

Group 2 Team Organization – PROJECT#1

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Team Structure:

Our group has opted to divide the project into smaller more manageable subtasks. Each subtask will be assigned to a group member based on that member's skills and/or interest level in that given subject matter. Each of the assigned tasks has been modularized to ensure that the integration of all the subtasks in the project will proceed smoothly.

Structurally our group will function democratically. Group decisions will be made by majority rule, while lower-level task specific decisions will be made by individual group members. Our group will function without delegating leadership/supervisory roles to one specific person.

Task Divisions:

Coding

Color Recognition: Module that will operate the cmu cam for the mobile robot. The program will take the sensor data from the cmu cam, and translate that sensor information into driving directions for the robot. Given the colors that are to be used in the assignment our group has decided against using the infrared port.

Velocity Control: This portion of code will try to correlate the amount of revolutions made by the robot's wheel into a consistent velocity (inches/second). Code will make sure each of the robots motors are going at the same rate to ensure that the robot is maintaining both a consistent velocity and straight path of travel throughout the course. Code will also tell the robot how many feet it has traveled since the last colored square (this is important because each square will be between 1 to 6 feet apart).

Turning Code: This module will use the driving directions from the color recognition code to turn the robot. This code will reorient the position of the robot by moving the wheel actuators. Ideally the robot will switch directions while not making any excessive rolling movements.

Construction

Main Designer: Will construct the main chassis of the robot. The main designer will also decide on the position of sensors on the main chassis. In addition to this, the main designer will also be designing the stabilizers for the mobile robot.

Secondary Designers: Will be concerned with the overall wheel structure of the robot. The designers will decide on how many wheels and motors will be needed for the robot. Designers will also decide the position of each of the wheels on the robot.

Write-up: Each member of the group will do at least one of the assigned writing assignments for this project.

Testing/Debugging: Each of the modules in the project will be unit tested separately to ensure that each module is functioning correctly. Integration of all the different modules will begin after the correctness of each of the individual modules has been shown. A mock course will be set up for the robot to navigate in order to gauge the effectiveness of the robot. Using the information from the mock course decisions will be made to see if any changes will be made to the robot

Meeting Times:

The group has decided to meet Tuesdays and Thursdays from 10:00am to 12:00pm as needed. Also, we have decided that both the conceptual as well as the final build of the robot will be done during the weekend.

Meeting Location:

Primary Location: Our group has chosen the ground floor of Sarkeys Energy Center as the primary location for robot construction/testing. We have chosen this location given the accessibility of the building. Also, this area was chosen given the availability of internet access.

Secondary Location: For a secondary location our group has chosen the robotics lab three miles north of campus. We chose this as a secondary location due to the fact that the lab is not always accessible to the group.

Task Assignment:

Jonathan Siegel will be responsible for doing the color recognition code as well as the secondary robot design for this project.

Prateek Duggal will be responsible for doing the part of the velocity control code as well as the main robot design

Kumaresh Rajan will be responsible for doing the turning code, part of the velocity control code, and the secondary robot design.