

Timeline with Milestones and Fallback Plan for Project 3
April 14, 2003
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1.0 Overview

The schedule for Project 3 will run from Wednesday, April 9, 2003, to Friday, May 2, 2003. Milestones for the project will consist of due dates assigned by Dr. Dean Hougen as well as goals set by the team. Milestones set by the team will coincide with the various phases of the project. Each team member will be responsible for ensuring that he heeds and meets each milestone as appropriate. Additionally, all team members will hold each other accountable. In the event that any of the milestones is missed, the fallback plan will be strictly adhered to. In this way, the team will remain on-schedule with sufficient time for each task, resulting in an optimal overall solution.

2.0 Milestones

The schedule for the third project will consist of seven major milestones – planning, designing, construction, coding, testing, demonstration, and documentation. The construction, coding, and testing phases will be divided into two sections. The first section will consist of readying the robot for accurate navigation with a world model; the second section will consist of bringing the robot to the point where it will fulfill the project requirements. For this project, the team will apply a “measure twice, cut once” philosophy. With this approach, the team will spend a great deal of time in the designing phase so that less time will be required during the remaining phases, particularly the testing phase. Milestones for the remaining phases will be assigned such that the team will be able to meet all deadlines imposed by Hougen.

2.1 Planning (April 13)

The planning milestone for the project will see the establishment of the team’s organization and timeline. The team will delineate the various phases of the project and will decide which members will be responsible for each task. Additionally, the team will assign milestones to the project and will create a fallback plan. Because Hougen has set a due date of April 14 for the organizational and timeline reports, the milestone for planning will be one day prior – April 13. This milestone has already been met, so no fallback plan will be necessary.

2.2 Designing (April 13)

The design milestone will be met only when the team has established a single, robust architecture for the robot construction and control. The design phase is the single greatest determining factor of the project’s lifecycle. Here the team will seek to develop a specific design that will be capable of performing all of the required tasks. If this phase is executed properly, no major design changes will be required after the design milestone. This will allow the team to devote the test phase to testing the robot, rather than re-designing it. In order to allow for such a thorough design, the milestone will be set at April 13. This milestone has already been met, so no fallback plan will be necessary.

2.3 Construction A (April 16)

The first construction milestone will be complete following the partial assembly of the robot as determined in the team's design. This means that the robot chassis will be complete, and encoders will also be in place. Because Matthew Lawrence is solely responsible for the robot construction, it can be completed autonomously before April 16. If this milestone is not met, all able team members will convene to ensure its completion before April 18.

2.4 Coding A (April 16)

This code milestone requires the implementation of the robot's mobility and world model in Interactive C. As with construction, a single member will complete this phase apart from the rest of the team. Once again, this code must be finalized and ready for testing by April 16. If the milestone elapses, coding responsibilities will assumed by the team's able members, who will ensure its completion before April 18.

2.5 Testing A (April 18)

The first test milestone will mark the confirmation of the robot's compliance with all required specifications pertaining to world model and its use in navigation. Here, the team will test every conceivable aspect of the robot's navigation to ensure correctness. If the design phase is properly completed, the team will meet with no failures and will need only to tweak the robot's parameters. Easter weekend provides an excellent time to complete the B sections of Construction and Coding, so this testing must be complete by April 18. If the team cannot meet this deadline due to problems in coding and/or construction milestones, the members will perform what testing and integration they can and leave the rest for Testing B.

2.6 Construction B (April 21)

The second construction milestone will be complete following the full assembly of the robot as determined in the team's design. Because Matthew Lawrence is solely responsible for the construction phase, it can be completed autonomously during Easter weekend. If this milestone is not met, the entire team will assume responsibility and work round-the-clock for its completion before April 23.

2.7 Coding B (April 21)

The last code milestone requires the implementation of the robot's artificial intelligence in Interactive C. The code must be finalized and ready for testing by April 21. Any lapse in this milestone will be handled similarly to Construction B; the entire team will work together to quickly complete the code before April 23.

2.8 Testing B (April 24)

The final test milestone will mark the confirmation of the robot's compliance with all required specifications. Here, the team will test every conceivable aspect of the robot's operation to ensure correctness. If the design phase and previous testing phase are properly completed, the team will meet with no failures and will need only to tweak the robot's parameters. Dr. Hougen has set the demonstration dates at April 25 and 28, so the team must complete testing before April 25. If the team cannot meet this deadline,

the members will begin sleeping in shifts and working around-the-clock to correct all problems before April 28, the final demonstration day.

2.9 Demonstration (April 28)

The demonstration milestone indicates the exhibition of the team's robot before Dr. Hougen. Here, the team will present the robot, and Dr. Hougen will observe as it performs all of the required tasks. Dr. Hougen has set the dates for demonstration at April 25 and 28, so the milestone must be completed by April 28. Because of the nature of this deadline, a fallback plan will be feasible only in the case of extreme circumstances, such as illness by all team members, and will have to be negotiated uniquely with Dr. Hougen.

2.10 Documentation & Presentation (April 30)

The documentation and presentation milestone indicates the completion of the team's final report and presentation. For this goal, the team must prepare a detailed report detailing the robot's construction and operation. The team will also prepare and present a brief, high-level speech concerning the robot. This milestone will be completed as quickly as possible following completion of the testing phase; the target date will be April 29. If this deadline cannot be met, the entire team will take these responsibilities to take advantage of prior experience with reports and presentations.