

Enhancing Fall Detection System for Elderly and Dementia Patients

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Abstract:- Dementia is the most frequent neurodegenerative cognitive disorders, mostly aged people faces this kind of brain related issues. In this paper, the data's of dementia patients are collected and also uses the sensors and send the data's to the server are stored in a database. And hence we have proposed our project to safeguard dementia patients from getting lag in their mental health by boost their memory power by often reminding the patient to do scheduled activities on time. Also our system continuously monitors their physical health and intimate them when they required any medical assistance. Additionally we have adopted accelerometer sensor which will identifies whether the patient is in fall zone and intimates them regarding the environment. In case of any emergency the caregivers or concern persons generate alerts immediately when they face the situations that are indiscernible. The real time IOT, webpage is created and the data's are secured by the security key. AURDINO UNO is used for analysis purpose and results are shown in a better and easy way. Finally we discuss about the wearable technology for the construction of sensor band.

Keywords:- Pressure sensor, Temperature sensor, Mems, Lcd, Gsm, Lcd.

I. INTRODUCTION

The healthcare Internet of things (IOT) based on bio medical devices makes the home based health monitoring for the elderly possible. IOT is the physical device network, used for vehicles, home; it is embedded based electronics device. Main work is to exchange the data. To refer physical objects and IP address for internet connectivity and multi layer technology. It's a smart application for health monitoring. An establishing an IOT-based home cares monitoring system. In the home care monitoring system, the smart home gateway to collects signals from the body sensor and transmits them to the authorized server. The development of home gateway-based health monitoring systems has been through three stages. In the first stage of process, the GSM modem acts as the home gateway, and data was transmitted through the telephone line. This method is successful monitoring system for elderly people. It should be able to detect the desired condition and user's activities. This work like convenient to everyone. And it can be used to educated and uneducated person. This system component used by temperature sensor, pressure sensor, MEMS, GSM, then using simulation software is PROTEUS.

II. RESEARCH ELABORATION

➤ Power supply

Power supply is an electrical device. It's should be convert to AC voltage to DC voltage. These components are transformer, rectifier, and filter, regulator. The Input voltage of power supply is 240V AC and output regulates voltage is 5V.

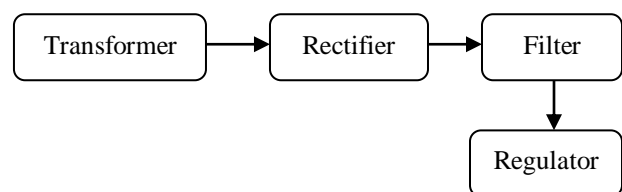


Fig 1:- Power Supply

➤ MEMS

MEMS represented by Micro-Electro-Mechanical Systems; it is defined as miniaturized mechanical and electro-mechanical device. This is micro fabrication techniques. Its fixed coordinate system, it is also used for health monitoring. It can be measure acceleration in 3axes. To detect whether person fall down or not.



Fig 2:- Mems Sensor

➤ Pressure sensor

A Pressure sensor is a device for health monitoring. These values convert to analog electric signal. This sensor used for to sense the human body pressure. These pressure values send to controller unit.

➤ Temperature sensor

A temperature sensor is a device, to detect the resistance of temperature level. Its act as thermometer or thermocouples, used to determine the human body temperature. LM35 sensor have 3 pins, ground pin, output voltage pin, supply voltage pin. LM35 is a high output voltage, these voltage directly proportional to temperature of Celsius.

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