Final Project Presentation

Harvesting and Sorting Bot

Team No. - **5**

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Problem Statement

Develop an automatic greenhouse harvesting and sorting bot using FireBird V.

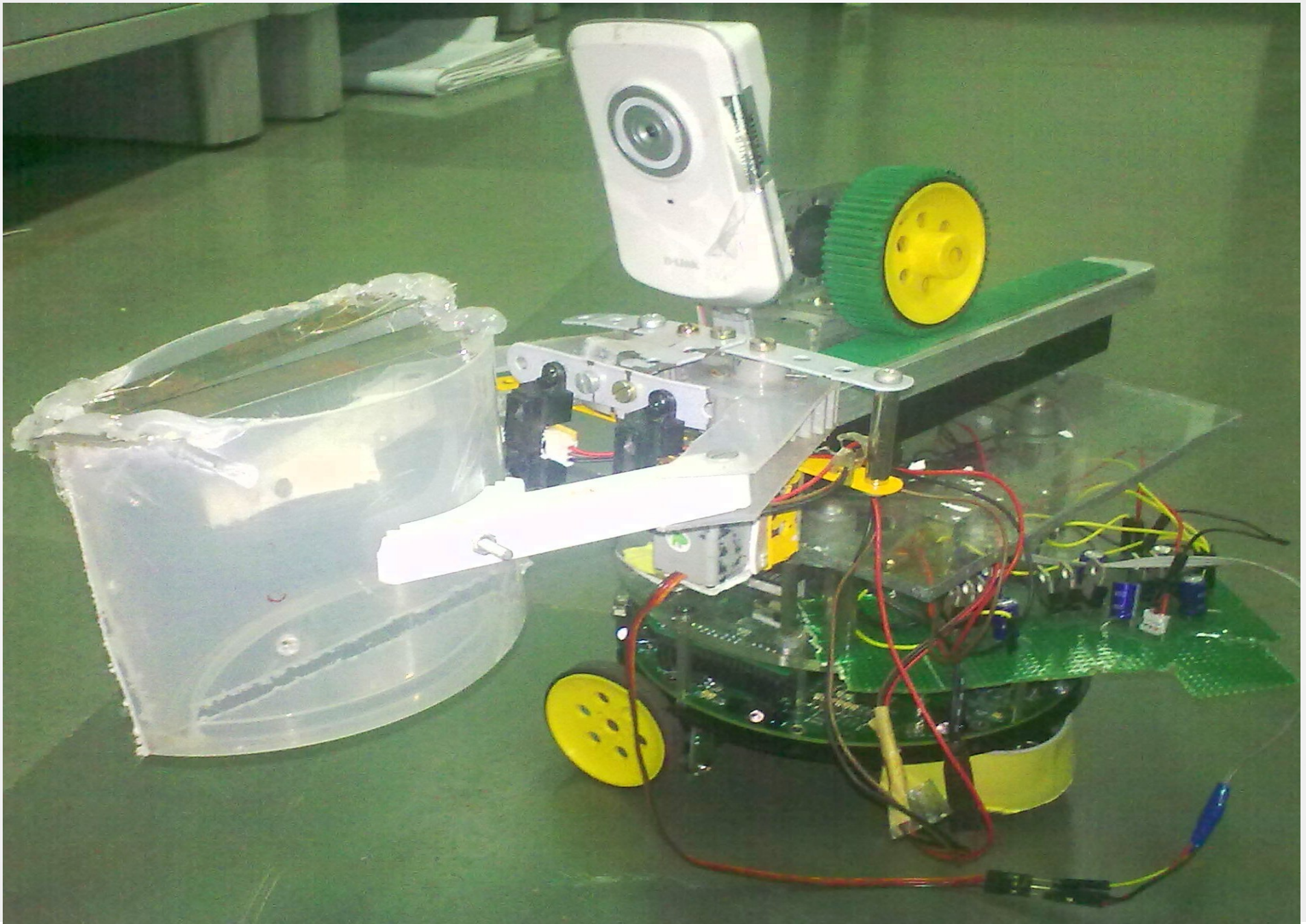
Subgoals:

1. Design a user interface by which user can define trough number.
2. Bot will pluck the tomatoes specified by user.
3. And sort them according to their size.

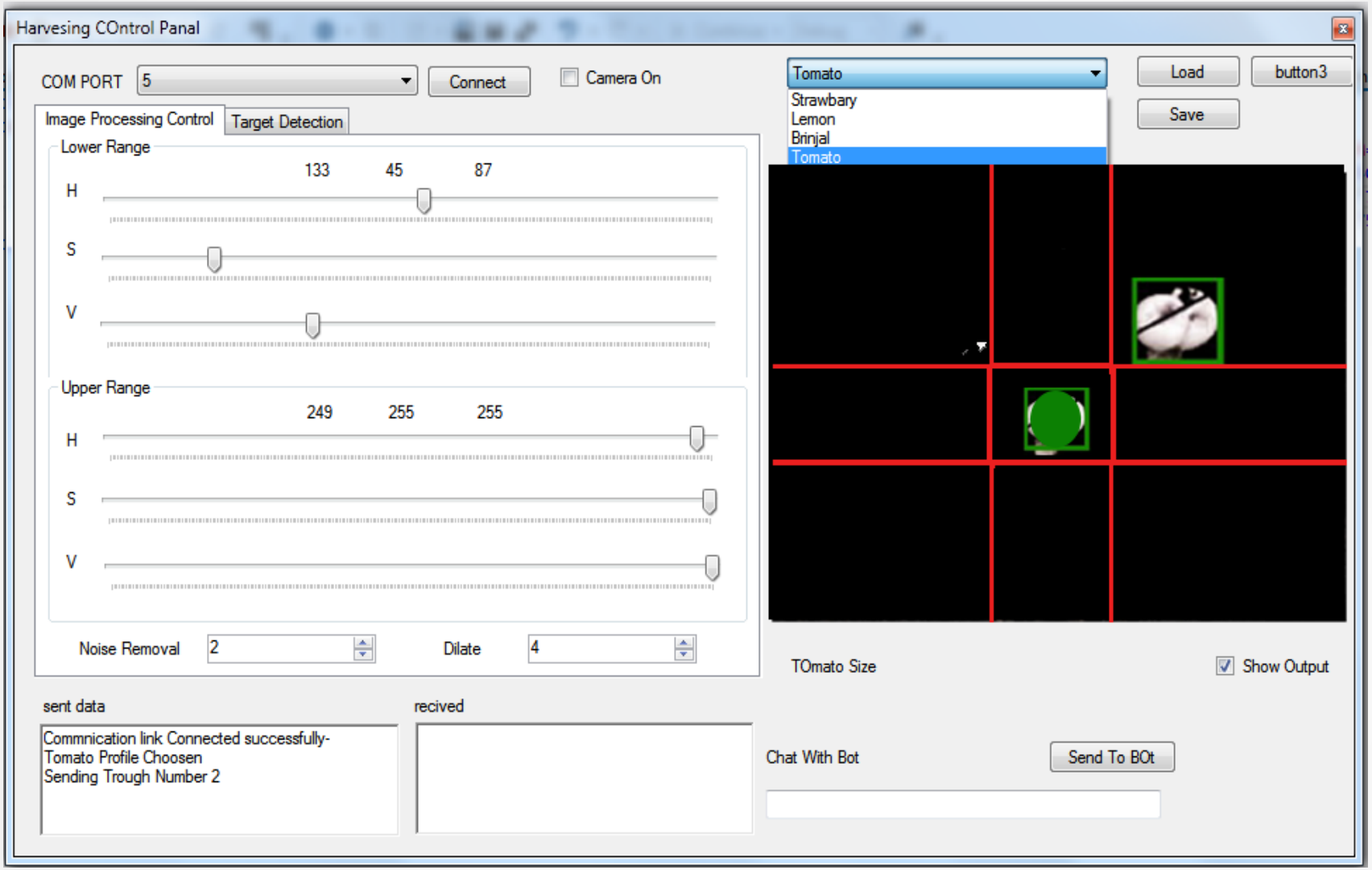
Requirement specification

- Design a user interface for interfacing with bot.
- User can specify trough number and type of tomato.
- Detection of given type tomatoes and estimate their size.
- Pluck and grip the tomato.
- Then sort them according to their size.

Final system

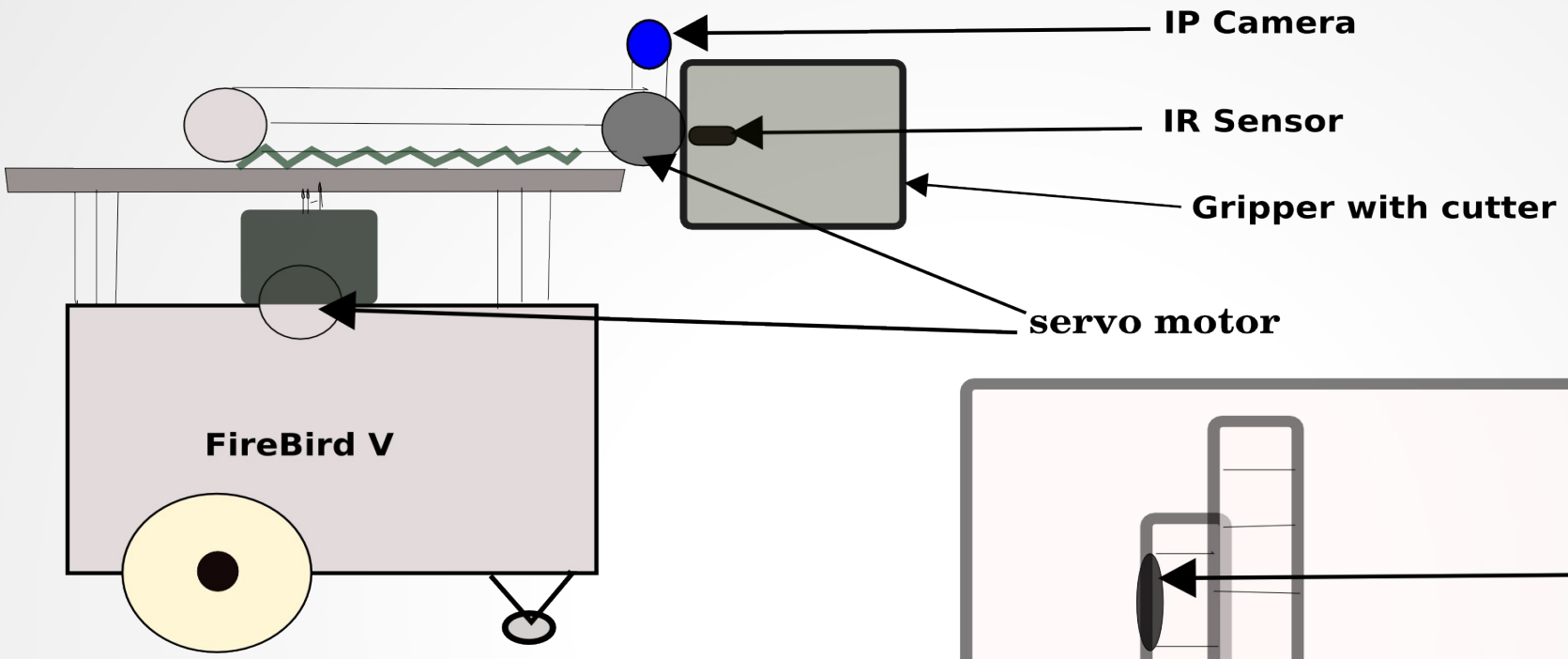


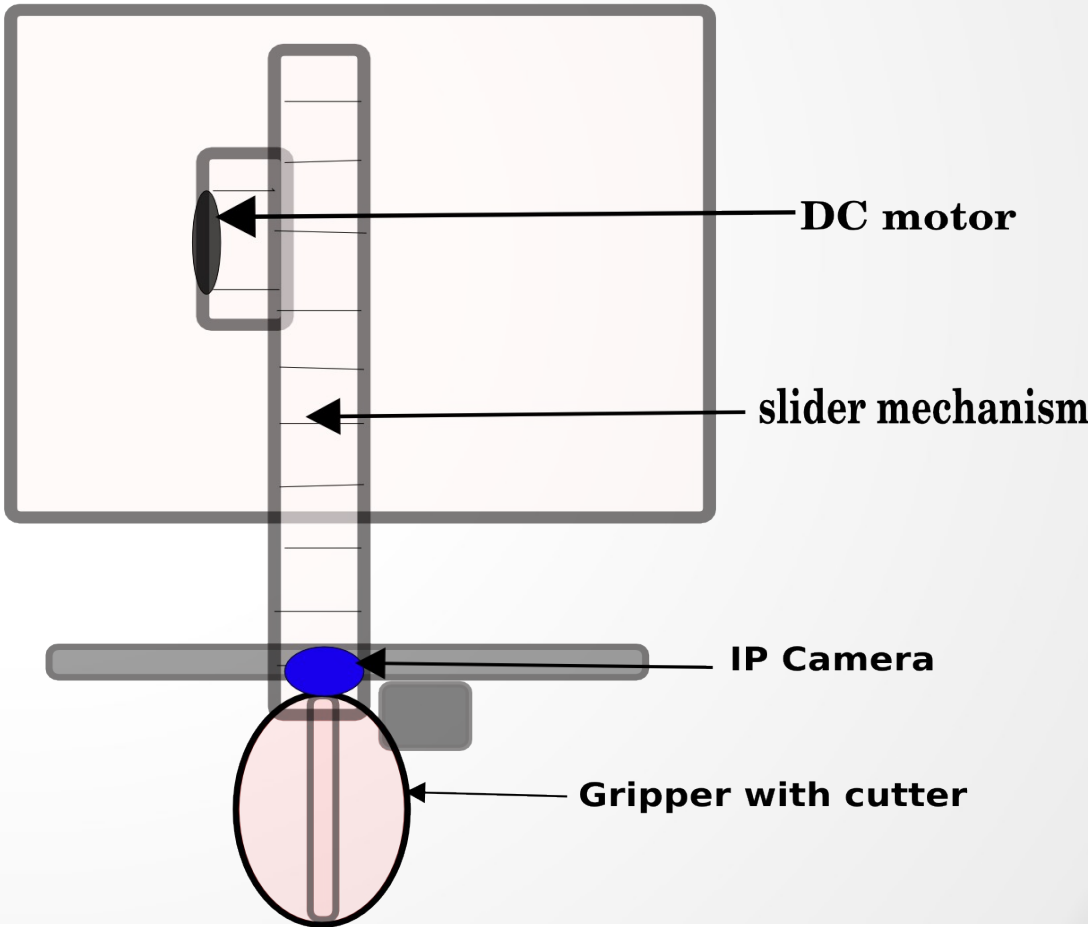
User Interface



This sytem is design in .NET but same source will work in LINUX if compiled with MONO framework.

Final System details





Issues encountered

There are some important issues that we experienced :

- Firebird functioning affected when carrying weight over 500gm.
- Firebird have issues with power supply.
- Servo motor needs much power as it specified.
- Ip camera have delay around 2-3 second.

Insights gained

1. Wireless Xbee communication with FB-V.
2. More knowledge about FB-V and its flaws.
3. Design idea (Design a system for a specific problem).
4. Hardware designing knowledge (Drilling, Soldering, Fabrication).

Future work

To make this bot more efficient following work Needed :

- This design work for a fixed height. So for variable height detection some mechanism needed.
- Cutting mechanism can be improved.
- On the spot bot training can be done for some type of vegitable like lemon, strawberry etc.
- Gripping mechanism needs little modification for not damaging vegitables.

Thank You