



36 T.Y. Project Synopsis Template A.Y. 2021-22

Engineering (Dr. Vishwanath Karad MIT World Peace University)



SCHOOL OF ELECTRONICS ENGINEERING

SYNOPSIS

T.Y. PROJECT

(ACADEMIC YEAR: 2021-2022)

SEMESTER: V

**PROJECT TITLE: HEALTH CARE AND MEDICATION ASSISTIVE
SYSTEM USING IoT AND I2C PROTOCOL**

Group ID: 36

Name of Project Guide: Mr.Mahesh Vibhute

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Abstract

A system can be developed to design test sets for recovery of a patient and to monitor the exercises remotely. The Goal of this project is to enable the doctor to acquire patients' data from remote places, which will help them to advise an effective and well organized treatment. In the current healthcare scenario, patients must visit a hospital to know their health related issues or not.

1. Project Background / Motivation / Idea Conceptualization

Increasing in elderly population puts extra pressure on healthcare systems globally in terms of operational costs and resources. To minimize this pressure and provide efficient healthcare services, the application of the Internet of Things (IoT) and wearable technology could be promising. These technologies have the potential to improve the quality of life of the elderly population while reducing strain on healthcare systems and minimizing their operational cost.

Although IoT and wearable applications for elderly healthcare purposes were reviewed previously, there is a further need to summarize their current applications in this fast-developing area. This device provides a comprehensive overview of IoT and wearable technologies' applications including the types of data collected and the types of devices for elderly healthcare. This paper provides insights into existing areas of IoT/ wearable applications while presenting new research opportunities in emerging areas of applications, such as robotic technology and integrated applications. The analysis in this paper could be useful to healthcare solution designers and developers in defining technology supported futuristic healthcare strategies to serve elderly people and increasing their quality of life.

2. Literature Review & Gap Identification

Sr. No	Parameter	1	2	3	Proposed work
1	Technology	Internet	Internet	Internet	Internet
2	Communication Protocol	IOT, MQTT	IOT and I2C	IOT	IOT and I2C
3	Hardware	Arduino,Sensors	LCD,Buzzer, Node-MCU, DS1307, Arduino	Sensor,Wi-Fi module, Microcontroller, Accelerometer	Blood pressure , Heart beat rate Sensor, LCD, Buzzer, Node-MCU, DS1307, Arduino
4	Software	Raspberry-pi	EEPROM, ROM, RTC, Blynk app	Proteus	EEPROM, ROM , RTC ,Blynk app/ cloud

Research Gap: We observed that although the reminder of activities is implemented already, the product in the paper requires a different system for different tasks which is not convenient because it is difficult to carry it. Hence, we are combining all these in a single device along with allowing us to consult with Physicians.

3. Aim, Objectives, Problem Statement & Scope

Aim: To Design Health Care and Medication Assistive System using IOT and I2C protocol.

Objectives:

1. To measure the blood pressure and heart beat rate by using the sensor.
2. To implement the I2C EEPROM and RTC clock for medication assistive systems.
3. To send the data of medication activities on cloud/ blynk apps.

Problem Statement: Design and implementation of health care medication assistive system to measure the blood pressure and heart beat rate by using the IoT and I2C Protocol.

Scope: Project will include: Knowledge, and information of medication, record pulse rate, heart bit of the user and an app to monitor it.

Project will not include: Live physician.

4. Deliverables

1. Take input from the user.
2. Replacing it with the information.
3. Controlling the action and features of the product.
4. Planning provides an application.
5. Providing a visible image.

5. Methodology & Expected Outcomes

Microcontroller takes the input from Pulse Sensor (SEN-11574). Timings prescribed by the doctor are stored in the EEPROM and the timings are continuously compared with current time obtained from Real-Time Clock (RTC) DS1307. The RTC module communicates with the microcontroller by using the I2C bus Protocol. Once the current time is matched with any of the

medication timings stored in EEPROM then the microcontroller alerts the people by ringing a buzzer.

System and press the button Medicines for each slot is stored in a separate hardware racks can be opened/closed automatically with the help of motors. Once the medicines are consumed their count will be decremented and displays the available count in a mobile application also it displays the heart beat rate(BPM).The mailing system sends a mail to the medical practitioner and doctor. The microcontroller used in this project is having an in-built Wi-Fi module which provides the communication between the medication hardware and the mobile device.

6. High-Level Timeline/Schedule

Sr.No	Month & year	Work planned to do	Remarks...
1.	Aug 2021	Design of the project and literature survey	
2.	Sept 2021	Mathematical calculations and Finalizing specifications.	
3.	Oct 2021	Implementation of MPLAB X IDE code for heart beat rate	
4.	Nov 2021	Proteus Simulation for measurement of heart beat rate and blood pressure by using sensors.	
5.	Dec 2021	Facing the practical exam in front of the external examiner	

APPROVAL AND AUTHORITY TO PROCEED

We approve the project as described above, and authorize the team to proceed.

Approved By:		
Committee Member	Name	Sign and Date
Guide		
Reviewer No. 1		
Reviewer No. 2		
School Dean		