

**PROJECT  
ON  
WIRELESS DIGITAL NOTICE BOARD**

*Report submitted to*

**ITM University, Raipur (Chhattisgarh)**

*for the partial fulfilment of the award of the degree*

*of*

**Bachelor of Technology  
in  
Computer Science & Engineering**

*Submitted by*

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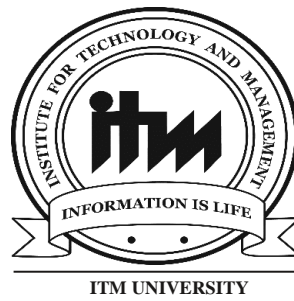
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**June 2019**

## DECLARATION

We **Mr. Harshit Badaya (D0172), Mr. Lekhram Dhruw (D0175)**, the students of Bachelor of Technology in **Computer Science & Engineering** under the School of Engineering and Research in ITM University, Naya Raipur, Chhattisgarh hereby declare that the work contained in this Project report is original and has been done by me under the guidance of my supervisor.

The work has not been submitted to any other University/Institute for any degree or diploma. I have followed the guidelines provided by the University in preparing the dissertation report.

The used materials (data, theoretical analysis, figures, and text) from other sources, I have given due credit to them by citing them in the text of the report and giving their details in the references.

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Date:

## CERTIFICATE

This is to certify that the Project Report entitled, entitled “**Wireless Digital Notice Board**” Submitted by “**Mr. Harshit Badaya** (D0172), **Mr. Lekhram Dhruw** (D0175)” to ITM University, Raipur, India, is a record of bonafide Project work carried out by him under my supervision and guidance and is worthy of consideration for the award of the degree of **Bachelor of Technology in Computer Science & Engineering** of **ITM University, Raipur (C. G.)**.

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## Project Report Approval Certificate

Objective of the Project report entitled “**Project on Wireless Digital Notice Board**” is being submitted by **Mr. Harshit Badaya (DO172), Mr. Lekhram Dhruw (D0175)** in Computer Science & Engineering Department of ITM University Raipur. We hereby accepted and approved after proper evaluation as a creditable work submitted in partial fulfilment of the requirement for the award of the Degree, Bachelor of Technology in Computer Science & Engineering at ITM University Raipur.

Objective of this Project report is **satisfactory** for the partial fulfillment of the requirement for the award of the Degree, **Bachelor of Technology in Computer Science & Engineering**

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We would like to express my sincere gratitude to all those people who have given their heart willing support in making this completion a magnificent experience.

We are thankful to **Dr. N.K Jaiswal**, Head, School of Engineering and Research, ITM University Raipur, for providing us good and healthy environment for the preparation of this Project.

We are also thankful to **Mr. Kranti Kumar Dewangan**, Head of Computer Science & Engineering Department, for his timely comments and suggestions. He advised on the details of my work and provides valuable discussions. Without the guidance of our supervisor, this project may not have well materialized.

We are overwhelmed by the constant support and needful motivation given by the Computer Science & Engineering Department Faculty.

We are really grateful to my parents for their support, appreciation and encouragement. I specially acknowledge the authors of different research papers and books for providing necessary contribution to my work.

## **ABSTRACT**

The developments are increasing in the face of the situations that cause human life, notice boards are commonly used in variety of institutions which we come across in a daily basis. In the present generation the advertisement notice boards are being managed manually. This process is difficult to involve in order to put a notice on the notice board. This waste a lot of things like paper printer ink, manpower and also brings the loss of time. In this project we have proposed a system through wireless transmit notices on a notice board or screen using Internet of things technology. In this project we have developed into three segments first the Bluetooth based electronic notice board using Arduino Uno board and Android interface which use for sending the text to the board which display on the LCD. And the Second we had used Arduino WIFI board where through Wi-Fi network with the help of MQTT broker the text send to system and then display to the screen and in third and last phase of our project. We had use IOT technology where we using Raspberry Pi board and network connection meanwhile local area connection of an particular organization connect both system and web interface with same network and then after we can send notices, audio files ,video files, images etc. to the screen wirelessly notice board being used specially at offices and public places to display important news and notices. To make the notice boards easy to use and more technically advance, we have used this prototype of notice board and this notice board is easy to use and effective everywhere and user Friendly.

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# **CHAPTER- I**

## **INTRODUCTION**

## 1.1 INTRODUCTION

Nowadays, people are becoming familiar to easy access to information. Whether it's over the internet or TV, people want themselves to be efficient with the latest events trendy around the world. In today's world people desire wireless connection because they can intermingle with people easily and it require a smaller amount of time. The main reason behind this project is to develop a wireless digital notice board that displays message sent from the approved user and to design a simple, easy to install, user friendly system, which can collect and display notice in a particular order with respect to date and time which will help the user to easily keep the track of notice board each time he uses the system. Design and Application of Digital notice board by using Arduino and Raspberry pi board. The application which will be used by users has been installed on a Smartphone, a web interface and a raspberry pi card to show text on display device. The main objective of this system is to develop a wireless digital notice board that display message sent from the user and to design a simple, easy to install, user friendly system, which can receive and display notice in a particular order with respect to date and time which will help the user to easily keep the path of notice board every day and each time he uses the system.

Notice board is an essential info gathering system in our life. In our day-to-day life we can see notice boards in various places like, educational institutions, railway stations, shopping malls, Bus stop, offices, digital hoardings etc. So, we can say that Notice boards are the places to leave communal info such as advertise events, proclaim events or provide attention to the public, etc. Now days an Isolated person is needed to stick those info's on the notice board. It will lead to lose of time as well as usage of manpower. In conservative analog type notice boards paper is the main medium for info exchange. We know that info counts are endless. So, there is a usage of huge expanse of paper for displaying those boundless counts of info. The problems faced by the wood or conservative type notice boards are resolved by the application of our digital notice board. It will bring an advanced means of passing notices around in the world in a much easier and efficient way. Due to the popularity of internet, we choose internet as a medium for transferring info. The Internet of things (IoT) is the network of physical devices, vehicles, home appliances and other items rooted with electronics. Software, which enables these objects to connect and exchange data. Rooted computing system but is able to inter operate within the existing Internet infrastructure for provide security, we add username and password type authentication system. So only respective authority can send info. Raspberry pi which is the Core of our system.

A monitor is interfaced with Raspberry Pi. So, info in the form of text, megamedia and pdf can display on the large screens. Our primary aim is to get more people's attention on the display. By the practice of high definition display devices people can get more attention on the notice board rather than conventional notice boards. In straight wireless notice board can display only texted messages. But in our newly implemented system can display images and pdf documents in addition to text messages. As in Educational institutions majority of info given from the higher establishments in the form of images or pdf format. So, displaying these types of info make our system more user friendly. Due to the utilization of internet the sender can send message wherever in the world. There is no variety control for the successful discussion of information.

## **1.2.PROJECT OVERVIEW**

Wireless digital notice board is basically divided into three parts. In first part the is project of communication in which we had use Arduino Uno is serially interface with Bluetooth module and, LCD also interface with Arduino Uno to envision the transmitted data by Bluetooth module. We had also designed an Android app interface using app inventor where user can connect with Bluetooth connection and then after connection, it can send text information to board and then its display to the LCD.

And then after Bluetooth has certain distance limit ,so for overcoming this problem we had created second part of project, in second part we had use Arduino Wi-Fi board ,and MQTT broker for interfacing between the microcontroller and network where from mqtt broker we send data to directly on Arduino board and it displays to LCD .This require internet connection after this it has certain limitation like we can only send single line text on screen or in LCD. And our project motive is to send data images, text, video wirelessly in minimum interval of time.

In final part of project, we had used Raspberry pi board, Raspberry Pi is a small single board computer. By connecting peripherals like Keyboard, mouse, display to the Raspberry Pi, it will act as a mini personal computer. We had installed operating system in Pi board meanwhile in a SD card and then setup local area connection between user interface and board, after installing OS on SD card, we had use web interface for sending the images, creating notices, sending video files capably in minimum lapse of time.

### 1.3.SYSTEM OVERVIEW

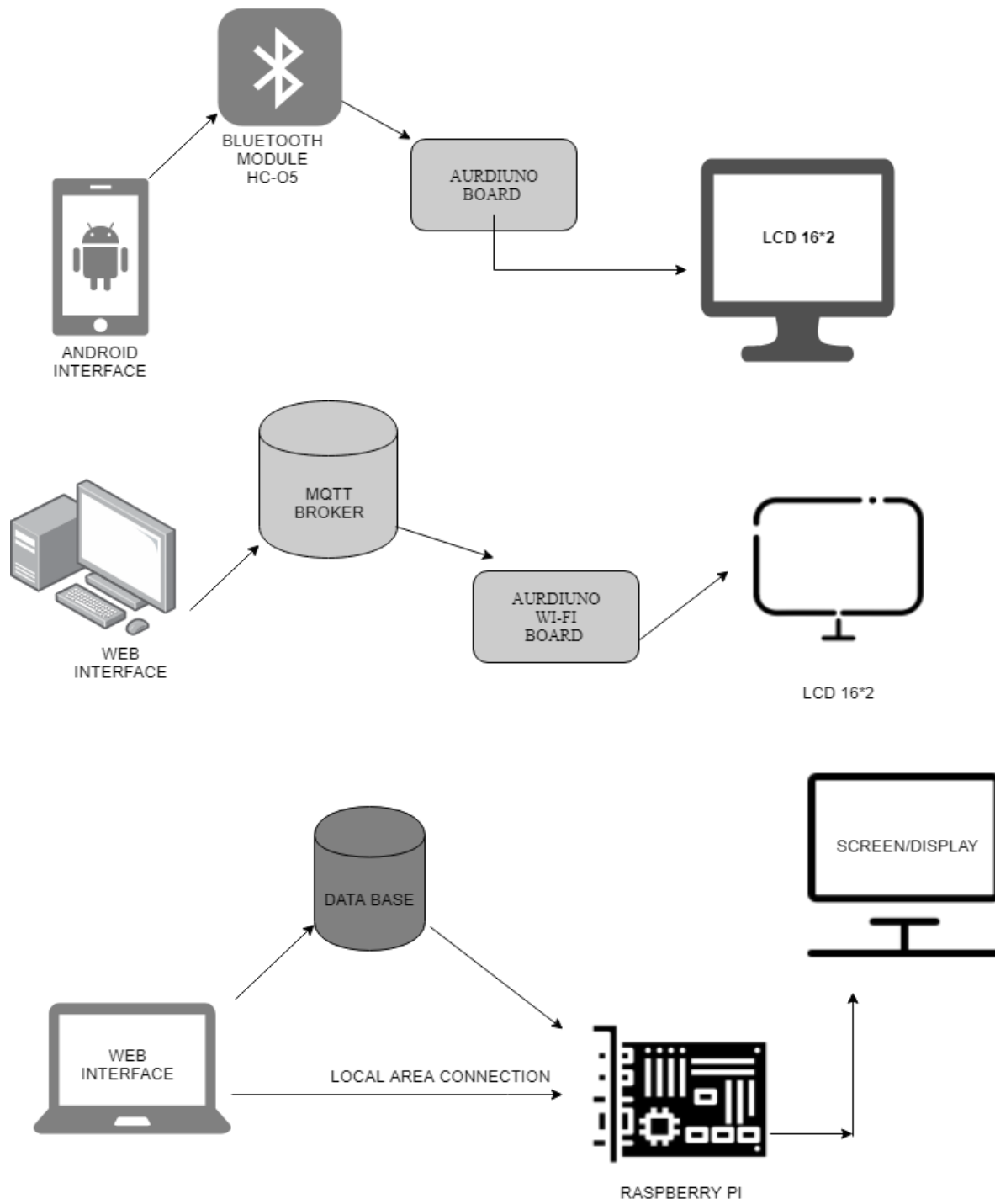


Fig: 1.1 Block diagram of system

As we see in the above figure, here in first part Bluetooth module is connected with microcontroller and it serially connected to LCD and having android interface which is connected to Bluetooth and then send to the LCD, and in second part we had use Arduino Wi-Fi board and using MQTT broker with web interface and send text to LCD , and then in third part we had use Raspberry pi board with local area connection network and installed operating system in it where it can send notices, images, video, pdf files etc in minimum lapse of time.

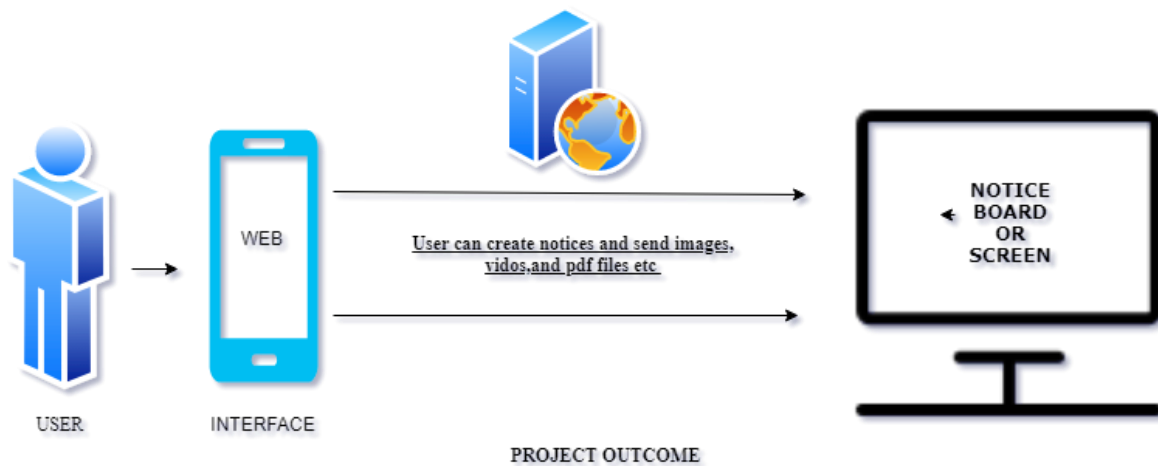


Fig 1.2: - Project Outcome



## 1.4. COMPONENTS OVERVIEW

### **Hardware requirements:** - Table 1.1: Hardware requirement

S no.	Hardware Components	Description
1	HC-05 Bluetooth Module	HC-05 module is an easy to use Bluetooth SPP (Serial Port Protocol) module, designed for transparent wireless serial connection setup
2	Arduino Uno	Arduino is an open-source electronics platform based on easy-to-use hardware and software.
3	Raspberry Pi 3 Board	It is a small single board computer. It is popularly used for real time Image/Video Processing, IoT based applications and Robotics applications.
4	WeMos D1 Wi-Fi ESP8266	The WeMos D1 is a small wireless 802.11 (WIFI) microcontroller development board. It turns the very prevalent ESP8266 wireless microcontroller module into a complete development board
5	LCD (16x2)	LCD screen is an electronic display component
6	Bread Board	It is a solderless device for impermanent model with electronics and test circuit designs.
7	Connecting wires and jumper wires (Male & Female)	It uses for connecting components
8	Power supply or Power Adapter & USB Cable	USB cable for power 5v – 15v dc power supply
9	SD card	SD cards are a form of flash memory storage used across a diversity of electronic devices.
10	USB Keyboard and Mouse	It uses for typing and dragging on the screen
11	Resistance	It measures of the opposition to current flow in an electrical circuit 220 Ohm.
13	Screen (monitor)	It uses as screen for output for content

14	Potentiometer	It is that the potential dropped across a segment of a wire of uniform cross-section carrying a constant current is directly proportional to its length.
15	I2C Adapter	Serial I2C LCD display adapter converts parallel based 16 x 2-character
16.	HDMI to VGA Convertor	It is use for converting HDMI data into VGA Output

**Software requirements:** - Table 1.2: Software used

Serial no.	Name	Description
1	Windows / Ubuntu	Uses for working with IDE, OS and all working technologies
2	Putty S/W	It a free and open-source terminal emulator, serial console and network file transfer application
3	Win32disk imager	Read/write image files of OS
4	Raspbian OS	Raspbian is a Linux Distribution. Anything that is built on top of the Linux Kernel can be called a Linux Distributionism is Operating system
5	Python 3 and C	Programming language used in Raspberry pi 3 for program and C language for Arduino
6	Arduino IDE	Arduino IDE for Programming.
7	SD card formatter	This is Software uses for formatting the Sd Card
8.	Xming Server	This is Server used for establishing medium between network, raspberry pi and Laptop
9	Adafruit Mqtt	This is Network broker uses for communication between board and user
10	App inventor	This is used for creating android app Interface for the project

# **CHAPTER- II**

## **LITERATURE REVIEW**

## **Voice controlled notice board using Bluetooth module (Priyanka. Ranjit, Maharashtra, India 2018)**

Main concept behind Voice functioned Electronic notice board using display is to show messages and to control them by using our own voice. We have already seen GSM based Electronic however speech-

controlled Notice board has additional advantage of ease of use. User has to give voice command in his/her own voice to control the messages displayed on electronic notice board. Voice recognition is done in the Android application has to install this Android application in his/her smart phone or tablet. Bluetooth wireless technology is a popular technique in the field communication, and it is one of the fastest growing fields in the wireless technologies. Bluetooth technology handles the wireless part of the communication channel; it is used in this system to transmit and receive data wirelessly between devices. User needs to install this application. A computer system used for this purpose is called a speech synthesizer, and can be implemented in software or hardware products. An inbuilt Google voice recognition app is used in this system This system deals with the implementation of voice-

based system by using Bluetooth with the help of android application. The communication is made possible by using Bluetooth module.

## **IoT based webcontrolled notice board (Divyashree M. MVJCE, Bangalore Apr-2018)**

IoT is the network of physical “things” or object that contain embedded technology to interface and sense to move with their internal states or the external setting. Automation is the most often spelled term within the field of electronics. The hunger for automation brought several revolutions within the existing technologies. Notice board could be a primary factor in any establishment or public places like bus stations, railway stations, colleges, malls etc. Sticking out numerous notices day to day could be a tough method. A separate person is needed to take care of this notice display. This project is regarding advanced wireless notice board. In IoT based Web Controlled Notice Board, Internet is employed to wirelessly send the message from Browser to the liquid crystal display. A local web server is created, this could be a global server over net. At the Raspberry Pi, LCD is used to display message and flask for receiving the message over network. Whenever Raspberry receives any wireless message from Web browser, it displays on the liquid crystal display.

## **Wireless Notice Board using Raspberry Pi (Pooja Trivedi Mumbai 2017)**

Notice Board is a primary thing in any institution or public utility places like bus stations, railway stations, colleges, malls, etc. But sticking various notices day to day is a difficult process. This project is about advanced wireless digital notice board. The project is built around ARM controller raspberry-pi which is heart of the system. A Wi-

Fi is used for Data transmission. At any time, we can add or remove the notices according to our requirement. The document to be displayed on notice board can be of any format like docx or Pdf file. The interesting part of our project is we can even display images and clips/videos on the screen as well as we can set timer for individual notice or video's which can be enabled or disabled according to requirements of authorized user. At transmitter authorized PC or any smart devices are used for sending notices. At receiving end Wi-

Fi is connected to raspberry pi. The receiver receives a notice from authorized user. Wireless is a popular technology that allows an electronic device to exchange data wirelessly over a computer network including high speed wireless connections. The notice is sent and received from authenticated user. Then it sends to raspberry pi and from raspberry pi notice is sent to display monitor.

## **Wireless E-Notice Board (Mitesh Santha Kumar 2016)**

Notice boards are one of the major communication mediums for mass media. Many Universities and educational institutions still use wooden notice board to display announcements. However, reliance on such boards is still not enough to convey relevant information around the organization.

This paper gives a basic idea about Wireless E-

Notice Board. Primary aim of the proposed system is to ensure that information sent from a remote place is displayed on display unit. The Wireless E-

Notice board uses the GSM technology to display the message sent through an SMS via mobile phone from a remote location on a larger display unit such as LCD screen. Also, multiple users can send message at a time, which in case, would be displayed on the basis of their priority. All registered users would be notified about the message being displayed. This paper deals about an advanced hi-tech wireless notice board.

## **Mobile based digital notice board (Emmanuel peter)**

In this proposed system the idea of wireless Digital Notice Board Using MOBILE Technology has been presented. So, the main aim is to reduce paper work and time. In this presentation I am trying to implement our system in such a way that it can display message from authorized user sends to MOBILE module which is located on the notice board. So, in short, the MOBILE module which is located at Digital notice board receives the message from authorized user and displayed on notice board which is situated at remote location at same time this message will be sent to different user's mobile numbers that are stored in microcontroller memory. So spreading of important message or notice will be takes place within very short span of time to respective mobile no's. Means user or registered person can able to send the message from anywhere and this message is displayed on LCD display.

## **Electronic Notice Board (Darshika Morey, Feb-2018)**

This paper describes the different technologies and features included in wireless electronic notice board by over viewing various researches done over time. In today's world displaying message and advertisement is an important part of communication. Many technologies like Bluetooth, GSM, Wi-Fi module, etc. are gaining popularity. Wireless is a popular technology that allows an electronic device to transfer data wirelessly and display it. In this paper a brief overview is provided of the technologies used and display devices like LCD display, LED display and also user authenticated system in electronic notice board.

# **CHAPTER- III**

## **METHODOLOGY**

### 3.1 INTRODUCTION

Wireless digital notice board is basically divided into three parts. In first part the is project of communication in which we had use Arduino Uno is serially interface with Bluetooth module and, LCD also interface with Arduino Uno to envision the transmitted data by Bluetooth module. We had also designed an Android app interface using app inventor where user can connect with Bluetooth connection and then after connection, it can send text information to board and then its display to the LCD.

And then after Bluetooth has certain distance limit ,so for overcoming this problem we had created second part of project, in second part we had use Arduino Wi-Fi board ,and MQTT broker for interfacing between the microcontroller and network where from mqtt broker we send data to directly on Arduino board and it displays to LCD .This require internet connection after this it has certain limitation like we can only send single line text on screen or in LCD. And our project motive is to send data images, text, video wirelessly in minimum interval of time.

In final part of project, we had used Raspberry pi board, Raspberry Pi is a small single board computer. By connecting peripherals like Keyboard, mouse, display to the Raspberry Pi, it will act as a mini personal computer. We had installed operating system in Pi board meanwhile in a SD card and then setup local area connection between user interface and board, after installing OS on SD card, we had use web interface for sending the images, creating notices, sending video files capably in minimum lapse of time.

Below are several advantages coming with project.

- 1.Easy to operate and to communicate
- 2.Reduce paper use for notices
3. it can send text, images and etc.



4.it works on local area connection

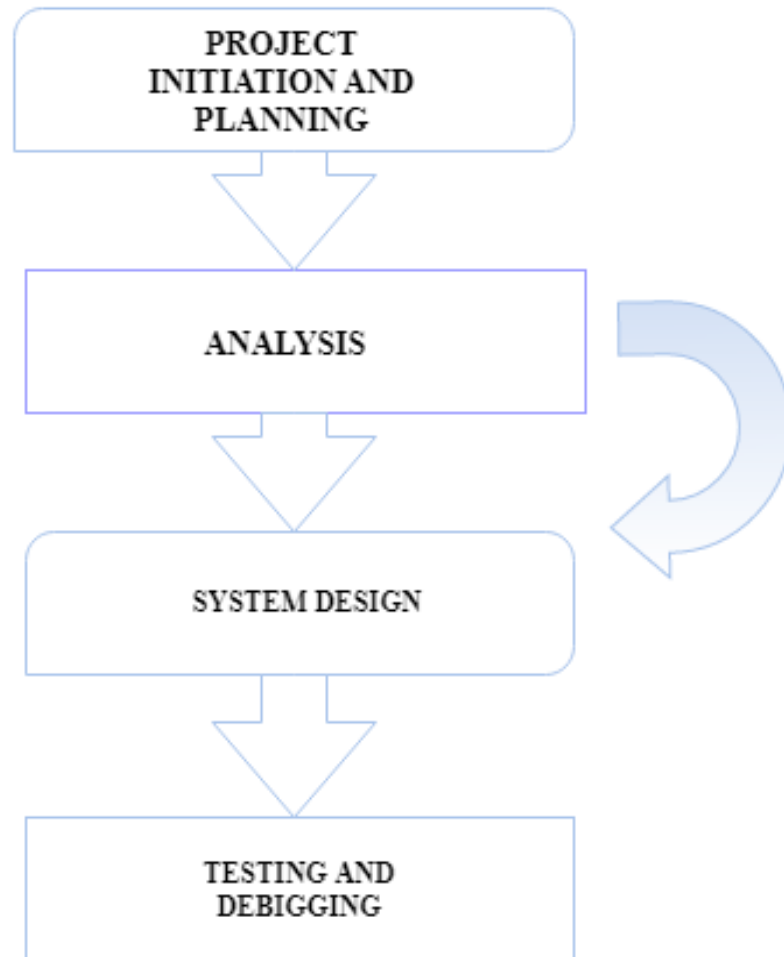


Fig 3.1:- Rad cycle

### 3.2. PROJECT INITIATION AND PLANNING

In this stage we had a meeting with project partner and discussion regarding this project after lots of discussion and research we had decided to do this project in three segments ,we had categorized into 3 parts first we had use Bluetooth module with Arduino and then WIFI board using mqtt and then finally for outcome that we need we use Raspberry pi board

### 3.3. SYSTEM DESIGN

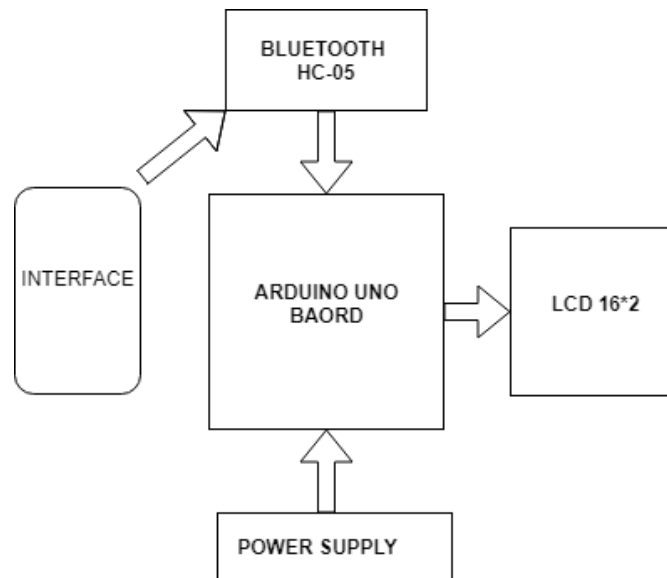


Fig 3.2: - Block diagram of Bluetooth based system

In this segment we had used following components and software

#### a. Arduino Uno

Arduino Uno is a microcontroller board based on the ATmega328P (datasheet). It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz quartz crystal, a USB connection, a power jack, an ICSP header and a reset button. The Arduino Uno board is a microcontroller based on the ATmega328. It has 14 digital input/output pins in which 6 can be used as PWM outputs, a 16 MHz ceramic resonator, an ICSP header, a USB connection, 6 analog inputs, a power jack and a reset button.

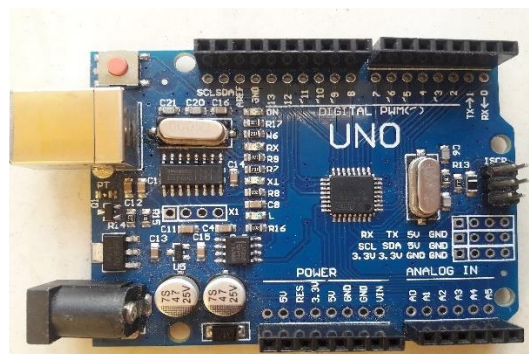


Fig 3.3 :- Arduno board

### **b. Bluetooth module HC-05**

HC-05 module is a laid-back to use Bluetooth SPP (Serial Port Protocol) component, planned for transparent wireless serial connection setup. The HC-05 Bluetooth Module can be used in a Master or Slave outline, making it a great solution for wireless communication. This serial port Bluetooth module is fully qualified Bluetooth V2.0+EDR (Enhanced Data Rate) 3Mbps Variation with complete 2.4GHz radio transceiver and baseband. It uses CSR Blue core 04-External single chip Bluetooth system with CMOS knowledge and with AFH (Adaptive Frequency Hopping Feature).



Fig 3.4 :- HC-05 Bluetooth module

### **c. LCD 16\*2**

LCD modules are very commonly used in most embedded projects, the reason being its cheap price, availability and programmer friendly. Most of us would have come across these displays in our day to day life, either at PCO's or calculators.



Fig 3.5 :- LCD 16x2

- First, we connect the LCD with Arduino board using jumper wires
- With the help of bread board, we connect the jumper wires with LCD and Arduino board

- There are 16 pins in LCD, we connect all pins with same similar pins in board as given in wire explained diagram below.

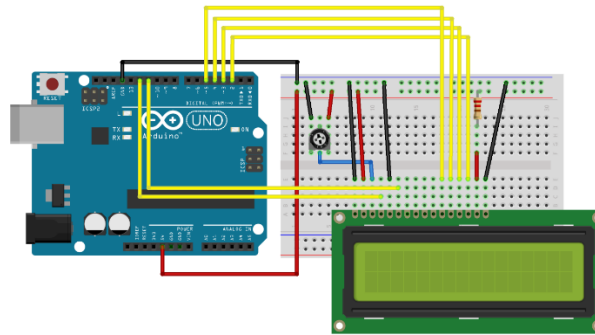


Fig 3.6 :- Connection diagram

- After connection , now we connect bluetooth module with board with given pins.  
Vcc to 3v, Gnd -to Gnd  
Rx -Rx (1), Tx to Tx (0)
- Now we code in Arduino Ide
- Arduino is authentic website or software where we can write code in C language and after writing code according to our requirement, we can boot the code into board and can wide-ranging the task
- After code, we develop an Interface from app Inventor, we create an android app interface for communication between user and board. App inventor is a website tool which is developed by MIT University to deploy and create android apps.

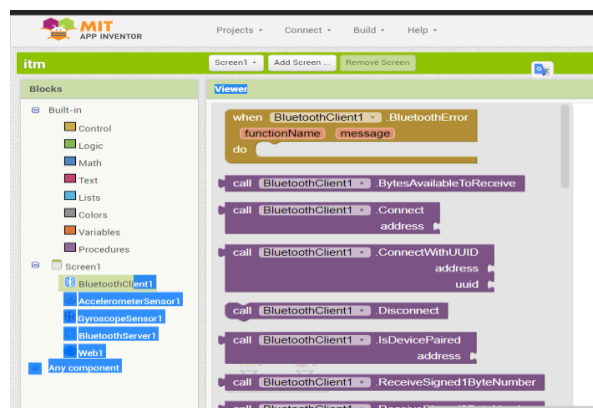


Fig 3.7: - Creating app in Inventor

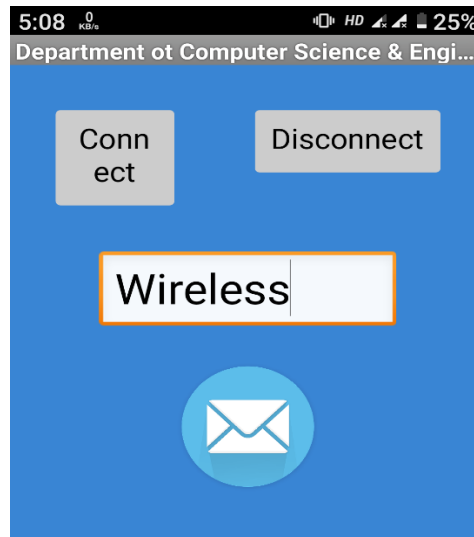


Fig 3.8: -Android Interface for Bluetooth

After completion of above part, we started next part, in this segment we had used following components and software

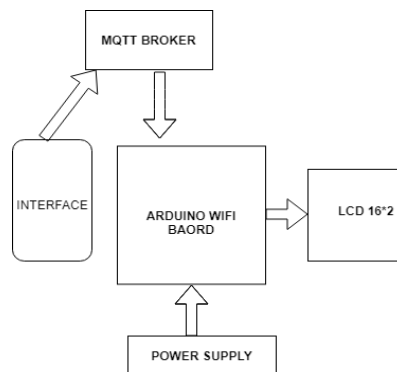


Fig 3.9 :- Block diagram for Wifi

#### d. WeMos D1 Wi-Fi ESP8266 (Arduino WIFI Board)

The Arduino Uno Wi-Fi is the similar as an Arduino Uno but with an integrated Wi-Fi module! The board is based on the ATmega328P with an ESP8266 Wi-Fi Module combined. It has 14 digital input/output pins, 6 analog inputs, a 16 MHz ceramic resonator, a USB connection, a power jack, an ICSP header, and a reset button.

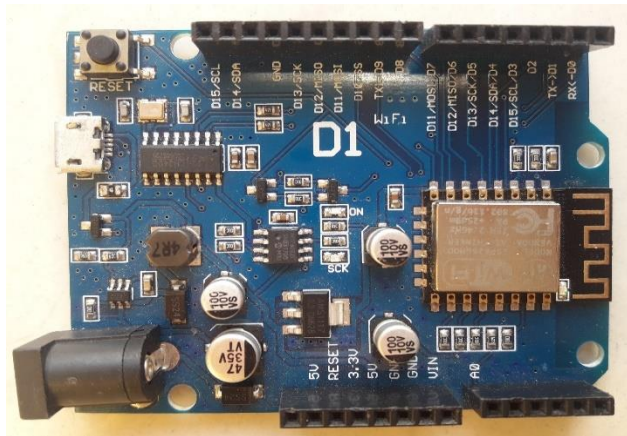


Fig 3.10:- Wemos ESP866 board

## E. MQTT (Message Queuing Telemetry Transport)

MQTT is an ISO standard publish-subscribe-based messaging protocol. It works on top of the TCP/IP protocol. It is designed for connections with remote locations where a "small code footprint" is required or the network bandwidth is limited.

The publish-subscribe messaging pattern requires a message broker.

- Now we had created a MQTT Publisher and subscriber where publisher is sending data to network and subscriber receives the data
- MQTT has dashboard for accessing the services for communication over a network
- Same LCD connection with Wi-Fi board and code load in board with help of Arduino IDE

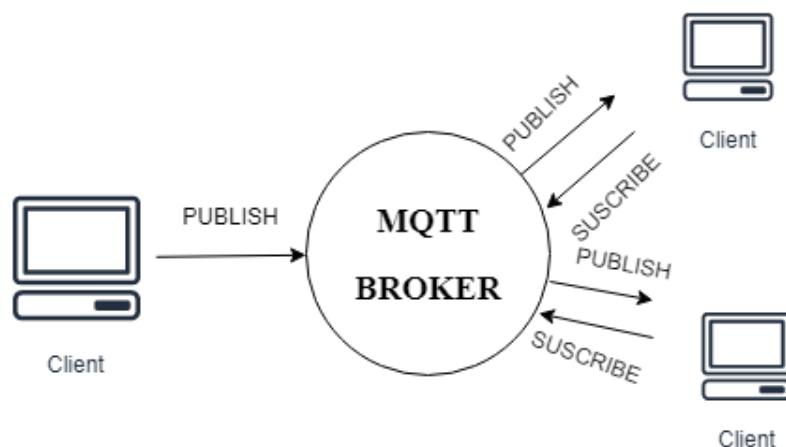


Fig 3.11 :- MQTT Service

Now, after creating with Wi-Fi board it has certain limitation and many issues like network lost, data loss and time taken to publish text on screen, so for overcome on this problem we had started third and final part of project which is very efficient and easy and better than this above approach.

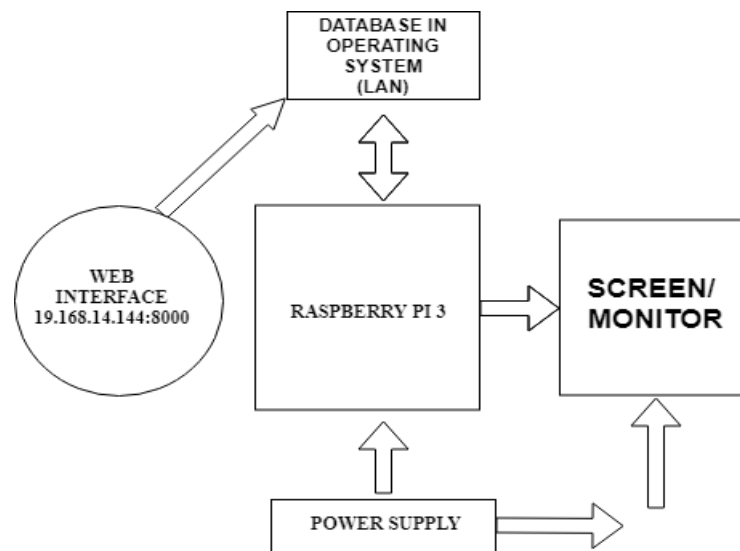


Fig 3.12 :-Block diagram of Wireless notice board using Raspberry Pi

## F. Raspberry Pi 3 Board

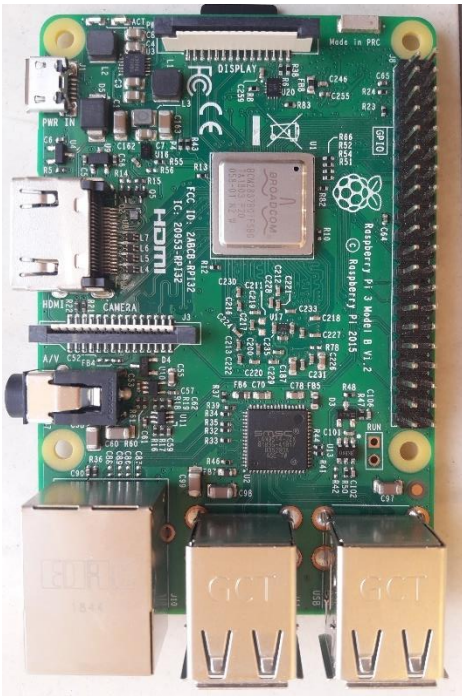
Raspberry Pi is a small single board computer. By linking peripherals like Keyboard, mouse, display to the Raspberry Pi, it will act as a mini personal computer. It is popularly used for real time Image/Video Dispensation, IoT based bids and Robotics bids. It is leisurelier than laptop or desktop but is still a computer which can run all the predictable structures or facilities, at a low power consumption.

Raspberry Pi Foundation authoritatively provides: - Debian based Raspbian OS, NOOBS OS.

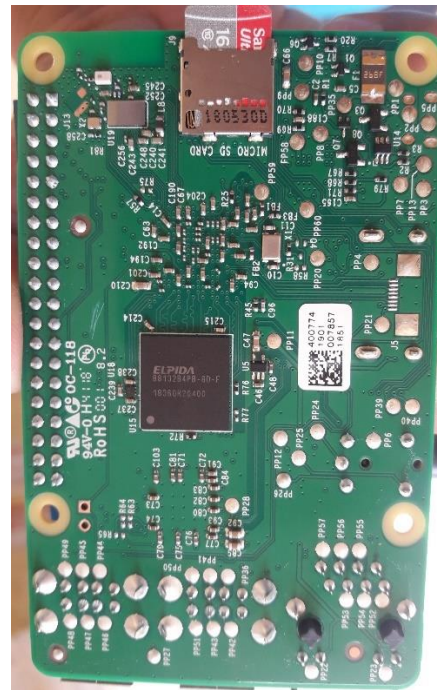
We can install OS like Ubuntu, Arch Linux, RISC OS, Windows 10 IOT Core, etc.

Raspbian OS is official Operating System available for free to use. This OS is efficiently optimized to use with Raspberry Pi. Raspbian have GUI which includes tools for Browsing, Python programming, office, games, etc.

We should use SD card (minimum 8 GB) to store the OS (operating System). it is supplementary than computer as it provides access to the on-chip hardware i.e. GPIOs for emerging an application. By retrieving GPIO, we can join devices like LED, motors, sensors, etc and can regulator them too.



(Front)



(Back)

Fig 3.13: - Raspberry Pi board

- Firstly, we installing operating system on SD card from downloading from raspberry official website name as Raspbian OS.
- Take a memory card format it by using SD card formatter.

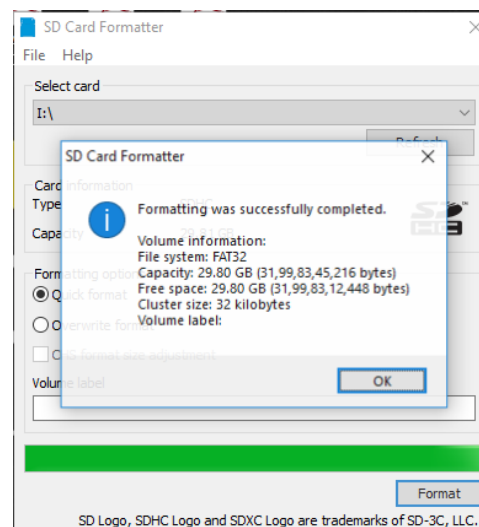
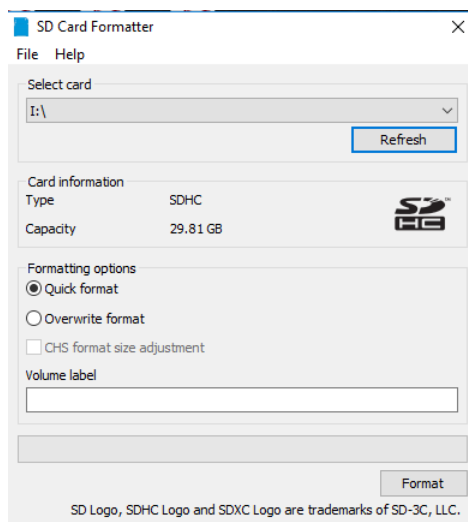


Fig 3.14: - Sd card formatting process



- Now after formatting complete, with the help of Win 32 Disc Imager we burn disc image file into Sd card means booting the operating system into SD card.

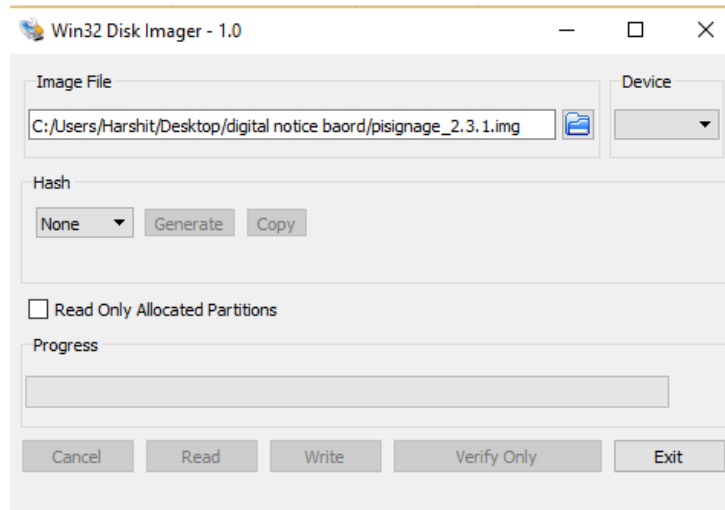


Fig 3.15:- Burn OS image file

- After burn disc image file, remove the SD card and insert into Raspberry pi board at back side there is having an SD inserting space.
- Now give power supply to Board with adapter 5v output.
- And connect the screen or monitor for displaying the Pi Operating system, we use a VGA screen, so for this, in raspberry pi it having an HDMI output of screen, so with help of HDMI to VGA Converter we connect screen with board.
- Now booting process started in board as displaying in screen.
- Now for our outcome, we use a pisinage operating system for local area connection for content display on screen.
- Then after booting process completed our display is ready, now on other Pc, open the web Browser and open an ip address of our raspberry pi and then an interface is appeared for communication to screen

IP address: **192.168.43.68:8000** (for web interface)

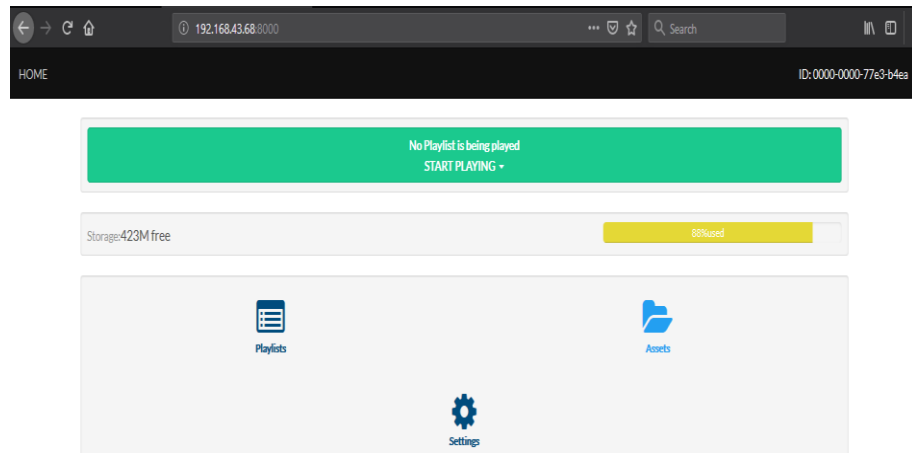


Fig 3.16: - User Dashboard

➤ In web interface we can add asset, make playlist, create notices, sends images, sends video  
Sends notices and etc.

- In asset we can create notice
- We can save images, data in given memory
- It can play video
- It can display pdf page
- It can make our playlist according to time
- It can put default notices
- It can make a schedule and set time for particular notice or content.

### 3.4. Deployment of project screen.



Fig 3.17:- default image on screen

### 3.5 Flow chart

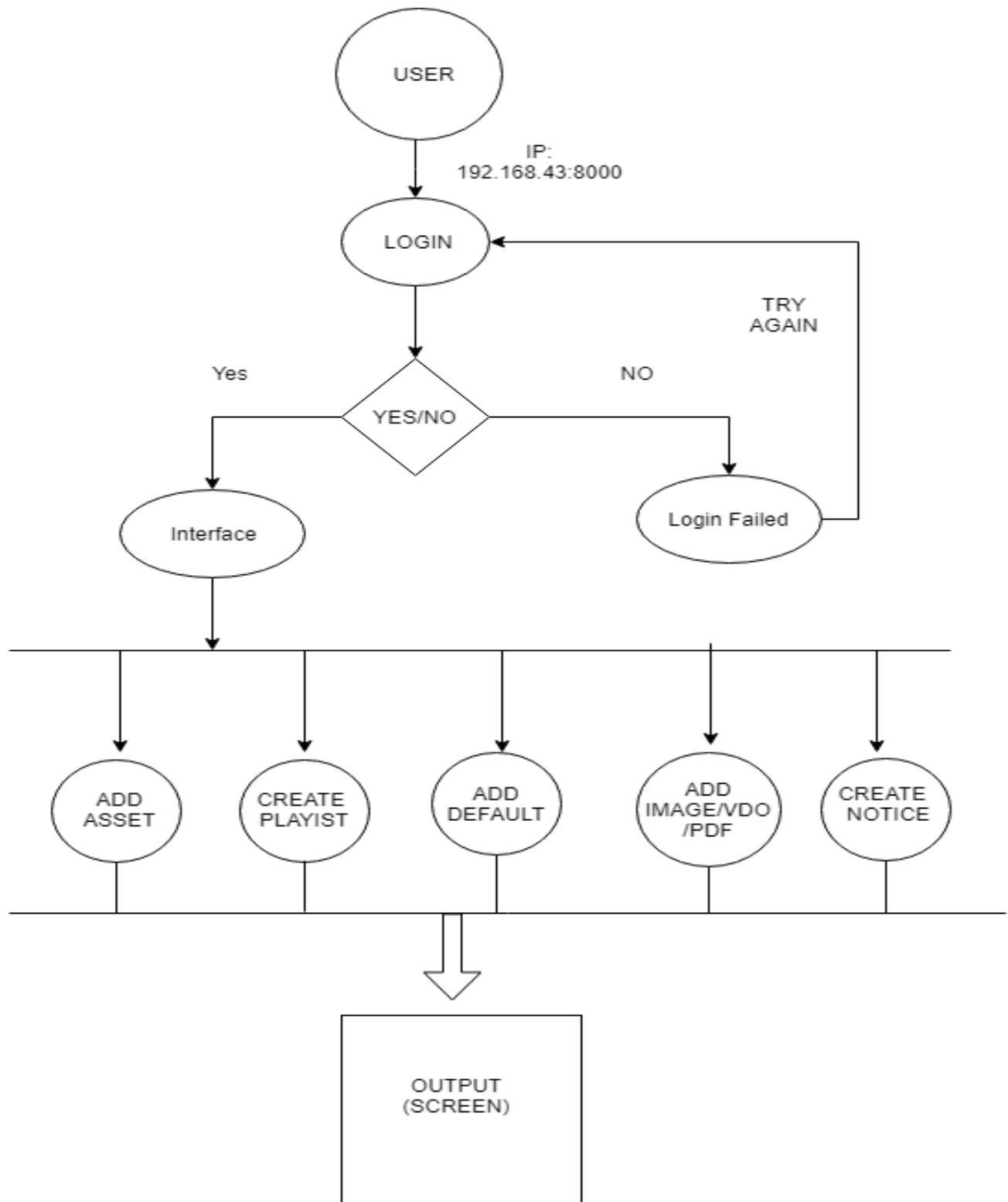


Fig 3.18: - System flow

# **CHAPTER- IV**

## **RESULTS DISCUSSIONS**

## 4.1 RESULT OF BLUETOOTH BASED SYSTEM

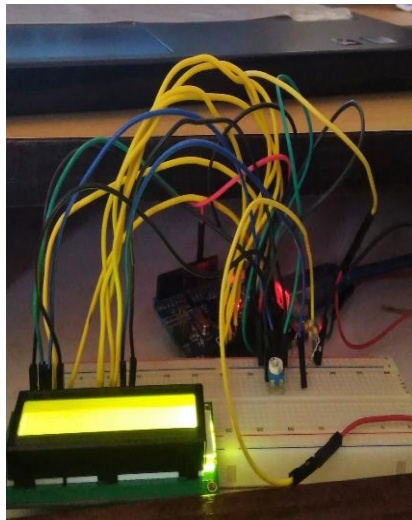


Fig 4.1: - Connection of LCD and board

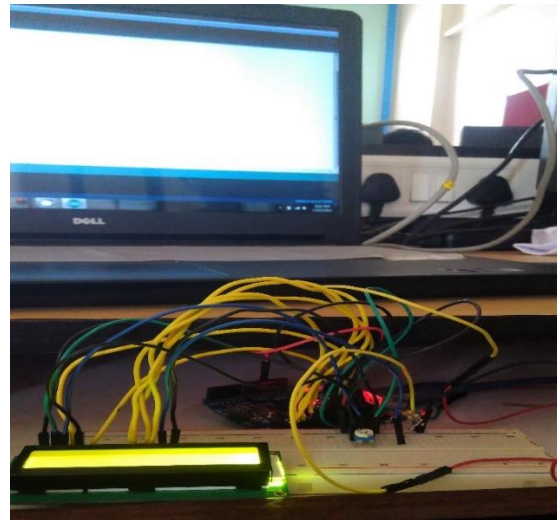


Fig 4.2: - Working on project

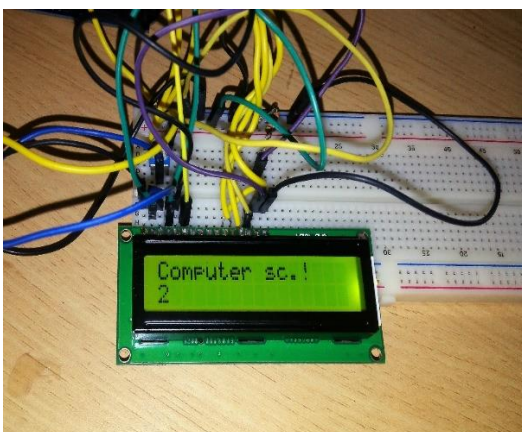


Fig 4.3:-Text On Display



Fig 4.4 :- Text send to lcd using android app interface

## 4.2. RESULT OF RASPBERRY PI BASED SYTEM

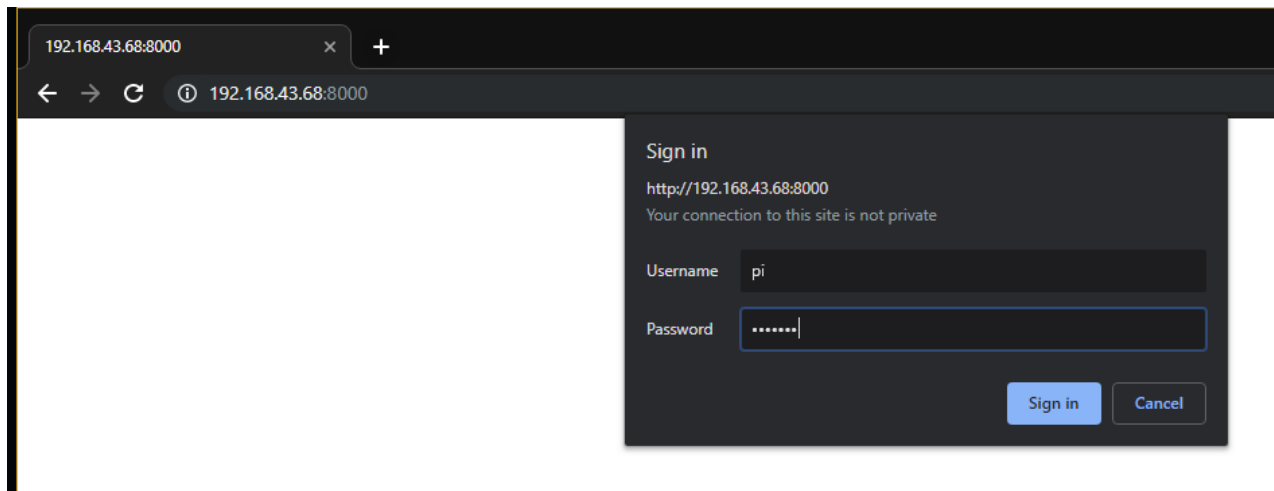


Fig4.5: - Login page

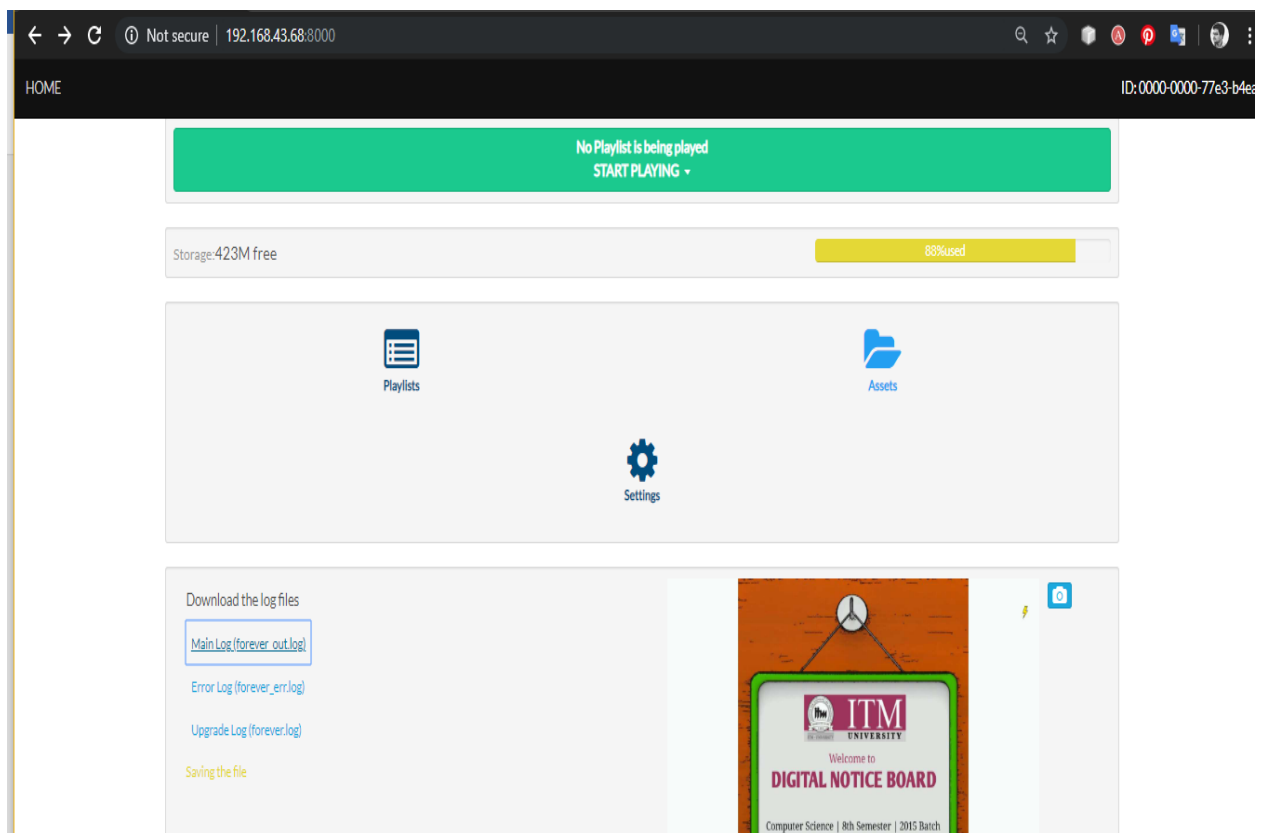


Fig 4.6: - User web interface

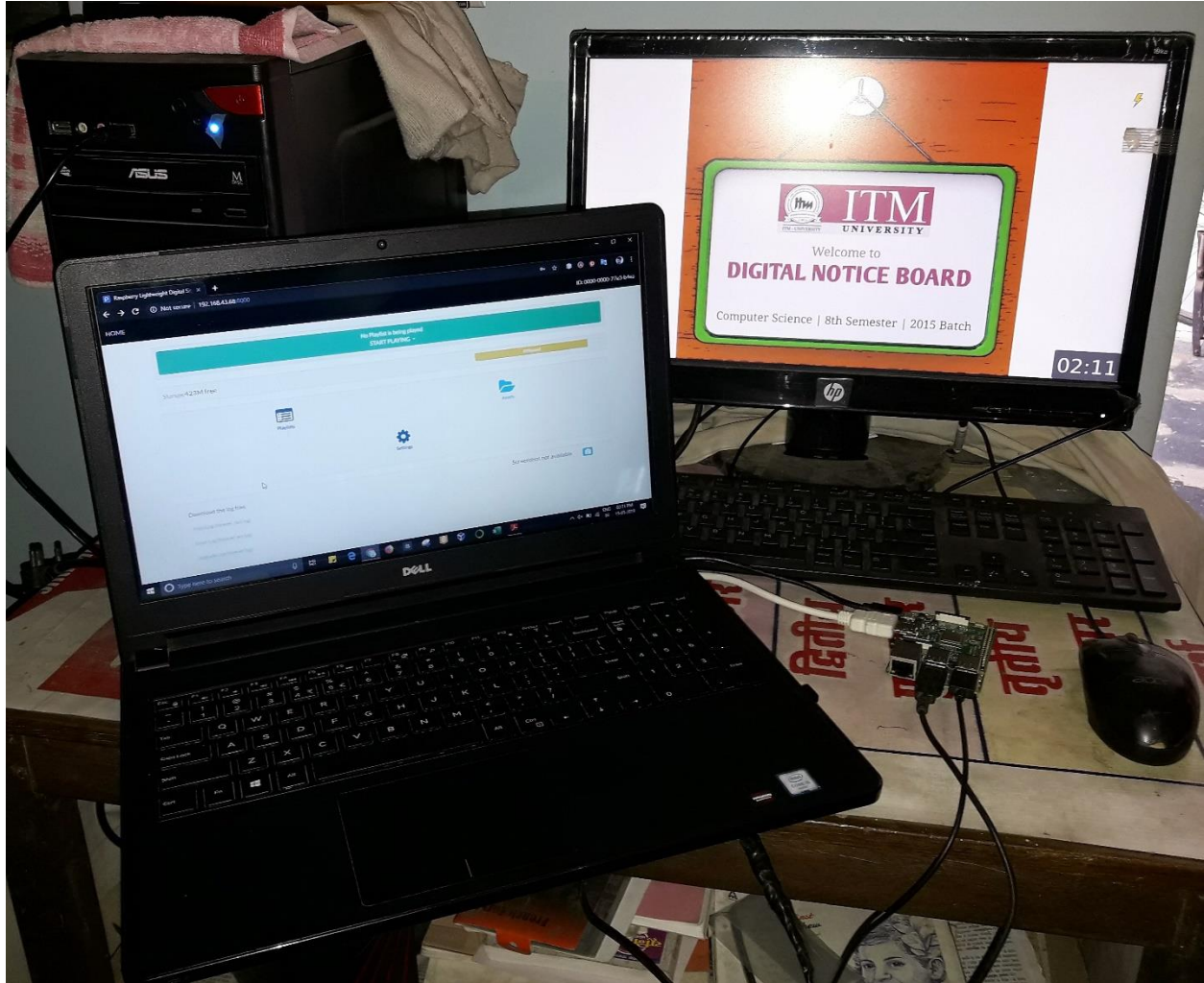


Fig 4.7: - Working of the project

# **CHAPTER- V**

## **APPLICATIONS OF PROJECT WORK**



## **5.1 ADVANTAGES**

- Low cost of manufacturing and no need of lengthy wires.
- 2.flexible and supple
- 3.Data can be sent wireless without taking much of time.
- 4.Communication is totally wireless.
- 5. low power consumption.
- 6.Data will not be lost in power failure.
- 7.Saves manual time and paper.
- 8. it can send notices in various ways like images, pdf, video etc.

## **5.2 DISADVANTAGES**

- Mainly the disadvantage is that it works on same network connection
- 2.It requires 5v of power through adapter not having any direct medium for taking power from AC current.

## **5.3. APPLICATIONS**

- It can used in bank for creating ticket system for withdrawals line.
- In advertisement industry it can be used.
- In educational institutes, schools, colleges, tuitions, coaching it can be used for notices.
- In stock exchange it can imply for displaying stock update on real time.
- It can used in Cafe's, restaurants and hotels.
- In traffic control system.

# **CHAPTER- VI**

## **CONCLUSION**

As the world is poignant towards Internet of things and Automation, so in this world if we want to do some deviations in the formerly used system, we have to use the latest techniques. Wireless technology offers fast broadcast over extended range communication and due to fast transmission resources and time is saved. Data can be sent from wirelessly and remote location. User verification is provided. Multimedia data can be seen whenever we want to see like Images, video, pdf files, and notice can create in such format, therefore raspberry-pi certainly a minor yet influential device can work efficiently in digital notice board connected with software's. Hence Web server can provide user with real time actual information which can be used submission.

In this system by Bluetooth and android interface it can send text to display which is very effective and then to overcome Bluetooth has certain distance limit and it uses broker medium where it can transmitted data over the internet with remote location and in final system it has used the system where in same local area connection we can send content and multimedia information in many less time.

# **CHAPTER- VII**

## **FUTURE SCOPE**

- This can be developed in online portal where it can need same network to connect. it can be assessable from anywhere means it can be created an online portal hosted website where the interface is linked, if user is not in same network out of range of that particular network, it easily accesses the services of notice boards.
- We can create Android application for better convenience as user interface.
- We can create multiple screen for same output and android app device for viewing the notices regularly.
- It can be created for Pc's, monitors mean it display on one screen, we can create a platform or service where it can send notices, content to many screens, devices etc. at same time

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