Task (0) | The Secret Box | Workday (1) | 7.3.24

Notes for Security:

- IMU sensor is to be mounted at the top as it gives best readings there.
- IMU sensor can be used to detect the box being opened yet at this point I will not use it for such a purpose; a separate mechanism for opening is better, so far.
- US sensor is to be placed at the top part that's being opened, why? If it's placed at the bottom of the box then someone can carefully open the box with a very narrow opening then slide a transparent sheet maybe to act as the box still closed, detect the US sensor position then keep this sheet or any other thing in its sight, so that you can play around with the internal contents without US sensor detecting you. It being mounted above and facing forward makes it a barrier for the above scenario/corner case.
- IMU sensor to be placed at the middle of the edge where the box is first opened, opposite to the knee/joint edge where the box opens/rotates around, change in distance is instantly detected, no walk around to mimic box distance ceiling to ground, this may be proved wrong when working physically on hardware.
- Detecting battery voltage using an LDR sensor with its voltage divider connection, so far. Then displaying it on an outer screen, a hole to be made for LCD to fit it, how would jumpers be connected to controller, or else if PCB how too.
- Database for timestamps and falling/opening data is to be saved to excel for the sake of simplicity at first then all to be on MySQL then on AWS or any cloud later.

Problems and Limitations (brainstormed only):

- I2C max distance is about 1 meter, how to join it to the controller and US while maintaining this distance? Where to mount the system?
- Controller has to be mounted on top with all sensors, how to attach all this solidly without it falling being pposite to gravity.