**ISSUES FACED:**

Choosing the right hardware proved to be a challenge due to cost and availability constraints.

* The drone needed for the project had to be a customizable drone, thus the parts necessary were not available in the market or via import. This was due to the recent impositions and restrictions the Indian government has imposed on drones and its components recently. Thus, we could only secure a RC remote controlled drone but, this was a cheaper drone resulting in low power and less lifting capacity. The higher end drones were not affordable at the present situation
* We needed a flight control board for the drone, we could narrow the boards to either PIXHAWK mini or PXFMINI. But due to the impositions on the drone, we didn’t purchase these as they would be a waste if not docked on any.
* We needed a microcontroller onboard the drone to control the flight control board and to run the necessary python executable on the system. After some research, we tested an Arduino first, but later settled on a raspberry Pi.
* We wanted a stereo camera compatible with the raspberry Pi and should be light weight, as we need to calculate the distance to the fruit. But this proved expensive and unavailable. Then the thought of using an ultrasonic sensor arose to calculate the live distance. But on experimenting, this proved futile as the alignment of the ultrasonic sensor was fixed and not focused on the object we want to capture. Hence finally we resorted to using a NO-IR filter raspberry Pi raspicam with 8MP resolution. A mono camera was used, it’s focal length was calculated and triangular similarity property was used to estimate the distance to the object at focus.
* There were many dependency bugs between opencv 2 and opencv 3. This was resolved after unit testing and dependency files and libraries installations.