

WOMEN SAFETY DEVICE BASED ON “INTERNET OF THINGS (IOT)”

Urmilla Pilania ,Aishwarya Nair,Sakshi Arora,Virender Kadian
Department of CSE , Manav Rachna University, Faridabad, Hararyana, India

Abstract—IOT (Internet of things) is a system of inter related or network connectivity of peripheral devices, or items implanted with various kinds of sensors, electronic devices, software, actuators that is basically used for exchange of data and information via network.

As we are aware of the fact that various incidents regarding women are taking place at an alarming rate day by day. In order to cease and put a full stop to these crimes, the Government need to take some special steps regarding women safety.

Recently there are many breathtaking cases occurred in India this year. A shocking news came into rumour on 17 January 2018.

This news not only threw a light on the crimes increasing in India but also has proved that now no humanity exists in the world.

This case was of a small 8 year old girl who lived in a village area in Kashmir. She was raped by four people constantly for 8 days and was drugged and later was murdered.

This news is enough for us to know that not only young woman but even children are also not safe now in this cruel world.

So in this paper, we are keeping forward some ideas to ensure the safety of women by a device that will not only have a buzzer in it but it can also locate her location using GPS (Global Positioning System) technique and once this buzzer is pressed in case of an emergency, it will get the exact location of the victim and then it will be sent to the nearest police station so that police force can take immediate action. So this paper basically involves some measures and techniques like a buzzing tool which helps for the woman safety.

Keywords—IOT(Internet of Things), Women Safety, GPS(Global Positioning System), Safety Device, Emergency Number, Sensors, Micro controller, Buzzer

INTRODUCTION

In today's world, with the emergence of latest technologies based on Internet of Things that have come up, various attempts and measures can be implemented to ensure women's safety. Every day we are teaching women to hide themselves or to stay in their limits or to ignore the assaults faced, as a result it has reached at the top level and also these methods are proving to be unproductive. So rather than following this old-age methods she can make use of device which are made of their safety if in case they are in any emergency and it will be very helpful if she is not carrying her mobile by which she could inform the cops or her relatives as soon as possible.

This buzzing tool is based on the concept of internet of things abbreviated as IOT.

So in this paper we will propose an idea to develop a device that will be a kind of a band or women wearable accessories in which various sensors like motion sensors, heartbeat sensors, a microcontroller, GPS GSM is present.

A. BACKGROUND /LITERATURE REVIEW

After studying and going through various research papers we have come across that safety of women is very much important and especially in rural areas women are really not safe. Woman is earlier treated as goddess .But now the same goddess is been exploited each day in some or other place in the world. The status of women has been a matter to various changes from the ancient to medieval times and then to recent times. The World Health Organization(WHO), in its research states that violence against women has been analyzed and divided the different types of violence against women happening through all the phases of life be it from birth to old age. So we are taking a small effort to improve the condition of women in our country and trying to make women safe on the road.

Especially the women doing night shifts job can have the greatest advantage of this buzzing tool.

In recent years, there is an increase on the rate of crime on women which will be minimized using devices based on Iot.

B. Comparative Study

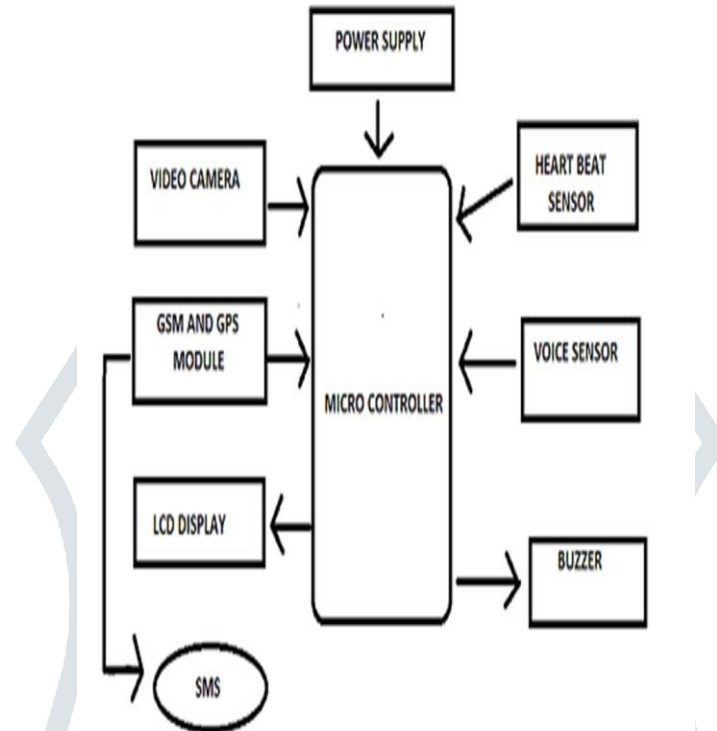
In today's time, the alarming question in every parent's mind is that will their girl child be safe or not, as there's always an increase on women harassments nowadays and they are worried about the safety. In ancient times there had no devices for women safety and no monitoring system which creates many problems The only thought evocating in woman's mind is that till when they will be able to walk openly on the roads with any fear of their security. Mostly systems are based on internet facilities which is an another issue because not all the women have internet facilities all the time. So the devices should be based on manual techniques like clicking button creating a buzzing sound which will be send to a server cloud and then from there the information will be forwarded to the nearest police station.

So in this paper we are discussing our ideas and techniques that will prove beneficial for the safety of women.

C. Organization of the paper

Rest of the paper is organized in the four divisions. In the first division we will discuss the basic block diagram of the model. In the second section we will describe about the methodology of the various components used in the making of device because of which most of the women will not be victimized. In the third section, we discuss about the result and solution. In the fourth section we give the conclusion and future work and in the fifth section we have given the references.

D. Methodology and Proposed Work



E. Components Used In the Model:

a) *GSM(SIM900A)*: GSM(Global System for Mobile Communication) SIM card is a module that is used for capturing the location of the woman who is in danger, which is obtained through GPS. The number pertaining to the GSM Card is registered with the system that behaves like a receiver while the GPS acts as a transmitter, the received number from the transmitter is then send to her some emergency contacts.



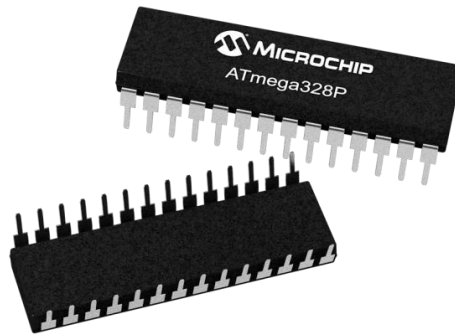
[1].

b) *GPS*: GPS(Global Positioning System) is a module that acts as a transmitter which determines the exact location of the woman who is in danger. This sensor gives the information of latitude and longitude of that particular area. Using these two values, we can easily find out the location of the woman.

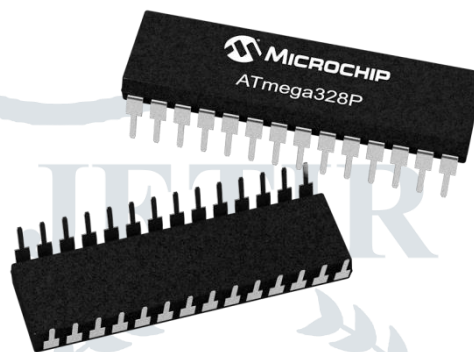


[2].

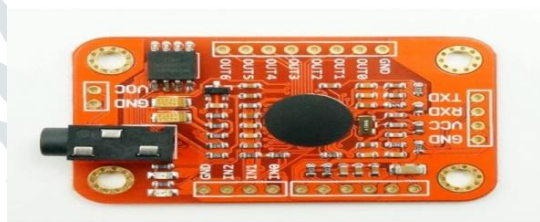
c) *Microcontroller*: Our next device is Microcontroller which is a small computer embedded in a integrated circuit. This is the main component of our device which keeps the control of all the other components used in the making of the device.



[3].



d) *Voice Sensor*: First specification is Voice Sensor. It detects the voice of the woman who is in danger, it gives the information of the location of the area around the woman and gets recorded and then it is send to her emergency contacts.



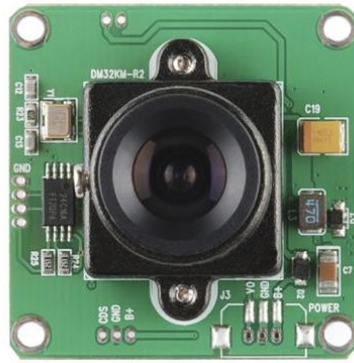
[4].

e) *Heart Beat Sensor*: Second specification is Heart Beat Sensor. It detects the heart beat rate of the woman. We have set a threshold value for woman's heart beat which is approximately equal to 120 beat per minute, crossing which the sensor gets activates and the buzzer will produce the sound.



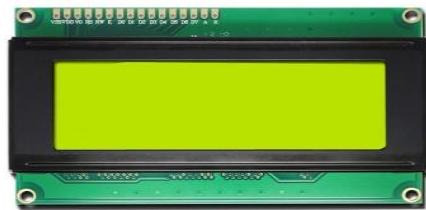
[5].

f) *Video Camera*: Third specification is Video Camera. It will be capturing the pictures of the culprits on the spot. It will then send the images to police and also send it to women helpline number as it is connected to a GSM module so that the authorities can take immediate actions.



[6].

g) *LCD Display*: A LCD(Liquid Crystal Display) is a flat console display which uses the light-regulated properties of liquid crystal particles. It is used to display the images and a alert message stating that the device is activated.



[7].

h) *Buzer/Alarm*: This buzzer will be acting as an alarm, when any of these sensors sense the situation of that woman. After that an alert message will be send to her emergency contacts that is registered with the system and the same information will be send to police for future investigations.



[8].

F. Advantages of the proposed model:

- It is useful for the safety of women.
- It is helpful for the safety of children.
- It can be used for the safety of old-age citizen and physically-challenged people

G. Result And Conclusion:

So this type of thought or idea would be playing a very important role in ensuring women safety rapidly as possible. This proposed technique can further be implemented in ruler areas.

We have given an idea for a model that will simply create a buzzing sound when a woman will click on the button and also will track the GPS location of the victim and will forward it to the nearest police station and to her relatives.

In this paper an intelligent and sophisticated women safety is proposed. This paper ensures complete women safety while using public transport and this proposed system gives self-confidence and defense to the women.

H. Future Work And Ideas

Our basic motive is to ensure each and every woman of our society to feel safe and protected. The emergency helpline number for woman in India is 1091.

According to recent survey of women in our country, approximately around 50% of the working women are not safe. The motive of this paper is to make them feel secure and make our nation free of crime, to make women independent and make their conditions much better to do their night shifts job.

Later we will develop an Android app which will be in the favor of Women safety

REFERENCES

1. Prof. R.A.Jain, AdityaPatil, PrasenjeetNikam, **International Research Journal of Engineering And Technology**, SPPUniversity,India, Volume 04 Issue: 05 May-2017.
2. Shubham Sharma, FasilAyaz, Rajan Sharma and Divya Jain, **IOT Based Women Safety Device Using ARM7**, Department of ECE, Jammu, India, Volume 7 Issue No.5.
3. MsDeepali M. Bhavale, MsPriyanka S. Bhawale, **IOT Based Unified Approach for Women and Children Using Wireless and GPS**, (IJARCET) Volume 5, Issue 8, August 2016.
4. Harshita N, Aishwarya S, Jayalakshmi K. V. , **Smart Security Solution for Women using IOT**, Department of ECE, RCE, Bengaluru, India.
5. AbhijitParadkar, Deepak Sharma, **All in one Intelligent Safety for Women Security**, Department of ME, K.J.SomaiyaColege of Engg, Mumbai, India, Volume 130- No.11, November 2015.
6. S. Vahini, N, Vijaykumar, **Efficient Tracking For Women Safety and Security using IOT**, Department of CSE , S R Engineering College, Warangal, India.
7. B. SindhuBala, M.Swetha, D. Vinodha, **Survey On Women Safety using IOT**, Department of CSE, S. A. Engineering College, Chennai, India, Volume-5, Issue-2, 2018 Regular Edition.
8. Prof. Ravindra P. Shelkikar, Prof. NitinS. Wagh, **Review Paper Based On Women Tracking Device Using Concept of IOT**, Department of ECE, College of Engineering, Maharashtra, India, Volume-5, Issue 2, February 2016
9. AshelshaWankhede, AshwiniVelankar, PriyankaShinde, **Portable Device For Women Security**, Department of ECE, BhartiVidyapeeth's College of Engineering for Women, Pune, Maharashtra, India.
10. Prof. Ravindra P. Shelkikar, Prof. Nitin S. Wagh, **Intelligent Safety & Location Tracking Device For Old Age & Women Using Concept of IOT**, , Department of ECE, College of Engineering, Maharashtra, India, Volume-5, Issue 10, October-2016

IMAGE REFERENCES

- [1] [https://www.google.co.in/search?q=gsm+\(SIM+900A\)&rlz=1C1CHZL_enIN713IN713&source=lnms&tbm=isch&sa=X&ved=0ahUKEwjbs8Wh1dfaAhWByrwKHdWJAbYQ_AUICigB&biw=1055&bih=587#imgrc=PsuF13SZuG126M](https://www.google.co.in/search?q=gsm+(SIM+900A)&rlz=1C1CHZL_enIN713IN713&source=lnms&tbm=isch&sa=X&ved=0ahUKEwjbs8Wh1dfaAhWByrwKHdWJAbYQ_AUICigB&biw=1055&bih=587#imgrc=PsuF13SZuG126M)
- [2] https://www.google.co.in/search?rlz=1C1CHZL_enIN713IN713&tbm=isch&q=gps+module&chips=q:gps+module,g_1:gps+tracker&sa=X&ved=0ahUKEwjqisCShtjaAhUE448KHUAqD_sQ4IYIygA&biw=1366&bih=662&dpr=1#imgrc=ZVVHjZGvdH7GCM
- [3] https://www.google.co.in/search?rlz=1C1CHZL_enIN713IN713&biw=1366&bih=662&tbm=isch&sa=1&ei=eNXhWrHfD8uBvgTt4J7QCg&q=microcontroller+&oq=microcontroller+&gs_l=psy-ab.3..0i67k118j0l2.15875.15875.0.16522.1.1.0.0.0.184.184.0j1.1.0....0...1c.1.64.psy-ab..0.1.182...0.Z5nfi0S9tbc#imgrc=GRLbTaObwTSh8M
- [4] https://www.google.co.in/search?q=voice+sensor+module&rlz=1C1CHZL_enIN713IN713&tbm=isch&source=iu&ictx=1&fir=M3AP2GFUJsh6NM%253A%252CT11J6hjrH5CqM%252C_&usg=__YpkLxmVZkATy1MY3sSVVszzderw%3D&sa=X&ved=0ahUKEwj-5vjNh9jaAhUDSo8KHZ3kCJsQ9QEIUTAH#imgrc=M3AP2GFUJsh6NM
- [5] https://www.google.co.in/search?q=heart+beat+sensor&rlz=1C1CHZL_enIN713IN713&source=lnms&tbm=isch&sa=X&ved=0ahUKEwidnNuaiNjaAhWMwI8KHUriCcsQ_AUICigB&biw=1366&bih=662#imgrc=3vHleRStMnkcXM
- [6] https://www.google.co.in/search?q=video+camera+module&rlz=1C1CHZL_enIN713IN713&source=lnms&tbm=isch&sa=X&ved=0ahUKEwiD-5-djNjaAhVEwbwKHfOoD9MQ_AUICigB&biw=1366&bih=662#imgdii=r_wBBWv4V9iT2M:&imgrc=LQW4ZbGIKsYPLM
- [7] https://www.google.co.in/search?q=lcd+display&rlz=1C1CHZL_enIN713IN713&source=lnms&tbm=isch&sa=X&ved=0ahUKEwjfvYSYjtjaAhXCPY8KHVnpCz0Q_AUICigB&biw=1366&bih=662#imgrc=IVbGCZ4WkdnpmK
- [8] https://www.google.co.in/search?q=buzzer&rlz=1C1CHZL_enIN713IN713&source=lnms&tbm=isch&sa=X&ved=0ahUKEwi-tsPAltjaAhXCflwKHejzBFMQ_AUICigB&biw=1366&bih=662#imgrc=iX1ZR9Yy2Nbf3M