

A project on Automatic Door open And close system

with visitor counter and Fire Alarm

**A Project submitted in partial fulfillment of the requirements for the
Award of Degree of**

Bachelor of Science in Electrical and Electronic Engineering

Submitted By

MD. Atiqur Rahman

ID: 153-33-2940

Uzzul Chakroborty

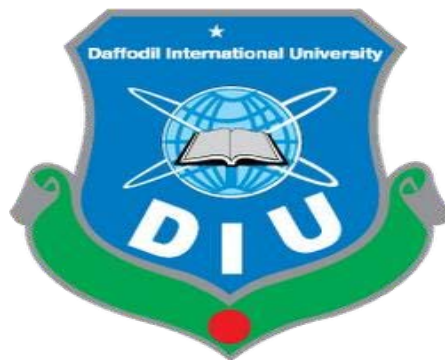
ID: 153-33-2868

Supervised by

Dr. Md. Rezwanul Ahsan

Assistant Professor

Department of EEE



DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEERING

FACULTY OF ENGINEERING

DAFFODIL INTERNATIONAL UNIVERSITY

NOVEMBER, 2018

DECLARATION

The project and thesis entitled “**A Project On AUTOMIC VISITOR SENSING GATE WITH COUNTER AND ALARM SYSTEM**” submitted by **UZZUL CHAKROBORTY**, ID No: 153-33-2868 and **MD. ATIQR RAHMAN**, ID No: 153-33-2940, Session: Fall 2018 have been accepted as satisfactory in partial fulfillment of the requirements for the degree of **Bachelor of Science in Electrical and Electronic Engineering** on December, 2018.

Signature of the Candidates

MD. Atiqur Rahman
ID: 153-33-2940

Uzzul Chakroborty
ID: 153-33-2868

Countersigned

Rahman
26/12/18

Dr. Md. Rezwanul Ahsan

Assistant Professor

Department of Electrical and Electronic Engineering

Faculty of Engineering

Daffodil International University.

Dedicated to

Our Parents

CONTENTS

List of Figures		V
List of Table		Vi
List of Abbreviations		Vii
List of Symbol		Viii
Acknowledgment		ix
Abstract		x
CHAPTER 1:	INTRODUCTION	1-3
1.1	Introduction	1
1.2	Object	2
1.2	Project Overview	3
CHAPTER 2	Analysis And Simulation	
2.1	Building The project	4
2.2	Block Diagram of the project	4
2.3	Circuit Diagram	5
2.4	Summary	6
CHAPTER 3:	HARDWARE DEVELOPMENT	
3.1	LDR (Light Dependent Resistor) :	7
3.2	Working Principle of LDR	
3.3	LCD (2 Line 16 Carriers)	8-10
3.4	Servo Motor	10-12
3.5	Microcontroller	12-16
3.6	Voltage Regulator	16-17
3.7	Capacitor	18

3.8	606-Transformer	19
3.9	Soldering Wire	19
3.10	Vero Board	20
3.11	List of Components with Price	21
3.12	Summary	22
Chapter 4:	RESULTS AND DISCUSSIONS	
4.1	Introduction	23
4.2	Performance Analysis	23-24
4.3	Our Project	24-25
4.4	Limitations of the Work	25-26
4.5	Conclusions	26
APPENDIX-A		27-32
REFERANCES		33

LIST OF FIGURES

Figure	Figure Caption	Page #
2.2	Auto Visitor Sensing Gate With Counter	4
2.2	Auto Visitor Sensing Gate With Counter Circuit	5
3.1	LDR (Light Dependent Resistor)	7
3.2	LCD (2 Line 16 Carriers)	8
3.3	LCD (2*16) Pin	9
3.4	Servo Motor	10
3.5	Components of servo motor SG-90	11
3.6	variable pulse width control servo position	12

3.7	Microcontroler cheap	13
3.8	PIC16F877 Microcontroller Pin Diagram	14
3.9	Voltage Regulator	16
3.10	100 μ f & 10 μ f Capacitors	18
3.11	606-Transformer	19
3.12	oldering Two Wires	19
3.15	Vero Board	20

LIST OF TABLES

Table	Table Caption	Page
3.3.2	3.3.1 Pin Features	10
3.5.2	Pin and their Functions	15

List of Abbreviations

CD	Chromatic Dispersion
EMI	Immune to Electromagnetic Interference
FBG	Fiber Bragg Gratings
FWHM	Full Width at Half Maximum
GVD	Group Velocity Dispersion
LED	Light Emitting Diodes
MD	Material Dispersion
NLSE	Nonlinear Schrödinger Equation
PMD	Polarization Mode Dispersion
PUA	Piecewise Uniform Approach
RMS	Root Mean Square
SSMF	Standard Single Mode Fiber
TFBG	Tilted Fiber Bragg Gratings
UV	Ultraviolet
WD	Wave-guide Dispersion
WDM	Wavelength Division Multiplexed

List of Symbols

λ	Wavelength
λ_B	Bragg wavelength
n_{eff}	Effective index
Z	Position along the grating
N	Mode index
F	Fundamental Frequency
ω	Angular frequency
M	Modulation Index
T	Fundamental Time Period

ACKNOWLEDGEMENT

To the exclusion of everything else, we express thankfulness to Allah. By then we should need to acknowledge this open way to offer our thankfulness and because of our endeavor boss Dr. MD. Rezwanul Ahsan ,Assistant Professor, Department of EEE, Daffodil International University. For being submitted in supporting, convincing and overseeing us through this errand. This endeavor can't be one without his profitable direction and has any kind of effect. In like manner much a debt of gratitude is in order for giving us opportunity to pick this assignment. Besides that, we should need to thanks our entire partners for sharing learning; information and helping us in making this endeavor a success. Moreover an obligation of appreciation is all together to advance us a couple of gadgets and equipment. To our venerated family, we have to give them our most significant love and gratefulness for being outstandingly solid and moreover for their inspiration and support in the midst of our examinations in this University.

ABSTRACT

The execution of a Microcontroller based programmed entryway control with guest counter will prompt immense enhancement for electronic security structures. In any case, for a framework with vast volume of development with practically no security cognizance, an entryway framework to fit the framework immediately in the free stream almost no security awareness, an entryway framework to fit the framework immediately in the free stream of development typically will in general represent an issue. Generally, in this sort of situation, a programmed entryway framework with a methods for identifying approaching traffic in order to open the entryway as required, along these lines the structure and operational standards of a microcontroller based programmed entryway with guest counter. The structure is made of sensors that distinguish human nearness, a dynamic presentation unit that shows distinctive messages at explicit time, the H-connect driver IC controls the development of the engine appended to the entryway. The entire framework is controlled by a 8051microcontroller. Watchwords: Microcontroller, H-connect driver IC, Sensor, Program, Remote.

CHAPTER 1

INTRODUCTION

1.1 Introduction

Microcontroller based automatic door control with visitor counter was designed to automatically open a door once somebody approaches the door without the need for any switch, button or handle. The system also has module that serves as visitor counter and as such, counts the number of entries in and out of the building. In this design, the door is made to slide open once the sensor picks up a signal implying that somebody is approaching the door. The door stays open for few minutes while the microcontroller checks the condition of the sensor. If the sensor still senses the presence of somebody, the door stays open. Else, the door closes.

1.2 Objective

While trusting that whenever will open. The plan is with multi-message show utilizing seven fragment shows. In this plan we have beseeched the utilization of both equipment and programming to realize the whole venture. The equipment parts are exclusively planned by the AT89S51 smaller scale controller chip while the C programming dialect is utilized to program the chip. The utilization of this Research work covers all works of life. A portion of the uses of this undertaking are in film lobbies where the quantity of individuals going in is much and accordingly this framework reacts to that by opening consequently and in addition keeping tally of the quantity of individuals all through the entryway. Moreover, if this structure is connected to occupied lodgings or drive-thru food joints, the requirement for a server or a security individual to always open the entryway for client is illuminated since the framework is clever. Additionally, this structure impeccably suits a carport framework; For this situation, the carport entryway opens once a vehicle approaches the entryway of the carport. This comprises of a sensor unit that detects individuals moving toward the entryway [1]. Through the yield of the sensor, the microcontroller decides when to send the important rationale to the H-connect driver so as to control the engine for the entryway. Likewise the

counter is increased once the sensor gets flag however not at all like the entryway schedule that keeps the entryway open once someone remains by the sensor, the counter standard does not keep tallying if

The sensor is continuously receiving signal like the door. The use of electronic door became popular just in the 18th century. Electronic doors usually comprises of either electric motors or roller instead of hinges which are applicable to manual doors. Basically the different types of electronic doors are determined by how the electric motors are activated and controlled.

Some of the types of electronic doors include the following: Button pressed door: this is the earliest form of electronic door and has little or no security details.

In this kind of electronic entryway, the entryway is opened utilizing a catch that goes about as a switch. Generally this kind of entryway is normally bolted of course and by squeezing the catch; the engine of the entryway is initiated, along these lines opening the entryway. Code based electronic entryway: this kind of entryway is further developed than the catch squeezed entryway bolt. For this situation, the entryway is bolted as a matter of course and as a rule requires an entrance code for the bolt to be deactivated. When the right code is entered, the electric engine is actuated, subsequently opening the entryway.

Key card b

this kind of entryway is further developed than the catch squeezed entryway bolt. For this situation, the entryway is bolted as a matter of course and as a rule requires an entrance card to open the entryway. It is like code based bolt. The thing that matters is that the opening code is inserted unto a card.

Exceptionally propelled type of

entryway locking framework dependent on the uniqueness of the human thumb print. Here once the thumb is put on the scanner, it checks whether the thumb print approaches the bolt. On the off chance that the checked thumb approaches, the electric engine controlling the entryway.

1.3 Project Overview

while trusting that whenever will open. The structure is with multi-message show utilizing seven portion shows. In this structure we have entreated the utilization of both equipment and programming to realize the whole venture. The equipment parts are exclusively planned by the AT89S51 small scale controller chip while the C programming dialect is utilized to program the chip. The utilization of this Research work covers all works of life. A portion of the utilizations of this undertaking are in film corridors where the quantity of individuals

going in is much furthermore, all things considered this framework reacts to that by opening naturally and also keeping tally of the quantity of individuals all through the entryway. Moreover, if this structure is connected to occupied inns or junk food joints, the requirement for a server or a security individual to always open the entryway for client is understood since the framework is canny. Besides, this structure impeccably suits a carport framework; For this situation, the carport entryway opens once a vehicle approaches the entryway of the carport. This comprises of a sensor unit that detects individuals moving toward the entryway [1]. Through the yield of the sensor, the microcontroller decides when to send the important rationale to the H-connect driver in order to control the engine for the entryway. Likewise the counter is augmented once the sensor gets flag however not at all like the entryway schedule that keeps the entryway open once someone remains by the sensor, the counter standard does not keep checking if the sensor is ceaselessly accepting sign like the entryway. The utilization of electronic entryway ended up well known just in the eighteenth century. Electronic entryways as a rule contains either electric engines or roller rather than pivots which are appropriate to manual entryways. Essentially the distinctive sorts of electronic entryways are dictated by how the electric engines are enacted and controlled.

Some of the types of electronic doors include the following:

Button squeezed entryway: this is the most punctual type of electronic entryway and has next to zero security subtleties. In this sort of electronic entryway, the entryway is opened utilizing a catch that goes about as a switch. Generally this sort of entryway is normally bolted of course and by squeezing the catch; the engine of the entryway is initiated, therefore opening the entryway.

Code base

developed than the catch squeezed entryway bolt. For this situation, the entryway is bolted as a matter of course and as a rule requires an entrance code for the bolt to be deactivated. When the right code is entered, the electric engine is initiated, subsequently opening the entryway.

Key card based bolt: this kind of entryway is further developed than the catch squeezed entryway bolt. For this situation, the entryway is bolted as a matter of course and as a rule requires an entrance card to open the entryway. It is like code based bolt. The thing that matters is that the opening code is inserted unto a card.

Thumb pr

exceedingly propelled type of entryway locking framework dependent on the uniqueness of the human thumb print. Here once the thumb is put on the scanner, it checks whether the thumb print approaches the bolt. On the off chance that the examined thumb approaches, the electric engine controlling the entryway.

CHAPTER 2

ANALYSIS AND SIMULATION

2.1 Building the Project

Automatic door control system is highly demanded & Applicable project can be used in airport, offices, restaurant, home etc. Microcontroller controls the door mechanism according to the sensor output

একটি পড়হঃডঃফঃবঃ ২ ড় গ় ঃ র় ংবফ ধং রহ্ৰ ঃ গ় ত্ববক্ষু ফঃর বং ি য়রপয ফঃর বং ত্ববক্ষু . It also used two servo motor to open and close the door. It works in 90 degree or 100 degree.

There are two Ir sensor, one buzzer, LCD display. It works on 5 volt.

There are two rechargeable battery.

2.2 Block diagram of this project

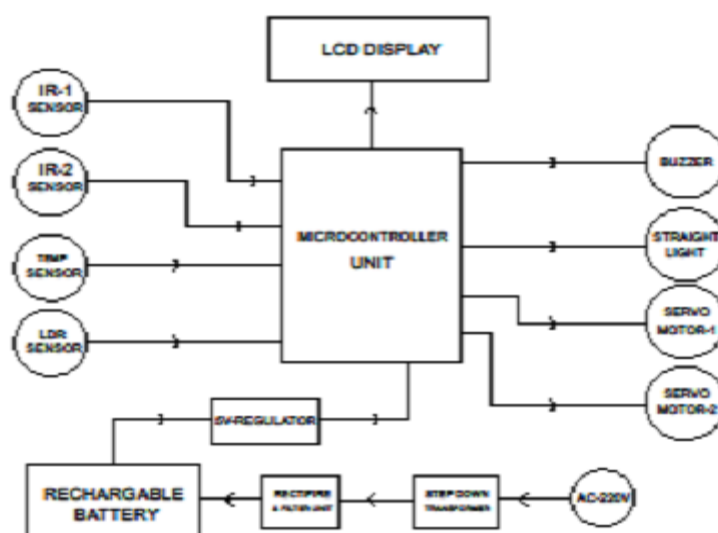


Fig 2. : Auto Visitor Sensing Gate With Counter

2.3 Circuit Diagram

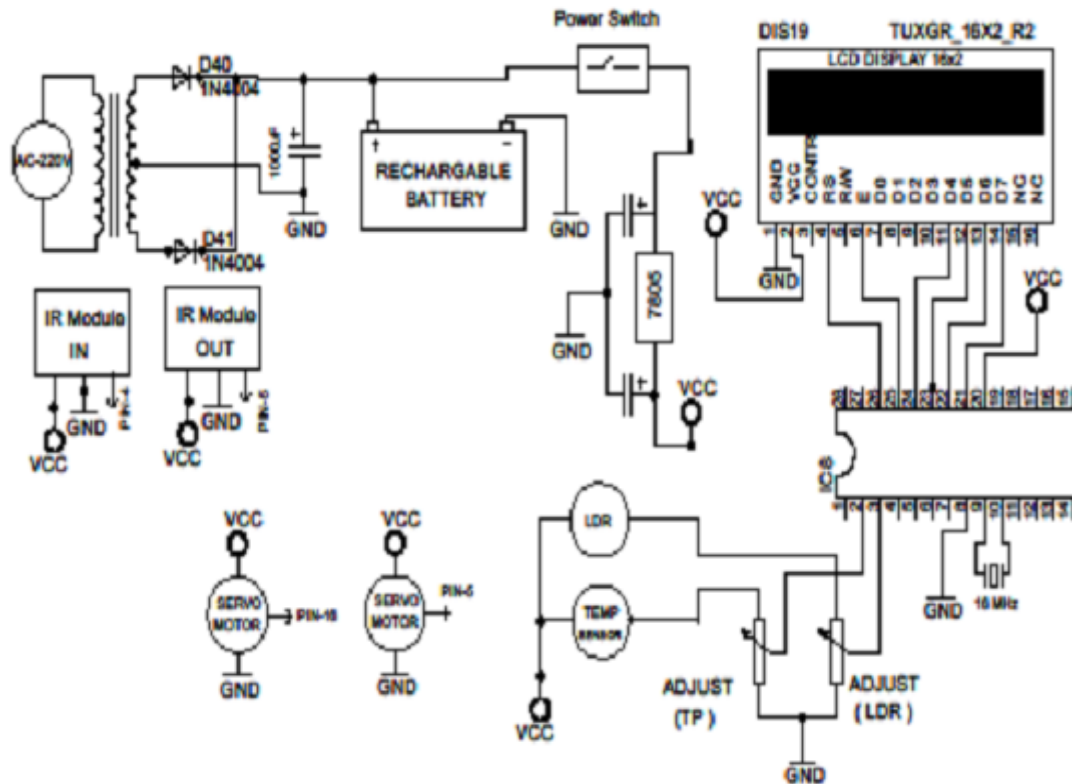


Fig:

Arduino is an open-source gadgets prototyping stage dependent on adaptable, simple to-utilize equipment and programming. This is extraordinarily intended for the simplicity of specialists, architects, specialists, and anybody keen on making intelligent articles or conditions. Arduino gets an info motion from various sensors to detect the Environment, and can influence its surroundings by controlling engines, lights, and other kind of actuators. The microcontroller mounted on the board can be program In this part has examined about rule of advanced programmed air conditioning voltage controller. It has included square graph, circuit outline and physical appearance of this task. It has likewise clarified working arrangement of the venture and indicated physical info/yield screen result.med utilizing the Arduino programming dialect (in view of Wiring) and the Arduino advancement condition.

2.4 Summary

In this part has talked about square chart, circuit graph, Advantage and flowchart of this task.

It has additionally clarified the working arrangement of the task.

In this segment has discussed Writing and expending framework. Moreover analyzed power supply and Flowchart system It has similarly elucidated about these subjects of the endeavor.

CHAPTER 3

HARDWARE DEVELOPMENT

3. 1 LDR (Light Dependent Resistor) :

LDR (Light Dependent Resistor) is called as light recognizing sensor to assemble sun based track which has included phototransistors, photodiodes and LDR. It is a comprised of semiconductor materials which has high obstruction. LDR is the most well-known in gadgets and it is spread utilized in numerous sorts of hardware. LDR can use for road light, outside lights, various indoor home apparatuses, etc. It is use the light sensor circuit for programmed turn OFF the heaps dependent on sunshine's power by aiding of a light sensor. In sunshine the beams of sun falls on the photovoltaic board and photograph resistor and when the light falls on the resistor, at that point the opposition changes. This present resistor's has diverse capacities and obstruction. Utilizing LDR in a circuit or in a hardware venture it is make circuit powerful and the gathering of LDR parts of the circuit are effortlessly accessible and exactness of this circuit is more than precision of different circuits. It is such a great amount of accommodating for sparing vitality. At the point when the light falling on the crisscross lines on the sensor (which is made of albums) makes the obstruction of the gadget fall. There are two sorts of photograph resistor dependent on material utilized and they are Intrinsic Photo Resistors and Extrinsic Photo Resistors. Inherent Photo Resistors are comprised of unadulterated semiconductor gadgets like silicon or germanium. At the point when the light falls on the Intrinsic Photo Resistors, the electrons get energized from the valence band to the conduction band and number of charge bearers increments on a resistor. Extraneous Photo Resistors are doped with polluting influences and this debasement makes another vitality groups over the valence band.

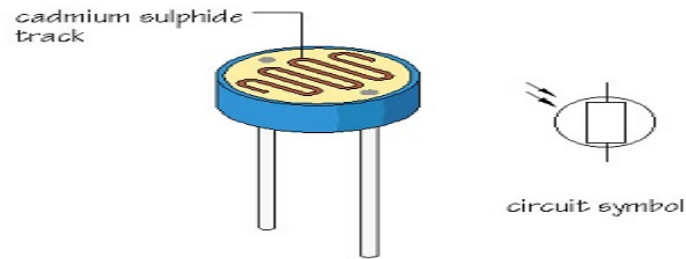


Fig 3.3: Light Dependent Resistor

3.2 Working Principle of LDR

Photograph Conductivity is the fundamental rule of the light depended resistor. photo conductivity is an optical strategy, which the material's conductivity is expanded when light is consumed by the materials. At the point when the light (photon) falls on the materials, the electrons in the valence band of the semiconductor material are eager to the conduction band. These photons in the episode light ought to have vitality more prominent than the band hole of the semiconductor material to make the electrons bounce from the valence band to the conduction band. The consequence of this procedure is an ever increasing number of current begins moving through the gadget when the circuit is shut and thus it is said that the obstruction of the gadget has been diminished. This makes the free electrons or openings direct power and accordingly dropping the obstruction (< 1 Kilo ohm). This is the working standard of light ward resistor. The condition to demonstrate the connection among obstruction and light can be composed as:

$$R = A.E^a$$

Where E = Illumination (lux)

R = Resistance (Ohms)

A , a = constants

The estimation of 'a' relies upon the cds utilized and on the assembling procedure. Qualities normally run somewhere in the range of 0.7 and 0.9.

3.3 LCD (2 Line 16 Carriers)

LCD (Liquid Crystal Display) screen is an electronic showcase module. A 16x2 LCD show is exceptionally fundamental module and is usually utilized in different gadgets and circuits.

These modules are favored more than seven portions and other multi section leds. The

reasons being: LCD are sparing; effortlessly programmable; have no restriction of showing uncommon and even custom characters (not at all like in seven sections), activities, etc.

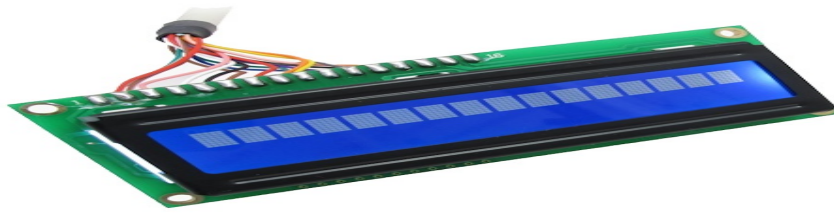


Fig 3.2: LCD

A 16x2 LCD implies it can show 16 characters for every line and there are 2 such lines. In this LCD each character is shown in 5x7 pixel lattice. This LCD has two registers, specifically, Command and Data. An enroll which directed capacity the order guidelines to the given LCD like instating it, clearing its screen, setting the cursor position, controlling showcase etc. The information enlist stores the information to be shown on the LCD.

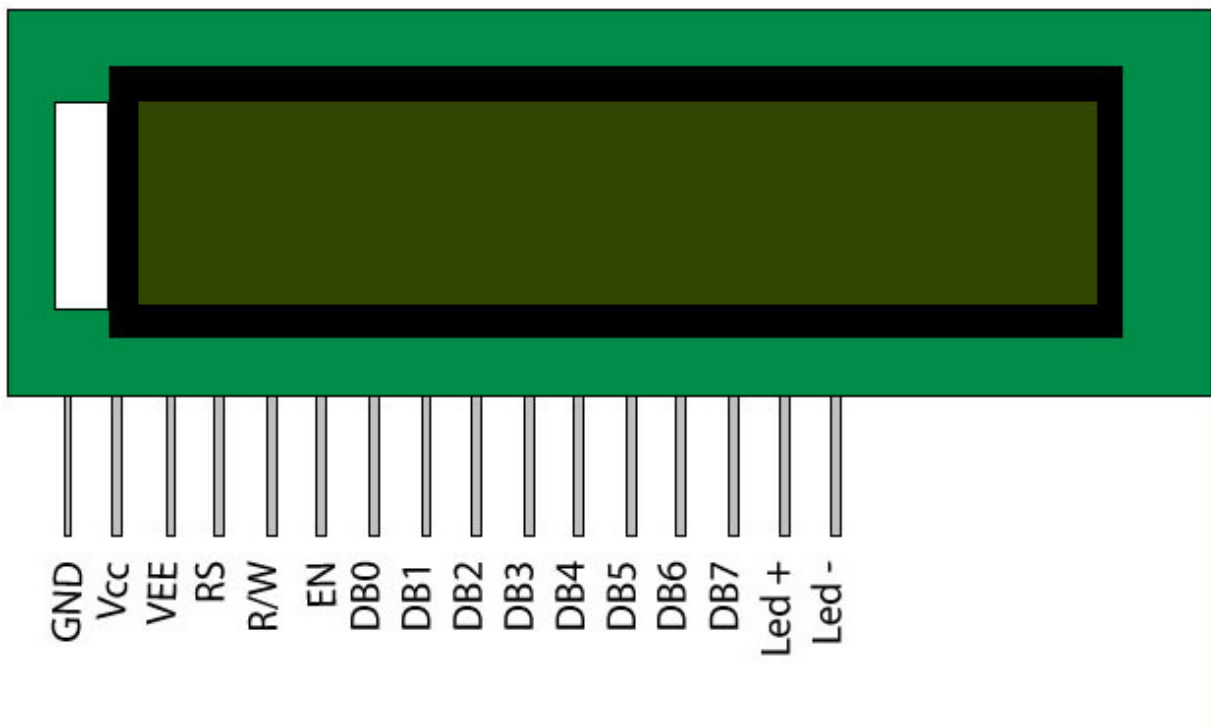


Fig. 3.3 LCD (2*16) Pin

3.3.1 Pin Features

- 5*8 Dots with cursor
- 16 Characters *2 line display
- 4-bit or 8-bit MPU interfaces
- Display mode & Backlight Variations

ROHS Compliant

Table.3.3.2

Pin No	Function	Name
1	Ground (0V)	Ground
2	Supply voltage; 5V (4.7V – 5.3V)	V _{CC}
3	Contrast adjustment; through a variable resistor	V _{EE}
4	Selects command register when low; and data register when high	Register Select
5	Low to write to the register; High to read from the register	Read/write
6	Sends data to data pins when a high to low pulse is given	Enable
7	8-bit data pins	DB0
8		DB1
9		DB2
10		DB3
11		DB4
12		DB5
13		DB6
14		DB7
15	Backlight V _{CC} (5V)	Led+
16	Backlight Ground (0V)	Led-

3.4 Servo Motor

Servo engine is an independent electric gadgets and straightforward electrical engine, which is controlled with the assistance of servomechanism. It is an engine which has a yield shaft and can be moved to an explicit precise position by sending it a coded flag. The servo engine will keep up the situation of the pole .When we changed the coded flag, the rakish position of the pole will changed. Servo engines are utilized for different applications. They are regularly little in size and have great vitality effectiveness. The expense of this engine additionally short of what others engines and furthermore easy to utilized. Servos are found in numerous spots from toys to home gadgets to vehicles and planes. Servos additionally show up in the

background in gadgets we utilize each day.



Fig. 4.4 Standard Servo Motor SG-90

Servo engine additionally utilized in mechanical activities for each moving of their joint. The servo hardware is worked inside the engine unit and accompanies a position capable shaft that is fitted with an apparatus. The engine is controlled with an electric flag that decides the measure of shaft development. In a market there are discovered two sorts of servo engine, one are comprised of metal rigging and another are comprised of plastic apparatus. The metallic one is a lot heavier than other rigging one. The span of metallic rigging servo engine is likewise greater than plastic apparatus servo engine.

wielyclarification of working of each square of the system is given underneath the quick and dirty is given in next segments

3.4.1 Components of servo motor SG-90

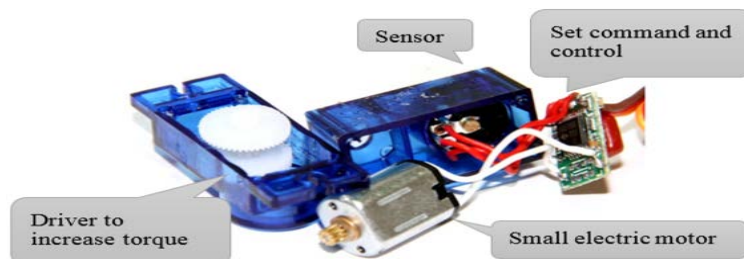


Fig. 4.5 Physical Construction of Servo SG-90

In our work we utilized SERVO MOTOR SG90 and its simple to utilized reason it is little in size which make our work agreeable. In quickly underneath we talked about on SG90.

3.4.2 Servo Motor Sg-90

It is small and lightweight with high yield control. This servo can pivot roughly 180 degrees and it works simply like the standard sorts

Specifications:

- Weight: 9 gm
- Dimension: 22.2 x 11.8 x 31 mm approx.
- Stall torque: 1.8 kgf cm
- Operating speed: 0.1 s/60 degree
- Operating voltage: 4.8 V (~5V)
- Dead band width: 10 μ s
- Temperature range: 0 °c \square 55 °c

3.4.3 How the Servo is Controlled

Servos are sent through sending electrical beats of variable width, or heartbeat width adjustment (PWM), through the control wire. There is a base heartbeat, most extreme heartbeat and a redundancy rate. Servos can ordinarily turn just 90 degrees in either bearing for a sum of 180 degrees development. The impartial position of the engine is characterized as that where the servo has a similar measure of potential turn in both the clockwise and counter-clockwise bearing.

The PWM sent to the engine decides the situation of the pole, and dependent on the term of the beat sent through the control wire the rotor will swing to the position that is wanted .The servo engine hopes to see a heartbeat after each 20 milliseconds and the length of the beat will decide how far the engine will turn. For example, a 1.5ms heartbeat makes the engine to turn in the 90 degrees position. In the event that the beat was shorter than

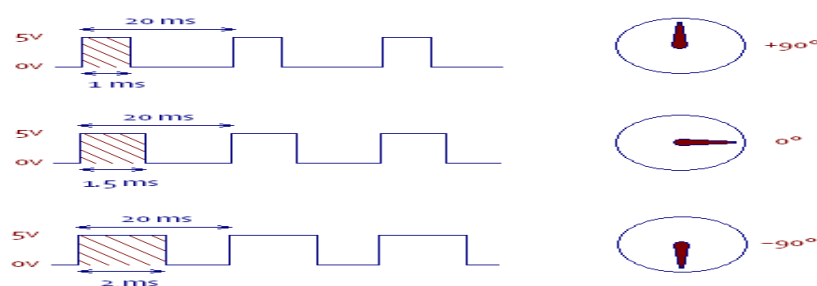


Fig. 4.6 variable pulse width control servo position

For applications where there is prerequisite of high torque, servos are ideal. They will likewise keep up the torque at high speeds, up to 90% of the evaluated torque is accessible from servos at high speeds. Their efficiencies are between 80 to 90%.

A servo can supply roughly twice their appraised torque for brief timeframes, offering enough ability to draw from when required. Moreover, they are peaceful, are accessible in AC and DC, and don't experience the ill effects of vibrations.

3.5 Microcontroller

A microcontroller is a solitary chip miniaturized scale PC on a solitary incorporated circuit containing a processor center, memory, and programmable information/yield peripherals. Fundamentally microcontrollers are utilized in naturally controlled items and gadgets, for example, car motor control frameworks, implantable restorative gadgets, remote controls, office machines, apparatuses, control devices, toys and other installed systems..A microcontroller is accessible in various word lengths like microchips (4bit,8bit,16bit,32bit,64bit and 128 piece microcontrollers are accessible today). Here we use PIC16F877A microcontrollers.

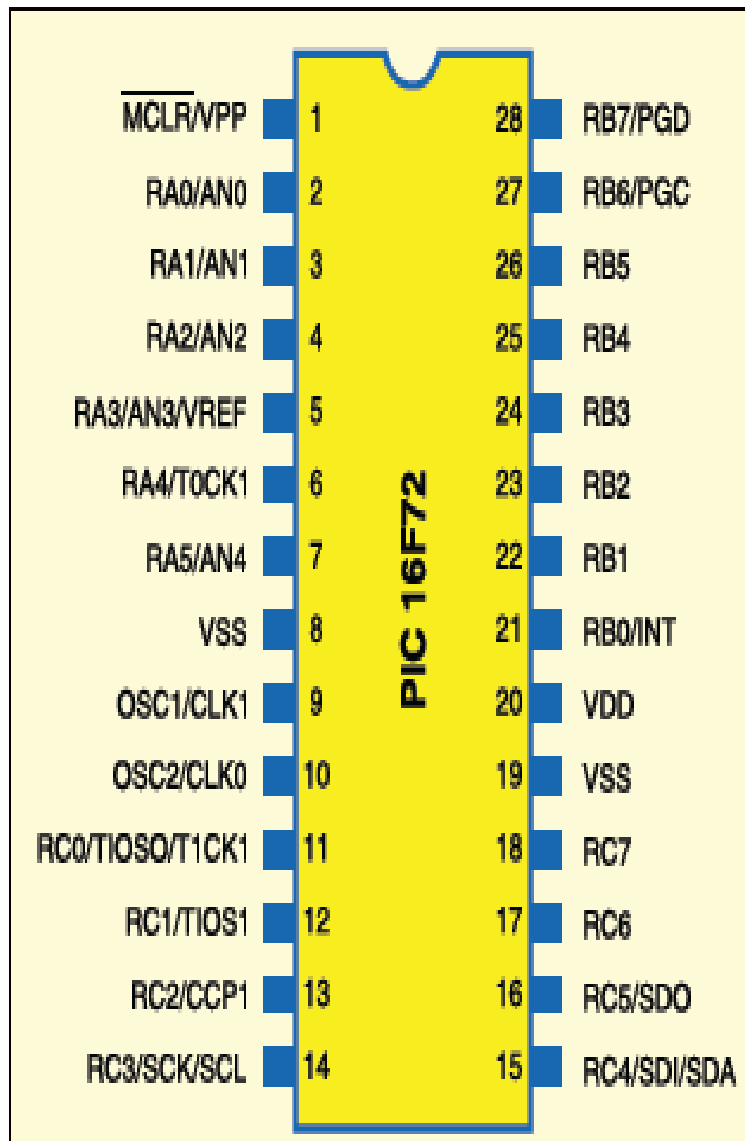


A microcontroller contains one or more of the following components:

- Central processing unit (CPU)
- Random Access Memory (RAM)
- Read Only Memory (ROM)
- Input/output ports
- Timers and Counters
- Interrupt controls
- Analog to digital converters
- Digital analog converters
- Serial interfacing ports

3.5.1 Pic16f72 Pin Diagram

The 16F877A is a standout amongst the most famous and propelled microcontrollers from Microchip and it are anything but difficult to actualize in a circuit. The 40 pins make it less demanding to utilize the peripherals as the capacities are spread out over the pins. This controller is broadly utilized for test cause its application run is wide, superb, simplicity of accessibility and minimal effort.



3.5.2 Pin and their Functions

Pin Number	Description Function
1	MCLR/VPP - Master Clear Input
2	RA0/AN0 - Port A
3	RA1/AN1 - Port A
4	RA2/AN2/VREF-/CVREF - Port A
5	RA3/AN3/VREF+ - Port A
6	RA4/T0CKI/C1OUT - Port A
7	RA5/AN4/SS/C2OUT - Port A

8	RE0/RD/AN5 - Port E
9	RE1/WR/AN6 - Port E
10	RE2/CS/AN7 - Port E
11	Vdd - Positive Power Supply
12	Vss <input type="checkbox"/> Ground
13	OSC1/CLKI - Oscillator Input
14	OSC2/CLKO - Oscillator Output
15	RC0/T1OSO/T1CKI - Port C
16	RC1/T1OSI/CCP2 - Port C
17	RC2/CCP1 - Port C
18	RC3/SCK/SCL - Port C
19	RD0/PSP0 - Port D
20	RD1/PSP1 - Port D
21	RD2/PSP2 - Port D
22	RD3/PSP3 - Port D
23	RC4/SDI/SDA - Port C
24	RC5/SDO - Port C
25	RC6/TX/CK - Port C
26	RC7/RX/DT - Port C
27	RD4/PSP4 - Port D
28	RD5/PSP5 - Port D
29	RD6/PSP6 - Port D
30	RD7/PSP7 - Port D
31	Vss <input type="checkbox"/> Ground
32	Vdd - Positive Power Supply
33	RB0/INT - Port B
34	RB1 - Port B
35	RB2 - Port B
36	RB3/PGM - Port B
37	RB4 - Port B
38	RB5 - Port B

39	RB6/PGC - Port B
40	RB7/PGD - Port B

3.6 Voltage Regulator

A voltage controller creates a settled yield voltage of changes to its information voltage or load conditions. The voltage controller must be steady with its condition. Here we use IC 7805 voltage Regulator. IC 7805 is a 5V Voltage Regulator that confines the voltage yield to 5V and draws 5V directed power supply. The voltage source in a circuit may have changes and would not give the settled voltage yield. The voltage controller IC keeps up the yield voltage at a consistent esteem

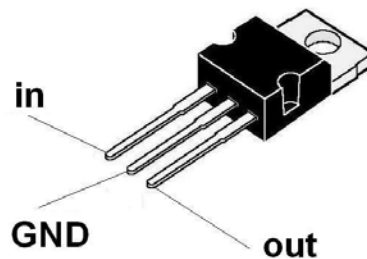


Fig. 4.9 Voltage Regulator

IC 7805 is a 5V Voltage Regulator that limits the voltage yield to 5V and draws 5V managed control supply. It accompanies arrangement to include warm sink. The most extreme incentive for contribution to the voltage controller is 35V. It can give a settled relentless voltage stream of 5V for higher voltage contribution till the edge furthest reaches of 35V. In the event that the voltage is close to 7.5V, it doesn't deliver any warmth and subsequently no requirement for warmth sink. On the off chance that the voltage input is increasingly, overabundance power is freed as warmth from 7805. It directs a relentless yield of 5V if the info voltage is in fury of 7.2V to 35V. Subsequently to stay away from power misfortune endeavor to keep up the contribution to 7.2V. In some hardware voltage vacillation is lethal (for e.g. Microcontroller), for such circumstance to guarantee steady voltage IC 7805 Voltage Regulator is utilized. IC 7805 is a progression of 78XX voltage controllers. The name the last

two digits 05 means the measure of voltage that it controls. Subsequently a 7805 would direct 5v and 7806 would control 6V, etc. The schematic given beneath demonstrates to utilize a 7805 IC, there are 3 sticks in IC 7805, stick 1 takes the information voltage, GND of both information and out are given to stick 2, stick 3 creates the output voltage.

3.6.1 Pin Description

PIN NO.	FUNCTION	NAME
1	Input voltage (5V-18V)	Input
2	Ground (0V)	Ground
3	Regulated output; 5V (4.8V-5.2V)	Output

3.7 Capacitor

Capacitor is a fundamental segment of our task. We can utilize the capacitor in various numerous applications. Utilizing capacitor in a microcontroller its must due to the microcontroller is a computerized gadget with quick exchanging edges which utilizes a lot of current for a brief timeframe at each change. The capacitors supply the substantial measure of current required with the goal that the power supply doesn't hang amid that time making clamor. The principle capacity of a capacitor is putting away electric charge.. It is in every case best to utilize an assortment of capacitors on the power supply pins of the microcontroller to give a low impedance wideband supply. In our work we utilized variable estimation of capacitors and they are 10 μf (6 Pcs) and 100 μf (1Pcs). Capacitors are utilized for a few purposes like planning, smoothing power supply, coupling, sifting, tuning for radio framework, putting away vitality and so forth

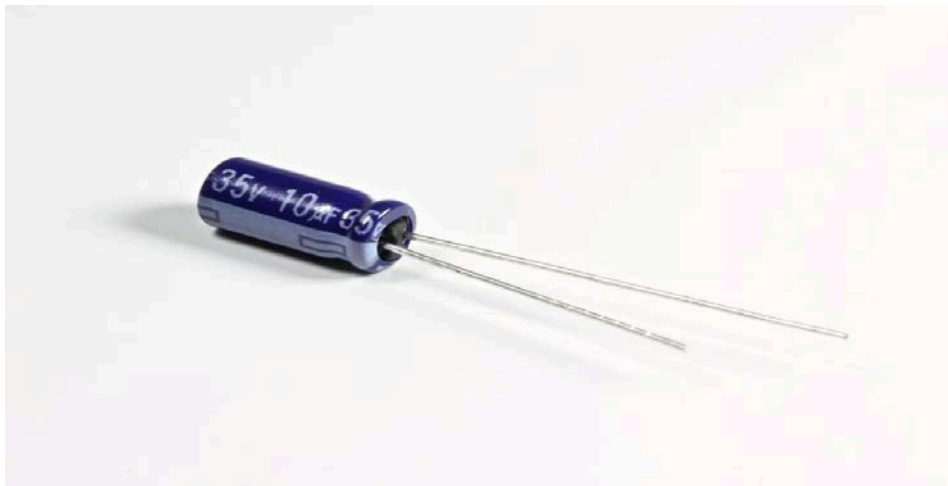


Fig. 4.10 100 μf & 10 μf Capacitors

3.8 606-Transformer

6-0-6 it's a decent quality transformer, control supplies for a wide range of venture and circuit sheets. It is venture down 230V AC to 6V with a greatest of 200ma current. We should utilize this transformer to get AC current and which changed over to DC current with an assistance of converter.

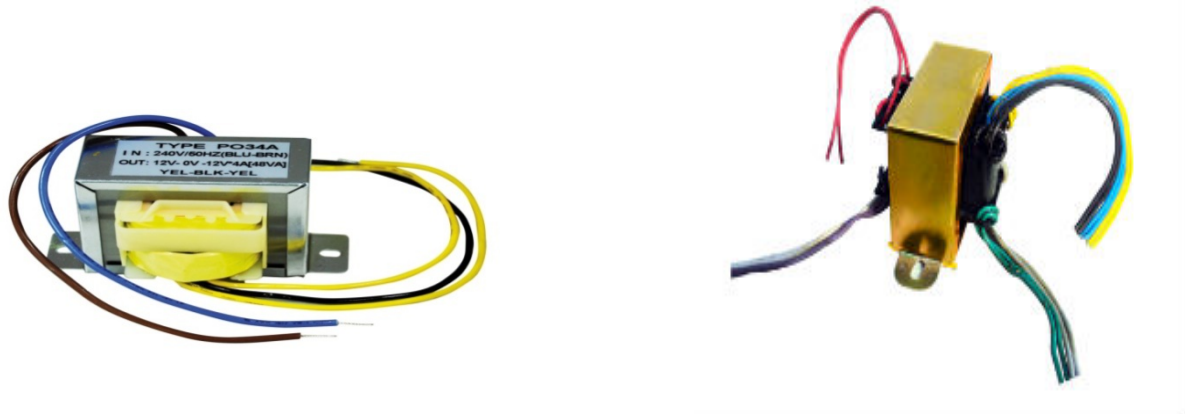


Fig. 4.11 606-Transformer

3.9 Soldering Wire

Patch is essentially metal wire with a "low" softening point, where low for our motivations implies low enough to be liquefied with a welding iron. For hardware, it is customarily a blend of tin and lead. At the point when the welding wire chilled an electrical association will lead. This is getting a decent mechanical association between the wires. The fibers of each wire ought to be turned together, act increasingly like a solitary element. Initial step is to set up the wires at that point tinning the wears, alongside join the wires and weld graft together.



Fig. 4.12 Soldering Two Wires

3.10 Vero Board

The first and best strip board accessible, created by Vero, and bringing about a scope of prototyping sheets with copper tracks and punched part openings in Eurocard and Non Eurocard sizes. Items are accessible with single or twofold sided copper and as exposed sheets without copper.



Fig. 4.13 Vero Board

3.11 List of Components with Price

SERIAL NO	PARTS NAME	PRICE(BDT)
1	MICROCONTROLLER pic16f876	150
2	MOTOR	200
3	LCD DISPLAY	180
4	CAPACITORS	30
5	AC TO DC POWER SUPPLY	180
6	SAMPLE PCB	1000
7	IR MODULE	100
8	RESISTOR	10
9	CONNECTOR	20
10	WIRES	50
11	DIODE	20
12	7805 Regulator	10
12	CRYSTAL 16mhz	10
TOTAL COST		2373

Table no.1: Cost Analysis

3.12 Summary

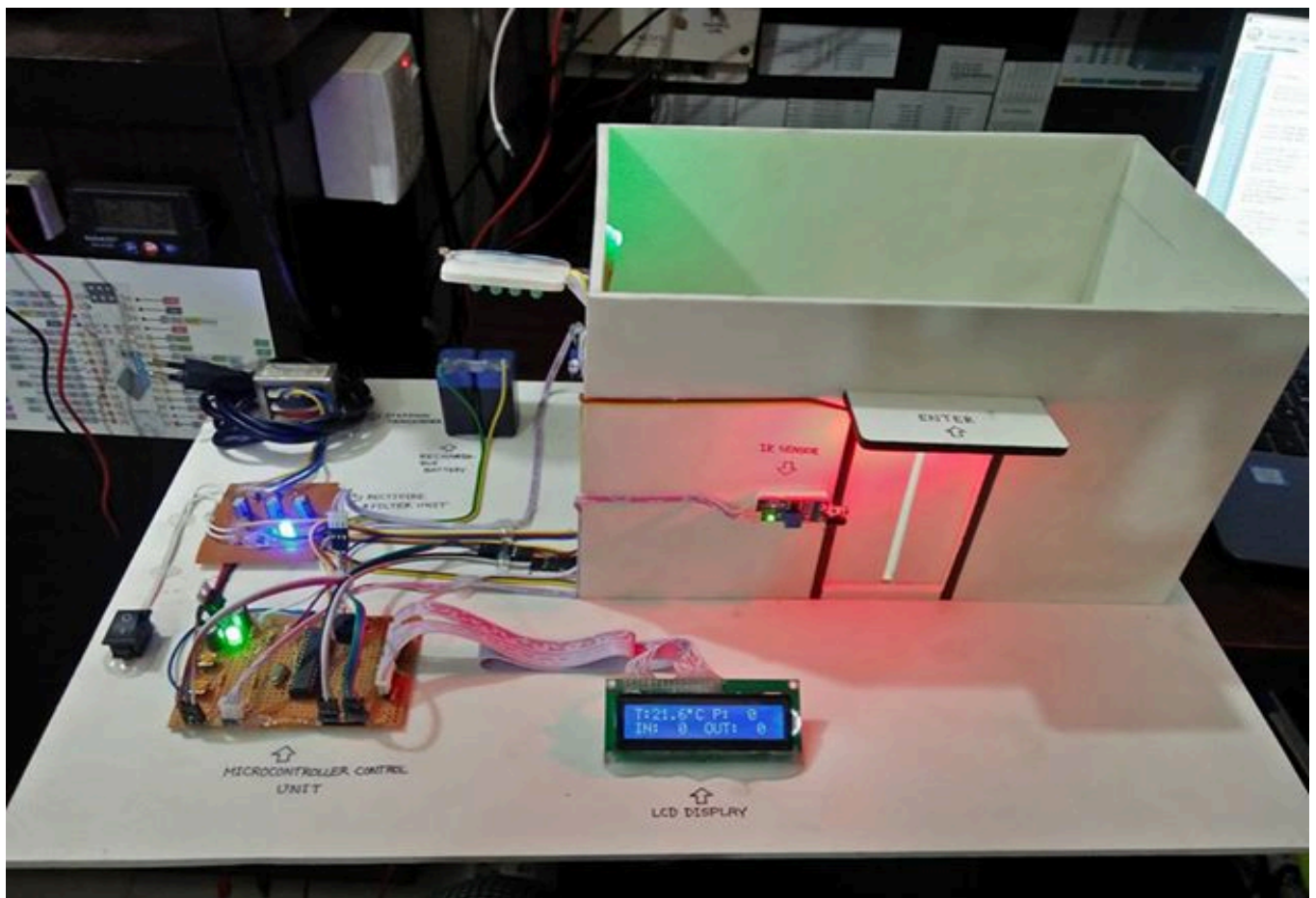
The section depicts about some essential gear that identified with the undertaking. Portrays of all gear like microcontroller, LDR, servo engine , sunlight based board, resistor, capacitor, Vero board , precious stone and furthermore LCD screen that works appropriately use for show information read related this venture.

CHAPTER 4

RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter will present all the results and calculations and relevant discussions.



4.2 Performance Analysis

The framework were gotten from LDRs for the sun oriented following framework and the board that has a settled position. The outcomes were recorded for four days, recorded and organized. The output of the LDRs were reliant on the light force falling on their surfaces.

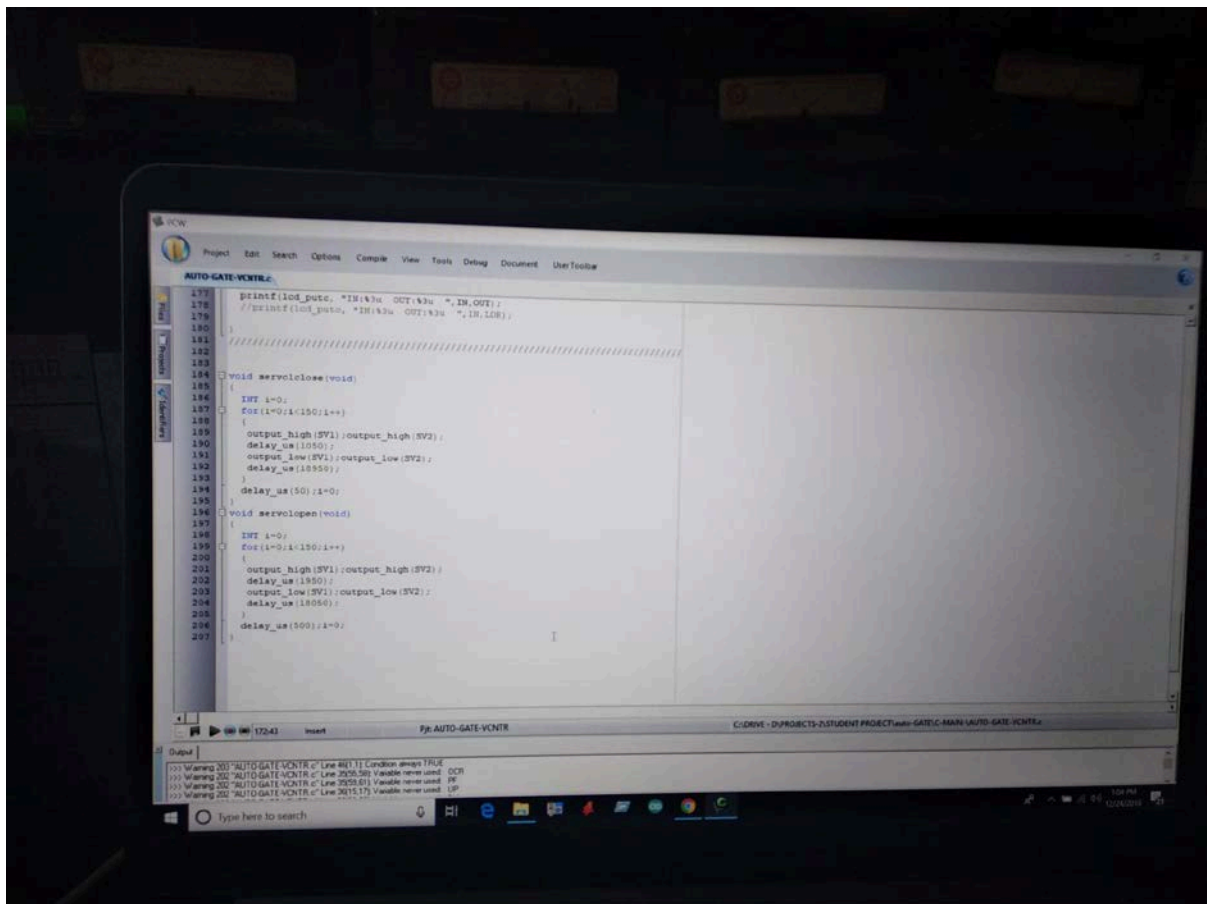
Arduino has a sequential that imparts on advanced pins 0 (RX) and 1 (TX) and in addition with the PC through a USB. Arduino condition's worked in sequential screen can be utilized to speak with the arduino board. To gather the outcomes, a code was composed that made it conceivable to gather information from the LDRs after each 60 minutes. The qualities from the two LDRs are to be perused and recorded at the given interims.

5.3 Our Project

After interface all gear as indicated by the circuit we had made the body structure following to the next exploratory model from the web. in the wake of setting up the body structure and association of the circuit we arranged a rationale program with the assistance of C++ program by Arduino. After entire the program we transferred the program to the Microcontroller .Then we interface the product and equipment part . After entire all the program and body with interface we had attempted to explore it will be it work or not .We seen that our venture working splendidly.

Our project picture is given below:





4.4 Limitations of the Work

Any framework with penny percent effectiveness and zero mistake are relatively unthinkable. An electronic task utilizing these numerous chips and advanced sensors can not be required to perform with the precision we expect in perfect case. So the restrictions are clear yet discovering them and displaying them for future improvement is the most essential part. Working with different correspondences standers and relying on some other framework for the yield of the framework make the framework considerably more blunder telephone. A portion of the confinement are expressed beneath;

As the sensor is to a great degree delicate to movement , even article blowing in wind & florescent lighting may activating.

It doesn't give security, It is helpful for open segment as opposed to private area.

Frictional impact is significant in the development of entryway worked by pulley drive.

4.5 Conclusions

Upon the consummation of the task we have nearly satisfy the goal of our undertaking building a programmed entryway control framework. Our entryway framework is pertinent from straightforward working to expansive meal, hospital, airport, etc. Our framework can be utilized worldwide and numerous applications based stream of mass. We have made the undertaking with the best of our capacities however with further upgrades we can definitely expand the capability of our framework.

Although it might give off an impression of being expressing the self-evident, the task truly ended up being extremely beneficial for us in all angles. The task gave us an opportunity of working in deferent territories if designing , in particular, Electronics and programming. Our venture likewise requires solid mechanical framework. Because of this we can upgrade our mechanical information alongside gadgets and programming segment. To be progressively exact, the finishing of the venture has raised our certainty to a next dimension, where we feel increasingly sure about our capacities as an architect. Thus, We finish up this undertaking sees a great deal of involvement and learning in the field of robotization.

APPENDIX-A

```
#include <16F72.h>

#use delay (clock = 16000000)

#define LOD1 PIN_C2

#define BUZ PIN_C7

#define SV1 PIN_C4

#define SV2 PIN_C5

int LDR,IR1,IR2,IN=0,OUT=0,PRESENT=0,temp=0;

main()
{
    setup();

    while(1)
    {

        LOD_CTRL();

        adc_read();

    }
}
```

```

void setup()
{

output_HIGH(BUZ);delay_ms(70);output_LOW(BUZ);delay_ms(70);
output_HIGH(BUZ);delay_ms(70);output_LOW(BUZ);delay_ms(70);
output_HIGH(BUZ);delay_ms(70);output_LOW(BUZ);delay_ms(70);

lcd_gotoxy(1,1);
printf(lcd_putc, " WELCOME TO ");
lcd_gotoxy(1,2);
printf(lcd_putc, " DIU ");
delay_ms(1200);

lcd_gotoxy(1,1);
printf(lcd_putc, " SUBMITTED BY: ");
lcd_gotoxy(1,2);
printf(lcd_putc, " ");
delay_ms(1200);

lcd_gotoxy(1,1);
printf(lcd_putc, " ATIQUR ");
lcd_gotoxy(1,2);
printf(lcd_putc, " UZZUL ");
delay_ms(2500);

```

```
lcd_gotoxy(1,1);  
printf(lcd_putc, "      ");  
delay_ms(500);  
  
}
```

```
void adc_read(void)  
{  
    set_ADC_channel(1);  
    delay_ms(1);  
    tp = read_adc();  
  
    set_ADC_channel(0);  
    delay_ms(1);  
    LDR = read_adc();  
  
}
```

```
void LOD_CTRL(void)  
{  
    if( TP > 30 )  
    {  
        output_HIGH(BUZ);  
        delay_ms(100);  
        output_LOW(BUZ);  
    }
```



```
    delay_ms(100);  
}
```

VISITOR COUNTER

```
IR1 = input(PIN_A3);
```

```
IR2 = input(PIN_A2);
```

```
IF(! IR1)
```

```
{
```

```
    OUT++; delay_ms(500);
```

```
}
```

```
IF(! IR2)
```

```
{
```

```
    IN++;
```

```
    servoopen();
```

```
    servoclose();
```

```
}
```

```
PRESENT = ( IN - OUT );
```

```
IF( LDR < 20 )
```

```
    output_HIGH(LOD1);
```

```
IF( LDR > 25 )
```

```
    output_LOW(LOD1);
```

```
}
```

```
void lcd_show(void)
```

```
{
```

```
    lcd_gotoxy(1,1);
```

```
    printf(lcd_putc, "T:,TP,223 C ");
```

```
    lcd_gotoxy(10,1);
```

```
    printf(lcd_putc, "P: ",PRESENT);
```

```
    lcd_gotoxy(1,2);
```

```
    printf(lcd_putc, "IN: OUT: ",IN,OUT);
```

```
}
```

```
void servo1close(void)
```

```
{
```

```
    output_high(SV1);output_high(SV2);
```

```
    delay_us(1000);
```

```
    output_low(SV1);output_low(SV2);
```

```
    delay_us(19000);
```

```
}
```

```
void servo1open(void)
```

```
{  
    output_high(SV1);output_high(SV2);  
    delay_us(2000);  
    output_low(SV1);output_low(SV2);  
    delay_us(18000);  
}
```

REFERANCES:

<https://www.researchgate.net/publication/261672348> Design and implementation of a microcontroller based automatic door and visitor counter

<https://www.researchgate.net/publication/261672348> Design and implementation of a microcontroller based automatic door and visitor counter

<https://www.researchgate.net/publication/261672348> Design and implementation of a microcontroller based automatic door and visitor counter