

FruitBot

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FRUIT PICKING ROBOT

Have you seen a large fruit garden with lots of fruits?

For a fruit gardener, it is extremely important to **harvest fruit in time**. In a large garden, there is a need for many people to select which fruit is ripe enough to pick out and which isn't? It is a time-consuming process and if not done in time would cause wastage and money loss.

This project idea is about a fruit picking robot that not only works as a fruit picker but is **smart** enough to pick only those fruits which are ripe enough. Also, it should be capable of **segregation** of different fruits in the garden.

TASKS TO BE DONE

- Fruit detection of suitably ripened fruits
- Harvest the fruits without damaging them
- Segregation of fruits by recognizing the type of fruit
- Check weeds or infested plants and weedicide spraying for it

Teams have to prepare a **detailed report** for their proposed model. Provide a **CAD model** for their design and a **video simulation**. Any extra feature is appreciable and will be considered for grace marking.

FINAL SUBMISSION

1. Detailed report
2. CAD Model
3. Video of model simulation
4. Detection of ripening and segregation codes

TEAM SIZE

A team of 3-5 members.

Useful Resources

- **Fusion 360** download link for CAD modeling - https://www.autodesk.com/education/edu-software/overview?us_oa=dotcom-us&us_at=Fusion%20360%20student%20license&us_si=21086916-b020-4e1c-94a0-2df3371662bb&sorting=featured&page=1

Install this As soon as possible, it would take some time to get your application approved.

- **Fusion 360 Tutorials:**
 - https://www.youtube.com/playlist?list=PLmN15diDm2iKJ_snJ60QpUUMcte19QaTs
 - <https://drive.google.com/file/d/1TREise7LoxFLE98uSezrTX8eH7xk0fVn/view?usp=sharing>
- Basic concepts and codes of **OpenCV**-
https://colab.research.google.com/drive/18TPxyB8R2z7XnzINyMa7J1AvZw6mszb_?usp=sharing
- You are free to use other modeling softwares and Simulation softwares that you are familiar with, the above one is just for a reference
- For edge detection and fruit detections etc, you can use concepts other than OpenCV like Deep learning, etc it's up to you.