

# Web Controlled Digital Signage System

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**Abstract**— The Digital signage is a sub-segment of electronic signage. Digital displays use technologies such as LCD, LED, projection and e-paper to display digital images, video, web pages, weather data, restaurant menus, or text. Raspberry Pi is a low cost, credit-card sized computer that plugs into a computer monitor or TV, and uses a standard keyboard and mouse. It is a capable little device that enables people of all ages to explore computing, and to learn how to program in languages like Scratch and Python. It's capable of doing everything you'd expect a desktop computer to do, from browsing the internet and playing high-definition video, to making spreadsheets, word-processing, and playing games.

**Keywords:** Raspberry PI, Web Host, Signage Intensity WIFI, Electronics Component

## I. INTRODUCTION

The network of digital displays that are centrally managed and addressable for targeted information and advertisements is known as digital advertising. The broadcasting of information can be done at road highways, subways, buses, train and train station, shopping malls, city squares, hospital, conference hall, colleges and schools for displaying notice for student information and displaying all institutional information for visitors.

Digital signage technologies are becoming very popular between many different business domains. Companies use digital signage for many various purposes. Digital signage solutions are creating opportunity for customizing the information that they want to deliver. Main usage purposes of digital signage are announcements, advertising and promoting products, entertainment, public information systems such as live traffic details, news, headlines, weather, and menu information such as digital menu boards with information on pricing.

Sensors and technologies allow digital signage boards to adapt to context such as time and location; many options appear to catch the audience's attention. Such features are called contextual signage.

The system of computerized shows that are halfway overseen furthermore, addressable for focused data and promotions is known as advanced publicizing. The broadcasting of data should be possible at street express ways, metros, transports, train and train station, shopping centers, city squares, doctor's facility, gathering lobby, universities and schools for showing notice for understudy data and showing all institutional data for guests. Advanced signage innovations are getting to be exceptionally famous between a wide range of business areas. Organizations utilize advanced signage for some different purposes. Advanced signage arrangements are making open door for altering the data that they need to convey. Primary use motivations behind computerized signage are declarations, publicizing and advancing items, amusement, open data frameworks, for example, live activity points of interest, news, features, climate, and menu data, for example, advanced menu sheets

with data on estimating Sensors and advances permit computerized signage loads up to adjust to setting, for example, time and area, numerous alternatives seem to get the crowd's consideration. Such highlights are called logical signage.

## II. BLOCK DIAGRAM

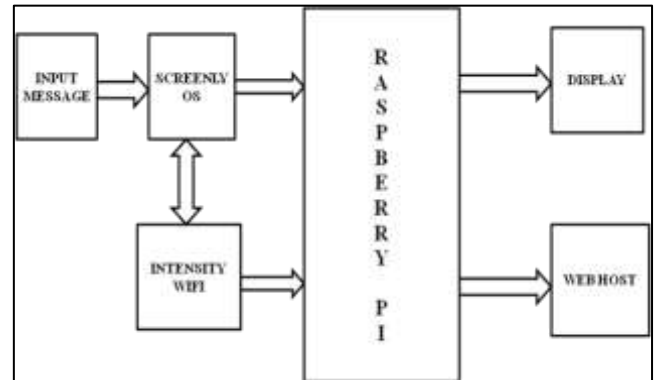


Fig. 1: Raspberry Pi Centrally Controlled Unit.

Digital Signage means a centrally controlled, content distribution platform by which to playback digital content to one or many displays or screens. Digital signage is best explained as a form of electronic display that shows television programming, menus, information, advertising, and other messages. The latest model is the Model 3 B+. The Raspberry Pi 3 Model B is a tiny credit card size computer. Just add a keyboard, mouse, display, power supply, micro SD card with installed Linux Distribution. Consisting of Linux Distribution packages all together suitable for raspberry pi. Input can take a variety of forms, from commands you enter from the keyboard to data from another computer or device. A device that feeds data into a computer, such as a keyboard or mouse, is called an input device.

The act of entering data into a computer. , screenly OSE stands for Screenly Open Source Edition. This was the first product launched by Screenly, and it started as a simple project for the Raspberry Pi for Screenly's founders. The intensity wifi is a facility allowing computers, smart phones, or other devices to connect to the Internet or communicate with one another wirelessly within a particular area.

A web host, or web hosting service provider, is a business that provides the technologies and services needed for the website or webpage to be viewed in the Internet. Websites are hosted, or stored, on special computers called servers. Web hosts are companies which provide space on a server which is owned or leased for use by clients.

Display screen means the display part of a monitor. Most display screens work under the same principle as a television.

Digital signage is a sub-segment of electronic signage. Digital displays use technologies such as LCD, LED, projection and to display digital images, video, web pages, weather data, restaurant menus, or text. They can be found in public spaces, transportation systems, museums, stadiums,

retail stores, hotels, restaurants and corporate buildings etc., to provide way finding, exhibitions, marketing and outdoor advertising. They are used as a network of electronic displays that are centrally managed and individually addressable for the display of text, animated or video messages for advertising, information, entertainment and merchandising to targeted audiences.

#### A. Input image

Input can take a variety of forms, from commands you enter from the keyboard to data from another computer or device. A device that feeds data into a computer, such as a keyboard or mouse, is called an input device. The act of entering data into a computer.

Screenly OSE stands for Screenly Open Source Edition. This was the first product launched by Screenly, and it started as a simple project for the Raspberry Pi for Screenly's founders.

#### B. Intensity Wifi

The intensity Wifi is a facility allowing computers, Smartphone's, or other devices to connect to the Internet or communicate with one another wirelessly within a particular area. Wifi is stand for wireless fidelity is a generic term that refers to IEEE802.11 standard for wireless local networks. Wifi connects computers to each other, to the internet and to the wired network. Wifi uses radio technology to transmit and receive data at high speed.

Wi-Fi is a one type of wireless technology. It is commonly called as wireless LAN (local area network). Wi-Fi allows local area networks to operate without cable and wiring. It is making popular choice for home and business networks. A computer's wireless adaptor transfers Data into a radio signal and transfers the data into antenna for users.

Wi-Fi is a high speed internet connection and network connection without use of any cables or wires. The wireless network is operating three essential elements that are radio signals, antenna and router. The radio waves are keys which make the Wi-Fi networking possible. The computers and cell phones are ready with Wi-Fi cards. Wi-Fi compatibility has been using a new creation to constituent within the ground connected with community network. The actual broadcast is connected with in sequence in fact it is completed by way of stereo system surf as well as the worth of wires with monitor to classification prone. Wi-Fi allows the person in order to get access to web any place in the actual provided area. we can now generate a system within Resorts, library, schools, colleges, campus, personal institutes, as well as espresso stores as well as on the open public spot to help to make the company much more lucrative as well as interact with their own customer whenever. Wi-Fi compatibility can make surf with stare to company using their inspiring cable television much a smaller amount force down.

The radio signals are transmitted from antennas and routers that signals are picked up by Wi-Fi receivers, such as computers and cell phones that are ready with Wi-Fi cards. Whenever the computer receives the signals within the range of 100-150 feet for router it connect the device immediately. The range of the Wi-Fi is depends upon the environment, indoor or outdoor ranges. The Wi-Fi cards will read the

signals and create an internet connection between user and network. The speed of the device using Wi-Fi connection increases as the computer gets closer to the main source and speed is decreases computer gets further away.

Many new laptops, mobile phones have inbuilt Wi-Fi card you don't have to do anything which is one of the best thing. If it is a free- based type of network connection the user will be promoted with a login id and password. The free base network connections also well in some areas. The Wi-Fi network connection is creating hot spots in the cities. The hot spots are a connection point of Wi-Fi network. It is a small box that is hardwired in to the internet. There are many Wi-Fi hot spots available in public places like restaurants, airports, and hotels offices, universities etc.

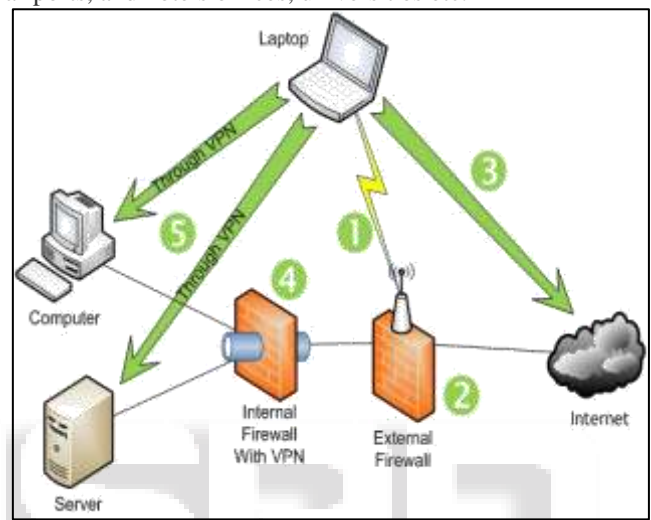


Fig. 2: Wifi connection

#### C. Web Host

A web host, or web hosting service provider, is a business that provides the technologies and services needed for the website or webpage to be viewed in the Internet. Websites are hosted, or stored, on special computers called servers. Web hosts are companies which provide space on a server which is owned or leased for use by clients Web hosting is a service that allows organizations and individuals to post a website or web page onto the Internet. A web host, or web hosting service provider, is a business that provides the technologies and services needed for the website or webpage to be viewed in the Internet. Websites are hosted, or stored, on special computers called servers. When Internet users want to view your website, all they need to do is type your website address or domain into their browser. Their computer will then connect to your server and your WebPages will be delivered to them through the browser. The actual website is just a bunch of files. HTML files, CSS files (style sheets), images and photos, etc. All of these files need to be in a folder on a computer that is connected to the Internet. That computer is usually called a "server" because it serves up our website files when people come to visit. When we pay a company to put our files on their web server, our buying hosting. They are hosting your website on their servers.

#### D. Raspberry PI 3

The Raspberry Pi 3 Model B is a tiny credit card size computer. Just add a keyboard, mouse, display, power supply, micro SD card with installed Linux Distribution. Consisting of Linux Distribution packages all together suitable for raspberry pi.

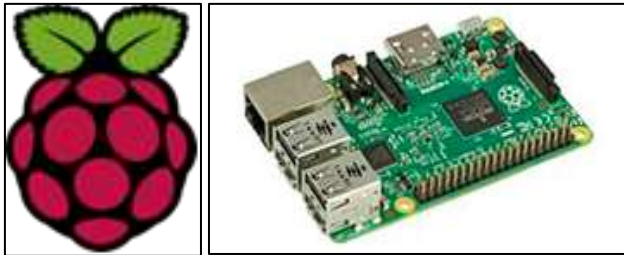


Fig. 3: Raspberry pi3

#### E. Display

Display screen means the display part of a monitor. Most display screens work under the same principle as a televiser.

### III. DIGITAL CONTENT DISPLAYED ON THE SIGNAGE IS PRESENTED IN ONE OF THE FOLLOWING FORMATS:

- 1) Images - Scrolling images, usually in the format of digital advertisement posters
- 2) Video - many display control systems use canned graphics and video, however, custom video can be self-generated or contracted by many sources.
- 3) Website

### IV. CONCLUSION

As the technology is advancing every passing day the display board systems are moving from static boards display to digital signage display. An efficient, effective, fast and cheap remotely managed embedded Digital Signage System architecture is designed, implemented, developed using raspberry pi 3 and web application. The strength of work lies not only in developing a compact size embedded digital signage systems, but also in implementing it within the reach of current hardware and software engineering technology. There are large number of applications for the system developed which can transform the advertising and marketing industry

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