

# Raspberry Pi Based Electronic Notice Board

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## ABSTRACT

Notice Board is primary thing in any institution or public utility places like bus stations, railway stations, colleges, malls, etc. This project is about advanced wired/wireless notice board. The project is built around Raspberry-Pi which is heart of the system. At any time we can add or remove or alter the notice according to our requirement. At transmitter authorized computer, android mobile is used for sending a notices. At receiving end Wi-Fi, Ethernet or Bluetooth is connected to raspberry pi.

**Keywords :** Raspberry Pi, Electronic Notice Board, Digital Notice Board.

## I. INTRODUCTION

In today's world of connectedness, people are becoming accustomed to easy access to information. Whether it's through the internet or television, people want to be informed and up-to-date with the latest events happening around the world. Now-a-days advertisement is going digital. The big shops and the shopping centers use digital displays now. Also, in trains and buses the information like platform number, ticket information is displayed in digital boards. People are now adapted to the idea of the world at its finger-tips. The use mobile phones have increased drastically over years. Control and communication has become important in all the parts of the world. The main objective of the project is to design a Raspberry Pi Based Electronics Notice Board system which can replace the currently used paper based notice boards. It is designed for displaying notice in college, organisation or offices on electronic notice board by sending notices to Raspberry Pi through wired or wireless connection.

### Internet of Things (IoTs)

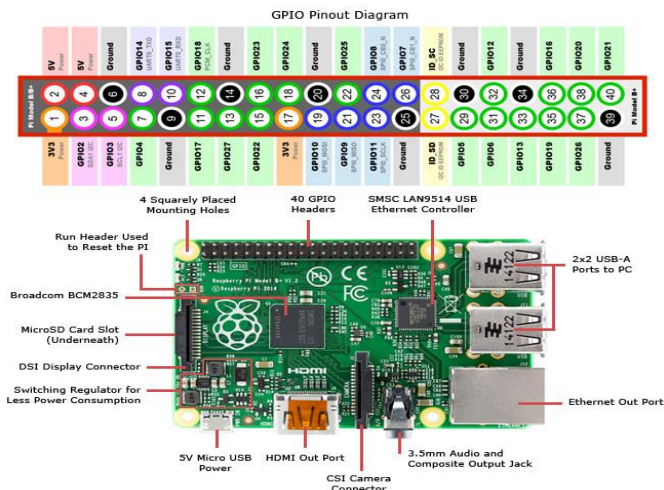
The Internet of Things (IoTs) can be described as connecting everyday objects like smart-phones, Internet TVs, sensors and actuators to the Internet where the devices are intelligently linked together enabling new forms of communication between things and people, and between things themselves. Building IoTs has advanced significantly in the last couple of years since it has added a new dimension to the world of information and communication technologies. It is expected that the

number of devices connected to the Internet will accumulate from 100.4 million in 2011 to 2.1 billion by the year 2021, growing at a rate of 36% per year. In the year 2011, 80% machine to machine (M2M) connections were made over mobile networks such as 2G and 3G and it is predicted that by 2021, this ratio will increase to 93% since the cost related with M2M over mobile networks are generally cheaper than fixed networks. Now anyone, from anytime and anywhere can have connectivity for anything and it is expected that these connections will extend and create an entirely advanced dynamic network of IoTs. The development of the Internet of Things will revolutionize a number of sectors, from automation, transportation, energy, healthcare, financial services to nanotechnology. IoTs technology can also be applied to create a new concept and wide development space for smart homes to provide intelligence, comfort and to improve the quality of life.

### Raspberry Pi

One line answer to the about question would be, "Pi is a single-board computer". Pi is a small scale computer in the size little bigger than a credit card, it packs enough power to run games, word processor like open office, image editor like Gimp and any program of similar magnitude. Pi was introduced as an educational gadget to be used for prototyping by hobbyists and for those who want to learn more about programming. It certainly cannot be a substitute for our day to day Linux, Mac or Windows PC. Pi is based on a Broadcom SoC (System of Chip) with an ARM processor [~700 MHz], a GPU and 1GB RAM. The boot media is an SD card, and the

SD card can also be used for persist data. Now that you know that the RAM and processing power are not nearly close to the power house machines you might have at home, these Pi's can be used as a Cheap computer for some basic functions, especially for experiments and education.



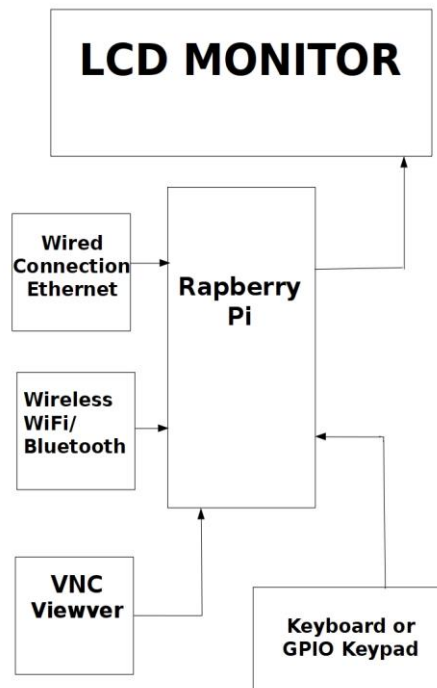
## Python

Python is an interpreter, object-oriented, high-level programming language with dynamic semantics. Its high-level built in data structures, combined with dynamic typing and dynamic binding, make it very attractive for Rapid Application Development, as well as for use as a scripting or glue language to connect existing components together. Python's simple, easy to learn syntax emphasizes readability and therefore reduces the cost of program maintenance. Python supports modules and packages, which encourages program modularity and code reuse. The Python interpreter and the extensive standard library are available in source or binary form without charge for all major platforms, and can be freely distributed.

## II. SUMMARY OF PROJECT

This product is aimed toward replacing the old paper based notice board with this Raspberry Pi based Electronic Notice Board which can be controlled through wired/wireless connection And also providing user interactions with keyboard/keypad.

## III. BLOCK DIAGRAM



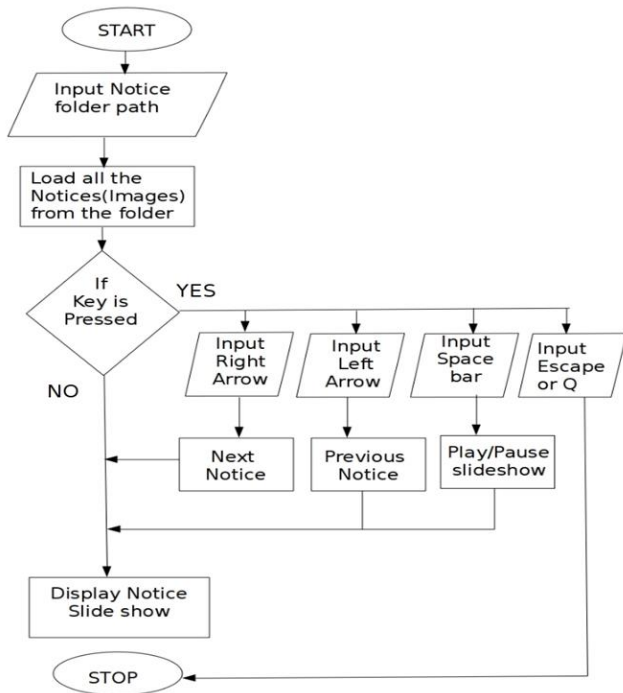
## IV. WORKING

In this project, the main component is raspberry pi which is the heart of this project and used to control the processes related to this project. Raspberry Pi is directly connected to the LCD monitor and keypad. In this project we are using LCD monitor as Electronic notice board. It is also connected to the internet through the wired or wireless connection. Raspberry Pi comes with inbuilt VNC viewer which can be used to monitor what is being displayed on notice board.

The Notices to be displayed on the LCD monitor screen will be converted into image form i.e. JPEG, PNG, BMP, GIF. These image form notices will be transferred to the Raspberry Pi through wired/wireless connection using SSH/FTP protocol. These image form notices stored in the predefined folder. The Python script will run on every bootup which will scan the folder containing image form notices and will make list of it. By using this list python script will display image form notices one by one as a slideshow with some time delay.

This notice slideshow can be controlled using keyboard or keypad (GPIO pins). The next, previous play-pause, quit are controls for the user.

## V. PYTHON SCRIPT FLOWCHART



[5]. Python Programming: An Introduction to Computer Science

[6]. Learning Python, 5th Edition

## VI. APPLICATIONS

- ✓ Educational institutions and organizations.
- ✓ Museums and events.
- ✓ Managing traffic and crowd.
- ✓ Digital Signage.

## VII. CONCLUSION

On considering requirement of simple, fast and secure system. We design system which is simple and very economical. By using this system it is very easy to control the Notice Board as well as remotely located notice or digital signage boards without going on field.

## VIII. REFERENCES

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