XTI-1

Monday, January 27, 2025 10:24 PM

eXperimental Test Initiative

1 Initial Sensor Test

.000 Initialization

.01 Sensor list

✓ Compile sensor & component list
-- subject to expansion

.02 Org. List

~ Filter, organize list
↳ Remove unwanted components
↳ Highlight primary components

.001 Arduino – Radar test

.01 Radar setup

waiting on servo mount ⊙ Setup radar/utrasonic sensor, servo
✓ • Confisure Arduino with appropriate code

~ .02 Display
• Setup display/radar output
• Use dashboard?

.03 Test

--- • Test radar respouse, accuracy, distance
• Evaluate display

.100 Test Design YP-1

✓ .01 Multi-sensor setup
• Choose top 3 sensors
└ ultrasonic HC-SR04
└ temp/humidity DHT-11
└ IR sensor HW-488
↑ replaced with mic module

✓ .02 Physical setup
• Include LCD w/ I2C
• Connect sensors
└ common GND
└ common Vcc (5V)
└ HC-SR04 Trig → D9 (PWM)
Echo → D8
└ DHT-11 Data/s → D2
└ IR Analog Data/s → A0

✓ .03 Main code config
• Write single Arduino ino code

- Write single Arduino .ino code w/ wifi credentials in header file
- Include html/ text display to IP address & data output @ end points

.04 Python Front-End api

- Python code to http request sensor data from IP & endpoints
- Display data graphically
  - w/ Tkinter

FAIL

.05 HTML, CSS Front-End

OK, but ABORTED

- Code http requesting in HTML + CSS
- Display the data graphically

.06 Back-End display

✓

- HTML, CSS, JS embedded in .ino code for graphical display

✓ .10 Modular code setup

- split cod blocks into header & cpp files for:
  - Wifi setup
  - Sensor config

h & cpp

- Wifi setup
- Sensor configs — h & cpp
- LCD & Serial dual print — just h
  - also encorporated in wifi setup & main ino code
- Dashboard endpoints — h & cpp
- Wifi credentials — just h
- main ino code — just ino