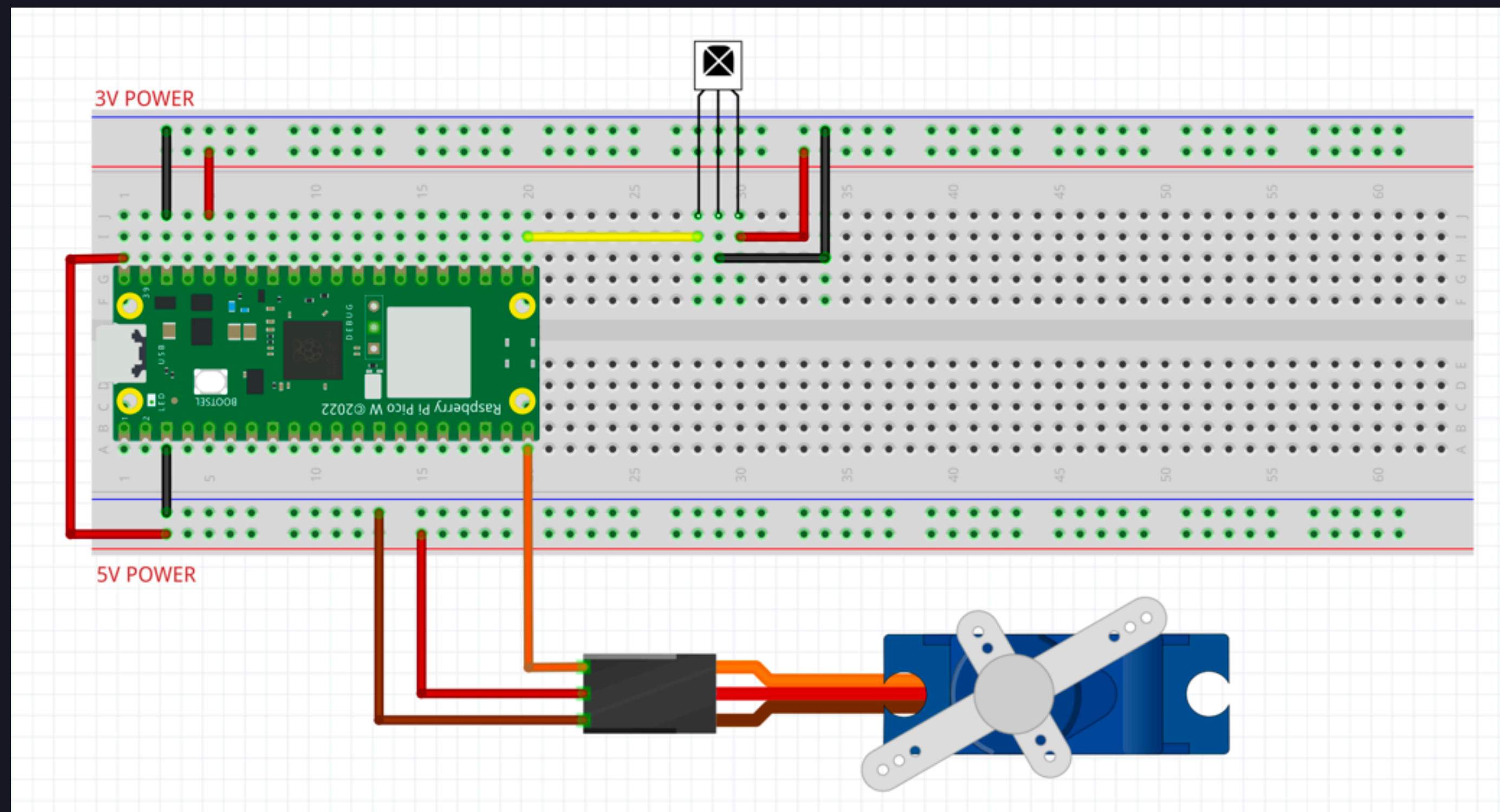
Preparing Hardware

- The Pico board will be powered by the laptop through USB.
- The IR receiver will be powered by the Pico's **3.3V output**.
- The IR receiver's **output data pin** will be connected to **GPIO 16 (GP16)** on the Pico board.
- The servomotor data pin will be connected to **GPIO 15 (GP15)** on the Pico board.
- The servomotor power pin will be powered by the Pico's **5V output**.
- All **GND (Ground)** connections are shared.

Pay close attention when making the connections.

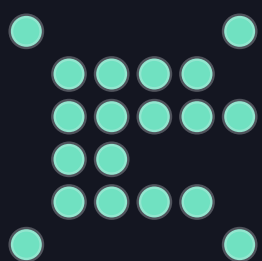
About 15 minutes

Preparing Hardware

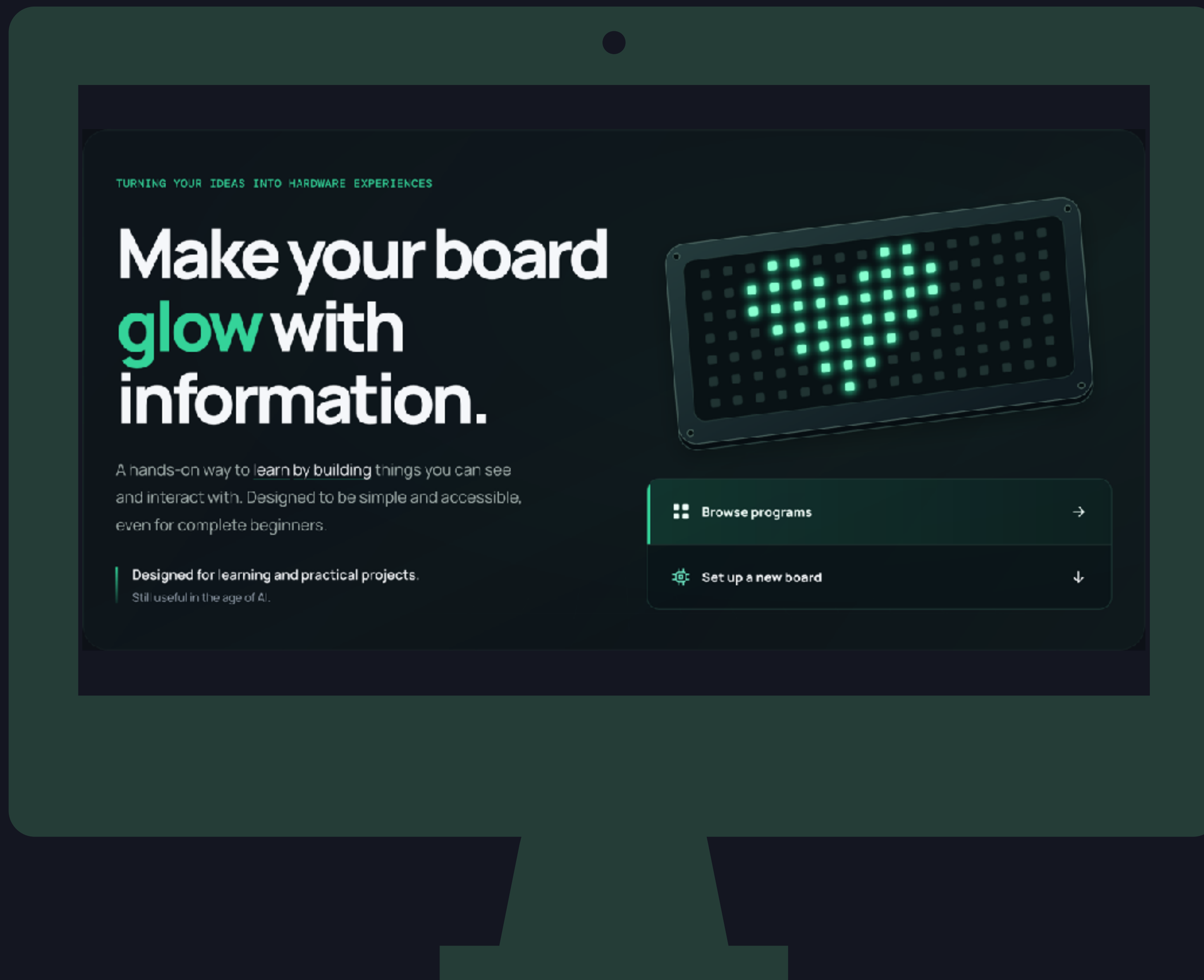


Breadboard connection

02 / SOFTWARE



<https://glowgrid.nodes.ro>



Open Program Collection

Navigate to the Program Library
using the top menu.

Open Project Loader

Open the Project Loader
program.

Select a project and a challenge

Select IRTurret - IR Remote
Controller

Check What you need

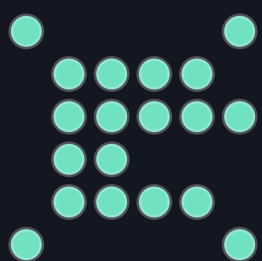
Open challenge card and go
through the details

Select Prepare Board

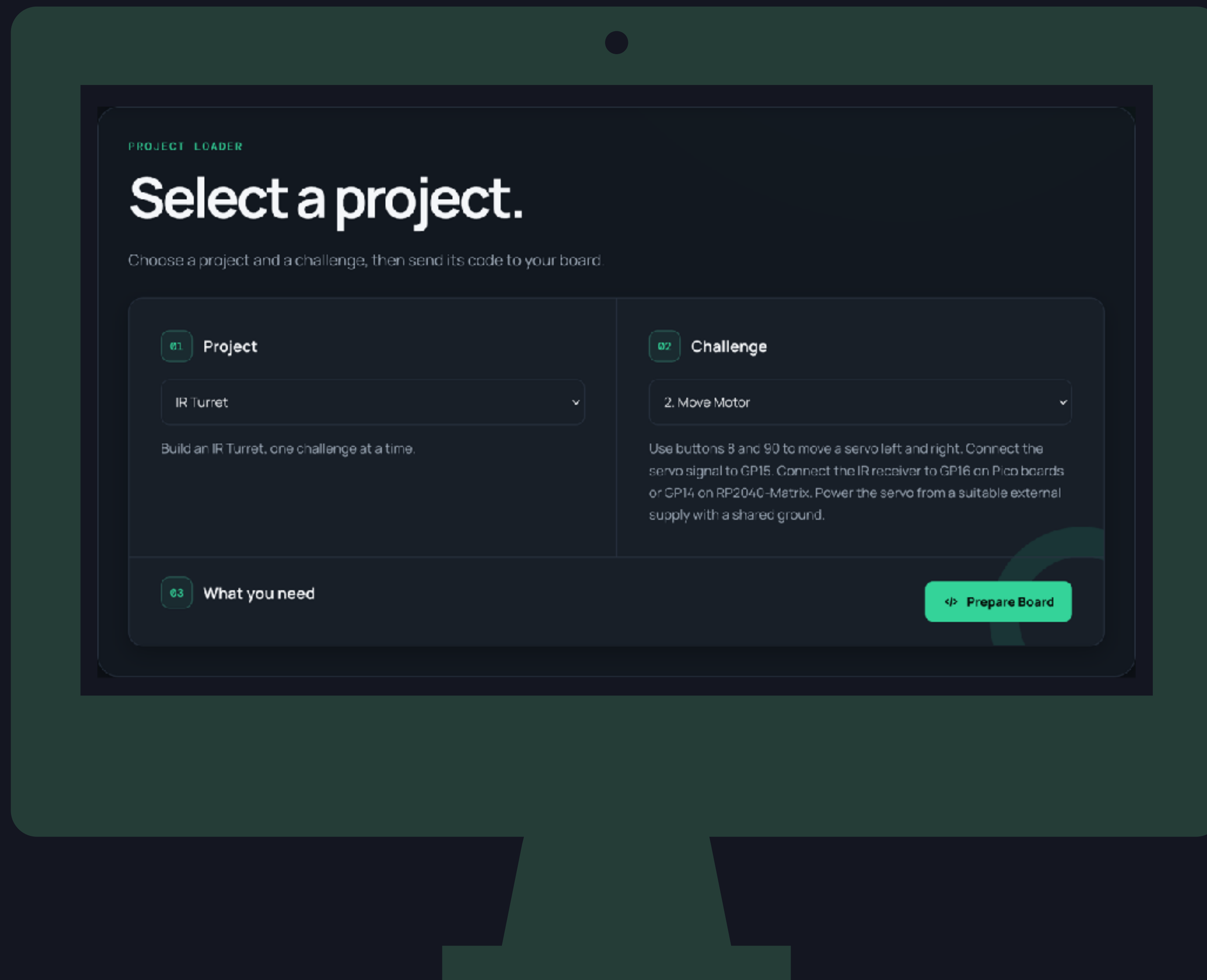
Send your program to the board
using Wi-Fi or a wired USB
connection.

See the result

See how your code behaves on
the board.



[Load the code](#)



Send it to your board

Loading a program to the board </> Prepare Board

In Project Loader, select Prepare Board button.

Confirm your hardware configuration.

Choose Wi-Fi or USB cable and follow the connection instructions.

Send the program to your board and keep the board powered.

Wait until you see the confirmation that your program is running.

Advanced Explanation

Preparing Software

We will use:

- Micropython
- micropython_ir Library
https://github.com/peterhinch/micropython_ir
- Source code MOVE_MOTOR_02.zip

03 / PREREQUISITES

About 5 minutes

Preparing the board

Connect Pico over USB

Install MicroPython firmware for your specific board

About 5 minutes

Preparing the board

Flash Firmware/MicroPython

Firmware index created on: Sep 10, 2026 at 7:01 AM

Device

Device type: RP2

Target volume /Volumes/RP2350

Firmware Selection

MCU: RP2350

Firmware source: ☒ MicroPython.org ☐ Local file

Board variant: Pico 2 W

[View on MicroPython.org](#)

Firmware variant: Standard

☐ Show older versions

☐ Show preview releases

Version: v1.29.0

Flashing Options

☒ Erase flash first

CancelFlash

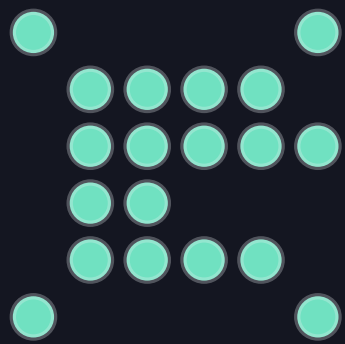
i

Flashing Complete

MicroPython firmware has been successfully flashed!

OK

Install MicroPython firmware
for your specific board in PyCharm.



04 / EXPERIMENT AND IMPROVE

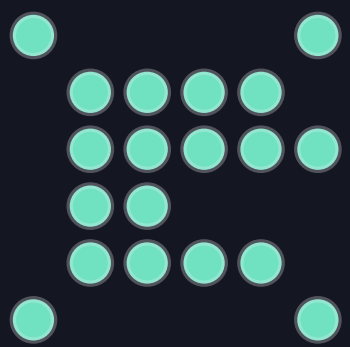
What have you learned?

A servomotor is a motor that can move to a **specific position**.

Robots love servos! They can move robot arms, legs, heads, claws, or eyes.

A servo is a small motor that can move its shaft to a specific angle, like 45° , 90° , or 180° by sending the servo a coded signal from your board.

Big servomotors require a lot of power to operate. So in order to use those you would need a separate power supply.



CONGRATULATIONS

Let's talk

Need a hand with GlowGrid?

Drop us a line – we'd love to hear from you.

info@nodes.ro

