CAPTIVE PORTAL FOR TRIMEX COLLEGES IN BIÑAN LAGUNA

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Abstract: The Internet is the most excellent system of PCs worldwide for correspondence. Web or between the operation of these gadgets help gain fast ground in the innovation improving the world a place to live in. Consistently there is a development which prompts new strategies for correspondence and subsequently, organizing. In the proposed work, Wi-Fi hotspot is empowered on Raspberry Pi with a Captive gateway method actualized, where the client can interface with the hotspot with the assistance of a hostage entrance page. The required sections like username and secret phrase should be entered in the entrance page which validates the client. The parts are checked in the database; if the passages are legitimate, the client gets the web access for the specific timeframe. On the off chance that the sections are invalid access gets denied. The message status is kept up in the database to check whether the message is sent to the client or not.

Keywords: Captive portal; Wi-Fi; Internet surfing; Mobile phone; Hotspot

INTRODUCTION

Advancement of data innovation which is developing quickly has changed the framework. The customary has been being the present-day framework, particularly at the point when the web goes on. Network adds to such an incredible route for individuals, organizations, and the administrations. Web needs have been felt by people in general, and there are many proofs of it open offices, for example, bistro grave, shopping centers, grounds, workplaces what's more, the more giving web offices. One issue that regularly happens is the employment of web arrange by an unlawful client or which one doesn't provide validation as a customer. Captive Portal is one of the answers for the forbidden client. It doesn't give the method for movement previous authorization except if a client enrolls on the web. Usually, the captive portal is utilized in remote framework regions, for example, hotspot, yet it additionally can be executed on link organize.

brands and the one of a kind mood-related with every one of these settings. The captive portal programmed identification framework depends on a straightforward check highlight of a customer gadget (cell phones, workstations, tablets, et cetera). At the point when a visitor Wi-Fi association is initiated, the system's working framework endeavors to achieve a particular URL and confirm that the URL restores a known outcome. On the off chance that there's no captive portal entrance set up, the OS perceives the URL and takes into account full access to the web. In any case, if the OS distinguishes an alternate URL, it recognizes that there is a captive portal entryway set up and that validation must occur for the client to increase full access to the Internet. By then, the OS consequently opens up a sprinkle page for validation to happen. The URL may fluctuate contingent upon the particular model of the cell phone. Notwithstanding, all gadgets utilize the procedure portrayed above to see whether they're behind a captive portal.

Captive portals are commonly used to present a landing or log-in page which may require authentication, payment, acceptance of Eula/accepted use policies, or other valid credentials that both the host and user agree to adhere by Captive portals are used for a broad range of mobile and pedestrian broadband services - including cable and commercially provided Wi-Fi and home hotspots. A captive portal can also be used to provide access to enterprise or residential wired networks, such as school, apartment houses, hotel rooms, and business centers. The Captive Portal is created to address the problem of costly mobile data and internet connectivity. Since most student nowadays own a smart phone with Wi-Fi capability, we can utilize the unlimited plans of our Telco’s by sharing it using Wi-Fi with very minimal cost.

Captive Portal for Trimex Colleges in Biñan Laguna designed of the mobile web-based software application and hardware device by using Raspberry PI will be beneficial to the following, the school. The Trimex Colleges which is the main beneficiary of this project since it is where the program is placed and implemented.

1.1 DESIGN OF THE STUDY
The different components of the Captive Portal for Trimex Colleges in Biñan Laguna the client associates with the Wi-Fi system of the gadget. The system can either have a secret phrase or none. In the wake of associating with the Wi-Fi organize, a website page will open with a Trimex Colleges logo, and on the off chance that you have a voucher code you can enter the system. The client is presently associated with the web until the point when the clock achieves zero. The Administrator, who control client’s record and clock setting, deal stock and print vouchers for the client how need week by week or month to month web get to.

1.2 NETWORK DESIGN INFRASTRUCTURE

Figure 1 Network Design Infrastructures

The network connected to the Wi-Fi. There is only one server and one Wi-Fi access point that accepting the users that are connected.

1.3 SCHEMATIC DIAGRAM

Figure 2 Raspberry Pi 3 Model B

The Raspberry Pi device looks like a motherboard, with the mounted chips and ports exposed. They are the various components on the Raspberry Pi board the GPIO these are exposed general-purpose input/output connection points that will allow the real hardware hobbyists the opportunity to tinker, Audio out this is a standard 3.55-millimeter jack for connection of audio output devices such as headphones or speakers. There is no audio in. USB this is a common connection port for peripheral devices of all types. Model A has one, and Model B has two. You can use a USB hub to expand the number of ports or plug your mouse into your keyboard if it has its own USB port. The JTAG module I use is the RPi HUB Module which embeds a FT2232H chip. HDMI this connector allows you to hook up a high-definition television or other compatible device using an HDMI cable. SD card slot this is a full-sized SD card slot. An SD card with an operating system (OS) installed is required for booting the device. They are available for purchase from the manufacturers, but you can also download an OS and save it to the card yourself if you have a Linux machine and the wherewithal. Ethernet this connector allows for wired network access and is only available on the Model B.

1.4 POWER CONTROLLER SCHEMATIC

Figure 3 Raspberry Pi Power Controller Schematic

The schematic shows you two options for applying the switched 5V power to your Raspberry Pi. You can apply it through the micro USB connector, in which case it passes through a PolySwitch resettable fuse (rated at 1.1 A) before being applied to the rest of the RPi circuitry, or, you can apply it to header P1, in which case it bypasses the fuse. The advantage of applying power to P1 and bypassing the fuse is that the 5V is then passed on to the USB connectors unimpeded, where it can drive high current USB devices.

2. LITERATURE SURVEY

According to the Authors, to develop this Captive Portal piece of software that will utilize the use of mobile phones and computer devices in connecting to the internet. Internet connectivity is one of the necessities of modern living especially to students who cannot afford to apply for internet connections. With the helped of Captive Portal it enables and can give user instant Wi-Fi hotspot for as low as Php 5.

According to the Authors, to develop this Captive Portal can access to the internet at a low price. With the used of the Captive Postal a self-service internet hotspot, the users can now access internet from specified period of time. The system is compatible with any access point Wi-Fi extenders. Compatible access points can reach from 50 meters to as far as 200 meters Wi-Fi signal range. The users can access internet without inserting a coins into the coins.
lot by availing a voucher code that they can input into the system.

3. FLOW CHART

Before use the system the user should be go to the Wi-Fi setting and then click to connect the Wi-Fi then the system will validate internet connection after the validation the user are Wi-Fi connected. The admin page displays manage the use list, timer setting, bandwidth, counter and voucher.

4. RESULT AND DISCUSSION

The banner interface is being tapped the buy voucher user will enter the code and his credits will be converted to surfing time to access to the internet.
Figure 9 Bandwidth limiter

The default bandwidth allocation per user is 1mbps upload and download. It can be modified in the admin panel.

Figure 10 Sale Inventory

The total viewing earnings of the voucher code. How much the income every day, week or month.

Figure 11 Print Voucher

The print voucher that users required to avail just hand them a voucher code that they can input into the system.

5. CONCLUSION

Based on the aimed of the study and the results of the evaluation, the following conclusions were drawn. Captive Postal can access to the internet at a low price. With the used of the Captive Portal a self-service internet hotspot, the users can now access internet from specified period of time. The system is compatible with any access point Wi-Fi extenders. Compatible access points can reach from 50 meters to as far as 200 meters Wi-Fi signal range. The users can access internet without inserting a coins into the coins lot by availing a voucher code that they can input into the system.

5.1 RECOMMENDATIONS

The researchers of the study further recommended the following:

1. It is strongly recommended that, Admin should concentrate on customer satisfaction and their buying behavior. In addition to these, admin should concentrate on long term strategy and to keep the customers with them by not allowing them to switch over to mobile data on having low internet connection.
2. Admin should concentrate on introducing various new schemes which will make standalone and this will only possible by providing various offers and continues services.
3. It is strongly recommended that, Admin must focus on Value Added Services, customer services, building strong distribution chain and offering new services to the customers. Admin should concentrate on customer care services. Customer care is the most essential and important department in the Telecom industry.
4. Adequate network facility should be developed by the admin service provider to avoid network connectivity problem. High 202 frequency towers to be provided to avoid link failures and better clearance.
5. Admin Service operators should promote more sales promotion schemes with various alternatives of payments and vouchers packages. For this, the Admin must further reduce “per minute” charges and introduce more flexible plan schemes.

REFERENCES