

ABSTRACT

Many countries are competing to use robotics technology for automation in all fields and aspects of life. Ranging from household, industrial, medical to military. One of the problems in a room that is often encountered is the lack of awareness of humans themselves in maintaining cleanliness in a room. The robot has many functions, including cleaning the room by mopping the dirty floor. This system uses several tools and materials such as an ultrasonic sensor as a distance meter, this system does not focus on the local network for connecting the robot and the user, it uses Bluetooth which is connected to the Arduino uno R3. In the legs sector, omni-directional wheels are used, the use of omni wheels is intended to make the robot's motion more effective and efficient because the omni-directional wheel itself is a unique wheel that has the ability to freely move in both directions, DC Motor and Motor Driver as wheel motion controllers and wheel speed. For the voltage source in this system, a Li-Ion 3300 mAh battery is used. The way this system works does not use a line follower, meaning the robot moves freely, then the MIT app inventor acts as a platform that helps communication between robots and users. From the results of the tests that have been carried out, the floor mopping robot can work well through the room freely and avoid obstacles, where in the design of the robot it can function properly, where the robot can avoid obstacles before a distance of 5 meters and the robot can be turned off using blueetooth up to a distance of 10 meters.

Keywords: Arduino uno R3, ultrasonic SRF-05, MIT App Inventor, omni-directional