Name(s)	Project Number
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Project Title

Avoiding the Subject: Avoider Robot's Performance in Mazes and Obstacle Courses

Abstract

Objectives/Goals
Determine if a simple walking robot designed to avoid objects, can pass through mazes more quickly than obstacle courses.

Methods/Materials
Materials include: "Spider 3 Walking Avoider Robot Kit" from the Mondo-Tronics Robot (Internet) store, Phillips screwdriver, pliers, plastic screwdriver, razor blade, various obstacles (different sizes, shapes, colors and textures), cardboard, linoleum floor, duct tape, paper, pens (multiple colors), camera, and pillows.
We timed the robot through a total of four obstacle courses and three mazes. I traced the path of the robot through each course and maze for each run. Times for successfully completed runs were averaged and compared to each other.

Results
The average time to complete the obstacle courses was 1 min. 31 sec. The average time to complete the mazes was 6 min. 47 sec.

Conclusions/Discussion
We proved our hypothesis. On average, the robot went through the obstacle courses faster than the mazes. The major reason for this result is the difference between a maze and an obstacle course. A maze is a twisted path that requires intelligence to get through quickly. An obstacle course is an open path with objects in the way of the robot. This experiment proved that the robot can detect and avoid objects, but the robot cannot "think" it's way through a maze.

Summary Statement

We tested a robot, designed to avoid objects, to see if it could get through mazes or obstacle courses faster.

Help Received

My brother, Jonathan, helped me build the robot, design the mazes and obstacle courses, write some of the run notes and the report. My parents helped type the report and assemble the presentation board. My dad helped assemble the robot, took pictures, and advised on scientific method.