الاستهلال

قال تعالي:

﴿ وَلا تَمشِ فِي الأَرضِ مَرَحًا إِنَّكَ لَن تَخرِقَ الأَرضَ وَلَن تَبلُغَ

الجِبالَ طولاً﴿٣٧﴾ ﴾

صدق الله العظيم

سورة الإسراء الأية

﴿٣٧﴾

Dedication

To the candle of Our life (father & mother),,,

To Our brothers & sisters,,,

To Our teachers,,,

To Our colleges and friends,,,,

To Those who are searching Knowledge,,,,

We dedicate this work….

Acknowledgement

Our grateful thanks firstly to Our God who guided us to the strait way in our life. Then many thanks and appreciations are extended to **our supervisor Dr.Mohammed Hussein** for his valuable advice and endless effort to make this work come into reality. A lot of thanks for **electronic engineering school** for its dedication laboratories to graduation projects.

I would like to thank our teachers and all those who guided and helped us and provided great environment to complete this thesis and our course work. Special thanks to my teacher **Dr. Fath Elrahman Ismael**, **Dr. AlaELdin Awouda, Hashim Batran, Ahmed Hamida.**

I would like to thank **Hamid Abdallah** from mechanical school.

Abstract

RFID is one of the latest trends in the industry, this is not a new technology but has been in the public domain for at least 10 years, and it was found in Common places where access control and tracking of physical objects is required such as include cattle herding, car immobilizers, and transport ticketing etc. This study is essential in order to increase the efficiency of classification of items and storage. In other words, it decreases the time of classification. So this robot automatically does this process, by identify the items by reading the tag on the items and store it at the appropriate place. An Arduino was connected with RFID reader to reads the RFID passive tag which is the item and the robot will move to the respective place based on the tag by DC motor using mapping system.

The robot consists of a simple lifting mechanism for lifting up the item, infrared sensor to detect the shelf. The project can be used also in any project that needs classification and storage process.

The proposed circuit simulated and Robot circuit implemented and testing it function.

المستخلص

تحديد الهويه باستخدام موجات الراديو واحدة من أحدث الإتجاهات في الصناعة, هذه ليست تقنية جديدة ولكن لم تكن في المجال العام لمدة 10سنوات علي الأقل ، وتم العثور عليه في الأماكن العامة التي تتطلب التحكم في الوصول وتتبع الأشياء المادية مث تتبع الماشية و السيارات و إصدار تذاكر النقل و غيرها. هذه الدراسة ضرورية من أجل زيادة كفاءة تصنيف المواد والتخزين .وبعبارة أخرى، فإنه يقلل من الوقت المستغرق في التصنيف. ولذلك فإن هذا الروبوت يقوم بهذه العملية أوتوماتيكيا من خلال التعرف على المنتجات عن طريق قراءة علامة على المنتج وتخزينها في المكان المناسب . تم ربط الاردوينو مع قارئ تحديد الهوية باستخدام موجات الراديو لقراءة العلامة الموجودة علي المنتج و يتحرك الروبوت إلى المكان المعني على أساس علامة المنتج بواسطة موتور التيار المستمر وبإستخدام نظام الخرائط.

يتكون هذا الروبوت من آلية رفع بسيطة لرفع هذا المنتج , وحساس للأشعة تحت الحمراء لتحديد الرف . يمكن لهذا المشروع أن يستخدم أيضا في أي مشروع يحتاج إلى عملية التصنيف والتخزين . تمت محاكاة الدائرة المقترحة و الاشارة للنتائج كما تم التوصل لعدة توصيات للاخذ بها في الاعتبار في المستقبل.

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LIST OF ABBREVIATIONS

A/D - Analog to digital.

AS/RS- Automated storage and retrieval systems.

D/A -Digital to analog.

DC - Direct Current.

E pin - Enable pin.

EAS-Electronic Article Surveillance.

EPC - Electronic Product Code.

HF - High Frequency.

I/O -Input /Output.

ID – Identification.

IFF - Identification Friend or Foe.

IR – Infrared.

LCD - Liquid Crystal Display.

LF - Low Frequency.

MMA -Methyl Methacrylate Monomer.

PIC - Programmable Integrated Circuit.

PMMA- poly methyl meth acryl ate.

PWM - Pulse Width Modulation.

RF - Radio Frequency.

RFID - Radio Frequency Identification.

ROM -Read Only Memory.

RS pin - Register Selection pin.

SRI-Stanford Research Institute.

UHF - Ultra High Frequency.

PTFE-Poly Tetra Fluoro Ethylene .

LDR-Light Depending Resistance.