ABSTRACT

The final project is to design and implement behavior-based control algorithm on robot maze type differential steering wheel and controller PID (Proportional, Integral, Differential) to maneuver of robot. The task of this robot is down and look for targets that are placed randomly on the maze, after seeing the target robot back to home through the lane closest to the target. Using behavior-based control modules that works behavior simultaneously form the robot's behavior to be achieved. Each of the independent nature of behavior, has a direct relationship with sensors and actuators. Each behavior can also send messages to other behaviors or inhibit any other behavioral output. In addition to implementing behavior-based control, the final project is also to design and implement a PID controller to maneuver robot maze on the labyrinth wall distance. PID controller aims to smooth the movement of the robot while searching the room / hallway maze. With the help of the PID controller robots able to maneuver the maze with a safe, smooth, responsive and fast. The results of the PID controller parameters obtained from tuning experiments with $K_p = 17$, $K_i = 1$ and $K_d = 50$ to very satisfactory results.

Keywords: behavior based, PID controller, robot maze.
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