Team Organization and Task Allocation Proposal for Project 2
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Team 4 – Justin Fuller, Rahul Kotamaraju, Matthew Lawrence

1.0 Organization

The team's organizational approach for the second project will be similar to that of the first. The team will have no designated leader, but instead will operate in a democratic fashion. Additionally, the individual team members will operate autonomously as much as possible. This will be accomplished through the unique division of tasks and will allow each member to focus on a single aspect of the project. To this end, the project has been divided into five major sectors – design, construction, code, test, and documentation. The design and test phases will require the participation of all three members, while the remaining aspects will be handled individually. Once the project solution has been designed, Rahul Kotamaraju will be responsible for the construction of the robot. Meanwhile, Justin Fuller will provide the Interactive C code for the robot control. Once the project is complete, Matthew Lawrence will compile the documentation detailing the team's approach and solution. Throughout the course of the project, the team will pay special attention to the milestones and will hold each other accountable for meeting all appropriate deadlines.

2.0 Task Allocation

As mentioned above, this second project will consist of five major phases. Whenever possible, each task will be assigned to a single team member. This approach will allow each team member to have expert knowledge of a single aspect of the project. Additionally, it will enable each member to work individually, with little interdependence on the other members. Lastly, it will reduce the number of team meetings, conferences which are often difficult to schedule and less efficient than individual work. With this philosophy in mind, the assignments will be made in the following fashion.

2.1 Design

The design phase is perhaps the most important phase of the project and thus will involve all three team members. During this phase, the team will seek to fully understand the requirements, goals, and constraints of the project. Any uncertainties that arise during this discovery will be referred to Dr. Dean Hougen for resolution. Following the determination of the problem will be the brainstorming. Here, the team will present a wide variety of possible high-level solutions for the project. Finally, a single approach will be chosen from among the brainstormed possibilities. By involving all three members in this phase, the team will be able to obtain the widest variety of possibilities during brainstorming. Additionally, all team members will be able to offer insight in the selection of a final approach.

2.2 Construction

The construction phase will see the realization of the hardware aspect of the team's proposed solution and will be executed by Rahul Kotamaraju. In this phase, Kotamaraju will design a physical robot based on the high-level design obtained in the previous phase. He will then construct the robot using the provided Lego Mindstorms

kit. Kotamaraju was selected for this task because he has not previously been responsible for the construction phase and had requested to perform construction for this project. Finally, Justin Fuller – the resident Lego expert – will be available for consultation should any problems arise.

2.3 Code

The code phase will bring about the implementation of the robot's artificial intelligence and will be completed by Justin Fuller. Here, Fuller will create the code necessary to realize the desired operation of the robot based on the team's high-level solution. The code will be written in the Interactive C language for execution on the Handy Board platform. Fuller was chosen for this phase largely at his request and also because he has not previously worked on the code phase. Lastly, Matthew Lawrence has extensive experience with IC and will be available as a mentor should Fuller require assistance.

2.4 Test

The test phase is the crux of the project's development cycle and will require the participation of all team members. During this phase, the team will put the robot to its final test to ensure that it can reliably complete the necessary tasks. In the unlikely event that the robot fails to perform well in initial tests, the team will fine-tune the system to improve performance. In order to have the greatest knowledge pool when overcoming problems, the entire team will be present for the test phase.

2.5 Documentation

The documentation phase provides the final summary of the team's work on the project and will be handled by Matthew Lawrence. Lawrence will be responsible for meeting with the other team members in order to gain a full understanding of each of the project's phases. He will then compile the team's solution into a detailed final report, to be summarized by a brief presentation. Lawrence was chosen for this task because of his skill with technical writing and presentation and because the other tasks had already been spoken for.