

# IoT Based Smart Advertisement Using Raspberry-Pi

G. Anuradha, Ch. Raga Madhuri, V.V.N.V. Phani Kumar

**Abstract:** In Advertisements are an audio or visual form of marketing communication that is brazenly sponsored non-personal message to market and sell a product. The platform is developed for the awareness and knowledge of the product which their desires. The disadvantage with lateral way of advertisement is that it is not flexible and often expensive. Many websites contain multiple advertisements leading to poor customer experience and advertising fatigue or blindness.

Our main objective is to foster a server which is administrated by the user to display in an indoor to change the ads repeatedly and reduces the expenses. These ads attract potential customers and permit the message to be seen vividly and clearly. We have divided the execution advertisement and make use of a time scheduling approach to auto play the needed ads for a specific time interval. They run under a given time span. This overall reduces the human interaction needed into 4 modules: establishing a server, creating several nodes, displaying ads on client screen without human interaction and making use of a time scheduling approach to auto play the ads.

**Keywords-** Raspberry Pi, Automation of advertisements, Server-client approach, Auto play

## I. INTRODUCTION

In improvising technology, promulgation is the key factor. Major business expansions, entrepreneurs inculcate the publicity in a lateral way. Generally here, we advertise in a smart way using Raspberry pi by centralizing all the advertisements data by giving credentials to the subscribers. It is the modern era of advertisements. Strong Customer base is required for every business to grow and develop so advertising is one of the tools to attract customers. Therefore, advertising or promoting is a key business [6]. There are two ways in advertising methods includes digital and traditional ways [4]. Newsletters, handbill, newspapers, big hoardings and radio, television broadcast advertising are general advertising methods and expensive compared to digital advertising. Digital advertising run on simple hardware facility based on continues moving images like videos. It contains distributed manner have different points over headquarters, generally used for distributing important information to the public like heavy traffic etc. These type of information is easy reach large amount of people with less cost.

Nowadays IoT is main research area in enabling machine advertising; it has several attention-grabbing opportunities and challenges. IoT advertising is improved version of web

advertising by taking three factors: device diversity, high connectivity and scalability

IoT advertising might count on users interacting with the IoT environment almost throughout the day web browser-based advertising where a limited number of user interactions occur during the day. Our main objective is to foster a server which is administrated by the user to display in an indoor advertisement and make use of a time scheduling approach to auto play the needed ads for a specific time interval. They run under a given time span. This overall reduces the human interaction needed to change the ads repeatedly and reduces the expenses.

## II. IMPLEMENTATION

We have divided the execution into 4 modules: establishing a server, creating several nodes, displaying ads on client screen without human interaction and making use of a time scheduling approach to auto play the ads. To implement these modules we need following steps:

- A. Setting up Raspberry Pi
- B. Creating a Yodeck Player based on Raspberry Pi
- C. Registering a Player on your Yodeck account
- D. Add videos or images in the media section

Following five subcategories of files are used:

- Image files
- Videos
- Web pages
- Documents
- Audio files

After making changes in your Account, we need to push changes to our Monitors.

Adding a Video

"+" Add button is used for adding a single video file, you click on the Video/YouTube/PowerPoint" button found at the bottom of the Videos list. You then need to select the type of Video source. You can choose any one from these : *Video File, YouTube Video, PPT File, Video Stream* then click "save" button to upload the video.

Just a quick note: In regard to the "Video Upload" source type, there is an option to upload the exact file for playback and not the normalized version. Enabling this option while uploading will inhibit encoding, decreasing the time required for the video to be available, but also prevent a thumbnail for the video from being created.

- E. Managing Playlists
- F. Managing Schedules
- G. Adding new schedule

**Revised Manuscript Received on February 11 , 2019.**

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III. EXPERIMENTAL ANALYSIS & RESULTS

Direct connections are quick and simple providing you're joined to the same private local network as your Raspberry Pi. The power is supplied and the raspberry pi is connected to a display screen using HDMI cable. It is shown in Fig. 1.



Fig. 1 Connecting Raspberry Pi

User opens yodeck site through any browser. User has to authenticate the process by entering username and password.

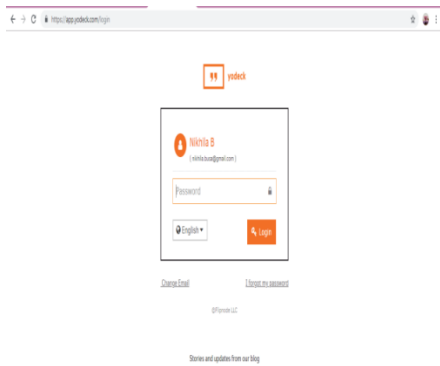


Fig. 2 Authenticating user

As soon as power is supplied, the raspberry pi is started.

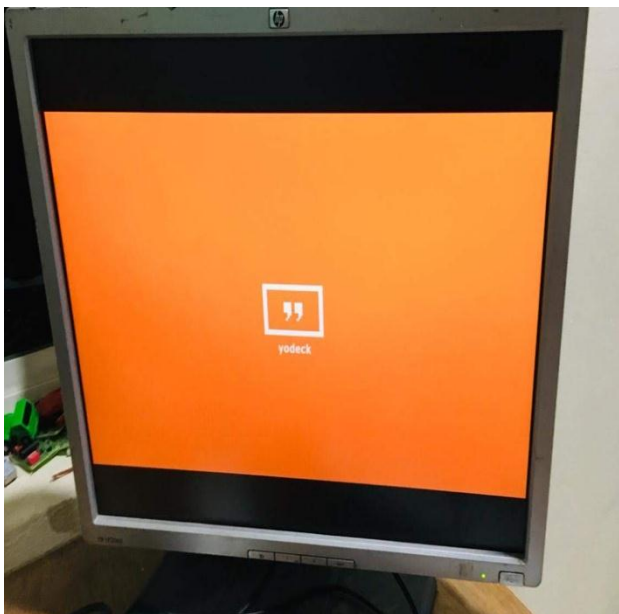


Fig. 3 Starting Raspberry Pi

The dashboard of the site is displayed as in Fig. 4.A whole list of options are being provided to the users. They can customize as per their requirement [9].

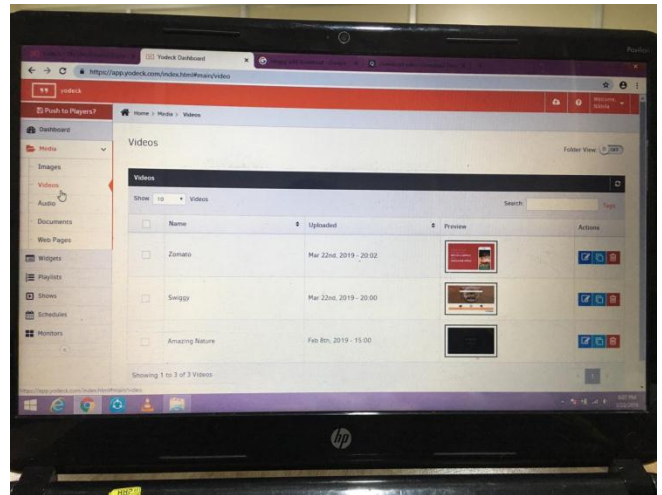


Fig. 4 Dashboard of localhost

The required media files are added. The media can be image, video, audio or any other web page. It is shown in Fig. 8.5.

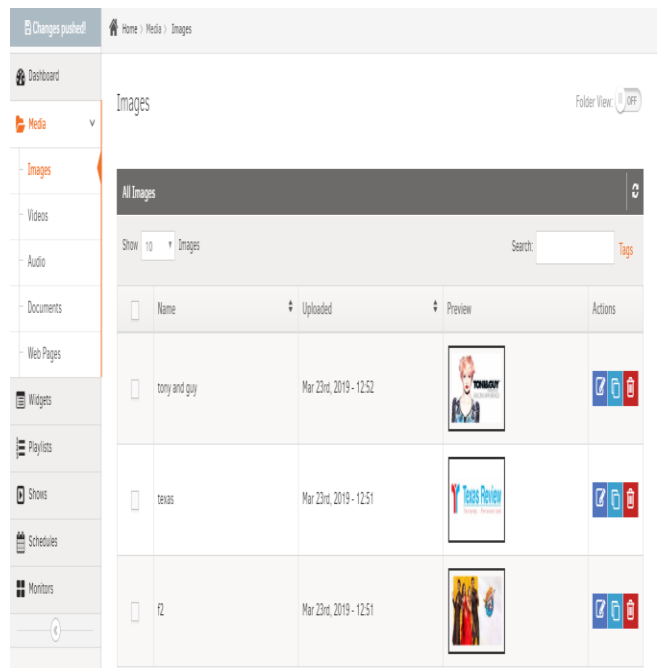


Fig. 5 Media files

The playlist consisting required videos is created. The playlist is capable of accommodating any number of media files and of any type. It is shown in Fig..6

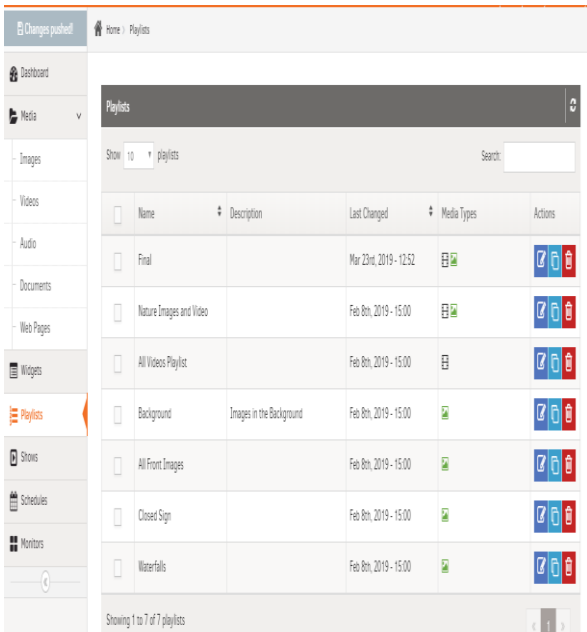


Fig. 6 Playlists section

Schedule is created as required. We can even customize the frequency of ads. Any number of playlists can be played in a day. It is shown in Fig. 7.

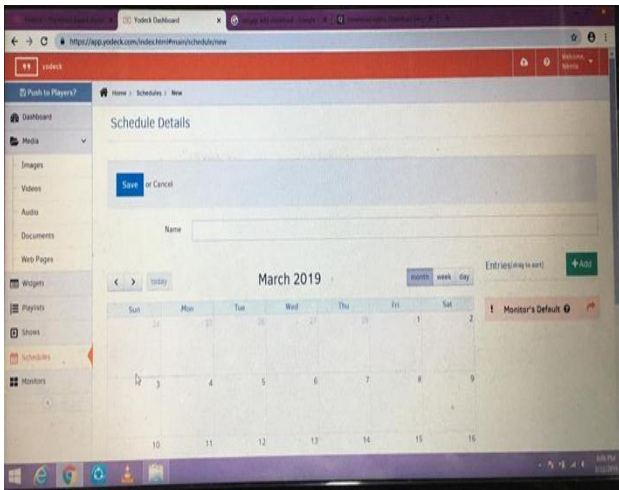


Fig. 7 Displaying the schedules section

The monitors registered are as shown in Fig. 8

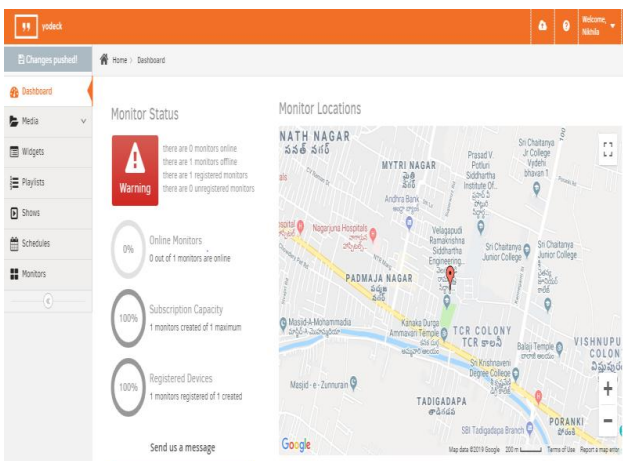


Fig 8 Monitors tab in the interface

The changes done are pushed to all the players or monitors. Changes are stored in local cache and updated as soon as the monitor is online.

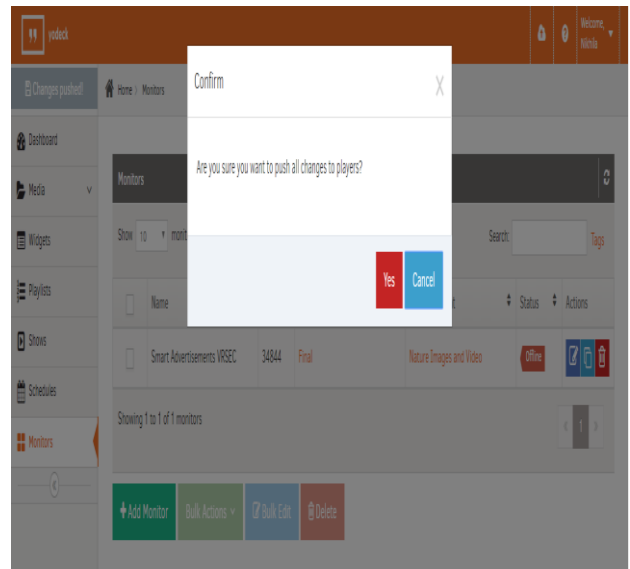


Fig. 9 Advertisement video to be published

A frame from the advertisement playing is shown in Fig. 10.

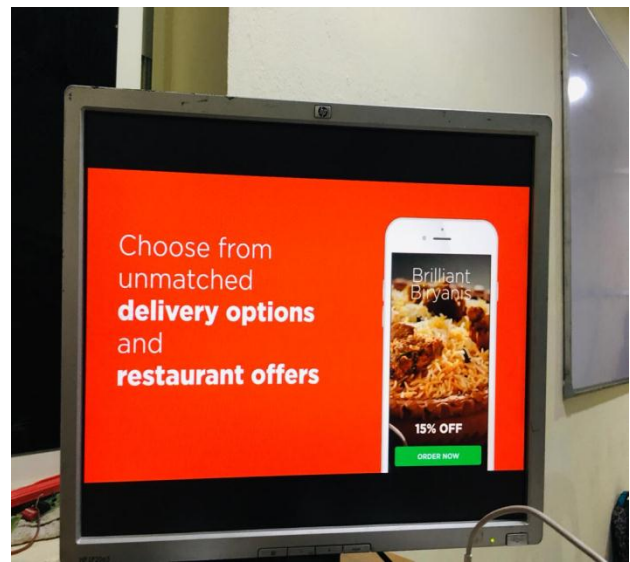


Fig. 10 A frame in the advertisement video

Videos playing according to schedules time.

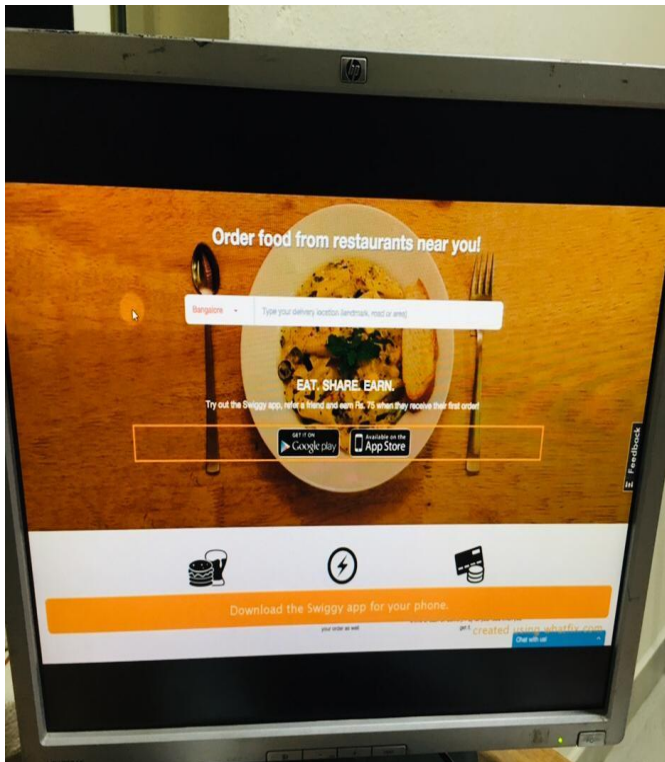


Fig 11. Advertisement playing according to scheduled time.

#### IV. CONCLUSION

Remote controlled raspberry pi smart advertising technology has been designed and tested for uploading moving images successfully. Foster a server which is administrated by the user to display in an indoor advertisement and make use of a time scheduling approach to auto play the needed ads for a specific time interval. They run under a given time span[1]. This overall reduces the human interaction needed to change the ads repeatedly and reduces the expenses. These ads attract potential customers and permit the message to be seen vividly and clearly. The future scope is to extend this idea to cloud based advertisements or further increasing the security. It is not constrained to area domain it can be accessed from any location [7]. All the local promotions are engrossed in the server which includes malls, resorts, restaurants, tourist places etc

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