


Vivekanand College, Kolhapur (Autonomous)

Department of Electronics

Students Project List 2018-19

Sr. No.	Name of Students	Name of Project
1	Bagadi Asha Kundlik	Pasword Based Door Lock System
2	Kolhapure Madhuri Mahavir	
3	Varute Samradnyi Dnyandev	
4	Shelake Mahesh Bibhishen	Distance Meter Using Arduino
5	Gawas Satwik Rajendra	
6	Jamadar Asim Yunus	
7	Karande Vinayak Krishanat	
8	Patil Sourabh Sampat	Air Quality Meter
9	Patil Santosh Rangrao	
10	Jadhav Shubhankar Vijay	Bluetooth Technology
11	Kamble Prashant Harilal	
12	Jadhav Gaurav Sanjay	
13	More Nilesh Tanaji	Robotic Car
14	Chavan Santosh Gopal	
15	Powar Sourabh Bhimrao	
16	Gavali Rohit Balaso	Smart Blind Stick
17	Lohar Dattatray Bhupal	
18	Koli Abhijeet Sanjay	
19	Patil Shivtej Anil	Home Automation
20	Devane Sourabh N.	
21	Kamble Pramod Shankar	Wi-Fi Technology
22	Desai Niranjan Satish	




(Mr. D. M. Panhalkar)
Head
Department of Electronics
Vivekanand College, Kolhapur.



(स्वायत्त) कोल्हापूर

A Project Work on

Password Based Door Lock System

Submitted to

Department of Electronics

Vivekanand College, Kolhapur (Autonomous)

For partial fulfilment of practical course for

The Award of B.Sc. III Degree in Electronics

By

1. Miss. Madhuri M. Kolhapure
2. Miss. Samradnyi D. Varute
3. Miss. Asha K. Bagadi

Under Guidance

Mr. N. P. Mote

2018-19



Department of Electronics


Certificate

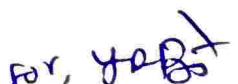
This is to certify that Miss. Miss. Madhuri M. Kolhapure, Miss. Samradnyi D. Varute & Miss. Asha K. Bagadi of B.Sc. III has sincerely completed the project on the entitled "Password Based Door Lock System" as a partial fulfilment of the practical course for the award of B.Sc. Degree in Electronics.

Place: Kolhapur

Date: 23-04-2019


Teacher in Charge


Examiners

for, 
Mr. D. M. Panhalkar
Head
Department of Electronics
Vivekanand College, Kolhapur.



DECLARATION

It is hereby declared that the work reported in the project entitled "Password Based Door Lock System Using Arduino" is completed and written by us and has not been copied anywhere

Place: Kolhapur

Date:

Students Name:	Roll No
1. Miss. Madhuri M. Kolhapure	8717
2. Miss. Samradnyi D. Varute	8725
3. Miss. Asha K. Bagadi	8709



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INTRODUCTON

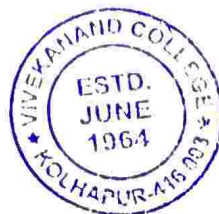
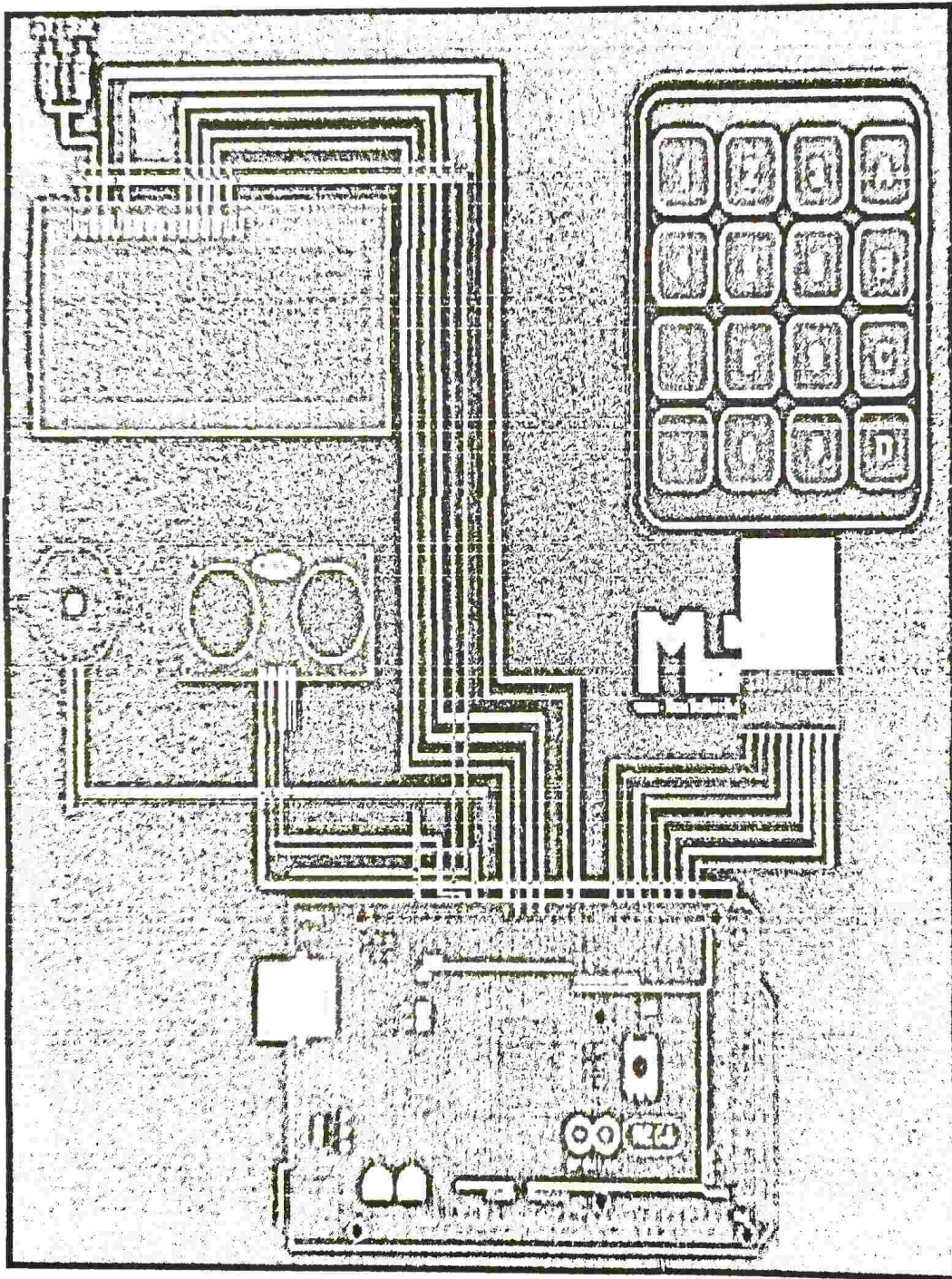
In this project we are providing enough security to satisfy the user's needs. The user will be prompted to enter a password to unlock the door. On successful password entry, the door unlocks for a specified amount of time enabling him/her to store or restore his/her valuables. On the other hand, if the user enters an invalid password then corresponding equivalent message will be displayed.

This project "Arduino based password protected locking system" can be used to provide enough security in various places like bank lockers, security doors, BIOS locking in computer etc.

This project uses an arduino kit that consists of ATmega 328 which is one of the most popular microcontrollers that consists of 14 digital pins and 6 analog general purpose pins, EEPROM of capacity 1KB and a ram of 2KB.

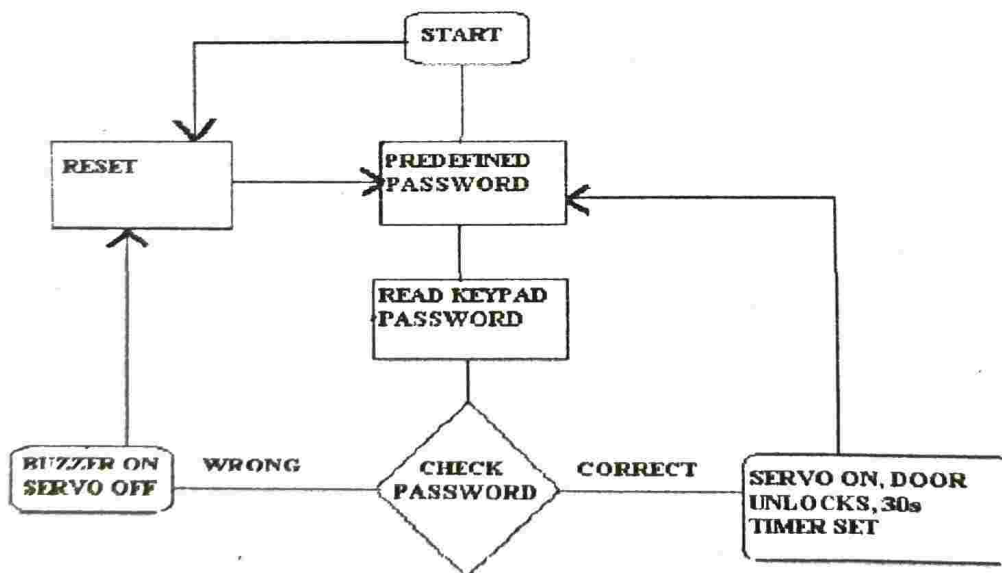


CIRCUIT DIAGRAM



Working-

The above flowchart gives a brief idea as to how the project "Password Protected Locking System Using Arduino" works. Initially the password is predefined. When the device is switched on, it resets the servo angle to lock the door. Now the user is prompted to enter the password. The user enters the password through a keypad which is read by the arduino. Now the entered password is checked with the predefined password. If the password matches, then the servo motor deflects and the door unlocks for 30s else the buzzer beeps indicating the invalidity of the password.



Step 1: *Configure the lcd pins.*

LiquidCrystal lcd(13, 12, 11, 10, 9, 8);



Next, the user is asked to prompt a password. Here the correct password is pre-initialized. **Step 2:** *Initialize the correct password* `char* pass="A1B2C";`

Next, the password entered by the user is compared with the correct password. If the password entered by the user matches with the correct password, then the following set of statements will be executed.

STEP 3:

`myservo.write(90);` //The servo motor deflects to an angle of 90 degrees enabling the user to unlock
`unlockdoor();` // Unlocks the door for a specified amount of time
`currpos=0;` //reset the password enabling the user to enter a new password
`myservo.write(0);` //after the time exceeds the servo deflects the angle back to zero degrees.

Else, the following set of statements will be executed
`myservo.write(0);` // Due to the entry of wrong password, the servo does not deflect and hence the door will //be locked
`invalidcode();` //Message of invalidity will be displayed to the user via lcd and returns to the start
`currpos=0;` //the password is reset enabling the user to enter a fresh password

In the above case, the door will be unlocked by the movement of servo to a particular angle or remaining still depending upon the user's entered password.

Note: The entered password by the user is converted into '*' to provide strong privacy. *For*(*l=0;l<=currpos;++l*)
{ *lcd.print ("*");*
}

Further, the buzzer is provided if the user enters a wrong password and also if the user exceeds the specified limit. Here we have given the specified limit to be 20 sec.

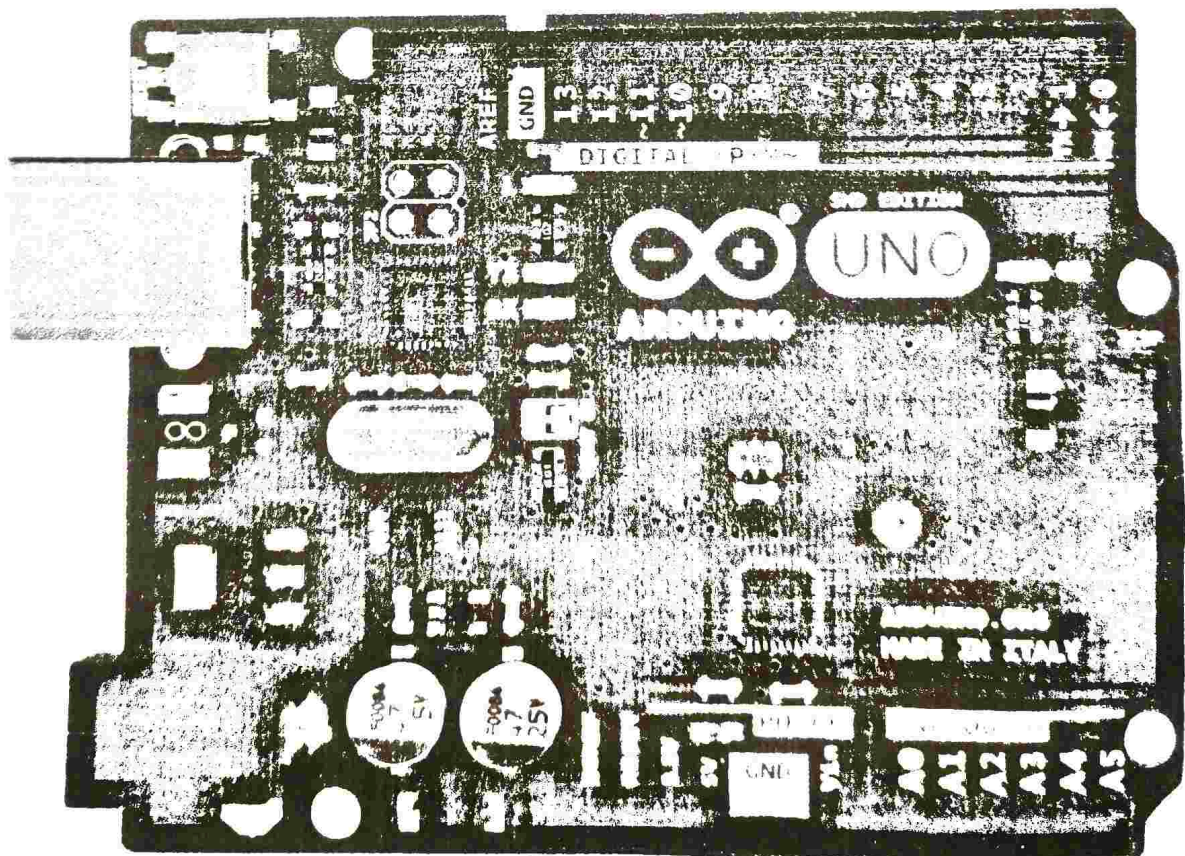


ArduinoUNO

The ArduinoUNO is a microcontroller board based on the ATmega328P

It has 14 digital input/output pins, 6 analog inputs, a 16MHz quartz crystal, a USB connection, a power jack, an ICSP header and reset button.

Simply connect it to a computer with a USB cable or power it with a AC to DC adaptor or battery to get started.



LCD

Liquid Crystal Display, which we are using in our project is JHD 1602A. This display consists of 16 columns and 2 rows.

The library that is used is <liquidcrystal.h>.

PIN SUMMARY OF LCD 1602A

Pin 1: VSS.

Pin 2: To VDD 5V input.

Pin 3: VL to adjust LCD contrast with the help of 10K potentiometer. Low VL indicates light contrast and high VL indicates dark contrast.

Pin 4: RS for register select. Data registers used for high RS. Similarly, instruction register for low RS.

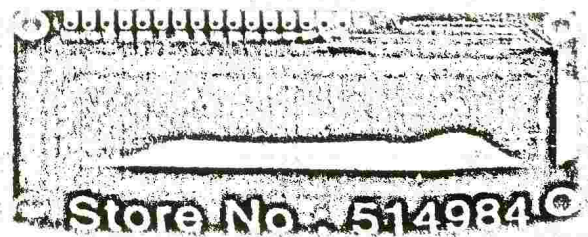
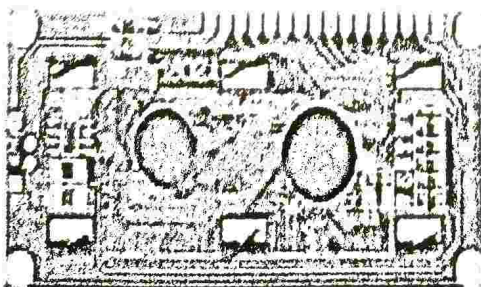
Pin 5: R/W signal stands for read/write. When R/W bit is high, it indicates a read operation. If R/W bit is low, it indicates write operation.

Pin 6: Clock Enable- Edge triggering.

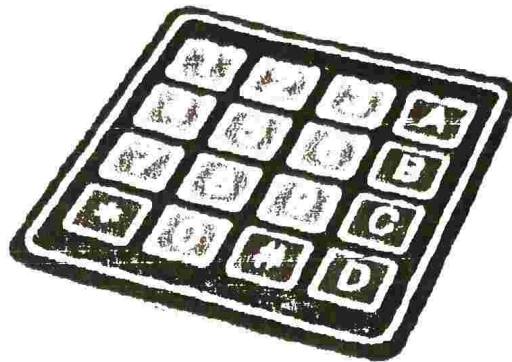
Pin 7 to 14: Represents from Bit 0 to Bit 7.

Pin 15: back light Anode.

Pin 16: back light cathode.



● 4*4 Matrix keyboard

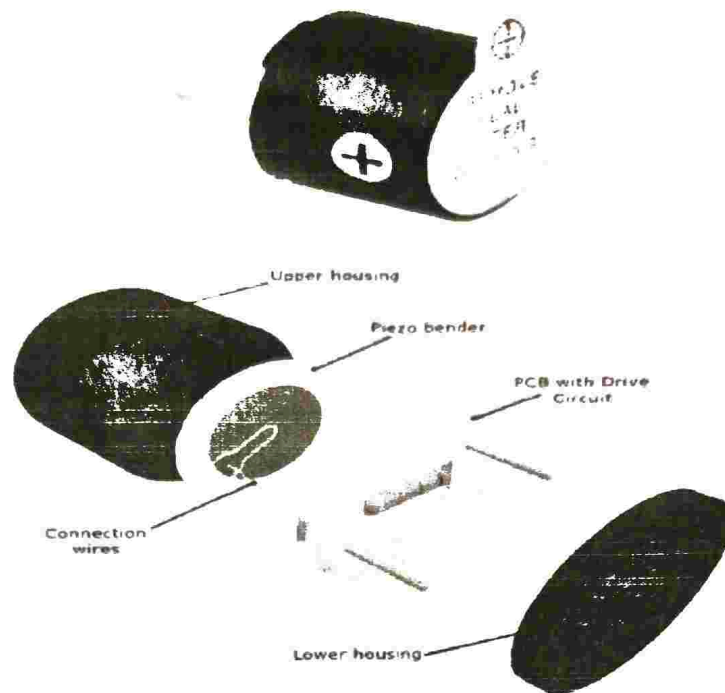


In our project we used 4X4 matrix membrane keypad. This 16 button keypad provides user interface component for Arduino project. this is programmed using the library <keypad.h>. It has the following features:

1. Easy interface to Arduino.
2. Ultra-thin design.
3. Cheap and economical
4. Maximum operation rating: 24V_{DC}, 30 mA.
5. Insulation Resistance : 100M ohm
6. Interface: 8 pins can be accessed in the form of 4X4 matrix.



Buzzer



In our project the buzzer is used for beep sound either indicating the countdown time or wrong password.



APPLICATIONS:

- This simple circuit can be used at residential places to ensure better safety.
- It can be used at organizations to ensure authorized access to highly secured places.
- With a slight modification this Project can be used to control the switching of loads through password



ADVANTAGES :

- No keys to be lost, stolen or occupied.
- Can be locked using keypad.
- Automatic door opening .
- Gives an indication for unauthorized entry.
- Totally cost efficient.



Conclusion

This project is effective in providing enough security as long as the password is not shared. In future this "Arduino based password security locking system" can be provided maximum security by the above enhancements in order to completely satisfy user's needs.

Hence, a common man can afford to purchase such locking system in minimal cost to keep his valuables safely without any worries.



Reference

<http://arduino.cc/tutorial>

<http://instructables.com>

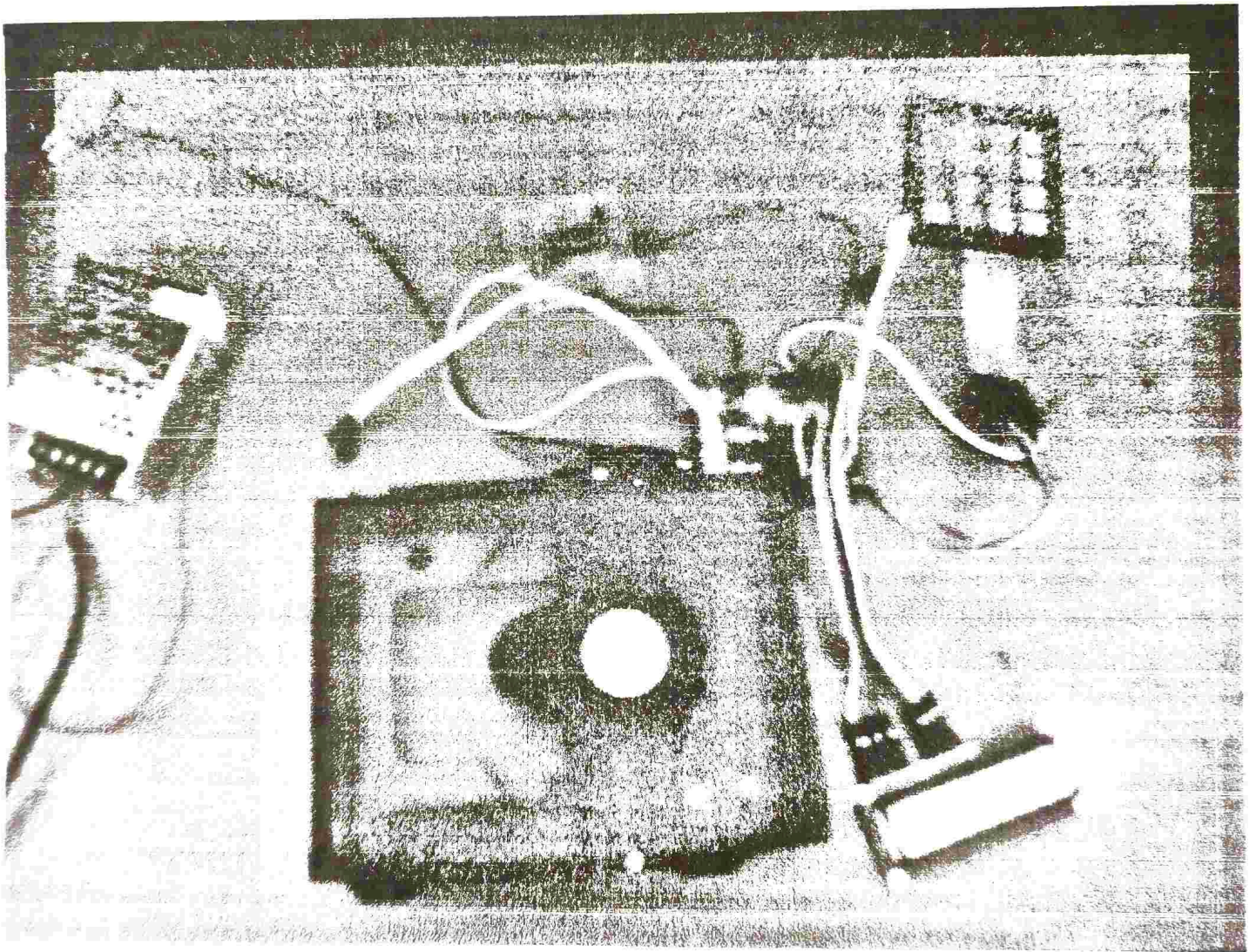
Getting started with Arduino

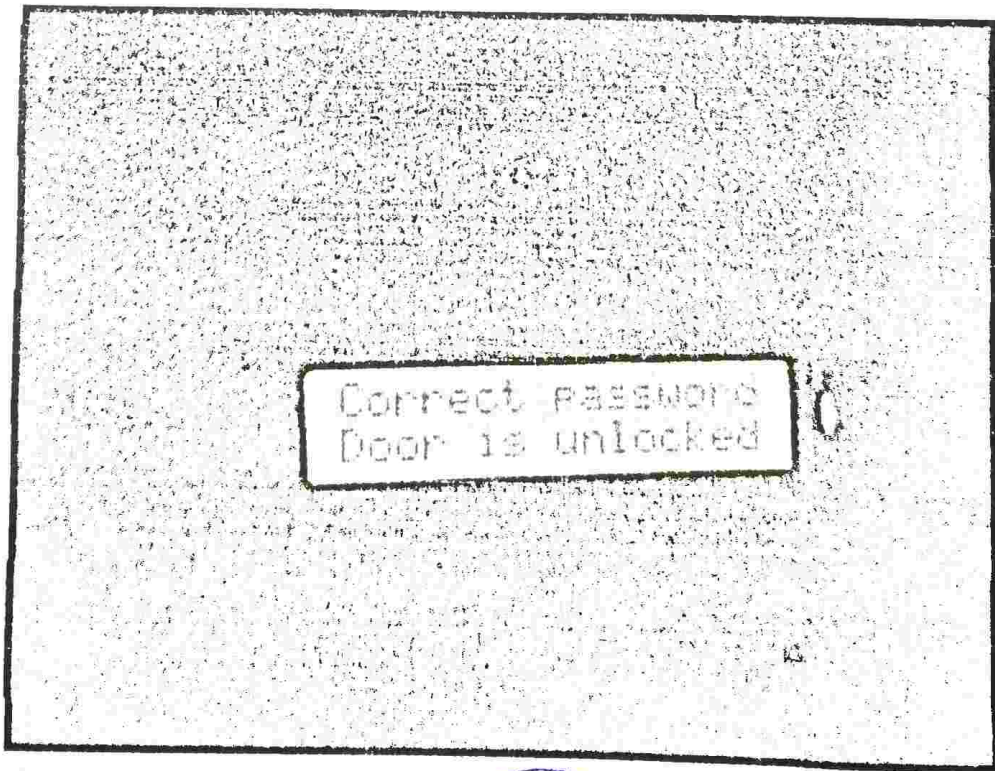
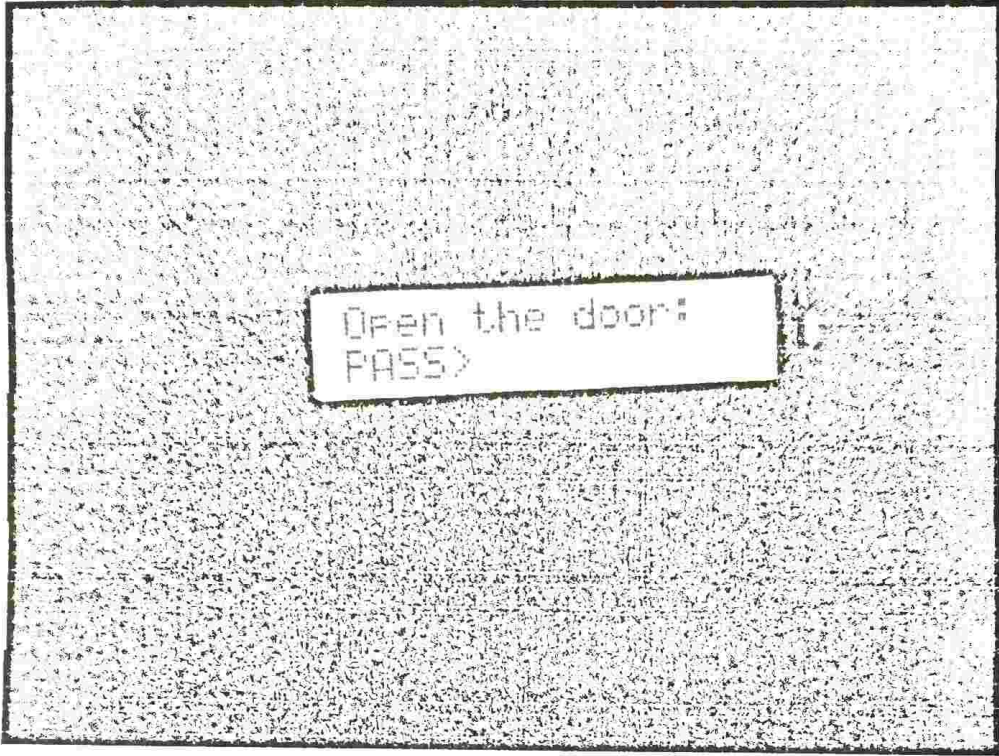
The working principle of an Arduino, Abuja, Electronics,
Computer and Computation

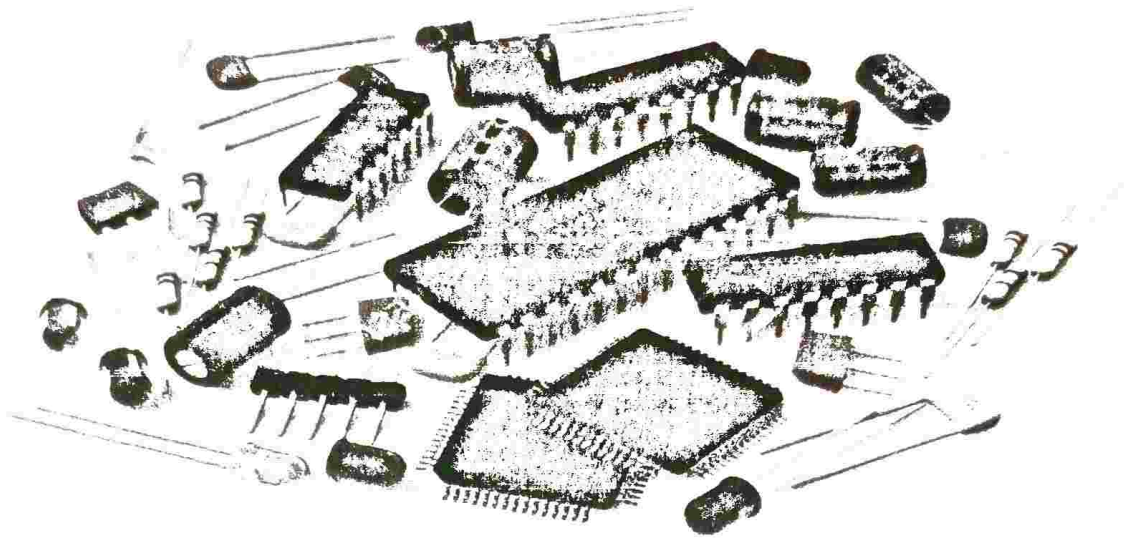
<http://google.com>



PICTURES :







THANK YOU





(स्वायत्त) कोल्हापूर

A Project Work on

AIR QUALITY METER

Submitted to

Department of Electronics

Vivekanand College, Kolhapur (Autonomous)

For partial fulfilment of practical course for

The Award of B.Sc. III Degree in Electronics

By

1. Mr. Sourabh S. Patil

2. Mr. Santosh R. Patil

Under Guidance

Mr. N. P. Mote

2018-19



DEPARTMENT OF ELECTRONICS


CERTIFICATE


This is to certify that Mr. Sourabh S. Patil and Mr. Santosh R. Patil of B.Sc. III has sincerely completed the project on the entitled "AIR Quality Meter" as a partial fulfilment of the practical course for the award of B.Sc. Degree in Electronics.

Place: Kolhapur

Date: 23/04/2019


Teacher in Charge


Examiners


Mr. D. M. Panhalkar



DECLARATION

It is hereby declared that the work reported in the project entitled "AIR Quality Meter" is completed and written by us and has not been copied anywhere

Place: Kolhapur

Date: 23/04/2019

Students Name:

Roll No

1. Mr. Sourabh S. Patil

8723

2. Mr. Santosh R. Patil

8722



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INTRODUCTON

● Air Pollution Problem :

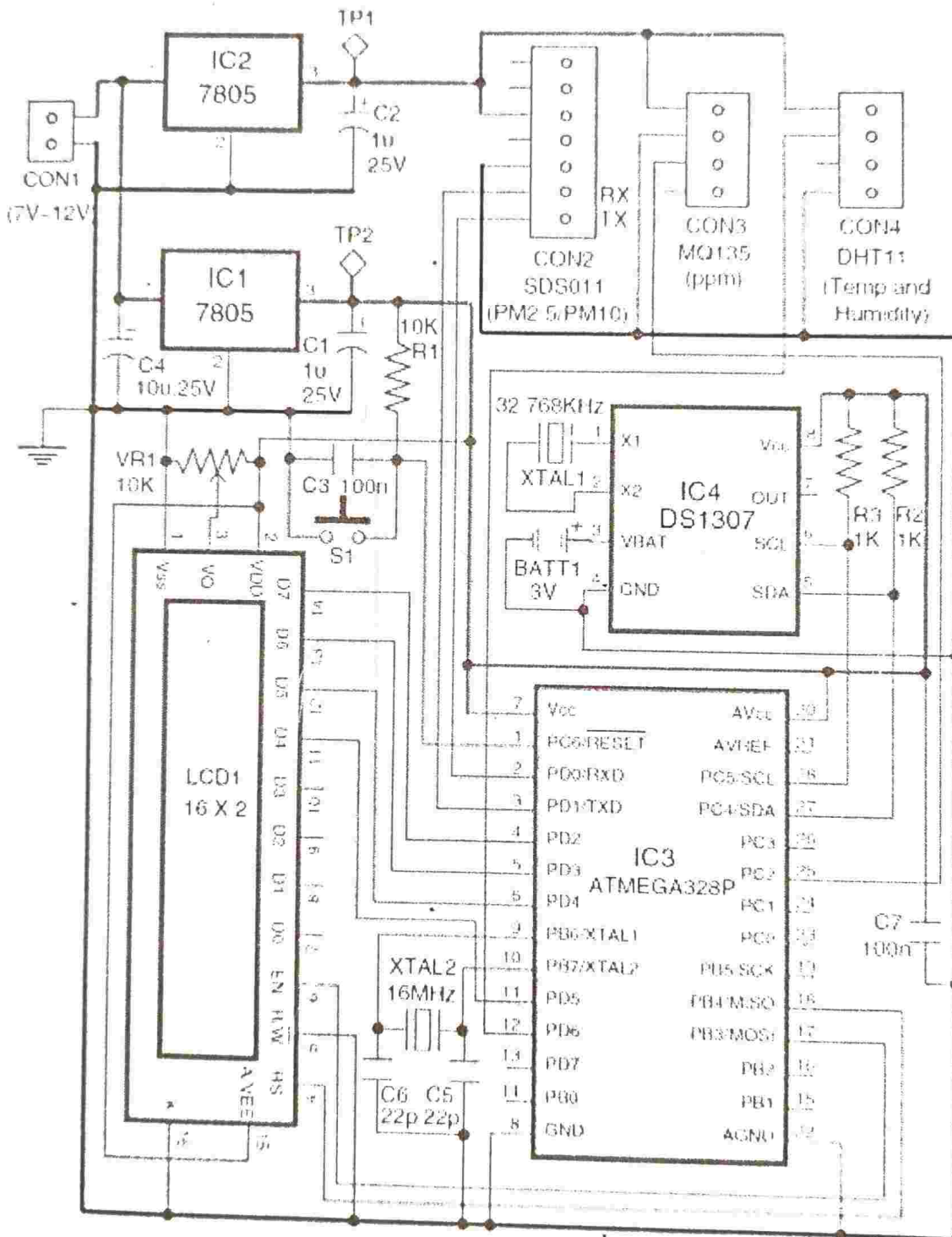
Air pollution is the biggest problem of every nation, whether it is developed or developing. Health problems have been growing at faster rate especially in urban areas of developing countries where industrialization and growing number of vehicles leads to release of lot of gaseous pollutants. Harmful effects of pollution include mild allergic reactions such as irritation of the throat, eyes and nose as well as some serious problems like bronchitis, heart diseases, pneumonia, lung and aggravated asthma. According to a survey, due to air pollution 50,000 to 100,000 premature deaths per year occur in the U.S. alone whereas in EU number reaches to 300,000 and over 3,000,000 worldwide. Various kinds of anthropogenic emissions named as primary pollutants are pumped into the atmosphere that undergoes chemical reaction and further leads to the formation of new pollutants normally called as secondary pollutants. For instance, according to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), nearly all climate-altering pollutants either directly or indirectly (by contributing to secondary pollutants in the atmosphere) are responsible for health problems. Almost every citizen spends 90% of their time in indoor air. Outdoor air quality of the cities of developed



countries improved considerably in recent decades. In contrast to this, indoor air quality degraded during this same period because of many factors like reduced ventilation, energy conservation and the introduction to new sources and new materials that cause indoor pollution . The design of buildings for lower power consumption resulted in decrease of ventilation which further decreases the quality of air inside the building. This increases the need for indoor air quality (IAQ) monitoring Due to this fact and use of new building materials, IAQ often reaches to unacceptable levels .



CIRCUIT DIAGRAM



Working-

- ⊙ Circuit diagram of the AQM is as shown in fig.
- ⊙ Heart of the circuit is ATmega328P(IC3)
- ⊙ Other components used are-
 - 1-ATmega328P
 - 2-Temperatur & Humidity Model(DHT11)
 - 3-Serial Real Time Clock(RTC)
 - 4-Air Quality Sensor(MQ135)

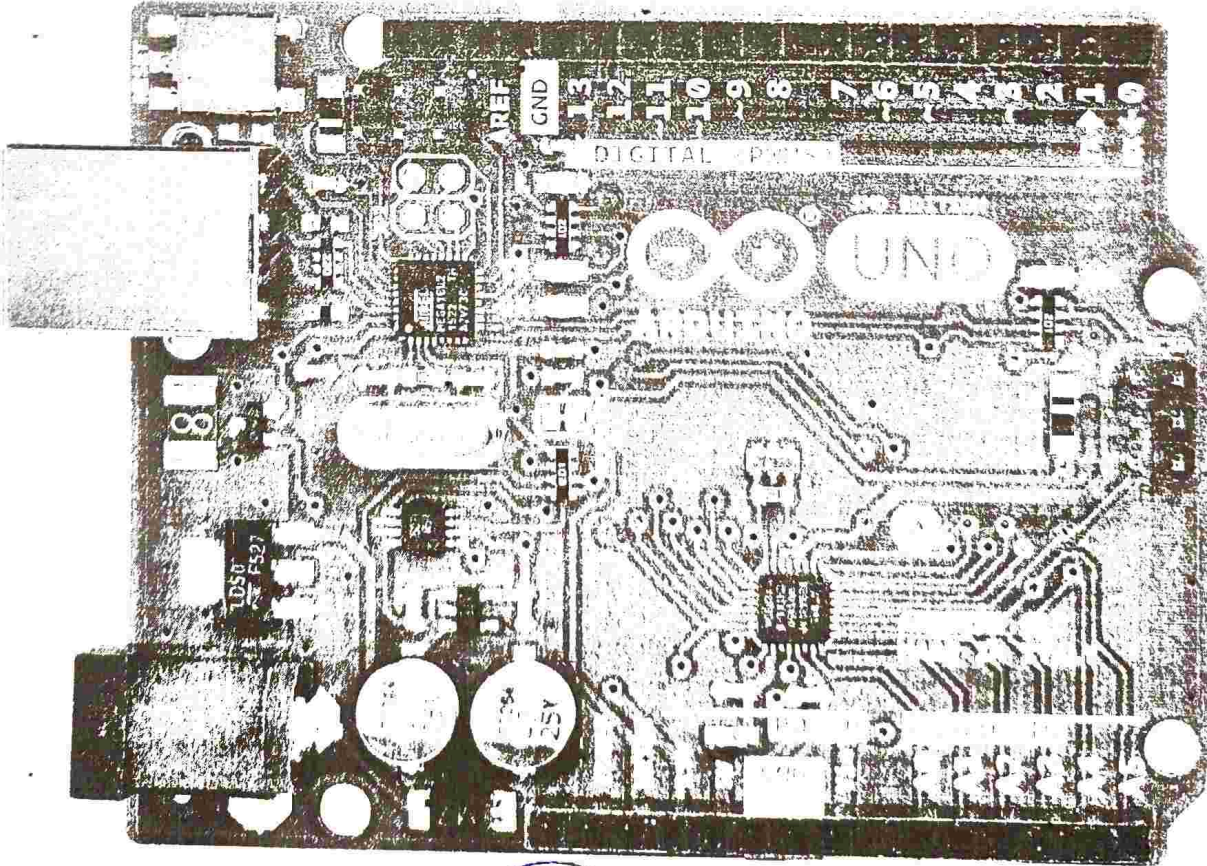


ArduinoUNO

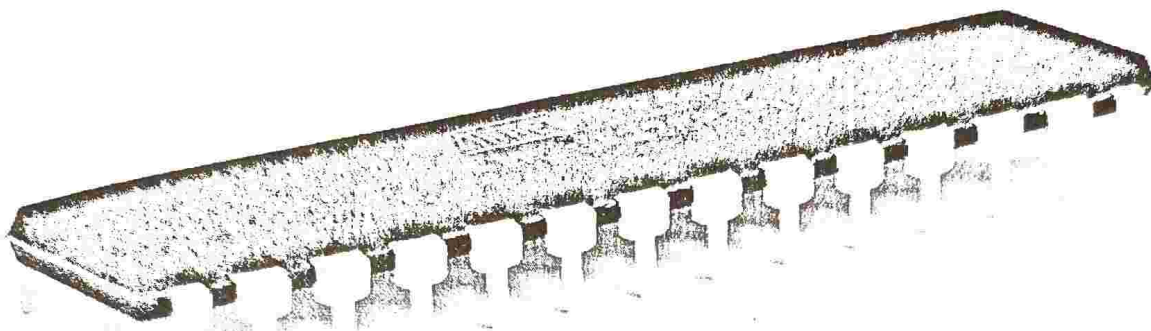
The ArduinoUNO ia microcontroller board based on the ATmega328P

It has 14 digital input /output pins , 6 analog inputs , a 16MHz quartz crystal , a USB connection , a power jack , an ICSP header and set button.

Simply connect it to a computer with a USB cable or power it with a AC to DC adaptor or battery to get started .



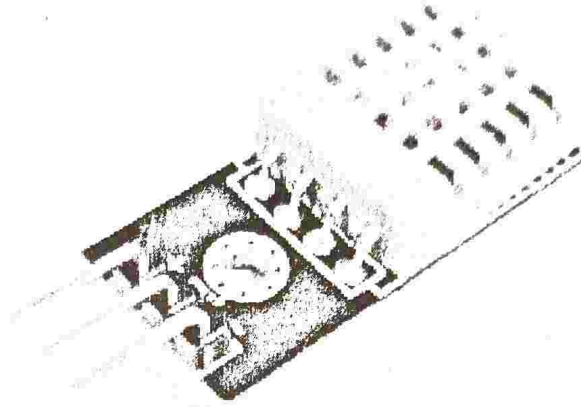
ATmega328P-



- ◎ It can be programmed with embedded software using a standard programmer or Arduino IDE. ATmega328P offers 23 input / output functional ports , and a 16MHz crystal oscillator is used to provide timing/clock reference.



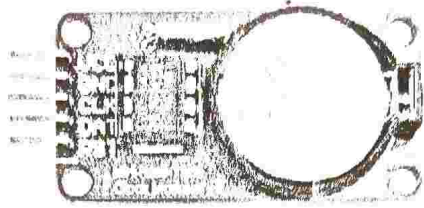
• Temperature and Humidity sensor



- ◎ DHT11 is featured to measure temperature and humidity sensor complex by using temperature & humidity sensing technology and digital-signal-acquisition technique with output in the form of calibrated digital signal .The sensor consists of NTC (Negative Temperature Coefficient) component for temperature measurement and resistive type component for measuring humidity as shown in Fig.



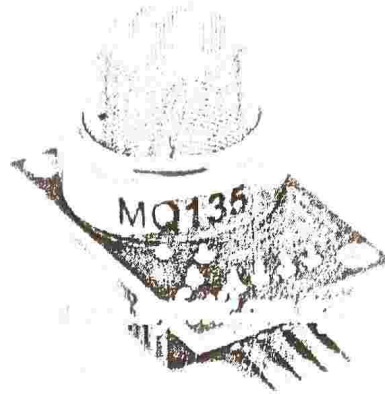
• Serial real time clock



It is low power, full binary- coded decimal (BCD) clock or calendar with 56 bytes of NV SRAM. Addresses and data are transferred serially through an I2C, Bi-directional bus. the clock or calendar provides information about seconds , minutes, hours , days , dates , months & years



● Air quality sensor-



This is a air quality sensor. The sensitive material of the sensor is tin dioxide (SnO_2). Whose conductivity increases with concentration of gas. change in conductivity is converted into output voltage signal , which varies corresponding to be concentration of the combustibile gas.MQ135 is highly sensitive to ammonia , supplied etc. it is low cost sensor suitable for different application



APPLICATIONS:

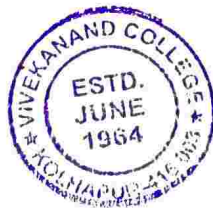
- ▣ Roadside pollution monitoring
- ▣ Industrial monitoring
- ▣ Indoor air quality monitoring

Hospital, colleges monitoring



ADVANTAGES :

- ▣ Low Cost
- ▣ Sensors are easily available
- ▣ Simple, Compact and easy to handle
- ▣ Visual output
- ▣ Quality of air can be checked indoor as well as outdoor

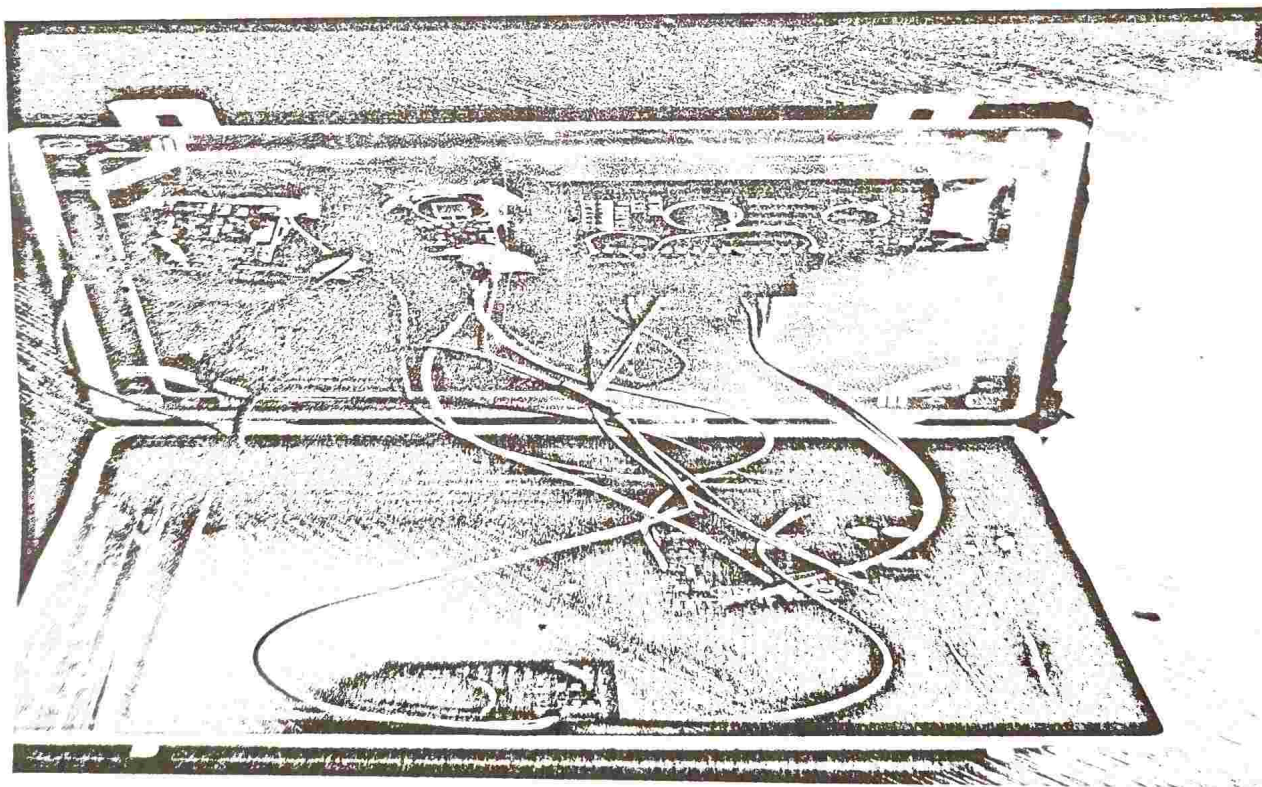
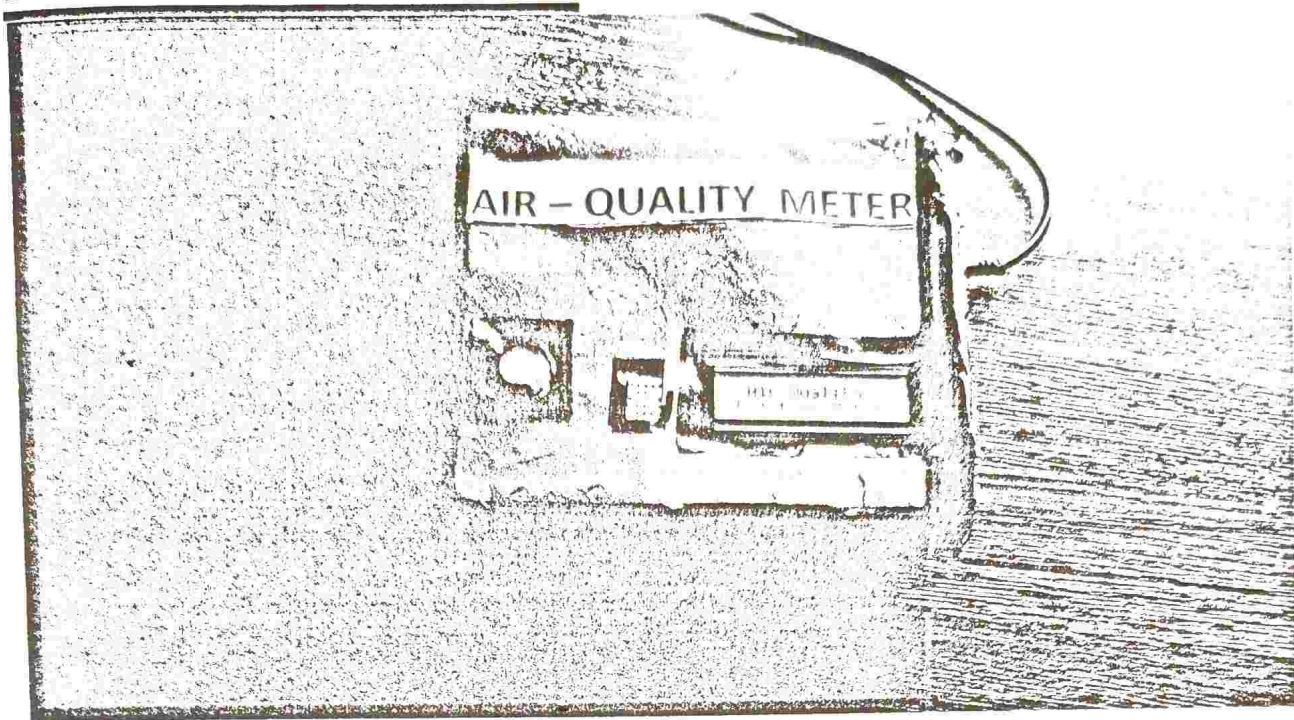


LIMITATIONS :

- ▣ Only 3 sensors are used.
- ▣ Humidity should be less than 95%
- ▣ Accurate measure of contaminating gases cannot be detected in ppm



PICTURES :



VIVEKANAND COLLEGE
ESTD.
JUNE
1964
KOLKATA



VIVEKANAND COLLEGE
ESTD.
JUNE
1964
KOLHAPUR

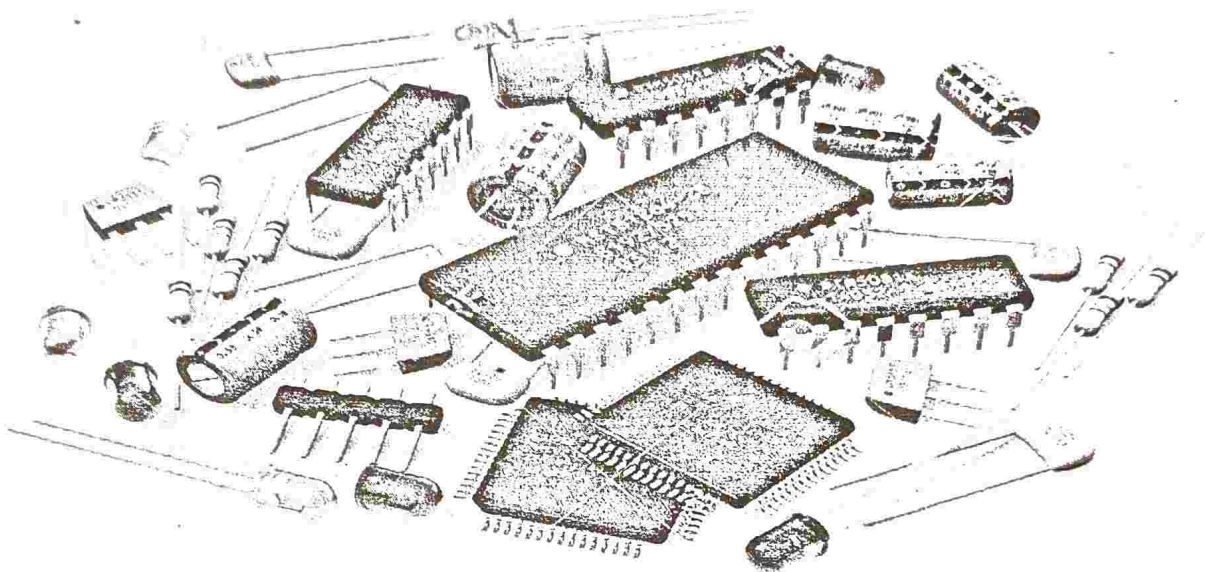
REFERENCES:

www.atmel.com

www.arduino.org

www.wikipedia.org





THANK YOU

