

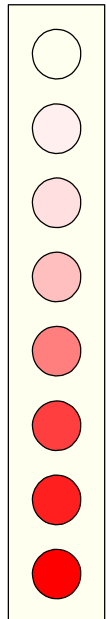
# ECE 476/676 - Homework #11

WiFi - Due Monday, November 25th

## Starter Tree

Write a Python program so you can control a starter tree with your cell phone over a WiFi network.

- A NeoPixel acts as the starter tree (0 to 8 lights on)
- The Pico updates a web page so that you can see the status of the LEDs on your cell phone in real time.
- Your cell phone can send commands to the PICO to
  - Clear the lights (new race) and
  - Start a race (start turning on the lights)



1) NeoPixel: Write a Python program so that the Pico controls the lights of a starter tree with push buttons:

- GP14: Clear the LEDs
- GP15: Start a race

When a race is started,

- The LEDs turn on one at a time,
- Each LED turns on once every second
- Once all eight LEDs are on, they stay on (race has begun)

Verify your code works.

2) Pico to Cell Phone over WiFi: Set up a web page so that you can see the status of the starter tree on your cell phone. It's your choice if you set up the PIC as a host or a client.

Verify that you can see the status of the starter tree in real time on your cell phone.

3) Cell Phone to Pico over WiFi: Add to the previous design a way for you to use your cell phone and the WiFi network to

- Clear the starter tree (replacing button GP14), and
- Start a race (replacing button GP15)

Verify your code works.

4) Demo your starter tree

- Video preferred