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Project Title : The Design and Build Tricycle Mobile Robot using Command Code for Motion Control
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Abstract

This project concerns the design and construction of the tricycle mobile robot using command code for motion control. The purpose for find information and modify navigation movement of AGV to use the navigation movement in various ways, that become restriction and so difficult when change the trajectory of the AGV. The construction process starts from using 3 wheel; 1 of drive and Steering wheel (front wheel of robot) and 2 of independent wheel (Back wheel of robot). For motion control system using DC motor. Control and process system of robot using computer notebook with microcontroller that robot can send command cord to control various trajectory movement and robot can move to avoid obstacle in the path that is straight too.

The robots Start by entering the code commands to a computer notebook. The command code is converted into data. And transfer data via USB port to board Motion control SDC 2130 to drive a DC motor. The microcontroller receives and transmits data between Ultra Sonic sensors for measure distance. (Used to detect obstacles in the path of robotics) and computer notebooks. When the system detects an obstacle to control the robot. Processes in order to avoid the barrier and then moves back to its original trajectory.

For testing tricycle mobile robot using command code for motion control has three test; 1. Moving forward, 2. Slight movement and 3. Moving avoid obstacle in the path that is straight. It has been found that the tolerances is no more than 5 centimeter of Quadratic mean error. For the movement of robot has four simulator stations. It found that the tolerances over the target set in four simulator stations. As a result of cumulative tolerances by the movement of the robot.

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