

ECE 100 - ITP

Lecture 2

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<http://www.ece.iit.edu/~flueck/ece100>

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Questions?

- ☐ Email List for ECE 100
 - You're responsible for all email.
- ☐ Policies
 - Posted on ECE 100 web site
 - Late assignments will receive zero credit.
 - Copied assignments will receive zero credit.
 - Lab notes should be detailed. Documentation is critical!
- ☐ HandyBoard/Interactive C
- ☐ What does "sleep(0.5)" do? Ignore sensor input for 0.5 sec.

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Important Information

- ☐ Email List for ECE 100
 - If you haven't done so already, make sure to subscribe to the ECE 100 Mailman email list. Only 53 out of 65 students subscribed.
- ☐ Assignments
 - Due at the beginning of class (laboratory, unless otherwise specified). Check calendar on ECE 100 web site to stay on track.
 - Blackboard online SafeAssignment submission required! Link is available under "Assignments". See course web page for details.
- ☐ Attendance
 - For each missed laboratory, one letter grade will be deducted from your final course grade.

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Course Objectives & Policies

- ☐ <http://www.ece.iit.edu/~flueck/ece100>
- ☐ You are responsible for reading and complying with all course objectives and policies.
 - Policies will be strictly enforced.
- ☐ You are responsible for reading and complying with all ECE 100 email broadcasts.
 - All "ECE 100" broadcasts are archived. Follow the "ECE 100 Email List" link on the ECE 100 web page to find the archives.

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Professionalism/Teamwork

- ☐ Laboratory groups should work together as a team.
- ☐ Rotate responsibilities each week: keyboard conductor, programming partner, hardware hacker
 - At any time, anyone on the team can call a “time-out” for a team discussion.
- ☐ Any student who finds it difficult to work with his/her teammates should report to me immediately.
- ☐ My door is always open.

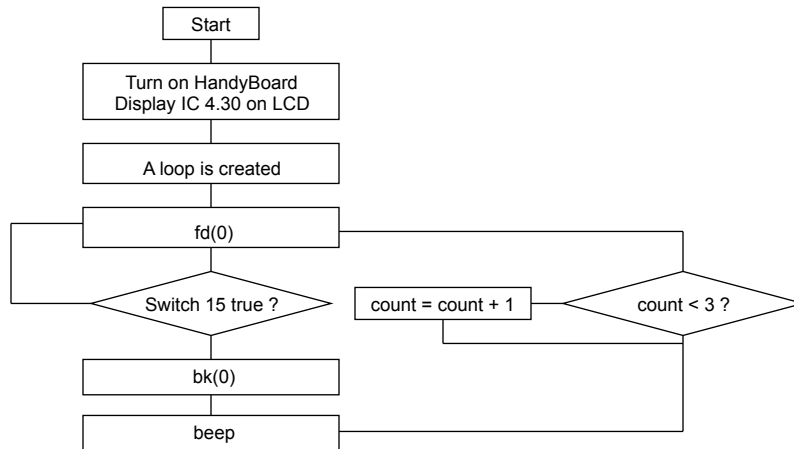
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Competition Round 0

- ☐ Navigate maze in the shortest time possible.
 - Maze will be constructed from the 2x4 lumber used in lab.
 - Angles between adjoining walls will be 90 or 270 degrees.
 - If no robot completes the course, then ranking will be based on distance completed.
 - If two or more robots finish with the same time, a winner will be determined randomly.
 - The top four teams across all laboratory sections will compete in the class runoff during the following week’s lecture period.
 - All students are required to observe the class runoff in lecture and predict the performance of the robots based on each team’s proposed strategy.
 - Complete specifications online: <http://www.ece.iit.edu/~flueck/ece100>

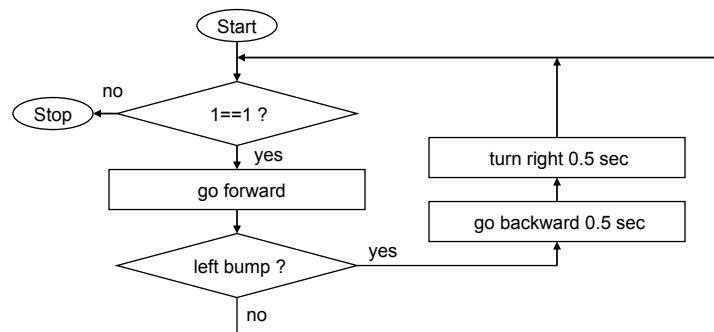
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Flowchart - Bad Example



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Flowchart - Good Example



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Post-Lab 2 Report

- ☐ (See last week's lecture notes for Pre-Lab 2 Assignment)
- ☐ Post-Lab 2 Report: Due in lab the week of Sep 10
 - SafeAssignment submission required via Blackboard
- ☐ Follow "Design Portfolio" format (i.e., disseminate your results)
- ☐ Put the following questions and answers in "Analysis & Testing".
 - Write each question in a bold font so it's easy to find in your report. After each answer, leave a blank line.
 - ❖ What values of backup sleep time and turning sleep time always get the robot stuck (at least 5 bumps) in a corner? Are the values upper or lower bounds? Explain.
 - ❖ How often is "random(4) == 2"? Give a percentage and explain.
 - ❖ Compare the robot's behavior using "metasens" versus "avoid_abstract". Which was better? Explain your experimental procedure.

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Pre-Laboratory 3 Assignment

- ☐ Due in Lab the week of Sep 10. SafeAssignment required via Blackboard.
- ☐ Review "Round 0: Maze Navigation" competition specifications online.
- ☐ Choose an appropriate Problem Statement and include a brief bullet list of "success" criteria and constraints for your design.
- ☐ Provide Research/Investigation background material, along with any citations of others' work.
- ☐ Consider at least two "Alternative Solutions" to meet your Problem Statement, i.e., provide two main routines. Give the two strategies different names. We expect you to improve upon the previous code. Briefly describe the strategies.
 - Create a flowchart for each main routine. Use simple English statements in your flowcharts. Note: IC multitasking is not allowed in ECE 100.
- ☐ Evaluate your alternatives and choose an "Optimum Solution". Justify your choice. Provide the details of your optimum solution based on your success criteria.
- ☐ Divide critical tasks among the team members in preparation for the Round 0 competition. For example, you'll need someone to build/test the HandyBug, someone to modify/test the code, perhaps someone to focus on strategy. Present the jobs in a Task Assignment list in the Optimum Solution section.
- ☐ Deliverables due at the beginning of lab: hard-copy of Pre-lab 3 report including attachments (codes) and electronic copies of codes.

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