

ABSTRACT

Determining the route of motion is a fundamental task of the mobile robot movement system and has begun to be developed in various needs in every field. Even from the results of previous research and research, the design of the Motion Route System has begun to be implemented, for example implemented in the fields of service, natural disaster evacuation, education and to competition, with various methods in determining the movement route.

This final project will try to design a mobile robot movement route that is different from the results of previous research and research, namely by recording the movement of the mobile robot when it passes through various forms of different track variations. The motion route of this final project will be determined based on the results of recording the movement of the mobile robot while passing the track determined by the author. There are four Tracks where each Track has a different shape, ranging from circular Tracks, bends, and branching. By using a MicroSD Card the system can store error reading data from the line sensor when reading the black line where the recorded data will be used as the Mobile robot's movement to determine the motion route of the Mobile robot.

Then the results in this final project, the Mobile robot has successfully designed its movement route using motion recording from the Mobile robot when it passes through the black line, where the first to get the percentage of success when the Mobile robot passes with a Kp value of 15 is Track 1 to Track 3 is 100% but on Track 4 it is only 73%. Then after that, the average recording results on the 1st Track of the Track deviation = 9.48 cm and the final line 19.9 cm, the 2nd Track of the Track deviation = 6.63 cm and the End Line = 16.6, Track to -3 Track deviation = 6.93 cm and finish line = 42 cm, and Track 4th track deviation = 21.3 cm and Finish line = 59.4 cm.

Keywords: *MicroSD Card, kp, Mobile robot, error, line sensor*