

California State University, Fresno

Department of Electrical and Computer Engineering

ECE 1L – Introduction to Electrical and Computer Engineering Laboratory

Laboratory 7: Navigating with Infrared Headlights

(The Boe-Bot, Board of Education, HomeWork Board, BASIC Stamp 2, and BASIC Stamp Editor are registered trademarks of Parallax Inc.)

1. Week #1

Turn to Chapter 7 on Page 235 of the Robotics with the Boe-Bot Manual, and work through the Chapter on infrared (IR) sensors. When finished, move onto Chapter 8 on Page 269 to gain additional familiarity with the sensors. When testing the Boe-Bot's ability to avoid edges, DO NOT use the table. Instead, place the Boe-Bot on the ground within the black strip of tape.

2. Week #2

Using a section of the micromouse maze, design a program that will allow the Boe-Bot to traverse the maze. In addition to the IR sensors, you may also use the whiskers and/or photoresistors for additional sensor information if you need it.

Extra Credit

Modify your design so that the Boe-Bot remembers its position. After successfully traversing the maze, the Boe-Bot should automatically turn around and move back to the beginning of the maze along the shortest possible path.