IoT Based Advertising System

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Abstract – *Internet of Things is the network of corporal things or object that contain embedded technology to interface and understanding to move with their internal states or the external setting. Automation is the most often carried term within the field of electronics. The craving for automation brought several revolutions within the present technologies. Advertisement digital boards could be a primary factor in any conception or public places like bus stations, railway stations, colleges, malls etc. Sticking out numerous advertise day to day could be a tough method. A separate person is wanted to take care of this advertising display. This project is regarding advanced wireless Advertising board. In IOT based Web Controlled Advertising Board, Internet is employed to wirelessly send the message from Browser to the display. A local web server is created; this could be a global server over net. AT the Raspberry pi, display monitor or TV is used to monitor the specific advertisement. Whenever Raspberry Pi receives any wireless message from internet through Wi-Fi, it displays on the monitor. The Internet of Things (IOT) cert system can be looked as a remarkably unique and fundamentally distributed networked system composed of a very large number of noticeable smart objects. These objects can take and to line among themselves, with end- users or different elements in the system. Entering the period of Internet of Things, the use of small, disordered and flexible computer hardware that allow end-user programming become present. One of them, considered in this, is the Single Board Computer, fully customizable and programmable small computer board.*

Key Words: **Raspberry Pi, Internet of Things, Website, Display monitor or TV, Wi-Fi.**

1. INTRODUCTION

The Internet of Things (IoT) concerns the environment where network connectivity and computing capability explains to objects, everyday items are not usually considered as computers. IoT will not be considered a unique system, but it is a critical, integrated substructure on which many applications and services can be mobilized. IoT, a promising technology when extended is striking to numerous improvising electronic instruments where Digital Advertising board is one among them. Digital Advertising Board is authorized as an important information element in any institution or public utility like transportation areas such as bus, railway stations etc. An individual is employed to take care of this advertisement display where the scenario is replaced by the concept that deals with advanced wireless advertisement boards. The project is built based on the Wi-Fi module which is a functioning part of the system. At any quick we can include or keep or alter the text according to our requirement through IoT using the WIFI module.

In this project Single board computers are used instead of microcontrollers to increase the processing speed of the system. The Data used to display would be in video or image format which need high speed processing speed which can be achieved by Single Board Computer. Raspberry pi 3b is used for processing all data and connects to the internet with an inbuilt Wi-Fi module through which data is transmitted and received. The LCD Monitor or TV is used to display the advertisement set by the user from a remote location. A web page is developed to change and update the data of advertising boards which can be accessed using laptop or PC or even accessed through any Mobile phones. In this system current sensor is used to monitor the power usage of the system and to check if the system is in succession or not. The power of display monitor can be thorough and scheduled with the webpage. Direction of reference in the consecutively text should match with the list of references at the end of the paper.

2. PROPOSED SYSTEM

In this project Single board computer is used instead of microcontroller to increase the processing speed of system. The Data used to display would be in video or image format which need high speed processing speed which can be achieved by Single Board Computer. Raspberry pi 3b is used for processing all data and connects to internet with inbuilt Wi-Fi module through which data is transmitted and received.

The LCD Monitor or TV is used to display the advertise set by the user from remote location. A webpage is developed to change and update the data of advertising board which can be accessed using laptop or PC or even accessed through any Mobile phones. In this system current sensor is used to monitor the power usage of system and to check the system is running or not. The power of display monitor can be controlled and scheduled with the webpage.
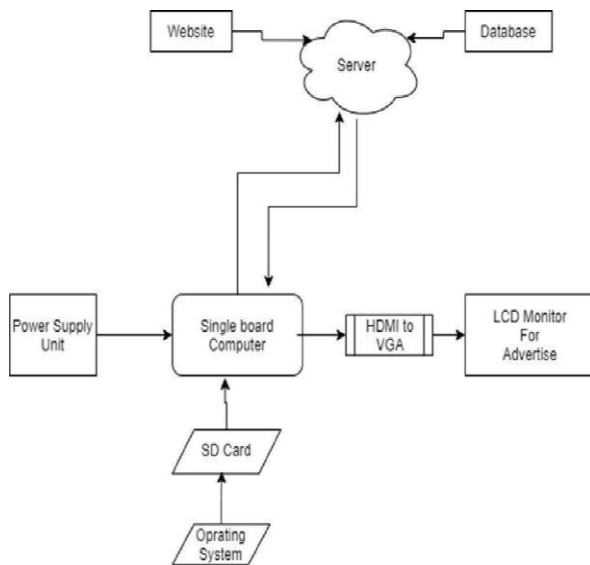
Fig 1: Block diagram of IoT based advertising system.

3. OBJECTIVE

- To select and configure hardware and software on a single board processor/computer for IoT based advertising system.

- To select and study compatible wireless communication protocol and design user friendly web application for IOT based advertising system.

- To implement and test IoT based advertising system.

4. SYSTEM IMPLEMENTATION

In this project Single board computer is used instead of microcontroller to increase the processing speed of system. The Data used to display would be in video or image format which need high speed processing which can be achieved by Single Board Computer. Raspberry pi 3b is used for processing all data and connects to internet with inbuilt Wi-Fi module through which data is transmitted and received. The LCD Monitor or TV is used to display the advertise set by the user from remote location. A webpage is developed to change and update the data of advertising board which can be accessed using laptop or PC or even accessed through any Mobile phones. In this system current sensor is used to monitor the power usage of system and to check the system is running or not. The power of display monitor can be controlled and scheduled with the webpage.
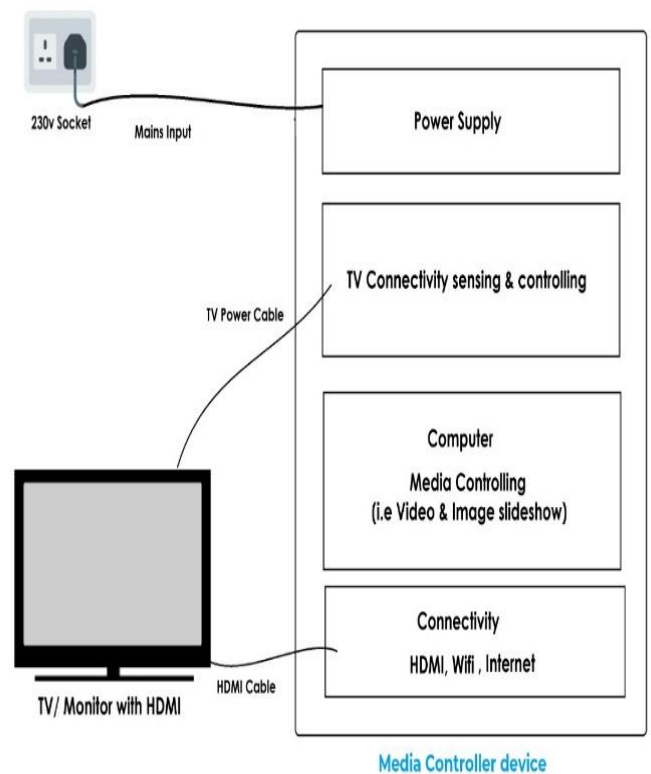

Fig 2: System implementation of IoT based advertising system.

5. ADVANTAGES

Following are the some of the advantages of IoT Based Advertising System.

- ✓ A permitted user can send the advertise from anywhere.

- ✓ This system will reduce the workforce as well as the human work.

- ✓ It is the most safe, consistent and personal as the administrator is provided with username and password.

- ✓ It also saves the capitals like time, printer, printing ink and paper.

6. HARDWARE DETAILS

- Raspberry Pi

Fig 3: Image of Raspberry Pi

- ✓ It involves of 40-pin GPIO header gives access to 27 GPIO.

- ✓ It contains of an ARM1176JZF-S 700MHz Processor, Video Core GPU, and with 256 MB RAM.

- ✓ The input voltage assortments from 6v to 20V.

- ✓ DC Current for respectively input/output pin is 40 mA.

- LCD Monitor

Fig 4: Image of LCD Monitor

- ✓ LCD is used in a project to visualize the output of application.

- ✓ We use monitor as display.

- ✓ LCD can also be used in project to check the output of different modules interfaced with the raspberry pi module.

- HDMI Port

Fig 5: Image of HDMI Cable

- ✓ The Raspberry Pi has a HDMI Port which you can plug directly into a monitor or TV with an HDMI Cable.

- ✓ This is the easiest solution; some modern monitors and TVs have HDMI ports.

- Power Supply

- ✓ The Raspberry Pi 3 requires a +5.1V supply.

- ✓ The exact current rating of Raspberry Pi depends on the Peripherals connected to it. It entails a 2.5A power supply to run the Raspberry Pi.
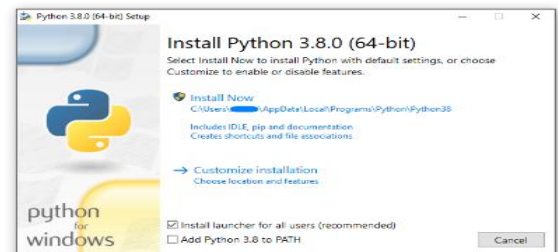
7. SOFTWARE DETAILS

- PYTHON

Fig 6: Python Image

Python is a multi-model programming language.

Object-oriented programming and structured programming are fully reinforced, and many of its features support functional programming and aspect-oriented programming (including by metaprogramming and metaobjects (magic methods).
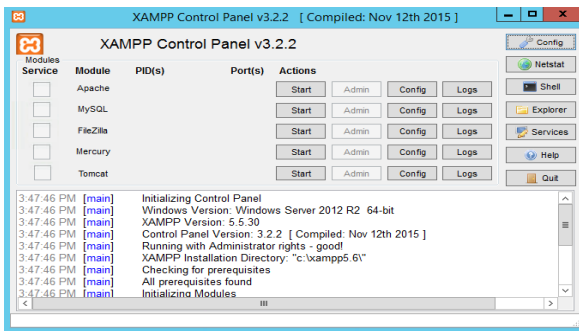
- XAMPP

Fig 7: XAMPP Installation Image

XAMPP is a free and open-source cross-platform web server solution stack package developed by Apache Friends, entailing chiefly of the Apache HTTP Server, MariaDB database, and explainers for scripts written in the PHP and Perl programming languages.
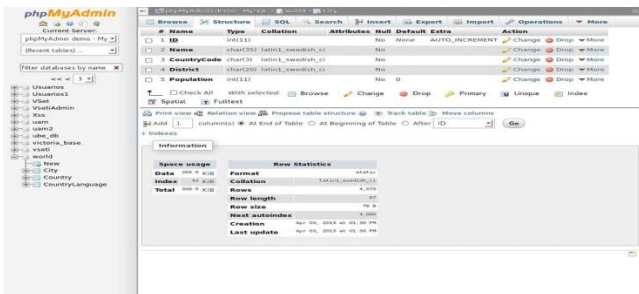
- PHPMYADMIN

Fig 8: PHPMYADMIN Image

PhpMyAdmin is a free software tool written in PHP, proposed to grip the administration of MySQL over the Web. PhpMyAdmin requirements a wide range of processes on MySQL and MariaDB. Normally used operations (managing databases, tables, columns, relations, indexes, users, permissions, etc) can be performed via the user interface, while you still can directly device any SQL statement.

- HTML [Hypertext Markup Language]

Fig 9: HTML Image

The Hypertext Markup Language, or HTML is the standard markup language for documents designed to be displayed in a web browser.

- CSS [Cascading Style Sheets]

Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a markup language such as HTML.

- JAVASCRIPT

JavaScript often condensed JS, is a programming language that is one of the core skills of the World Wide Web, alongside HTML and CSS.
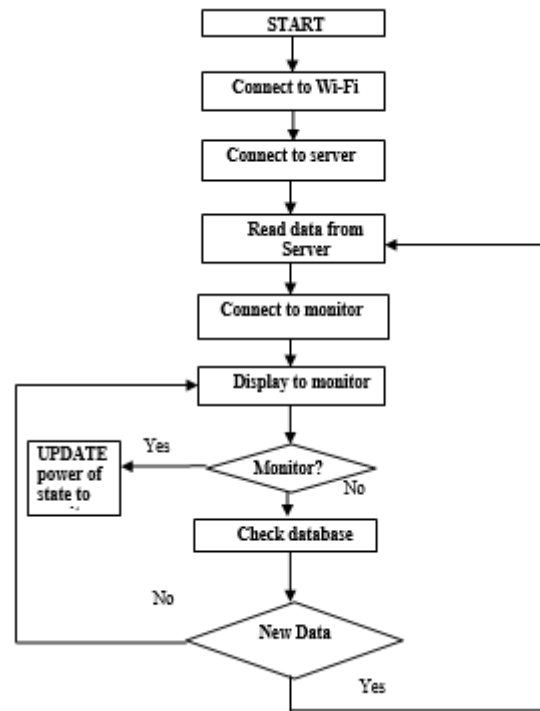
8. FLOW CHART

Fig 9: Flowchart of IoT Based Advertising System

9. FLOWCHART WORKING:

- Start the system.
- Then connect to Wi-Fi.
- After connecting to the Wi-Fi then connect to server.
- Then read the data from server.
- Then that data is ready to display to the monitor.
- For that first we check monitor is ON or OFF. If monitor is ON, then display the data. If monitor is OFF,

then inform update power OFF state to server. If monitor is OFF, then check database and take the action to ON the monitor.

- If new data is there, then again followed step number 4 and 5.

- If new data not available, then follow step number 5 that is display available data monitor.
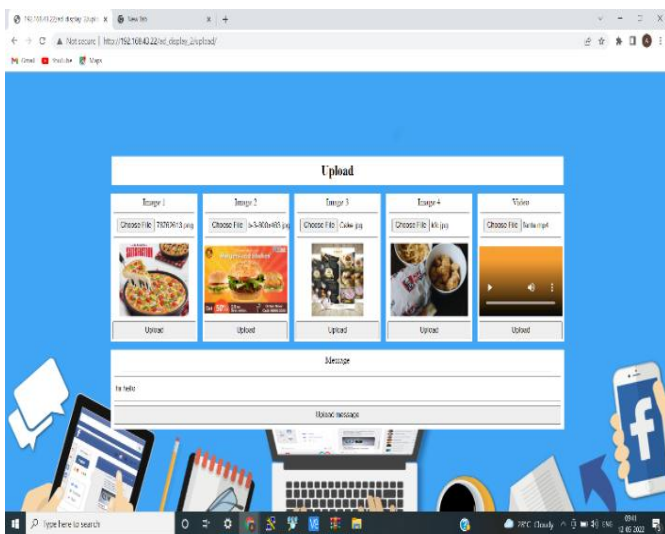
10. RESULTS

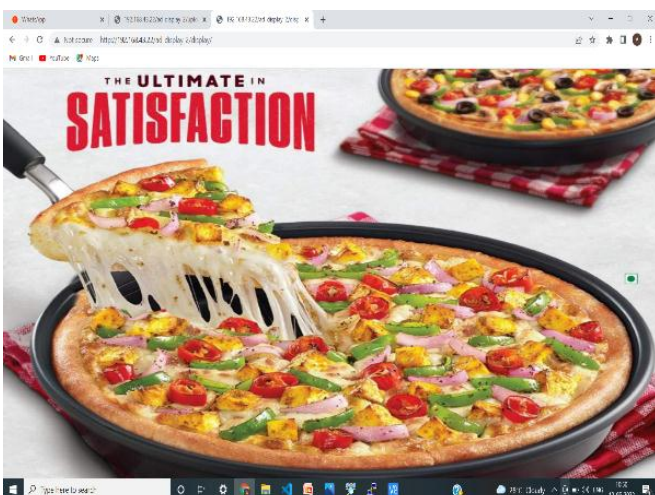Fig10: Webpage of IoT Based Advertising System

1. ADVERTISING IMAGE

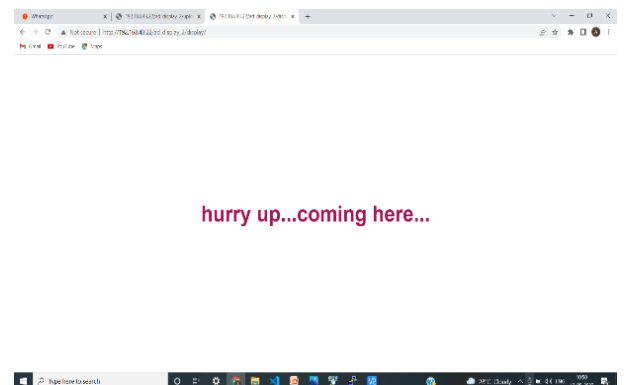Fig11: Advertising Image

2. ADVERTISING TEXT

Fig12: Advertising Text
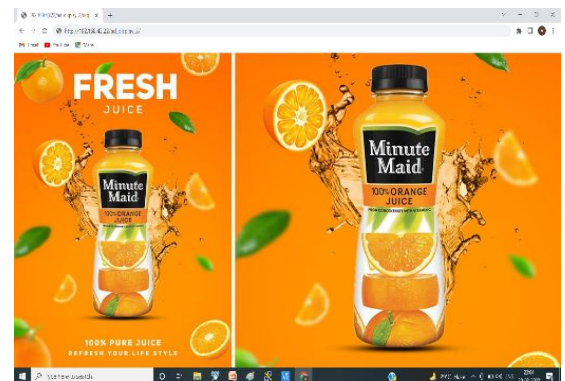
3. ADVERTISING VIDEO

Fig13: Advertising Video

11. CONCLUSION

- In the world full of automation, we must employ new technology in the place of conventional methods.

- Wireless operation offers fast transmission over long range communication.

- It saves time and resources. From remote location we can send data to display. User authentication is provided.

12. REFERENCES

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