ABSTRACT

The development of mobile robot technology has been growing rapidly, especially in artificial intelligent robot which is used to accomplish a maze. In robotics area there is two kinds of maze that commonly used, there are wall maze and lines maze. Commonly wall maze known as labyrinth terms that means a way web which is built in tunnel with wall without a roof. In line maze a way web that shaped made which is using line. If the lines is white colored so that the background is black colored or reversed. The problem appears in line maze that is the way for getting a shorten way from the line maze.

In this final paper, the problem in line maze has been finished with using depth first search algorithm which is available in artificial intelligent field. The searching process of depth-first search it is done to one level node. The searching begins from root node to higher level. This process is repeated continue until find the solution.

The robot moving arranged from dual mode, there are search mode and return mode. In search mode, the robot is doing a journey from the start to finish position with the rule that the robot will use mainly turned left if it is facing a crossing way. In return mode, the robot have moved from the start to finish with his shorten way. The shorten way is reached from the unique codes that have been converted. Refer to conversion trial program that have been done in whole system testing, is reached 70% well done. The failure caused of the battery condition that is getting weak and the robot control systems are not done well.

Keywords : Robot, maze, Depth First Search, ATmega32, line sensor.