## Dec 17, 2023 | [Post-Exam Recap and Plans](https://www.google.com/calendar/event?eid=N3RkNTVubjQxMzF0a29mcjBjNmpucmFrcXYgbmF2aWQucmFobWFuQHRvcm9udG9tdS5jYQ)

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Notes

* [Load Cell 1KG 5KG 10KG 20KG 50KG HX711 AD Module Weight Sensor Electronic Scale Aluminum Alloy Weighing Pressure Sensor](https://www.aliexpress.com/item/1005003384530970.html?src=google&aff_fcid=4f06e8f105264c25bb9628c49db7714b-1702844700162-09394-UneMJZVf&aff_fsk=UneMJZVf&aff_platform=aaf&sk=UneMJZVf&aff_trace_key=4f06e8f105264c25bb9628c49db7714b-1702844700162-09394-UneMJZVf&terminal_id=b588260a16214a9abe044992cf688898&afSmartRedirect=y)
* Make a carved out parking lot floor and place load-sensor apparatus beneath the holes (parking-spots)
* Make a 3d model of apparatus
* Make 3d model of parking lot model

### Parking Lot

* ~~Send email to FLC to get access to the room~~
* Start with software design
  + Parking lot automation
    - LED and sensor driving code
    - Client and server communication code
    - Weight sensor code
  + Testing
* Define dimensions for the parking lot and parking spot
* Weights attached to the vehicles
* License plate
* Create 3D model of parking-spot load-sensor apparatus
* Create 3D model of parking lot (not entrance)
* Create design of the whole fixture
  + Base
  + Layers
  + Screws, nuts to secure it
* Circuit diagram for LEDs, sensors with ESP32 and ESP32-CAM
  + Calculating power consumption for each component
  + Resistance, Current for each path
  + Check Datasheets for each component

Tasks to define

* Ideally I want a circuit that is isolated from the I/O pin, and is powered only through power supply (battery).
  + Voltage is reduced using a voltage divider.
* PCB Design
* Define the LED states

Example state table

| Input Signal | State condition | Behaviour | Output |
| --- | --- | --- | --- |
| 0 | * When the parking spot is not occupied. | * Constant light emission (Changeable) * Can be made into a blink for power saving purposes ? | Green |
| 1 | * When the parking spot is occupied. | * Constant light emission (Changeable) * Can be made into a blink for power saving purposes ? | Red |
| Periodic digital signal | * Invalid parking spot detected | * Rapid changes to the state (0 → 1 and 1 → 0) to simulate blinking behaviour. * Yet to define a blinking period constant. | Alternating Red/Green signal |