Pseudocode Overview –

Products to be used:

- https://www.amazon.com/gp/product/B07DKD79Y9/ref=ppx_yo_dt_b_asin_title_o01_s03?ie=UTF8&psc=1 ESP32 OLED with Wifi and Bluetooth
- https://www.amazon.com/gp/product/B07GQPV6C4/ref=ppx_yo_dt_b_asin_title_o01_s02?ie=UTF8&psc=1 – Load Cell Weight Sensor with HX711
- https://www.amazon.com/gp/product/B07KGBJ9VG/ref=ppx_yo_dt_b_asin_title_o01_s02?ie=UTF8&th=1 – RC522 NFC reader
- https://www.amazon.com/gp/product/B07TBKTGR3/ref=ppx_yo_dt_b_asin_title_o01_s00?ie=UTF8&psc=1 – independent toggle button, so we can long term use this without device input.
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The objective here is to take the data from the load sensor, the NFC sensor, pair them together, and then send them via wifi connection to a HTTP endpoint. Here is more or less the pseudocode:

- Set variables and establish packages
    - Wifi network and password: NETWORK-Name and TESTpassword
    - HTTP Endpoint: https://dev-us.com/functionarchitecture/REST/
    - Set HardwareID = xxxxxx

- Initialize Hardware
    - On success, continue
    - On fail, print the device that failed on the ESP32 screen.

- Initialize Wifi
    - On success, continue
    - On fail, print Wifi Connection Failed on ESP32 screen, abort

- Listen loop for HX711 weight
    - If weight between -1gram and 5grams, do nothing
    - Elseif weight > 5grams
        - Listen for RC522 NFC content.
            - IF RC522 content does not exist currently, print to screen “NO NFC TAG DETECTED”
            - ELSE > Save RC522 content to variable. Save HX711 weight to variable.
                - IF NFC variable NOT EQUAL to prior NFC variable…OR (NFC variable EQUAL to prior NFC variable AND Weight Variable is GT 1% difference positive or negative)
                    - Create JSON collection:

```
{
  "data": {
    "weight": "111",
    "weight-designation": "g",
    "target": "nfctaghere"
  },
  "timestamp": "gettimeofexecutionhere",
  "module": "111 (set a unique id variable
at the top to identify the hardware,
HardwareID)"
}
```

- Send data to the HTTP endpoint defined at the top of the script

- Wait for 2 seconds to rerun the loop to make sure we don't get minor unsettled changes.

That mostly ends it. We want to capture any changes of different NFC ID OR any substantial change (1%) of the weight. If there is no change of either the ID or the weight, we don't want to send that information to the server. If there is no NFC, we need to alert the user that nothing is detected.

There may be variances to this that I'm unaware of. For example, with the NFC tag, the unit may only alert on initial NFC tag coming into range, and not keep a persistent view of that tag. At which point we'd need to change the sequencing above…I'll just need guidance on that sort of thing as we go.

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