What Does It Do?

Our robot can find its way out of a connected maze composed of straight hallways and right-angled turns. It will walk through a maze, following the wall to its right-hand side, negotiating left hand turns and dead ends, until it reaches the end of the maze.

How Does It Work?

The robot uses a series of sensors to gather information about its surroundings. The robot then directs itself through the maze using its two electric motors and wheels. The motors are connected to the wheels through a transmission which allows for straight/backward motions, and turns to the left and right.

IR Sensors

The infrared sensors are time-of-flight sensors. They send out a burst of IR light and calculate how long the reflected light takes to return. This gives us a reading which can be translated to a distance. The IR sensors let the robot know how close or far away a wall is. With this information the robot can then determine when to turn and in which direction.

Encoder Sensors

The encoder sensor counts the number of clicks from a pulley wheel. This wheel is mounted on the drivetrain so that it can count the number of clicks it has turned. These clicks can then be converted to distance.

Hallway Navigator Robot

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