OLISCAN

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OUTLINE

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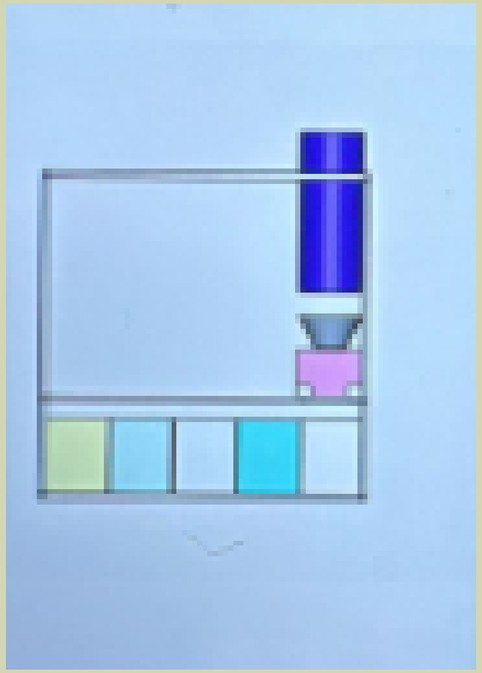
INTRODUCTION

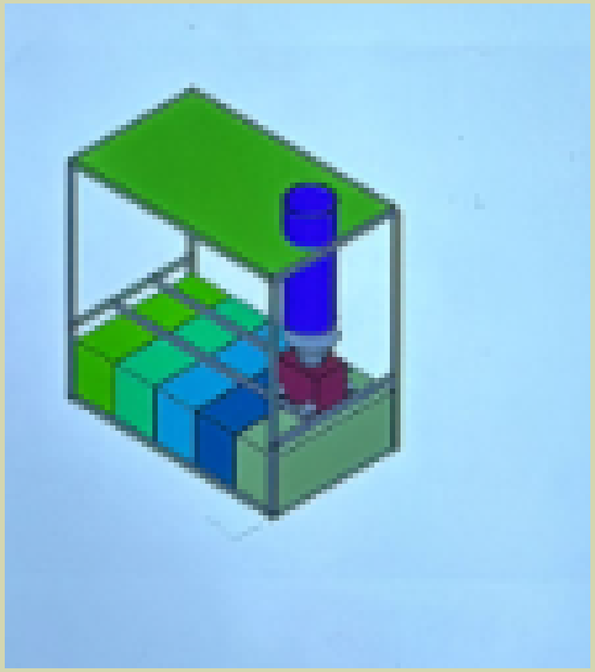
The olive sector is a key part of agriculture in Palestine and the Mediterranean region. Olive trees are not only a source of food but also an important cultural symbol. The quality of olives directly affects the quality of olive oil, making sorting a crucial step in production. Manual sorting is time-consuming, labor-intensive, and often inconsistent. The OLI SCAN project aims to develop an automated system to improve accuracy, efficiency, and reduce human effort in olive sorting.

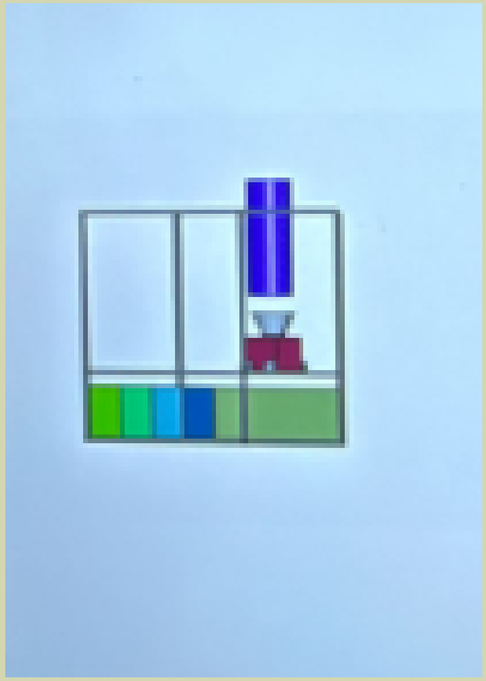
OBJECTIVE

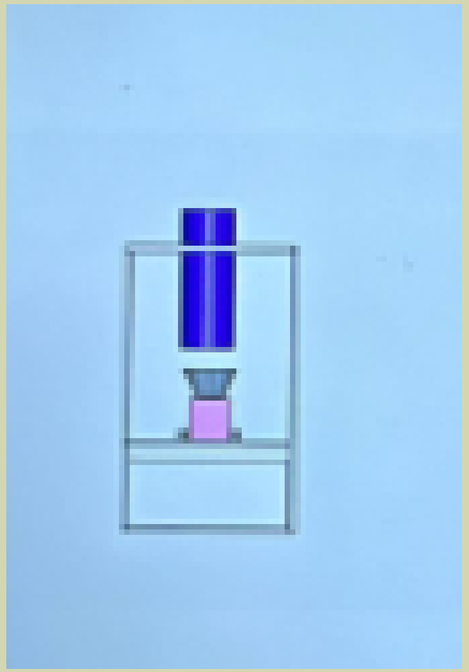
The main objective of OliScan is to design and implement an automated olive sorting system using computer vision and embedded control. The system will classify olives by size and color, detect damaged fruits, and remove unwanted materials like leaves. It will integrate a Raspberry Pi and ESP32 for image processing, actuation, and wireless communication. The goal is to provide a cost-effective, reliable solution for small to medium-scale olive producers.

OUR DESIGN





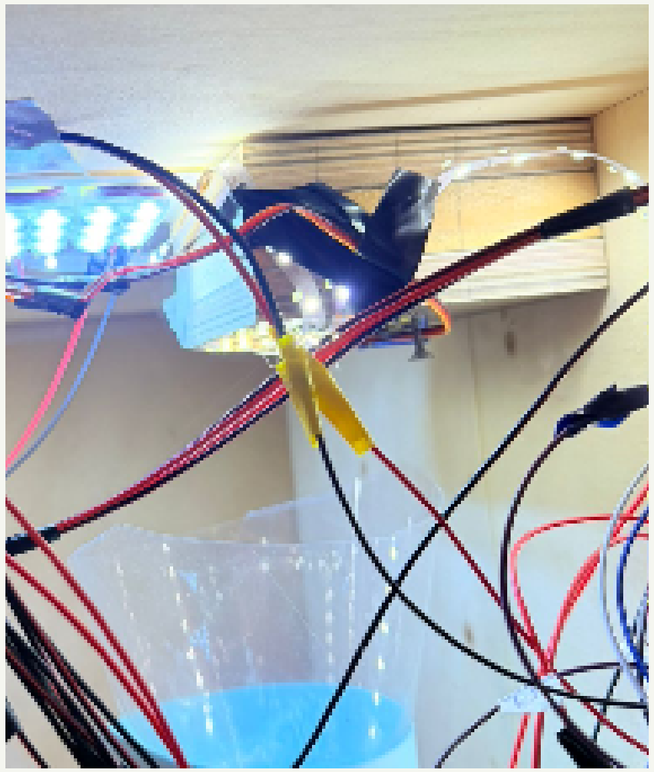




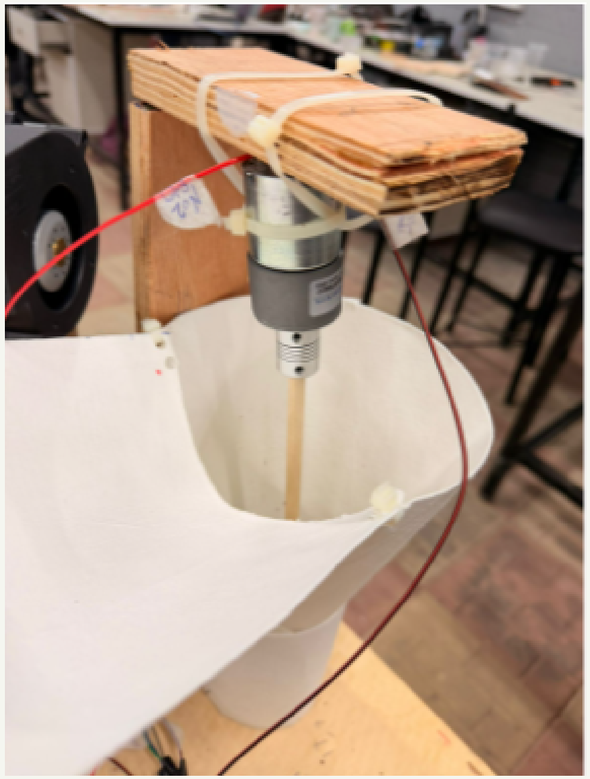
FEATURES

1.Preprocessing stage

2.Servo-controlled feeding gate

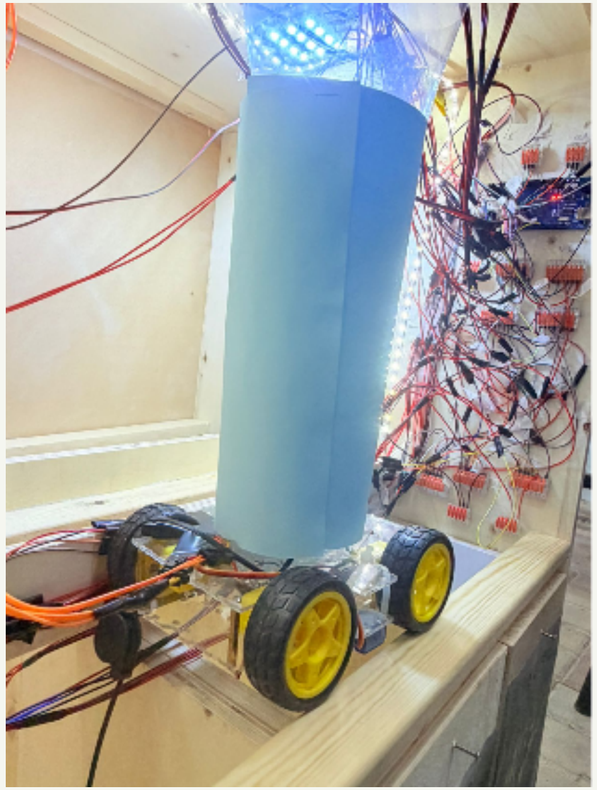


3.DC motor arm

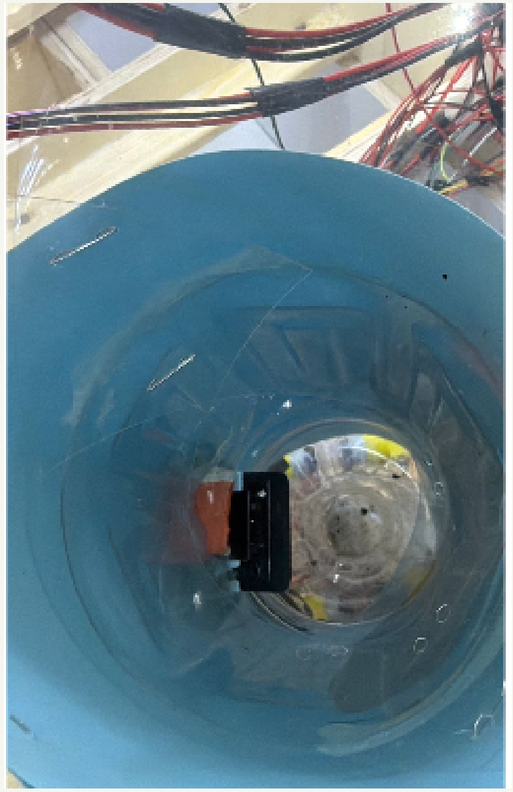


FEATURES

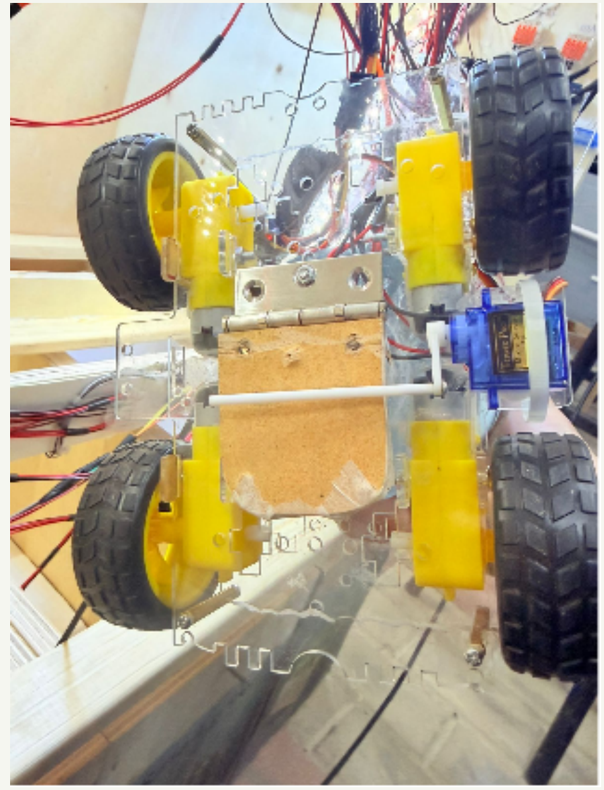
4. Mechanical transport unit .



5.Inspection station.



6.Servo sorting gates



FEATURES

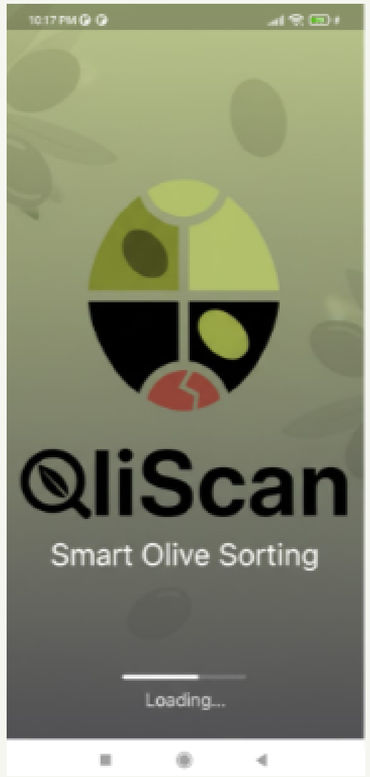
7.Monitoring system

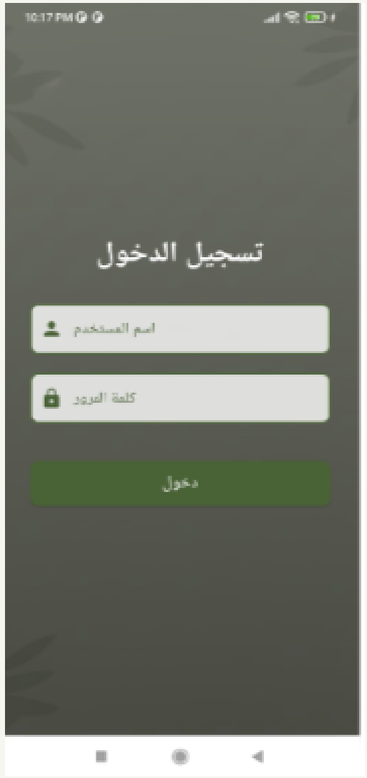
FEATURES

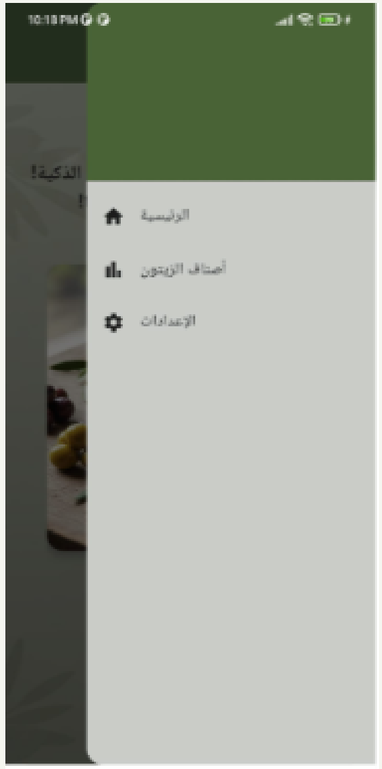
8.User interface and interaction

FEATURES

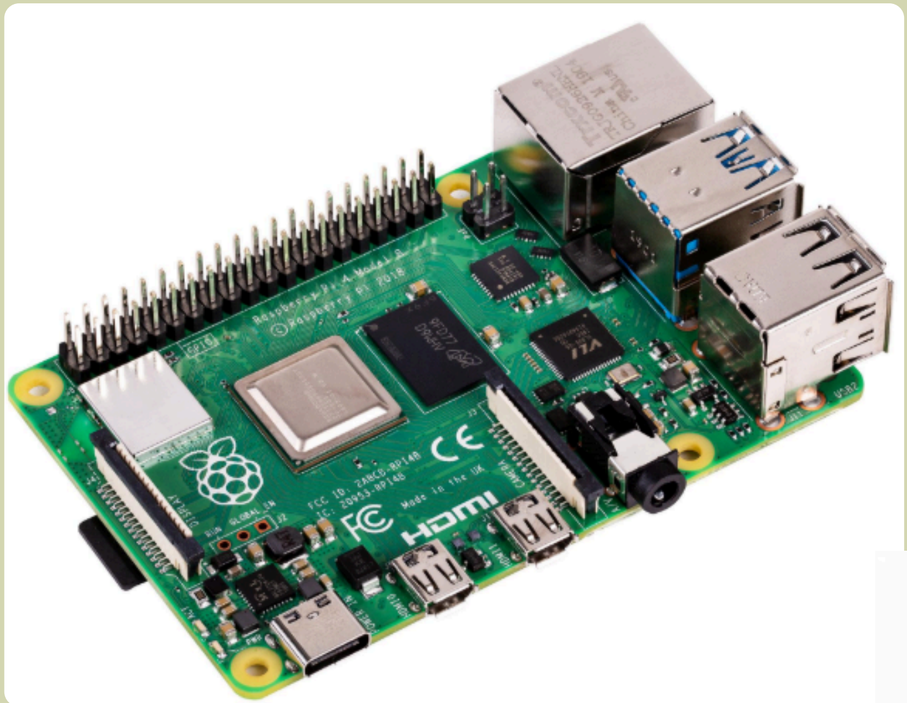
9.Mobile application

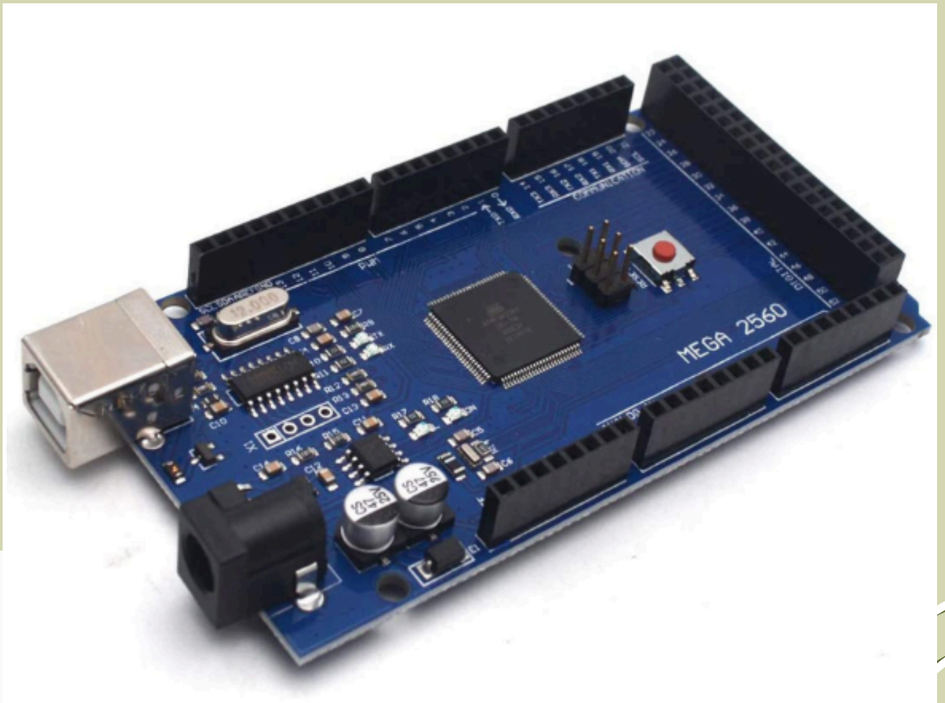


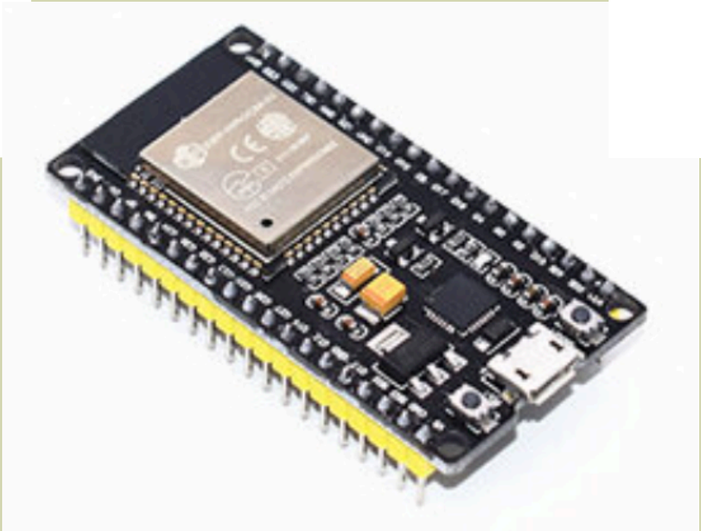




5.HARDWARE PARTS







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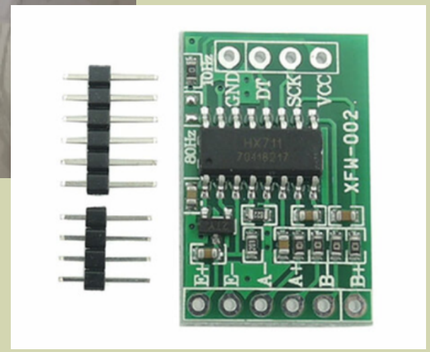

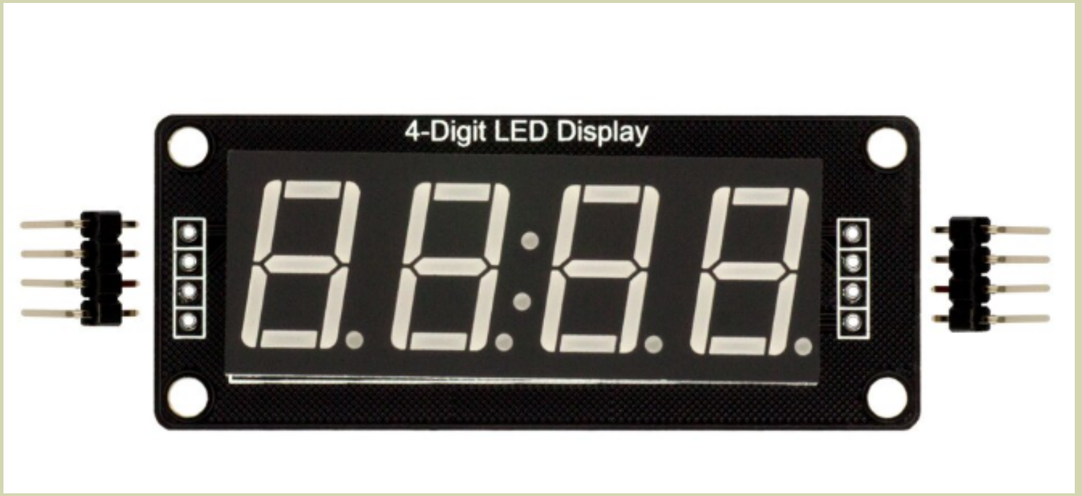

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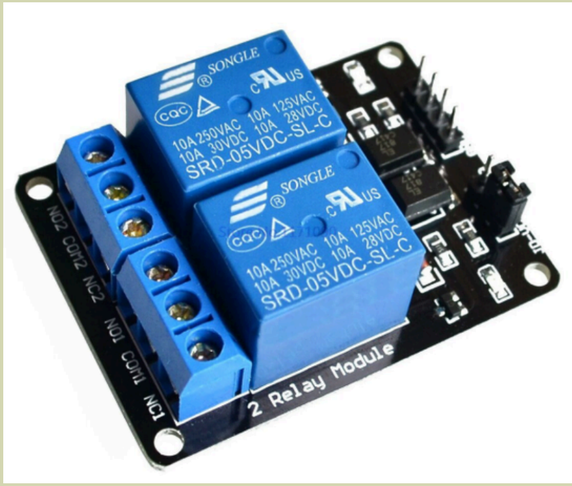

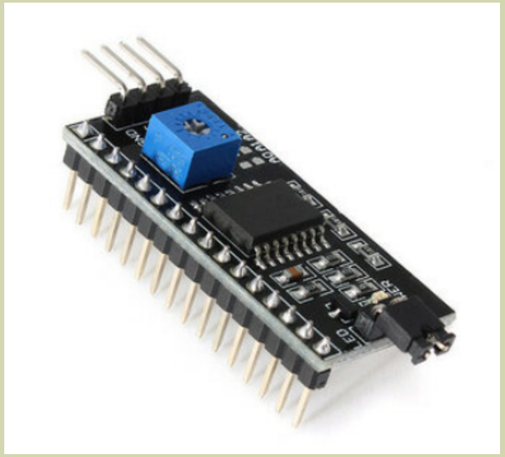

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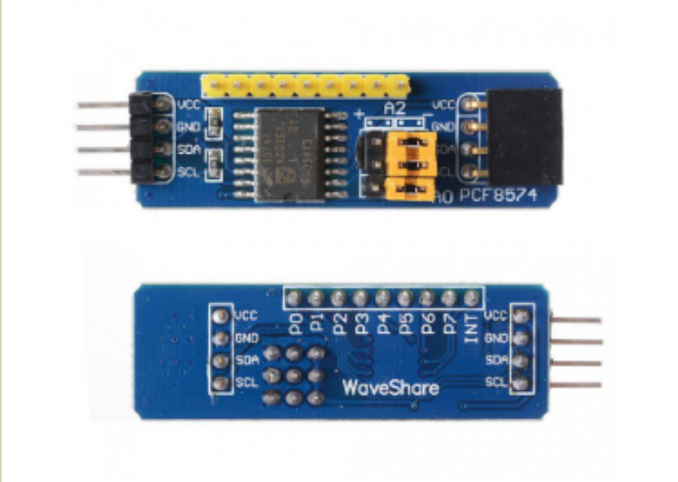

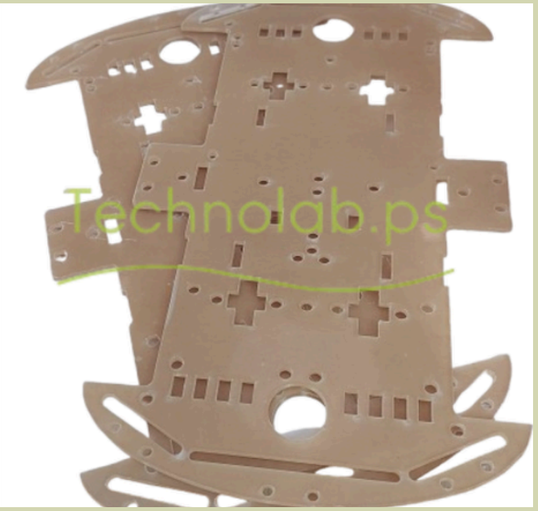

CONSTRAINS

- Sensitivity to lighting conditions
- Mechanical synchronization requirements
- WiFi communication delays/interference
- Limited scalability (small–medium scale only)

FUTURE WORK

- Improved lighting system
- Advanced vision & machine learning
- Mechanical system enhancement
- More reliable communication
- Extended mobile application features
- Industrial-scale system expansion

QUESTIONS & ANSWERS

THANK YOU!