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An Efficient Way for Providing Security to Women using GSM and GPS

Fatima Zehra Ibrahim Baig
M.Tech (Embedded Systems)
Department of ECE
VIF College of Engineering and Technology
Hyderabad, Telangana, India.

Imthiazunnisa Begum
Associate Professor
Department of ECE
VIF College of Engineering and Technology
Hyderabad, Telangana, India.

K Tirupathi
Assistant Professor
Department of ECE
VIF College of Engineering and Technology
Hyderabad, Telangana, India.

Abstract:

This project describes about a smart intelligent security system for women. Women all over the world are facing much unethical physical harassment. This acquires a fast pace due to lack of a suitable surveillance system. Our project is a venture to resolve this problem. We are using two objects wrist band and spectacles that are used in day to day life. The system resembles a band on the wrist incorporated with pressure switch as an input which when activates shows the result Screaming alarm and tear gas mechanism are imposed for self-defending purpose and send location and messages to the emergency contacts.

I. Introduction

An implanted framework is a unique reason PC framework that is intended to perform little arrangements of assigned exercises. Installed frameworks go back as ahead of schedule as the late 1960s where they used to control electromechanical phone switches. The main unmistakable implanted framework was the Apollo Direction PC created by Charles Draper and his group. Later they discovered their way into the military, restorative sciences and the aviation and vehicle enterprises. Today they are broadly used to fill different needs like: Network gear, for example, firewall, switch, switch, et cetera.

Today in the current worldwide situation, the prime inquiry in each young lady's psyche, considering the always rising increment of issues on ladies provocation in later past is for the most part about her wellbeing and security. The main idea frequenting each young lady is the point at which they will have the capacity to move uninhibitedly in the city even in odd hours without stressing over their security. This paper proposes another point of view to utilize innovation for ladies security. "848 Indian Ladies Are Irritated, Assaulted, Killed Each Day!!" That is a path past tremendous number! We propose a thought which changes the way everybody considers ladies wellbeing. A day when media communicates a greater amount of ladies' accomplishments as opposed to badgering, it's a deed accomplished! Since we (people) can't react appropriately in basic circumstances, the requirement for a gadget which naturally faculties and salvages the casualty is the wander of our thought in this venture.

II. Proposed Method

We propose to have a gadget which is the reconciliation of various gadgets, equipment includes a wearable "Brilliant band" which persistently speaks with Smart telephone through GPS and GSM. The application is customized and stacked with all the required information with the utilization of sensors which incorporates Human conduct and responses to various circumstances like outrage, dread and nervousness. This creates a flag which is transmitted to the observing area which comprises of raspberry pi module

We propose to own a tool that is that the integration of multiple devices, hardware includes of a wearable “Smart band” that ceaselessly communicates with sensible phone through GPS and GSM. the appliance is programmed and loaded with all the desired knowledge with the utilization of sensors which has Human

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behavior and reactions to completely different things like anger, concern and anxiety. This generates a symptom that is transmitted to the observance section that consists of raspberry pi module

ADVANTAGES

- Safe and secured
- Accurate
- Easy to implement and low value technique.

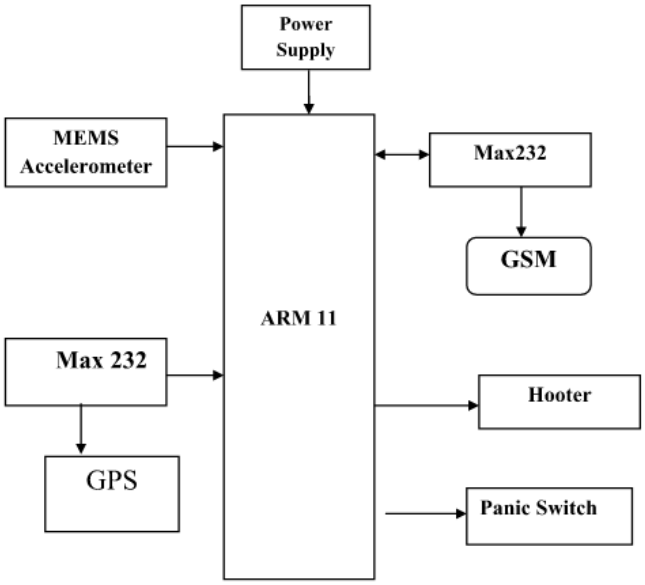
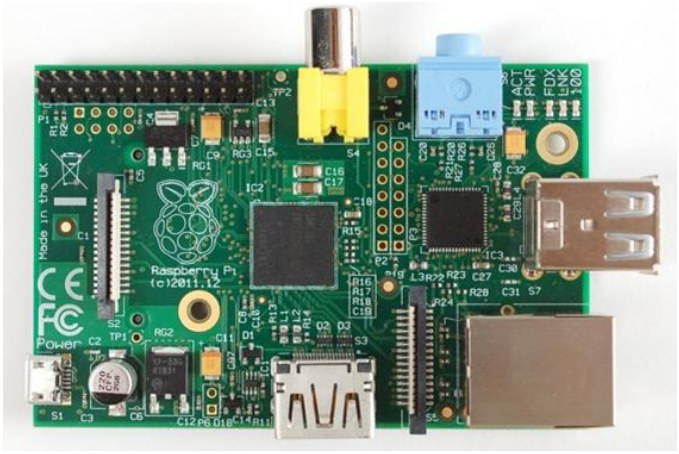


Fig. Block diagram (Smart band section)

A.ARM MICROCONTROLLER

ARM could be a 32-bit reduced instruction set computer (RISC) processor architecture developed by the ARM Corporation. ARM processors possess a novel combination of options that produces ARM the foremost standard embedded design nowadays. First, ARM cores area unit terribly easy compared to most alternative general processors, which suggests that they'll be factory-made employing a relatively little range of transistors, exploit lots of area on the chip for application specific macro cells. A typical ARM chip will contain many peripheral controllers, a digital signal processor, and a few quantity of on-chip memory, together with Associate in Nursing ARM core. Second, each ARM ISA and pipeline style area unit geared toward minimizing energy consumption — a essential demand in mobile embedded systems. Third, the ARM design is extremely modular: the sole necessary element of Associate in Nursing ARM processor is that the number pipeline; all alternative elements, together with caches, MMU, floating purpose and alternative co-processors area unit facultative, which supplies lots of flexibility in building application-specific ARM-based processors. Finally, whereas being little and low-power, ARM processors give high performance for embedded applications.

RASPBERRY PI BOARD



The Raspberry Pi could be a credit-card-sized single-board pc developed within the UK by the Raspberry Pi Foundation with the intention of promoting the teaching of basic applied science in colleges. The Raspberry Pi includes a Broadcom BCM2835 system on a chip (SoC), which has Associate in Nursing ARM1176JZF-S 700 megahertz processor, Video Core IV GPU, and was originally shipped with 256 megabytes of RAM, later upgraded to 512 MB. It doesn't embody a integral disc or solid-state drive, however uses Associate in Nursing Mount Rushmore State card for booting and protracted storage.

B. GPS RECEIVER

The Global Positioning System (GPS) is a Global Navigation Satellite System (GNSS) created by the United States Department of Defense. It is the main completely practical GNSS on the planet. It utilizes a heavenly body of in the vicinity of 24 and 32 Medium Earth Orbit satellites that transmit exact microwave

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signals, which empower GPS collectors to decide their present area, the time, and their speed. The GPS is comprised of three sections: satellites circling the Earth; control and observing stations on Earth; and the GPS collectors claimed by clients. GPS satellites communicate signals from space that are grabbed and distinguished by GPS collectors. Every GPS recipient at that point gives three-dimensional area (scope, longitude, and elevation) in addition to the time.

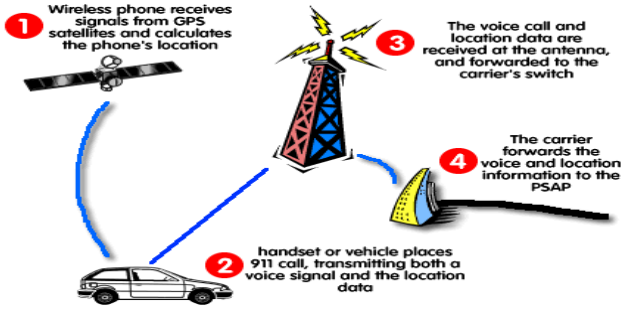

Fig. GPS Network

C. GSM (GLOBAL SYSTEM FOR MOBILE COMMUNICATIONS)

GSM (Global System for Mobile interchanges) is a cell arranges which implies that cell phones interface with it via hunting down cells in the prompt region. GSM systems work in four diverse recurrence ranges. Most GSM systems work in the 900 MHz or 1800 MHz groups. A few nations in the Americas utilize the 850 MHz and 1900 MHz groups on the grounds that the 900 and 1800 MHz recurrence groups were at that point designated.

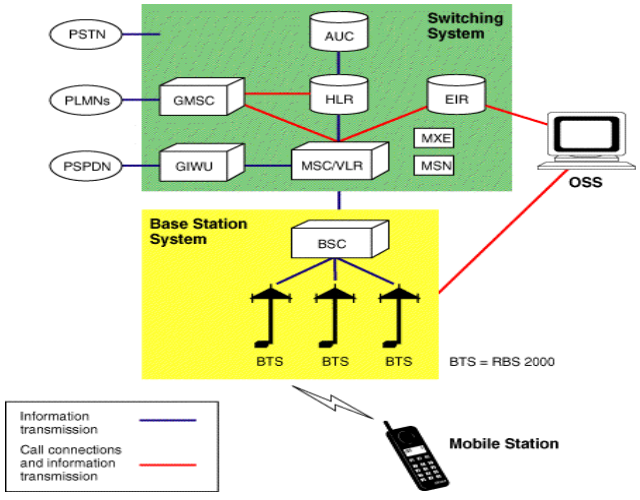

Fig. GSM Network

D. MEMS ACCELEROMETER

An accelerometer is a miniaturized scale electromechanical gadget that measures speeding up strengths. These strengths might be static, similar to the consistent drive of gravity pulling at our feet, or they could be dynamic - caused by moving or vibrating the accelerometer. There are many sorts of accelerometers created and revealed in the writing. By far most depends on piezoelectric gems, yet they are too enormous and to awkward. Individuals attempted to create something littler, that could build relevance and began looking in the field of microelectronics. They created MEMS (small scale electromechanical frameworks) accelerometers.

E. LINUX OPERATING SYSTEM

Linux or GNU/Linux is a free and open source programming working framework for PCs. The working framework is a gathering of the fundamental guidelines that tell the electronic parts of the PC what to do and how to function. Free and open source programming (FOSS) implies that everybody has the opportunity to utilize it, perceive how it works, and changes it. A Linux-based framework is a secluded Unix-like working framework. It infers quite a bit of its essential outline from standards built up in Unix amid the 1980s. Such a framework utilizes a solid part, the Linux portion, which handles prepare control, systems administration, and fringe and document framework get to. Gadget drivers are either incorporated straightforwardly with the piece or included as modules stacked while the framework is running.

F. QT EMBEDDED FRAME WORK

Qt is a cross-stage application system that is broadly utilized for creating application programming with a graphical UI (GUI) (in which cases Qt is named awidget toolbox), and furthermore utilized for creating non-GUI projects such ascommand-line devices and consoles for servers. Qt utilizes standard C++ yet makes broad utilization of a unique code generator (called the Meta Object Compiler, or moc) together with a few macros to enhance the dialect. Qt can likewise be utilized as a part of a few other programming dialects by means of dialect ties

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III. WORKING PRINCIPLE

In this venture, we are giving the entire portrayal on the proposed framework design. Here we are utilizing Raspberry Pi board as our stage. It has an ARM-11 SOC with coordinated peripherals like USB, Ethernet and serial and so on. GPS module has four association pins, to be specific: Vcc, GND, TX and RX. It requires a power input 5V 100mA ,which can be given utilizing any reasonable supply source.. The GND stick of the GPS module and the GND stick of the RPi board (sixth stick) ought to be grounded appropriately. The RX stick of Pi, i.e the tenth GPIO stick on the RPi board, ought to be associated with the TX stick of the GPS module. Once the association are made and the modules are fueled, ensure that the GPS module is kept in a place where the GPS has an unmistakable view to the sky or possibly almost a window for solid flag trustworthiness. Embed a SIM card in to the GSM modem and make the appropriate associations as appeared in the figure. The transmission and gathering pins ought to be associated in a switch arrange and the ground pins must be shorted. At the point when our application begins running it initially check every one of the gadgets and assets which it needs are accessible or not. After that it check the association with the gadgets and offers control to the client.

IV. RESULT

The proposed system was fully developed and tested to demonstrate its feasibility and effectiveness. The screenshots of the smart home app developed has been presented in Figure

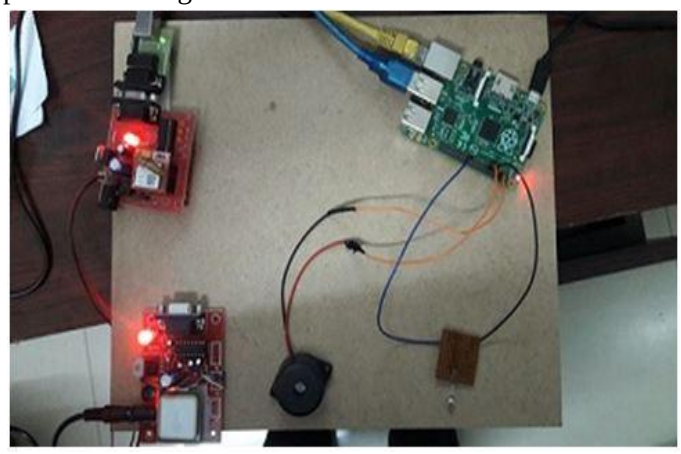

Fig. Hardware implementation

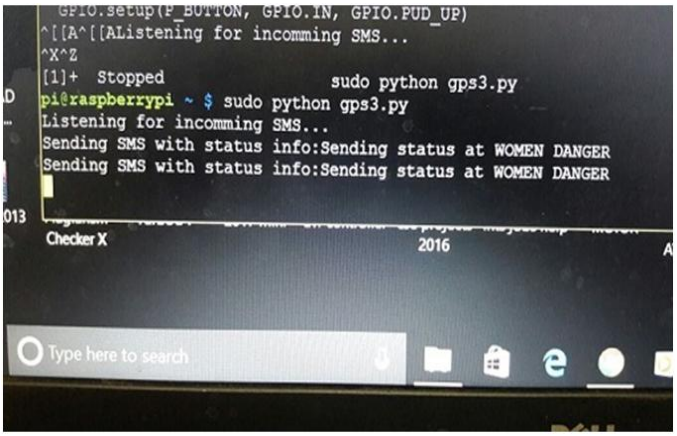

Fig. Output representation in the terminal

This type of an idea being the first of its kind plays a crucial role towards ensuring Women Safety in the fastest way possible automatically. The proposed design will deal with critical issues faced by women in the recent past and will help solve them through technologically sound gadgets.

V. Applications

- Used for safety and security of woman.
- Woman can travel any place at any time without any fear.

VI. Advantages

- As ARM11 CPU is used, future modification is done easily according to our need.
- Safe and secured
- Accurate
- Easy to implement and low cost technique.

VII. FUTURE SCOPE

- The cost of ARM11 is more that's why in future we can implement this system using ARM CORTEX A8, Beagle bone etc as well as updated processors with high frequencies will work fine.
- As the storage space is also less in future we can also record these live streaming data by connecting external memory storage.
- We can complete our project using wireless technology.

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- In future we can provide more security to data by using encryption, decryption techniques.

VIII. CONCLUSION

The project **"An Efficient Way for Providing Security to Women using GSM and GPS"** has been successfully designed and tested. It has been developed by integrating features of all the hardware components and software used and tested. Presence of every module has been reasoned out and placed carefully thus contributing to the best working of the unit. Secondly, using highly advanced ARM 11 Processor board and with the help of growing technology the project has been successfully implemented.

IX. REFERENCES

[1] Wireless Medical Technologies: A Strategic Analysis of Global Markets [online]. International Telecoms Intelligence. http://www.itireports.com

[2] G. Y. Jeong, K. H. Yu, and Kim. N. G. Continuous blood pressure monitoring using pulse wave transit time. In International Conference on Control, Automation and Systems (ICCAS), 2005.

[3] K. Hung, Y. T. Zhang, and B. Tai. Wearable medical devices for telehome healthcare. In Procs. 26th Annual International Conference on the IEEE EMBS, 2004.

[4] Fang, Xiang et al: An extensible embedded terminal platform for wireless telemonitoring, Information and Automation (ICIA), 2012 International Conference on Digital Object Identifier: 10.1109/ICInfA.2012.6246761 Publication Year: 2012 , Page(s): 668 - 673

[5] Majer, L., Stopjaková, V., Vavrinský, E.: Sensitive and Accurate Measurement Environment for Continuous Biomedical Monitoring using Microelectrodes. In: Measurement Science Review. - ISSN 1335- 8871. - Vol. 7, Section 2, No. 2 (2007), s. 20-24.

[6] Majer, L., Stopjaková, V., Vavrinský, E.: Wireless Measurement System for Non-Invasive Biomedical Monitoring of PsychoPhysiological Processes. In: Journal of Electrical Engineering. - ISSN 1335-3632. - Vol. 60, No. 2 (2009), s. 57-68.