

Embedded Systems 220 Final Report for Lab 10

Submit one report per group

Write a report for the final laboratory assignment entitled “Collecting Red Cans in a Simple Static Environment”. The objective for the last laboratory is to use the mobile robots to find a red can in the laboratory test box and transport it to a specified location (for the lab, transport near the starting location of the robot). To complete the laboratory, you will need to use almost all the concepts introduced in previous laboratories. The laboratory report should reflect these ideas and concepts and use them to develop a strategy for completing the lab assignment. The report should also include a description of the full program design, all structures and major functions.

Topics which should be addressed are:

- Finding the can (*image processing technique, filter design and location approximation*)
- Going to the can (*visual feedback, motor control*)
- Grabbing the can (*digital I/O*)
- Transporting can back to start position (*position control, motor control*)
- User input and graphical design (*menus, key input*)

The format guidelines are:

- 2 pages in length
- 10 pt font

The report will need the following sections:

- Title and Names
- Abstract
- Introduction
- Discussion
- Conclusions

The marking for the final lab will be as follows:

- 4pts - Report
- 2pts - Finding can
- 2pts - Driving and grabbing can
- 2pts - Driving back to home position