

Control our Christmas Tree!

Via Python!

2025-12-08

CircuitRee!

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1 The code stuff

LED protocol



LED State: 4-tuple of integers

(R, G, B, L)

- R, G, B: 0-255 (color)
- L: 0-100 (brightness)

LED Array: List of states

`[(255, 0, 0, 100), (0, 255, 0, 50), ...]`

Array length must match LED count!

We have 100 LEDs

Python Subset



Allowed Standard Library

- `math`, `random`

Blocked

- `os`, `sys`, `subprocess`, `ctypes`
- All external modules

Extra Functions:

- `getLEDCount()` - Returns the number of LEDs (100)
- `setLEDs(states)` - Update all LEDs with the given states
- `sleep(seconds)` - Pause execution for the specified duration

Example Code

Python Subset (ii)



```
led_count = getLEDCount()  
states = [[0, 0, 255, 100] for _ in range(led_count)]  
setLEDs(states)
```

2 The Infrastructure

tree.cartof.io



Everything happens here:



Homepage



Separately write
and upload

Welcome to Chippy Tree!

Upload your Python code to control the LED tree.

Queue

Upload Code

Submit your Python script

Open Web Editor

Code in your browser

View Queue

Check upload status

VSCode-esque
editor

Submission screen



editor.py

User: asdasd Hash: f694c0c8 Status: completed

Output

```
Job: editor.py
User: asdasd
Hash: f694c0c8
-----
-----
Output:
Job completed successfully
```

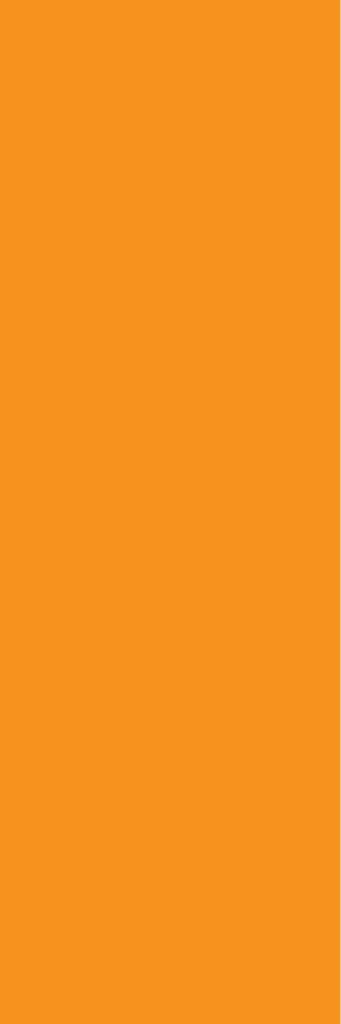
[Back to Queue](#)

[Upload Another](#)

Disclaimer



Issues are *certainly* going to arise... but do try to figure out as much as you can on your own – help us help you.

A solid orange vertical bar runs along the left edge of the slide.

3 Questions?



**Let's light up
this tree!**