

ABSTRACT

Robot is a mechanical device that is created to help humans in doing something they want. One of the advantages of robot is its high durability and able to do what is ordered consistently. Another advantage is being able to perform calculations and movements that are accurate and can be customized depends the needs

The wheel is basically a round-shaped component designed to spin on a shaft for easy removal of heavy items. The wheels themselves have a variety of types, including wheels on cars, wheels on bicycles, continous track, mecanum wheel and omniwheel. Omnidirectional wheel or better known as omniwheel is a recent breakthrough in the field of kinematics and robotics. This omniwheel can function like a wheel in general, which distinguishes the existence of small wheels or rollers around the main wheel. This small wheel or roller serves like a second wheel on the omniwheel when doing sideways movements.

In this final project robot design is made by using omniwheel as prime mover with work similar to line follower robot and this robot can only be used on land area only, especially area with flat contour. For the design and realization of mobile robot itself is quite successful because it is able to drive mobile robot weighing approximately 1.8 Kg and able to reach a top speed of about 0.75m / s (2.7km / h). When testing the movement with different distances, quite often obtained deviations are categorized as constant, although there is a difference in rotation speed on one wheel. The movement of the robot is also not always constant because there are some mechanical aspects and external factors that affect the movement of the robot.

Key words : vehicle, wheel, omniwheel, mecanum wheel