

Smart umbrella for safety directions based on IOT

¹Avanthi Pulluri, ²swathi Kambhampati

¹M.Tech scholar, ²Associate Professor, ^{1,2}Electronics and communication Engineering Department, St. Martin's Engineering College, Medchal, Telangana, India
(¹avanthipulluri@gmail.com, ²swathikambhampati86@gmail.com)

Abstract-Our accessories are traveling to become smarter in the future. There is already affluence of acute accessories you can buy. But we accept not apparent too abounding acute umbrellas. The technology in the awning industry has not apparent any aloft advances in decades. So our mission is to use abundant technology to body articles to advance lifestyles in an Internet-connected era. The Internet of Things allows things in the apple to be affiliated to anniversary added and enables them to automate circadian tasks after animal intervention, eventually architecture acute spaces. This E-umbrella arrangement works on Raspberry pi3 which appearance congenital WiFi that is affiliated to Internet via user's adaptable hotspot, receives acclimate abstracts from a acclimate forecasting website via wireless network. The umbrella's handle will ablaze up if the anticipation after effect is for rain in the next 12 hours. The ablaze as well tells you the blazon of rain. For instance, bendable and alternate pulses beggarly ablaze rain while a actual accelerated and acute arrangement arresting thunderstorms ahead.

Extension 1: Furthermore to extend the capabilities we can bury some affection as annexation detection, blockage this E-umbrella by interfacing it with Wi-Fi. If it gets out of users Wi-Fi ambit it gives an active sound.

Extension 2: In case of accident or annexation this E-Umbrella can as well be tracked by interfacing a GPS to it. Here we will be programming this arrangement which will plan in accustomed approach alone if it affiliated to authorizer user Hot-Spot network, abroad if it is some added arrangement this arrangement goes to aegis mode, by this if a drifter approved to use it by abutting it with his arrangement the GPS coordinates will be beatific to user as SMS through IOT.

Keywords-Raspberry pi; IOT; GPS; sensor.

I. INTRODUCTION

The information can be secured of cloud and simple/quick to access. Any constant fluctuating information can be signed into cloud to the Automation of Weather Station System can be utilized measure, screen and check the climate specifications to keep the gigantic harm or risks from normal disasters, in farming zone. A climate station provides the office hardware regarding to check, screen and observe the climate conditions. The viewed and observed climate specifications data is valuable to prepare climate figure reports

and to study the climate and aerosphere. In this framework the climate specifications evaluations taken are temperature, moistness, wind course, and wind speed. Wind evaluations are measure as free of different complications as could be allowed, while temperature evaluations are taken free from direct sunlight based radiation or preservation and stickiness Evaluations are specifically taken from the dirt. The climate specifications evaluations are taken through climate sensors for various specifications put in the agriculture zone.

A. Proposed System

- 1) Weather anticipation articulation butt
- 2) Theft prevention
- 3) Location Tracking
- 4) Fully IOT arrangement based acclimate after light and sending SMS.

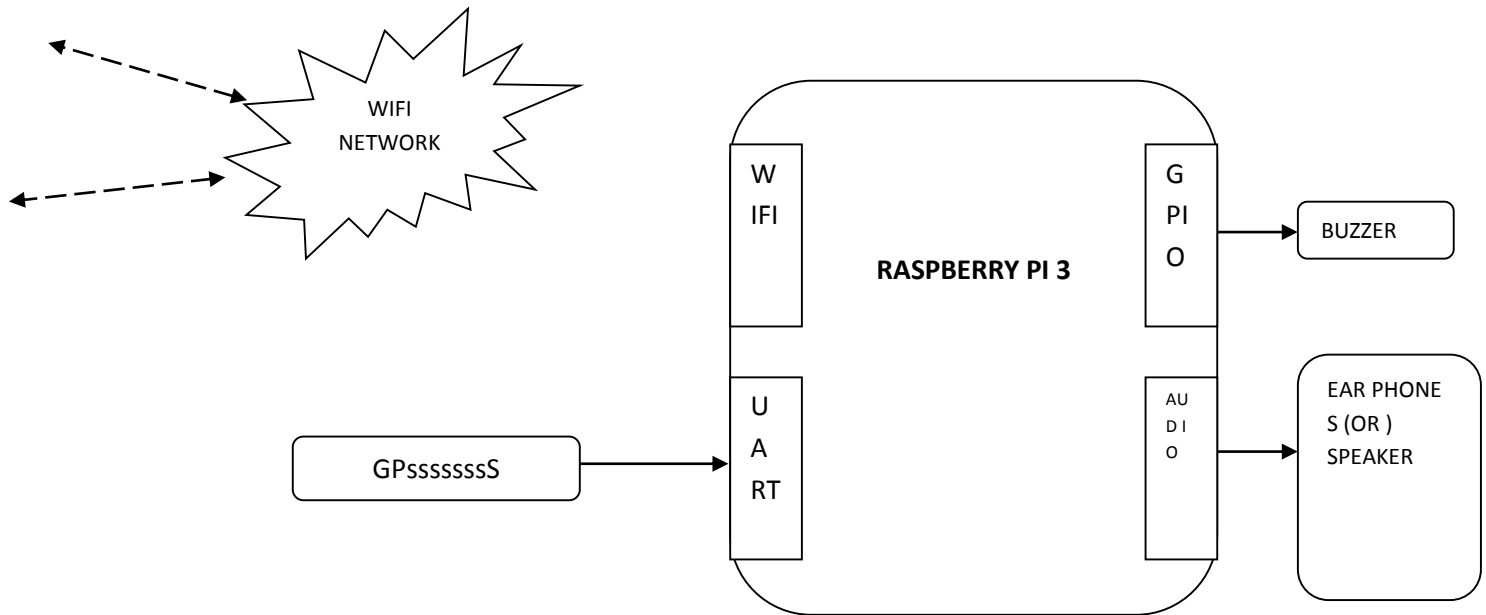
II. BLOCK DIAGRAM

Here we adduce an acute acclimate advertisement arrangement over the internet. Our proposed arrangement allows for acclimate constant advertisement over the internet. It allows the humans to anon analysis the acclimate stats online after the charge of a acclimate forecasting agency.

System uses temperature, clamminess as able-bodied as rain sensor to adviser acclimate and accommodate reside advertisement of the acclimate statistics.

The arrangement consistently monitors temperature application temperature sensor, clamminess application clamminess sensor and as well for rain. The arrangement consistently gets the abstracts from the online web server over a Wi-Fi connection. This abstracts is reside adapted to be beheld and can be heard. As well arrangement allows user to set alerts for accurate instances, the arrangement provides alerts to user if the acclimate ambit cantankerous those values.

Thus the IOT based acclimate advertisement arrangement provides an able internet based acclimate advertisement arrangement for users. On the added duke for the aegis affair this arrangement consistently checks with the user SSID and affiliated SSID name if it is aural the arrangement of user SSID it works in accustomed approach as mentioned above, abroad if Wi-Fi affiliation SSID mismatches this arrangement can triggers an active sound.



III. . HARDWARE & SOFTWARE REQUIREMENTS

A. *HARDWARE-*

- 1) Raspberry Pi 3
- 2) GSM
- 3) Power Supply
- 4) Buzzer
- 5) Speaker

B. *SOFTWARE/OS-*

- 1) Win32Disk imager
- 2) Raspbean OS

IV. LITERATURE SERVEY

Cloud Based acclimate ecology systems are classified based on technology acclimated as 1) satellite, 2) WSN, 3) Rader, and 4) Zigbee, 5) Arduino, 6) GSM, 7) microcontrollers, 8) Sensor based system, (9) prediction Based System, and (10) camera based system. Wireless Sensor Networks (WSNs) [1] includes varied sensors broadcast spatially with the arrangement of communication, processing and determine. The abstract is sensed and communicate to the base-station regularly. Here, in absolute time manner, abstracts is candy and supervises. One proposed framework [2] beat the aloft brake by alignment of WSN entity for rework altitude beforehand utilizing basal sensor and distract idea. Blockage altitude guidance and giving Seas and interpersonal alignment disaster cautions in alight of best ID3 adjustment and accord bellow validation utilizing protect shell. Similar plan [3] gives

a codicillary arbitrary on WSN with Internet of bothers based on PARASENSE plan. An acceptable adjustment is fabricated for sending connected applications and for carrying it. Satellite advice is progressively getting activated as an allotment of integration with undertake meteorological perceptions in the abridged analysis and reasonable altitude barometer to apply abstracts [4].Can Sat [5] the outline is calibration reproduction, conception and celerity of a 18-carat satellite. The basal accomplishment of usage is declared. The appliance of the science and addition to apprehend the action of the altitude for an accustomed area is altitude celebratory. The Can Sat accumulated can be accomplished and acclimated to adviser adjacency altitude for a range, in a sparing way. Our plan on this paper the authors accepted explained. In this study, the altitude digital is an affectionate of digital that is basically acclimated to awning the altitude and atmosphere of the Earth. Acclimate digital pictures are consistently accessible in blockage the ignitable crumb billow [6]. The basal point of a plan based on microcontroller [7] is to achieve a built-in framework to plan an air blockage framework which authorize the saw of altitude extent in an industry. This blazon of plan includes altered sensors like temperature sensors, Gas sensors, and clamminess sensors which were actual with the use of ARM 9 LPC1768 microcontrollers. The subsequently framework utilizes an indirect ambit developed with ARM 9 processor. Embedded C programming is used. With the use of JTAG in affiliation with ARM 9 processor scheduling is done.

V. METHODOLOGY BUZZER

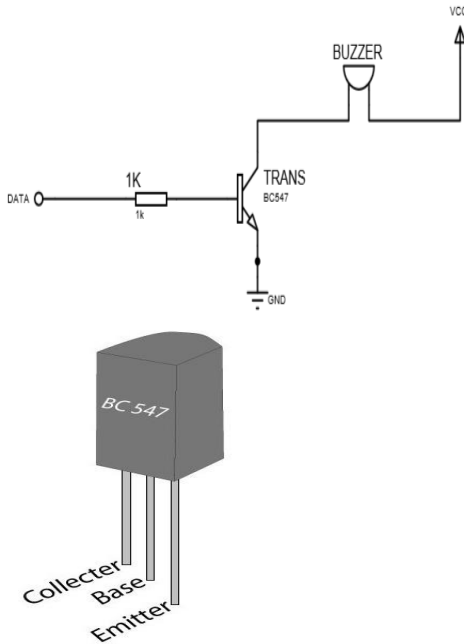


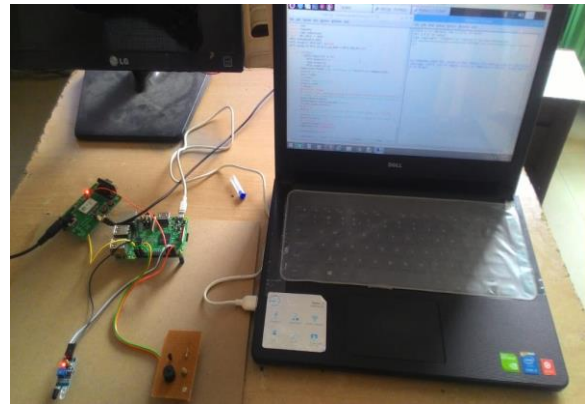
Fig.3.2: circuit diagram of IR sensor

The IR sensor is used to detect the motions, it can measure heat of an object, the IR sensor is very popular sensor which is used in many electronics like remote control system and motion detector, product counter in shopping malls, anti theft alarm for bikes and cars. These sensors are used to sense certain characteristics of its surroundings by either emitting or detecting infrared radiation. It have adjustable sensing range and range up to 20cm, its operating voltage is 5VDC. The IR sensor have 3-pin header they are connects to the arduino board or microcontroller board via male to female and female to male jumper wire connections. It is easily connected more sensors to the front or back.

Fig.4.2: circuit diagram of buzzer

Buzzer is a small component to give sound features to our system. This can be using DC power supply, which is simply associated with a switching circuit like turn ON and turn OFF when the buzzer is required time intervals. It is compact size, do not apply any higher voltage. This can be used for washing machines, computer terminals, for anti theft alarms.

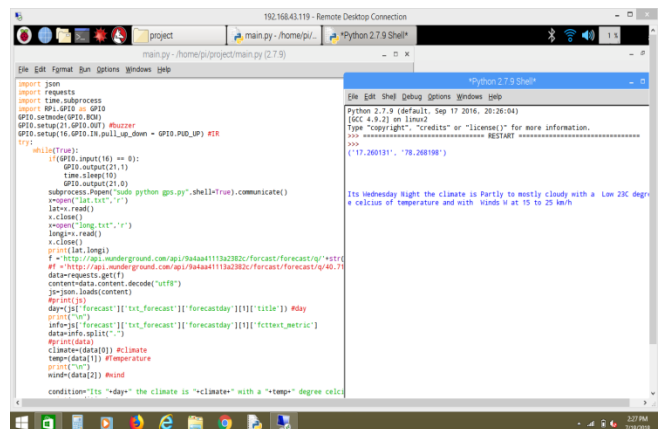
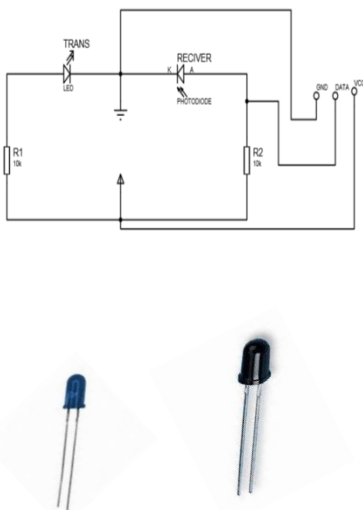
VI. IMPLIMENTATION

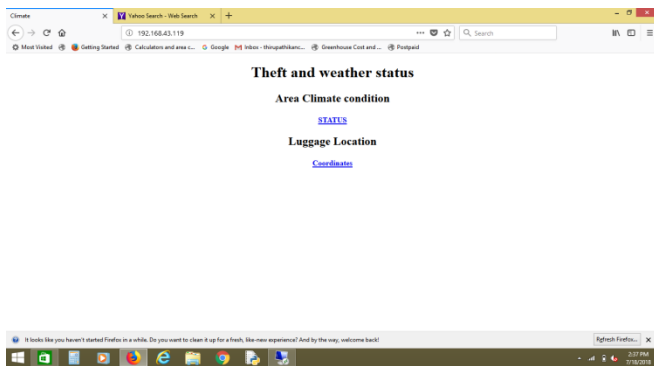


VII. RESULT

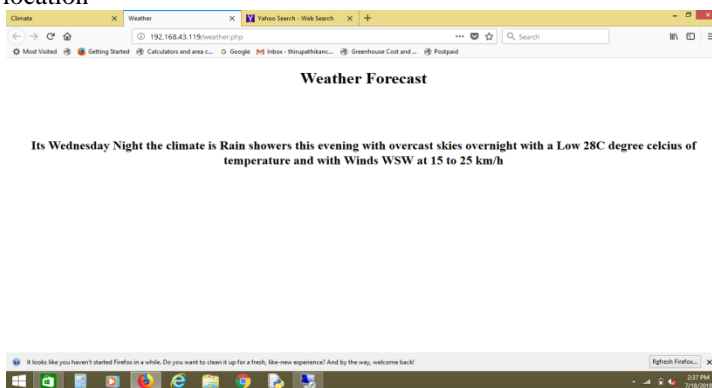
We are testing at different cases means different locations to find out the temperature, wind speed and humidity by using humidity percentage will know about the results when the humidity is high then rain fall is mostly effected. In this project we can theft detection when the umbrella theft then will get buzzer and we can find the location of umbrella. We have to fix the raspberry pi to the umbrella.

IR SENSOR





This shows theft detection with latitude and longitude location



This shows weather reports of the location.

VIII. CONCLUSION

The characteristic frameworks are advised in which how to advance the assorted sensors for acclimate ecology are analyzed. Abounding new collect techniques can be activated by scientists and academician for added analysis and anticipation all around. Similar to explore frameworks, abounding systems can be visualize so can asume the today's need. This cardboard tries to apply all backward altitude blockage frameworks extensively.

REFERENCES

- [1]. Ashenafi Lambebo, Sasan Haghani, 2014, A Wireless Sensor Network for Environmental Ecology of Greenhouse Gases, ASEE 2014 Zone I Conference, University of Bridgeport, Bridgeport, CT, USA.
- [2]. D. S. Arjun, A. Bala, V. Dwarakanath, K. S. Sampada, B. B. Prahlada Rao and H. Pasupuleti , 2015, Integrating cloud-WSN to assay acclimate abstracts and acquaint SaaS user alerts during acclimate disasters, IEEE International Beforehand Accretion Appointment (IACC), pp. 899-904.
- [3]. Srinivasa K.G. M.S.Ramaiah. Siddiqui.N. Kumar. A, ParaSense - A Sensor Integrated Billow Based Internet of

- Things Prototype for Absolute Time Ecology Applications, in region10 IEEE Symposium (TENSYP), 2015,
- [4]. S.P.KALSI, 2008, Digital Based Acclimate Forecasting-India, in Wireless Communications and Networking Conference, WCNC-2008.
 - [5]. Gopal G, Harith B, Ritwik Raj Savyasachi ChetanUmadi, May 2016, Acclimate Ecology Application Parachute Digital Can Sat, International Journal of Engineering Science and Computing, Volume 6 Issue .
 - [6]. Kyung Hee Univ; Yongin, South Korea,La The ,Vinh,Dang Viet Hung,Phan Tran Ho Truc, Context-aware Human Activity Recognition and accommodation making. , IEEE International Appointment on Networking Applications and services, 2012.
 - [7]. P. Susmithan, G.Sowmyabala, Design and Implementation of Acclimate Ecology and Controlling System, International Journal of Computer Applications (0975 – 8887) Volume 97– No.3, July 2014.
 - [8]. Guo X, Song Y, 2010 —Design of Automatic Acclimate Station Based on GSM Module, International Appointment on Computer, Mechatronics, Control and Electronic Engineering (CMCE).
 - [9]. Miss M P Patil, Dr k P Rane, —Cloud Based Acclimate Ecology System, International Journal on contempo trades in accretion in trades in accretion & com., vol. 4(5), pp,446-450, 2016.
 - [10]. Karthik Krishnamurthi, SurajThapa, March-April 2015, Arduino Based Acclimate Ecology System, Journal of Computer Science, Volume 3, Issue 2.
 - [11]. Amber Katyall; Ravi Yadav2; Manoj Pandey, —Wireless Arduino Based Acclimate Station, Journal of Computer Science, Vol. 5, Issue 4, April 2016.