آية

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قال تعالى:

اقْرَأْ بِاسْمِ رَبِّكَ الَّذِي خَلَقَ (1)

صدق الله العظيم

سورة العلق

DEDICATION

To our parents who threw their best to raise us, who stayed up whole long nights to provide the perfect atmosphere for us to grow, the main factor for what we have reach and what we have become. On our darkest times they were by our side supporting, encroaching and motivating us, and because of that we breakthrough our limits.

Our brothers and sister, our source of inspiration, who shaped the hope in us by their motivation they were the guidance in the roads of our lives.

To our brothers whose from another mothers, our dearest friends. We found them when we struggle the most. When we broke and bend they were always there for us to lean on.

To our batch. 31th Electrical engineering batch. They were more than just colleagues. Always there for each other and never spare a thing to support the batch.

ACKNOWLEDGEMENT

First we extremely grateful to our parents for their love, prayers, caring and sacrifices for educating and preparing us for my future.

We respect and thanks Ust. Galal ABD EL-Rahman Mohammed ,for providing us an opportunity to do the project work and giving us all support and guidance which made us complete the project duly. we extremely thankful to him for providing such a nice support and guidance, although he had busy schedule managing the corporate affairs**.**

Finally, our thanks go to all the people who have supported us to complete the research work directly or indirectly.

ABSTRACT

The project provides a mechanism for transporting medicine inside hospitals, where there is delay in the process due to overcrowding and the movement of nurses and co-patient to make the purchase. The process starts by writing the treatments in the patient's file, and due to its importance it is only handed over to the medical staff, which requires the appointment of a nurse assistant to accompany the co-patients during the procedures. And after the spread of Corona virus epidemic, new solutions must be found to reduce crowding, direct contact and to reduce the infection rate of the virus.

A control system has been designed and applied to process medicine and medical supplies delivery operation inside the hospital by using an elevator that moves vertically between the pharmacy and the nurse stations on each floor of the hospital, using an Arduino controller, the motor that is connected to the Arduino controller via the motor driver which supplies the motor with the current required to operate and move the elevator between the different floors.

A simulation of this study was made using Protues program. A prototype of the project was also made, which achieved and facilitated the process of transporting medicine and medical supplies. The system can be improved by adding security, protection and software improvement, also the system can by linked to hospital information system through the software.

مستخلص

المشروع يوفر آلية لنقل الدواء داخل المستشفيات, حيث يكون هنالك تأخير في العملية بسبب الازدحام و حركه الممرضين و مرافقي المرضى لإجراء عملية الشراء. تبدأ العملية بكتابة العلاجات في ملف المريض, و نظرا لأهميته لا يتم تسليمه الا للكادر الطبي, من ما يتطلب تعيين مساعد ممرض لمرافقة مرافقي المرضى اثناء الاجراءات. وفي ظل انتشار وباء فايروس كورونا لا بد من الوصول لحلول جديدة للحد من الازدحام و التلامس و المعاملة المباشرة لتقليل فرص انتشار الفايروس.

تم تصميم وتطبيق نظام تحكم لعملية نقل الدواء والمستلزمات الطبية داخل المستشفى عن طريق مصعد يتحرك رأسيا بين الصيدلية و محطات التمريض التي يتواجد فيها الممرضين في جميع طوابق المستشفى وذلك باستخدام متحكم اردوينو, تحتوي الدائرة علي ازرار لإرسال الاشارة من الطوابق المختلفة, حساس لقياس المسافة وتحديد مكان المصعد و محرك موصل بمتحكم الاردوينو عن طريق الموتر درايفر لإمداد المحرك بالتيار الازم لتشغيله لتحريك المصعد بين الطوابق المختلفة.

تم عمل محاكاة لهذه الدراسة باستخدام برنامج البرتوس كما تم ايضا عمل نموذج مصغر للمشروع حقق وسهل عملية نقل الدواء والمستلزمات الطبية. يمكن تحسين النظام بإضافة نظام تأمين و حماية و التحسين البرمجي بربط النظام برمجيا مع نظام المستشفى.

TABLE OF CONTENTS

LEST OF FUGRES

LEST OF TABLE

LEST OF ABBREVIATIONS

2D	Two Dimension
3D	Three Dimension
AC	Alternating Current
AREF	Analog Reference
ATMEL	Advanced Technology for Memory and Logic
AVR	A microcontroller Designed by ATMEL Company
CPU	Central Processing Unit
DC	Direct Current
GND	Ground
HIS	Hospital Information System
IC	Integrated Circuit
ICSP	In-Circuit Serial Programming
I/O	Input/ Output
LED	Light Emitting Diode
mA	Mille Ampere
M Hz	Mega Hertz
MOSI	Master Out Slave In
MIMO	Multiple-Input Multiple-Output
PCB	Printed Circuit Board
PMW	Pulse Width Modulation
PTT	Pneumatic Tube Transport
Rx	Used to Receive Data
SCK	Serial Clock
RAM	Random Access Memory
ROM	Read-Only Memory
SPI	Serial Peripheral Interface

V	Voltage
VCC	Voltage Common Collector
VI	A label used to indicate the input pin for the voltage to the Arduino