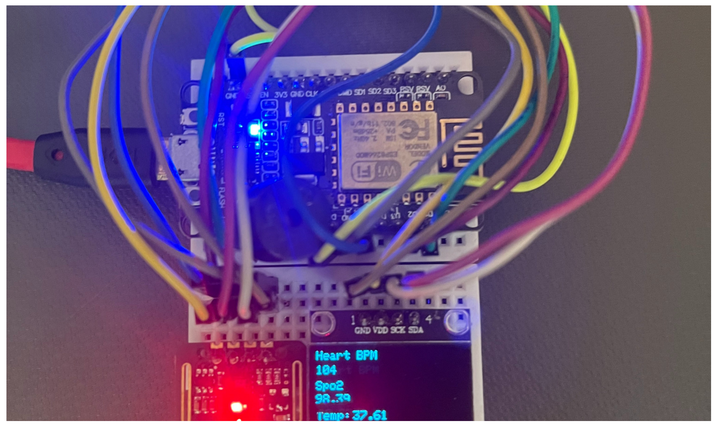
SARVAJANIK COLLEGE OF ENGINEERING & TECHNOLOGY, SURAT

PROJECT ON COMPETITION ON EMBEDDED SYSTEM

PROJECT TITLE:

Heart Rate and SpO2 Monitoring System with Automated Excel Reporting



01. Introduction

• Blood oxygen monitoring, heart rate monitoring, and temperature monitoring are all important in healthcare.
• Blood oxygen monitoring involves measuring the oxygen saturation level in a person's blood, which is a critical indicator of respiratory function.
• Heart rate monitoring involves measuring the number of times a person's heart beats per minute, which is a critical indicator of cardiovascular function.
• All Two monitoring techniques can help diagnose and monitor a wide range of medical conditions, and are important tools for healthcare professionals in providing effective treatment and care to patients.

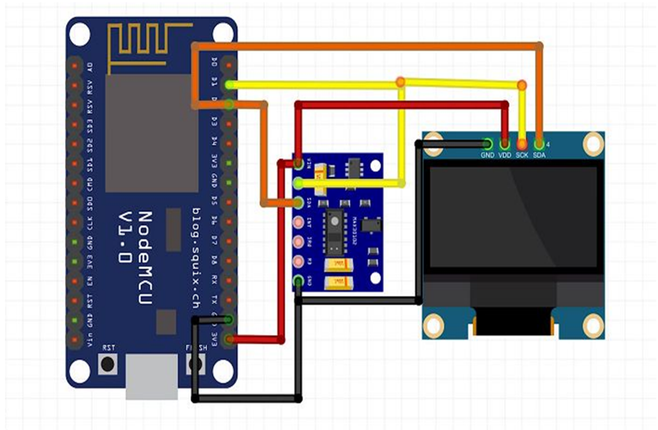
03. ESP32 TO GOOGLE SHEETS

•Google Sheets come to play as these are free, familiar, and most importantly reliable.
•It has a lot of functionalities and built-in integration with many other Google services and APIs.
•We can use this for many IoT applications from simple data logging to live monitoring and management of IoT devices.

Steps to create data logger using google spreadsheet.
1.Create a new Google Sheet.
2.Create a header row for your data.
3.Create a Google Script.
4.Deploy the script as a web app.
5.Update your ESP32 code to send data to the Google Sheet.

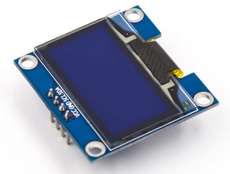
02. System Components

- ESP 8266
- MAX 30102
- OLED DISPLAY (0.98 INCHES)
- BREADBOARD
- JUMPER WIRES
- SPEAKER



03. Advantages

•Early Detection of Medical Conditions
•Non-Invasive
•monitor blood oxygen levels and heart rate using wireless devices.
•Cost-Effective



04. Disadvantages

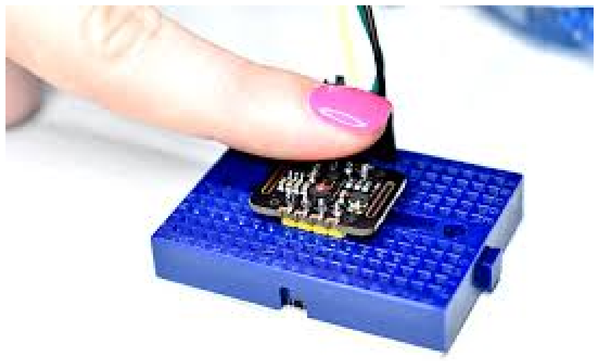
•False Readings
•Technical Difficulties
•Privacy Concerns

04. MAX 30102

- Operating voltage: 1.8V to 5.5V
- Integrated photodiode and LED driver
- Low-power operation: 600 nA standby current, 4.4 mA active current
- Two LEDs for emitting light and one photodetector for measuring light intensity
- Digital output (I2C interface)
- Adjustable LED brightness for different skin ton and ambient light conditions
- Operating temperature range: -40°C to +85°C
- Size: 5mm x 6.4mm x 1.5mm

06. Applications

•Medical Settings
•Sports and Fitness
•Aviation and Aerospace
•Military and Defense



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