

ABSTRACT

The official title of this project is Maze Solving Robot. The objective of this final year undergraduate project is, as the title suggests, to create an autonomous mobile robot that is able to navigate inside a maze and has the intelligence to find the exit of the maze with the help of hardware and software interface.

This project can be divided into four parts; they are the processing unit, the locomotive unit, the sensor system and the time announcing unit. The sensor system consists of two main sensors which aids the robot in the navigation through the maze. They are the infrared sensor and the whisker sensor. These sensors give the robot the feedbacks about the wall surround the robot. It also has a third sensor, light sensor which helps to guide the robot to reach its final destination which is a bright source of light. The processing unit acts as the brain of the robot based on the sensor readings and to control the motors. The power circuit for the robot, the microcontroller circuit, the motor control circuit and the time announcing are designed. And then soldered and interfaced with the motors and sensors. The microcontroller is programmed in a way so as to give the robot the intelligence to make decisions based on its surrounding and eventually find the exit of the maze. Locomotive unit comprises of motors that will be the driving force of the robot and also a motor driver circuitry which enables the processing unit to control the movements of the motor. Finally, the time announcing unit will announce the time taken by the robot to finish its entire mission. The project expectation is that the robot will able to find the exit of the maze and based on the sensors guidance and move towards a spot before announcing the total time taken to solve the maze.