Abstract

In this paper, a new method for objects store in static environments, referred to as objects store system, is designed and constructed. This system consists of thirty boxes arranged in four columns to store and retrieve objects using the line follower robot. The storing and retrieving process is investigated by using a differential drive mobile robot which equipped by left and right infrared sensors to work as line follower robot. The trajectories of this robot is arranged according to the N-ary tree algorithm and enhanced by using the digital differential algorithm DDA to reduce the rabble occurrences. The address of each store box is considered as an access code with five binary digits which protect by using the radio frequency identification module (RFID). The objects store system is implemented on two experimental scenarios, one of them is used to test the time of arrival with respect to the number of store boxes and the other is used to test the average length of the paths.

References


Index Terms

Computer Science

System Architecture

Keywords

Objects store system, Line follower robot, RFID module, N-ary tree algorithm.