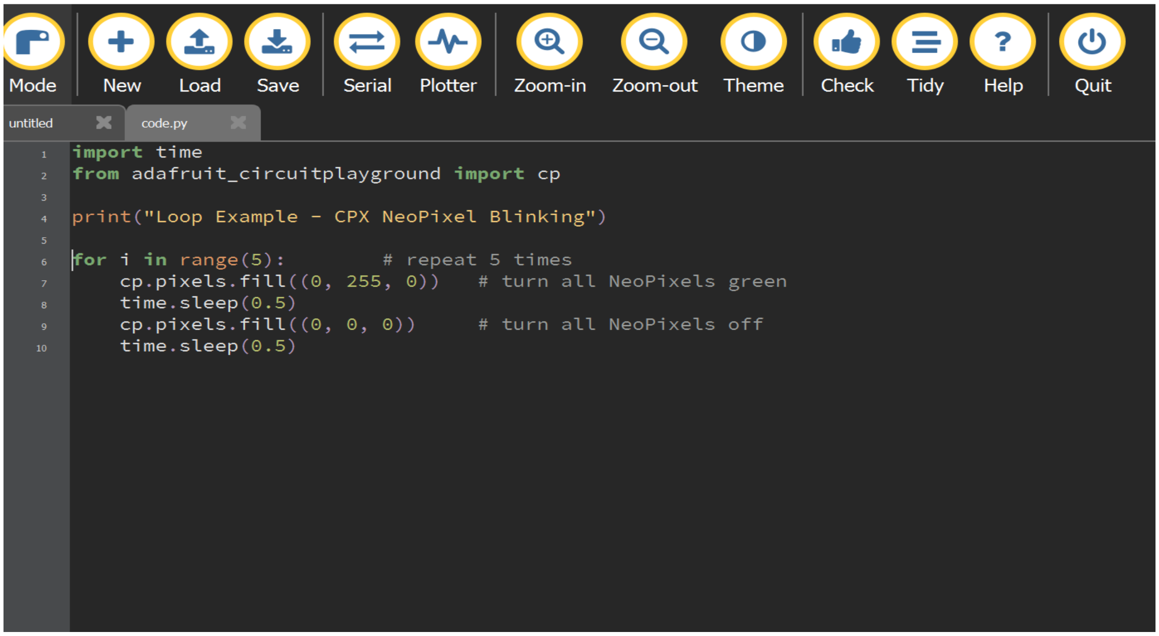
What is a Loop in Python?

Simple meaning:

A **loop** is used when you want to **repeat** something **again and again** automatically — instead of writing the same line many times.

How it works in Python:

- Python checks the loop condition.
- If it’s true, it runs the code inside the loop.
- Then it goes back to the beginning and repeats the steps.
- When the condition becomes false (or items are finished), the loop stops.
  Example Using CPX NeoPixel Lights



```python
import time
from adafruit_circuitplayground import cp

print("Loop Example - CPX NeoPixel Blinking")

for i in range(5):        # repeat 5 times
    cp.pixels.fill((0, 255, 0))   # turn all NeoPixels green
    time.sleep(0.5)
    cp.pixels.fill((0, 0, 0))     # turn all NeoPixels off
    time.sleep(0.5)
```

Step-by-Step Explanation

Step 1:

`for i in range(5):`

This means “repeat the inside lines **5 times**.”
The variable `i` changes each time (0, 1, 2, 3, 4).

Step 2:

`cp.pixels.fill((0, 255, 0))`

Lights all 10 CPX NeoPixels in **green** (R, G, B = 0, 255, 0).

Step 3:

```
time.sleep(0.5)
```

Wait for half a second — the light stays ON briefly.

Step 4:

```
cp.pixels.fill((0, 0, 0))
```

Turns all NeoPixels **off**.

Step 5:

```
time.sleep(0.5)
```

Waits again before the next loop cycle starts.

Result

The lights **blink ON and OFF in green color five times** using a simple `for` loop.