Electronic Notice Board Using Remotely Controlled Device

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ABSTRACT:
Inpresentscenarionoticeboardisrequiredinmanyorganizations.Anoticeboarddisplayis usedtodisplay themessage/informationsentbythehighauthoritiesoftheorganization. Aseparateperson isallotted to stick the various notices which are a very difficult process. Here this project is dealing with hitch wireless Electronic notice board. Whenever a messageis sent from the users, the message will be displayed on wirelesselectronicnoticeboard.Thismessagecanbesentfromanytablet/ Pc etc connecting with the terminal app. As the LED monitor which is connected to raspberry pi has its own IP address and port number that will beknown only to the users who is operating. Later it is sent to theraspberrypithatfurtherhelpsindisplayingthenoticeinwirelesselectronicnotice boardwhichisequippedwithLEDmonitor.
KEYWORDS: Raspberrypi,PC,connectionterminalapp.

I INTRODUCTION

Electronic notice board can be used at differentplaceswheretheinformationistobedisplayed. Forexampleifthesystem is implemented in colleges all the information usesto the students can be shorted by the higher authorities ofthe college to the students. It is very easy to use this kind ofnotice board and having less physical work which is mostlyusedforphysicallychallenged.
Themainaimoftheprojectistohaveanelectronicnotice board where the least information can be shorted bythefacultytothestudents.Thesystemareusingisawirelesssystemsothereisnomessofwires.Theinputherewe are using is an android phone/tab/pc anything. In thisadvanced world, everyone strives for a comfortable life. Sohumanhas invented lots of technologies to live hislifewith full of satisfaction and in comfort zone. In today'sworldof connectivity,people wants toget the updatedinformation or news timely, does not matter wherever theyareandwhenevertheywant,whetherit'sthroughthe internet or television, people wants to be informed and up-to-date with the latest events happening around the world.Going with wired technology, complexity increases won'tbe able to overcome the distance limitation. As, it has manylimitationsdependingontheneedandtypeofconnection,sonow-a-days people usually choose wireless technology asthey can easily interact with people all over the world. Themainobjectiveofthisprojectistodevelopasystemwithouthumanintervention.Noticeboardisanecessarythinginginany institutionorpublicutility placeslikebusstations,railwaystations,schoolsshoppingcenters,etc.Butpassingvariousnoticesdaytodayisadifficultprocess. A separate person is required to take care of thesetraditional notice boardsby making use ofthis we can reduce the salary given to him. Even thenoticesarenotabletoreachontimeasittakestimetocirculateamongstpeople and sometimes they are not reachingcorrectlywhathasbeentoldbythehigherauthorities.ThetraditionalnoticeboardisflatsolidObjectplacedatstrategicpositions making on which notices and articlesareplaced.Inprofessionalcollegecampus,noticesfromdifferentprofessorsbringingreminders,warnings,resultsandappointments.Asthesenoticesarebeingplacedonthesamenotice boards, some of the old notices are not removed andwith time the board gets covered with several notices andimportantmessagesareremainedunnoticedwherein thisallthe messages has been stored in the raspberry pi. In Indiacities are becoming smart and display boards and LED's areplaced at every square for advertisement and many otherpurposes. But still these technologies are not adapted inmanyinstitutionsinmajorityofcitieswhichneedthewireless electronic boards the most. Sending the

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messageswith a wireless electronic display board to the people andstudents which willhelppassing the message without anydelay with more reliability rather than traditional wayofpasting messageonthe old notice board. These advancenotice boards provide multiple users to update notices onthe electronic notice board along with security. No printingand photocopying cost is required thus saving time, energyand natural resources. These notice boards are easy tooperateandconsumelesspower.Byintroducingtheconceptofwirelesstechnologyinthefieldofcommunication and implementing them in institutions. Inthe simplest terms, cloud means storing and accessing dataandprogramsoverthe Internet instead of our computer's hard drive. In the receiver section, Raspberry Pi is connected on Wi-Fi for accessing the internet. The Raspberry Piis alowcost,credit-cardsizedcomputerthatplugsintoacomputer monitor or TV ordesktop. It is a capable littledevice that enables people of all ages to explore computingand to learn how to program in languages like Scratch andPython. It's capable of doing everything what you expect adesktop computer to do, from browsing the internet andplayinghigh-definitionvideo,tomakingspreadsheets,word-

processing. Raspberry Pi is activated by supply power around 5v. After switching onRaspberry Pi, it will collect data from the cloud. Cloud isalreadyspecifiedthroughaprogram.Uponreceivingmessagesitwilldisplayonthemonitor.RaspberryPihasno VGA port. So in order to interface the LCD monitor withRaspberryPi,HDMIinterfaceisused.Thereceived messages are displayed onthe screen. Similarly receivedimages will display on the screen. For displaying pdf files,first,itconvertedintoanimagefilebytheprogramwritteninthe Raspberry Pi. After converting all the pdf pages intoimages then it will display. Every two pages in the receivedpdffilewillbedisplayedatatime.Toachievethismonitorscreen is spat into two sections. Each section displays eachpage.Afteracertaindelay,thenextpageswillbedisplayed.All these messages are displayed sequentially after a shortdelay.

Ifthesenderwantstodeletesomeimageorpdffile,hecansimply delete it by checking into the raspberry pi in whichall. Also, we delete or modify text messages whenever wewant. After deleting the messages

from the cloud it will automatically delete on the display after a short delay. Thesesystemsareenhancedtodisplaythelatestinformationinstantly.Thiswillhelptheinstitutionsforpassingthe information without any limitations.

II RELATED WORKS

TCP/IPSockets, TheTransmissionControlProtocol(TCP)" is a core protocol of the Internet protocol suite. Therefore, the entire suite is commonly referred to as TCP/IP.TCPprovidesorderedanderror-checkeddeliveryofastream of octetsbetween applicationsrunningonhostscommunicatingoveranIP network.MajorInternetapplications such as the World Wide Web, email, remoteadministrationandfiletransferonTCP.Applicationsthatdonot require reliable data stream service may use the UserDatagramProtocol(UDP),whichprovidesaconnectionlessdatagram service that emphasizes reduced latency overreliability. TCP abstracts the application's communication from the underlying networking details [1]. TCP\IP Connectionestablishment and termination" Process whentransmittingdeviceestablishesaconnection-orientedsessionwithremote peer is called a three-way handshake. As the resultend-to-endvirtual(logical)circuitiscreatedwhereflowcontrols andacknowledgmentforreliabledeliveryisused.TCPhas several message types used in connectionestablishment and termination process [2].Only registeredpersonsabletosendthemessagesfromanywhere [6].Sockets are communication points on the same or differentcomputers exchange data. Sockets are supported by UNIX,Windows, Mac, and many other operating systems. Thetutorial provides a strong foundation bycovering basictopics such as network addresses, hostnames, architecture,ports and services before movingintonetworkaddressfunctions and explaining how towrite client/server codesusing sockets. Sockets allow communication between twodifferent processes onthe same or different machines [3].To develop a notice board that displays phone talks to eachother via router. Router allows an IP address to Raspberry piandTCPIPserverisestablishedwhichcontinuously listens for incoming client connection [4].

Block diagram of the proposed system

III PROPOSED SYSTEM

The main objective of the system is to develop a wirelessnoticeboardthatdisplaysnoticesintheformofimage,text,pdf. It uses a Raspberry Pi as a processor. Raspberry Pi isequippedwithaLEDdisplay.Wecandisplaymessages andcan be easily set or changed from anywhere in the world. The system will send this message to the cloud. Then it passesto the notice board which is connected to the raspberry pi. The processor, process it and displayed on the screen. We can send the message to all the screens or the desired screen.

Themainfunctionoftheproposedsystemistodevelop a Digital notice board that display message sent from the userthroughinternetandtodesignasimple,userfriendlysystem,which can receive and display notice in a particular mannerwhich will help the user to easily keep the track of noticeboard every day and each time he uses the system. Thesystemconsistsoftwosectionscalledassenderandreceiver. The sender is responsible for sending valuableinformationthroughthewirelessnetwork.InordertoaccessDigitalnoticeboard,thesendermustentterintothecorrespondingIPaddress.Forpreventingunauthorizedaccess web address provided security authentications likeuser name and password.Ifthe

username andpasswordentered are invalid in the raspberrypi thenthe user can'taccess the digital notice board. When theuser enters thecorrectpasswordandusernameraspberrypiwillopenedandget space for the information transmission. The user canaccess this IP address eitherusing a personal computer ormobile phone. To make the proposed system more userfriendlybyusingWINSCPapplication.Byusingthisapplicationsendercandirectlyenterintothewebaddress.Inaddition to this android application contain voice to speechconverter. So the sender can send a text message. Thesemessages including text file, image file and the pdf file willsend to the cloud. The raspberry pi act as server for oursystem as it as both raspberry pi and as well as the webserver. The raspberry pi is connected to wireless network tocreateitsownnetworkandtobetheserverforthenetwork.The notice board can beassessed onlybytheoneperson whiletheysendnotificationtotheserverthroughwinspandtheserveracceptsthedevicedataand stores inMySQL database and raspberry pi retrieves data from MySQLdatabaseanddisplaysthatcontentonnoticeboardinteractedwith raspberry pi. It will be used to update information no printing and photocopying cost.
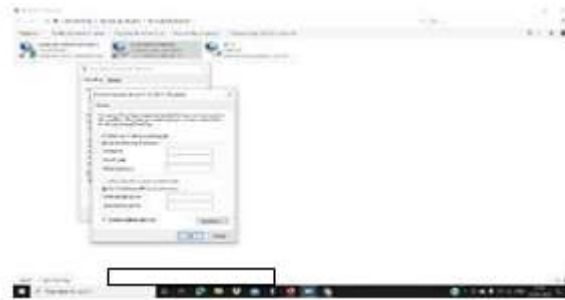
IV RESULT AND CONCLUSION

Raspirian whezzy can be downloaded from the raspberryofficial site at freeofcost. Once youhave the zip file to downloaded to your computer, unachieved it. There will besingle.png file inside. This is the disk image you will flashto the raspberry pi SD card Raspberry pi gives plenty ofspace to add media and other programs once raspirian is installed. In the project we just want raspberry pi to hidden behindthe screenwith just a networkcableand HDMIcable coming out of it. First setup a static IP addresses for our opinion the network. Make sure your pi is connected to the networkandinterminalwindowtype.Followingarethe stepstoopenraspberrypiinheadlessmode

1. While the raspberry pi is switched off, connect of the Ethernet cable to the raspberry pi and other side to the RJ45jackofthePC

2. OpenLANpropertiesandmakesurethose IPV4 propertiesandsettoobtainIPaddressautomatically.

This project needs to determine the IP of our PC when it isconnected to the raspberry pi. Now power ON the raspberrypiwhile makingsure thatthe networkcableisconnectedon both ends. Wait for a minor two notice that the PC will scan and then show a small warning indicating the presence of anunidentified network. Now open the command prompt and type the IP of the LAN. Please change the IP accordingly and assign aunique value (while making sure you don't gobeyond the subnet mask).Save the endline.png file withoutmaking any changes. Power ON the raspberry pi Wait acouple of minutes while the raspberry pi tries to establish alocal network connections with our PC. Then by using thepython code display the images which are saved inthedownloads.

Changing the IP Address
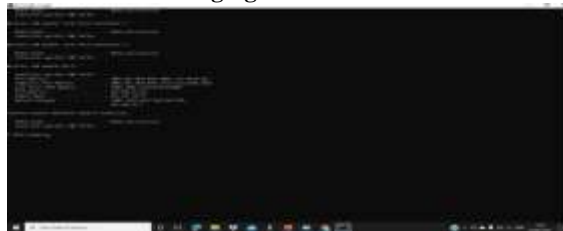
Comm and Prompt

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imort
osx=0w
hile1:
    os.system("feh-Y-x-q -D-Bblack-F-Z
-z-r-D5--cycle-once/home/pi
/downloads/*.png")
    forf_nameinos.listdir('/
home/pi/downloads/'):
        iff_name.endswith('.png')i
ff_name.endswith('.png'):
        x=x+1print(f
    _name)print(
        x)
```

Theproposedstructurewastotallydevelopedandattemptedtodisplayitsfeasibilityandsufficiency.Inthis,by using the PC as transmitter to send the noticeandRaspberryPi3modelisusedasgatherer.Exactlywhenboththetransmitterandrecipientarerelatedwith acomparative framework, by then the notice are appeared on the screen. The overall result of the experiment gloves came as follows: They are appeared in a consistent movementfollowing 5 seconds delay. The Raspberry Pi is related withthe screen through HDMI to VGA converter as showed upinthefigure.ThedeftlytotheRaspberryPiisfurthermore given. The main objective of the system is to develop awireless notice board that displays notices in the form ofimage, text, pdf. It uses a Raspberry Pi as a processor. Thesystemwillsendthismessagetothecloud.Thenitpassesto the notice board which is connected to the internet byWi-Fi. Here LED monitor is utilized to send the notice, theRaspberry Pi it is utilized to show up on the LED show up.HDMI cable interface is utilized for Data transmission. Therequiredupbraidingistransmittingfromtheevident source to the raspberry pi through web and put aside it in aparticular envelope. Raspberry pi is changed to show therecordputasideinexpressenvelope,consistentlycontinually with fitting time opening on LCD show up. Therecordputasideinshowfacilitatoriscomposedbyutilizing the idea of this innovation in the field of remotecorrespondencemadeourcorrespondenceefficientandquicker. This can show the messages with lessmistakesandbettereffectiveness.Timeutilizationa

ndpaperwastageisdecreased.Thistechniquecanbeutilizedproficientlyinfoundationslikeinnovativeeateriesto providetheirquest,in shopsofferlimitscan beshown, atall branches in schools the understudies and staffs can beeducated at the same time simultaneously. Likewise itvery well may be set up at open vehicle places likerailroads,busstop,airterminalandfurthermoreatstreet side for traffic control and in crisis circumstanceslikemedicalclinics,sanctuariesandsof orth.Itsexpenseislowand it tends to be dealt with without any problem.Utilizingthisapplicationwecanmaintainastrategicdistancefromtheutilizationofpapersconsequently cutting of trees with the end goal of papers is significantlydecreased.

V CONCLUSION

By utilizing the idea of this innovation in the field ofremote correspondence made our correspondence efficientandquicker.Thiscanshowthemessageswithlesssmistakesandbettereffectiveness.Timeutilizationand paperwastageisdecreased.Thistechniquecanbeutilizedproficiently inat all branches in schools the understudiesandstaffscanbeeducatedatthesametimesimultaneously. Its expense is low and it tends to be dealtwithwithoutanyproblem.Utilizingthisapplicationwecanmaintain a strategic distance from the utilization of papersconsequently cutting of trees withthe end goal ofpapersissignificantlydecreased.

Output Screen

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