GROUP 8
TEAM ORGANIZATION AND TASK ALLOCATION PROPOSAL
PROJECT #2

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Objective

The purpose of this proposal is to list the individual tasks that will be done and to illustrate the allocation of these tasks. The essential tasks will be explained as well as each task allocation.

The Project.

Our objective is to design, build, program, and demonstrate an autonomous robot that carries out several simple tasks: avoid obstacles, and move to a light source. At the end of this project we will also submit a written document regarding the design and implementation of the robot and its software and present our findings in a class presentation and demonstration.

Group Organization

From our previous experience working on project 1, we decided to split our team into two teams: a **hardware team**, and a **software team**. In fact, because we have four people in the group it was possible to assign two people per team. The hardware and software teams carry two different goals. The hardware team is solely responsible for the hardware aspects of the robot: hardware design, hardware documentation, and the actual robot implementation. The software team is responsible for the software design, the code, and software documentation.

Our main strategy behind selecting members for each team is as follows. The two members for each group are selected in such a way that one person should be the one who has done the same task in the project – 1 and the other one must be the one who carried out the task not related to that team. For example, Josh did the hardware design part in the project – 1. So, Josh and Neelam, who has taken care of the documentation portion, are assigned to hardware team so that Neelam would gain hardware design experience with the help of Josh and be ready for guiding another member in the forthcoming projects. On the similar lines Ramakrishna Pantangi who has carried out Software design and coding part, and Vitaliy, who has done testing and presentation tasks in project – 1, are assigned to the Software team. Below you will see how the tasks are split among the group members.

Tasks and their allocation

For the second project our group decided that all the essential tasks that we outlined in the first project need not be modified. The decisions about who is responsible for each task have been established during the first group meeting for project 2. We have identified the following major tasks to be accomplished in order to reach our objective:

1. **Task organization and allocation**

   This is a written proposal for the task organization and allocation in order to be clear about the various responsibilities that each team members, individually and simultaneously, would carry during the course of this project.

   Because we have decided the task allocation and team organization as a group, any of the members could have completed this part. So we decided to rotate a person who was responsible for this portion in project 1 and assign it to Vitaliy Marin.

2. **Time lining the major milestones and fallbacks.**

   This was decided the same way as for the first task. As a group we decided to rotate the people responsible for this part of the project and assigned it to Ramakrishna Pantangi.

3. **Hardware Design / Assembly**

   Since the robot is a mechanical device, the hardware design and hardware assembly becomes one of the major tasks in the project. Again, studying about handy board and the provided kit would consume time and efforts. The hardware team will be responsible for this part. The hardware team is Neelam Chauhan and Josh Guice. Here they are completely responsible for the hardware design and assembly of robot, including the math/calculation portion. Josh chose to join hardware team because he had more software experience and was the main hardware person for the first project. So we found it beneficiary to save him for the software team for the last two projects and also to help the new hardware team member. This team is also responsible for the hardware documentation.

4. **Software Design / Code**

   It is known that the robot will be autonomous so programming is another major task. For this project it is believed that software will be a dominant cause of most complex problems. To avoid the possible problems we have decided as a group to assign Vitaliy Marin and Ramakrishna Pantangi to the software team simply because this project will be moderately complex, but their previous software experience will help them overcome the obstacles. Another important reason is that Ramakrishna, with his software design and coding experience from project − 1, will be helping another new member into the software part, Vitaliy, to pick up fast and be ready for next projects. In addition, the above team is also responsible for the software documentation.

5. **Testing the robot**

In order to make sure that the robot works as intended, the hardware group will test for the hardware problems and software team will be responsible to do software testing. The two groups will test together to ensure that interrelated problems are solved efficiently and with group consensus. So, the system testing will be done by the team as a whole.

6. **Demonstration and Talks**

Vitaliy chooses to demonstrate the performance of the robot and talk about our team efforts and achievements. However, it is possible to have two people from the two different groups do this part of the project. This will be decided upon the deadline. The presentation materials will be prepared by the team as a whole.

7. **Final Report / Documentation**

Includes information about:
   a. Our team
   b. Robot Design
   c. Robot Code
   d. Robot Code documentation
   e. Team organization evaluation and plans
   f. Presentation materials

For this part the documents from both teams will be merged and submitted.

Equal division of tasks?

We believe it is an equal division of tasks with an added advantage that every team member would be involved in all the decision-making aspects of the project. We also feel that having the people who were responsible for the hardware and software aspects of the first project work with a team member who is new to this area will reduce the learning curve for this project and allow the team to spend more time working on the robot's behaviors and construction.

Final word.

From all of our previous group meetings, we have discovered that all the members are new to this area with little / no experience in robotics except the experience gained from project – 1, but with a strong background in Computer Science and Engineering. Since this is our second project, we want to make sure that all the members get a chance to know what is being done at all different junctures of project. We also want to make sure that all of the members interact with each other and that no group makes any changes without consulting with the team as a whole first. To satisfy these requirements, we found the above-mentioned Task Allocation the best option. Also, the reader can understand that there is no leader for the group. But as we will be keep on updating one another with everybody's progress, any possible problems or disputes will be settled by the team as a whole, not any particular individual. Finally, we have reviewed the task allocation and general approach for the project and approved it as a group; we feel that this is the best way to tap into the strengths of the group and to ensure that our group would do quality work.