FABRICATING INTELLIGENT ANKLE BOOT FOR DEMENTIA PATIENT

Ms. S.Pavya M.E[1], K.Akila[2], S.Kavi mani[3], R.Josephine Steffi[4]

[1]*Assistant professor, Department of Electronics and Communication, Paavai Engineering College, Namakkal, Tamilnadu, India.*
[2],[3],[4]*UG Student,Department of Electronics and Communication, Paavai Engineering College, Namakkal, Tamilnadu, India.*

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Abstract - *: Motivation of the paper proposed a technological innovation project which can ease to reduce the caregiver stress. The patient module and guardian module in paired with device. The NIWI device is used to store the location. The patient health condition is continuously monitoring. LCD is used to display the current status of the device.*

Key Words: NIWI device, LCD, GSM

1. INTRODUCTION

Every year the dementia patient's rate has risen. The dementia patient appearance is like a normal human being but the behavior is different from others .The dementia patient has lost the memory. The caretaker having more stress to monitor the dementia patients so the system is used to reduce the caretaker stress.

2. LITERATURE SURVEY

Jorge Gimez[1] the paper titled as "patient monitoring system based on internet of things". The main aim of the project is to design the implementation of the system is to constant monitoring of the patient by doctor. It is slow in process due to signal is the drawback of this system.
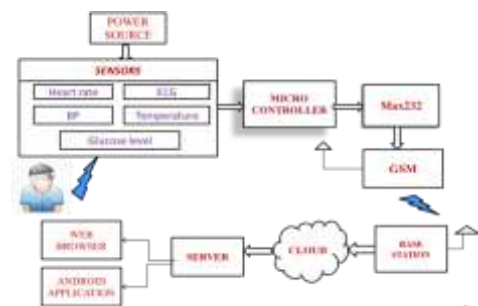
Maglogiannis[2] the paper titled as "intelligent pervasive healthcare system". The main aim of the project is to developed of integrated system for health and patient context monitoring based on mobile. The drawback of this system is less security.

Korhonen[3]the paper titled as "Health monitoring in the home of the future". The main aim of the project is the patient is able to extended independently living at home and improvement of quality of life for individuals and it is compatible. The drawback of the system is not more accurate.

3. METHODOLOGY

In this paper is simple and easy to implement.It is so compact to wear. The power source is give the power supply to the sensor. The sensor is to sense the patient condition. In this project there are three type of sensors are used. They are pressure sensor, heart rate sensor and temperature sensor. The pressure sensor is used to sense the patient pressure. The heart rate sensor is used to sense the patient heart beat. The temperature sensor is used to sense the patient body temperature. Using the MAX232 to send the information to GSM. The GSM gives the location to base station. The GSM gives the signal to nearby base station. The base station gives to the cloud and then the cloud gives to the server. In this server to create the android application. Most of the peoples only used the web server. It monitors the patient's health condition continuously and load the data in a cloud storage location for future reference.

Block diagram of proposed system

4. HARDWARE COMPONENT

4.1 TEMPERATURE SENSOR

The Temperature sensor is sensed by humans as "Hot", "neutral", or "cold".This is achieved through the use of temperature sensor and temperature regulator which process the signal they receive from sensors.

4.2 PRESSURE SENSOR

A pressure sensor is a device it sense a patient pressure and converts it into an analog electric signal .

4.3 HEART RATE SENSOR

A heart rate sensor is a device it sense a patient heart rate and then display the LCD.

4.4 LCD

The LCD is used to display the timing in the system.

4.5 ARDUINO

Arduino process is done in both hardware and software. The interactive object that can sense and control object in the physical world.

4.6 POWER SUPPLY

The power supply converts the one type of electrical power to another.

5. RESULT AND DISCUSSION

VALUE OF TEMPERATURE SENSOR

The temperature sensor is used to sense the human body temperature.

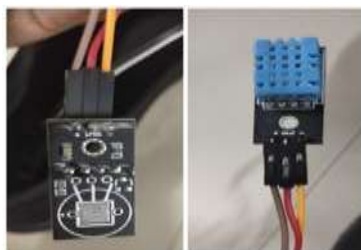| s.no	Age	Normal range
1.	(0-2) years	97.5℉ -100.4℉
2.	(3-10) years	97.0℉ -100.0℉
3.	(11-65)years	96.6℉ -99.7℉
4.	>65 years	96.4℉ -99.5℉

Fig. 5.1 Temperature and pressure sensor

VALUE OF PRESSURE SENSOR

A pressure sensor is a device generates a signal as function of the pressure imposed

Blood pressure category	Systolic mm Hg		Diastolic mm hg
Low blood pressure(Hypotension)	<80	Or	<60
Normal	80-120	And	60-80
Prehypertension	120-139	Or	80-89
High blood pressure(hypertension stage 1)	140-159	Or	90-99
High blood pressure (hypertension stage 2)	160 or higher	Or	>100
High blood pressure crisis(seek emergency care)	>180	Or	>110

VALUE OF HEART RATE SENSOR

Heart rate sensor is a device is used to sense the human heart rate.

s.no	category	Age	Heart rate
1.	New born	(0-1) months	100-180
2.	Infant	(0-12) months	80-150
3.	Toddler	(1-3) years	75-130
4.	Pre school age	(3-5) years	75-120
5.	School age	(5-11) years	70-110
6.	Pre adolescent	(11-13) years	70-110
7.	adolescent	(13-18) years	65-105
8.	Adult	18+ years	50-90

Fig.5.2 heart rate sensor

LCD

A LCD is used to display the timing in the system.

Fig.5.3.LCD

ARDUINO

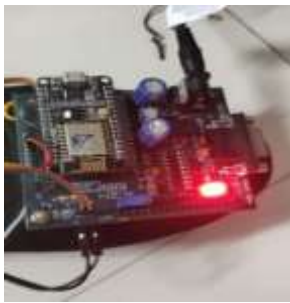Arduino is an open source hardware and software.In the paper the arduino is used in hardware.

Fig.5.4.Arduino

POWER SUPPLY

Power supply is a electrical device. It gives the power to the shoe.

Fig.5.5 Power supply

5. CONCLUSION

With the help of this paper the caretaker easily find the patient location by using the NIWI device. This paper reduce the caretaker stress.

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BIOGRAPHIES

Description "K.Akila, UG Student, Department of Electronics and Communication Engineering, Paavai Engineering College, Namakkal, Tamilnadu, India."

Description "S.Kavi mani UG Student, Department of Electronics and Communication Engineering, Paavai Engineering College, Namakkal, Tamilnadu, India. "

Description "R.Josephine Steffi UG Student, Department of Electronics and Communication Engineering, Paavai Engineering College, Namakkal, Tamilnadu, India. "

Description "S.Pavya Assistant professor, Department of Electronics and Communication Engineering, Paavai Engineering College, Namakkal, Tamilnadu, India. "