RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY
0BEROI CENTER FOR EXCELLENCE
Post Graduate Diploma In Cloud Technology

A

PROJECT REVIEW

On

IOT based biometric fingerprint attendance system

By

Ms. Naina Bawane
Ms. Chaitali Ghugal
Ms. Pratiksha Wankhede
Mr. Sumit Parate

Under the guidance

Prof. Sandip Sonaskar
Prof. Nitinkumar Choudhary

Title

IOT BASED BIOMETRIC FINGERPRINT ATTENDANCE SYSTEM

Contents

Introduction

Biometric System

- Biometric systems are using personal characteristics to authenticate or identify a person.
- A system biometrics is the analysis of unique biological and physiological characteristics with the aim of confirming a person’s identity.

Abstract

Biometric Fingerprint Attendance System

- A biometric attendance system utilizes a fingerprint to allow employees to clock in and out of their office.
- The fingerprints of every employees are scanned and mapped using various system co-ordinates.
- A biometric time and attendance system will record the clocking in and clocking out of our staff during their working days.

Problem Definition/Statement

- Attendance Management System is software developed for daily faculties attendance in colleges and institutes.
- It facilitates to access the attendance information of a particular faculties in particular department.
- This system will also help in evaluating attendance eligibility criteria of a faculties.
- This application is built for automating the processing of attendance. It also enhances the speed of performing attending attendance task easily.

Literature Review

- Sharath Pankanti, Nalini K.Ratha, Andrew Senior, Guide to biometrics, Springer Publication (2003).
- Davide Maltoni, Anil K. Jain, Handbook of fingerprint recognition, Springer publication(2002).
- Leo Louis, “Working Principle of Arduino and using it as a tool for study and research”, IJCACS(International journal of control automation communication and system), April, 2016.

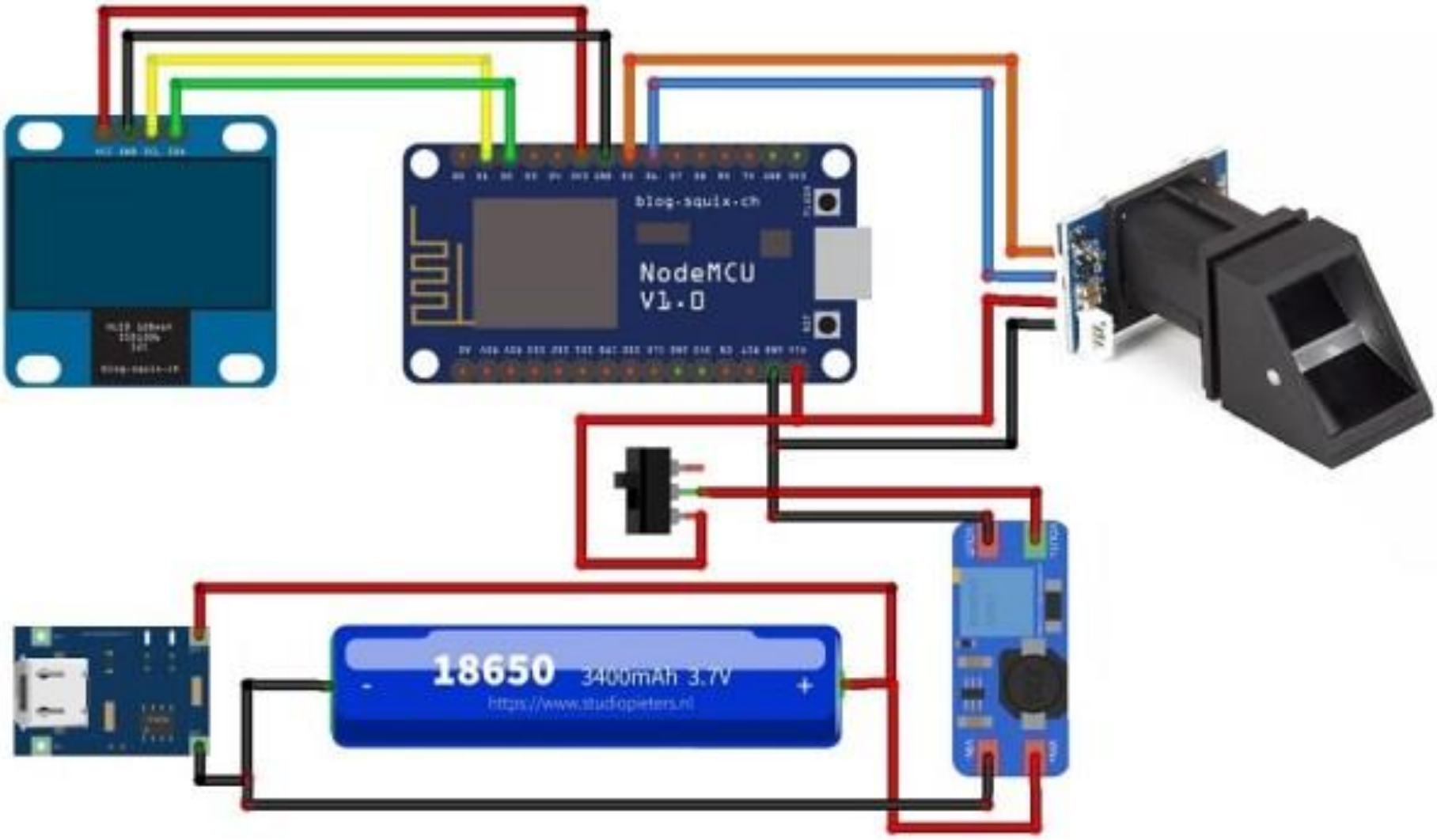
Hardware

- ESP12 Nodemcu
  Fingerprint Sensor
- LCD
- Battery & other (PCB, Diode, Wire, Switch)

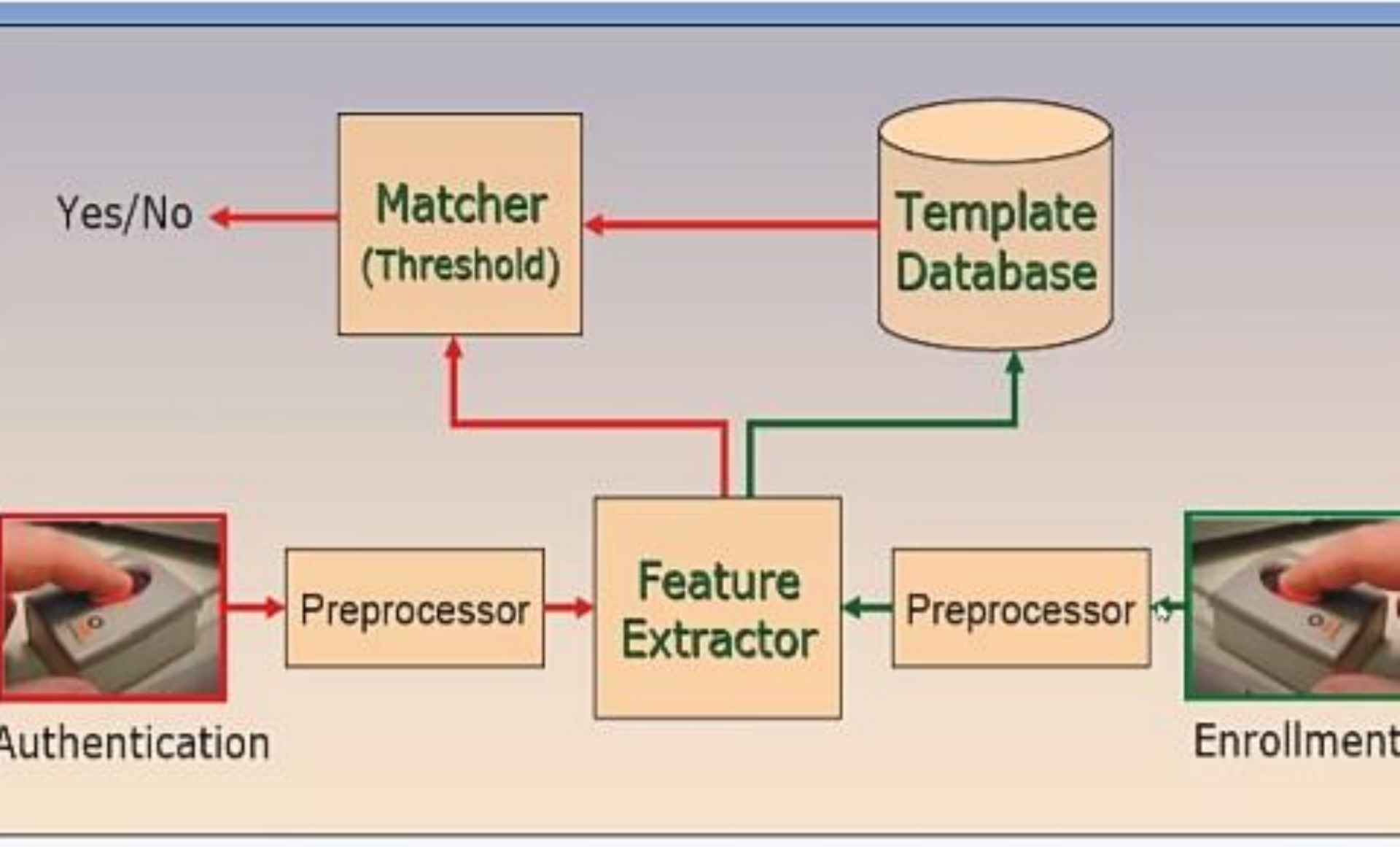
Softwares

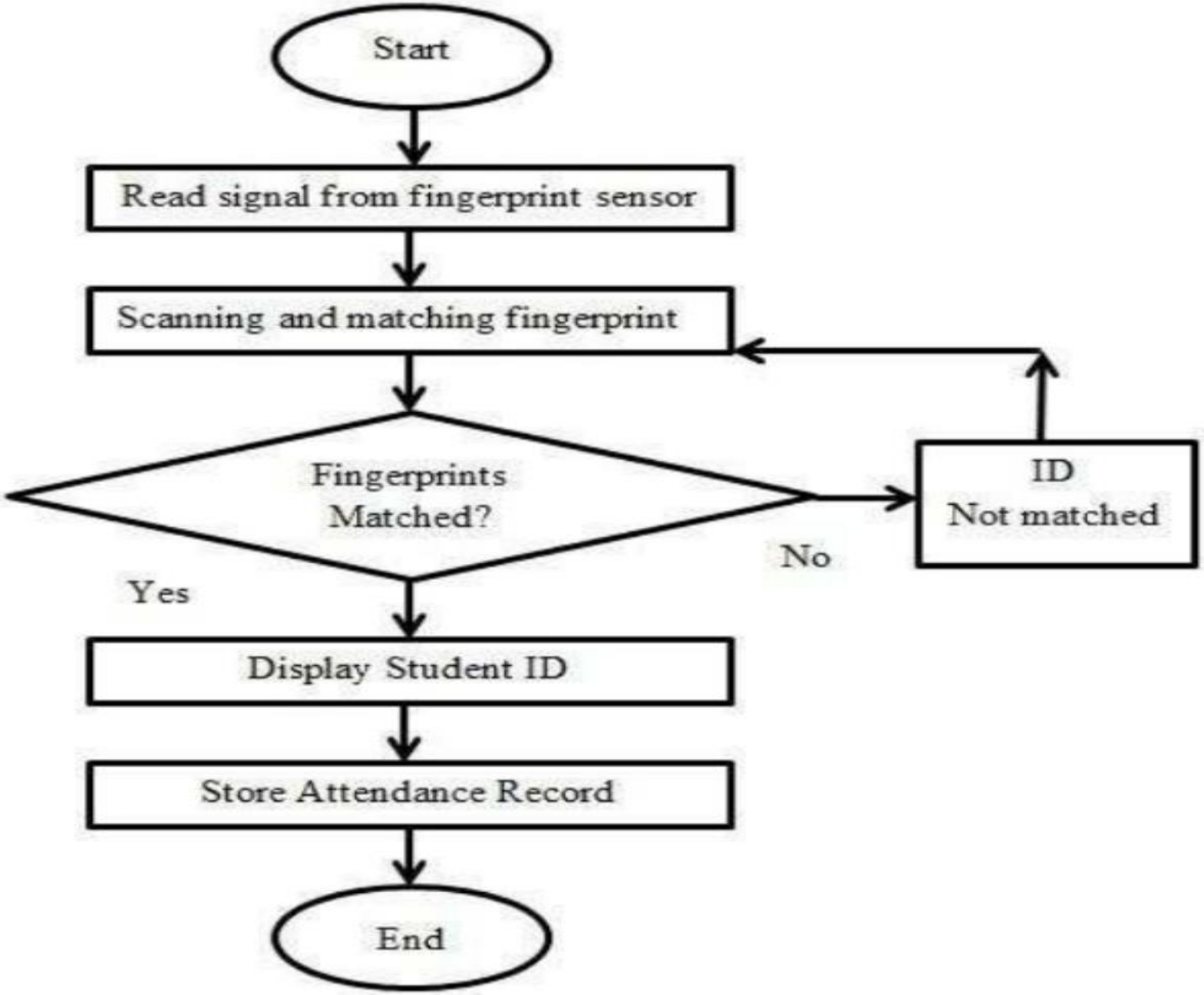
- Arduino IDE
- MY-SQL
- CSS
- PHP

Circuit Diagram



BIOMETRICS SYSTEM MODULES




Start
Read signal from fingerprint sensor
Scanning and matching fingerprint
Fingerprints Matched?
No
ID Not matched
Yes
Display Student ID
Store Attendance Record
End

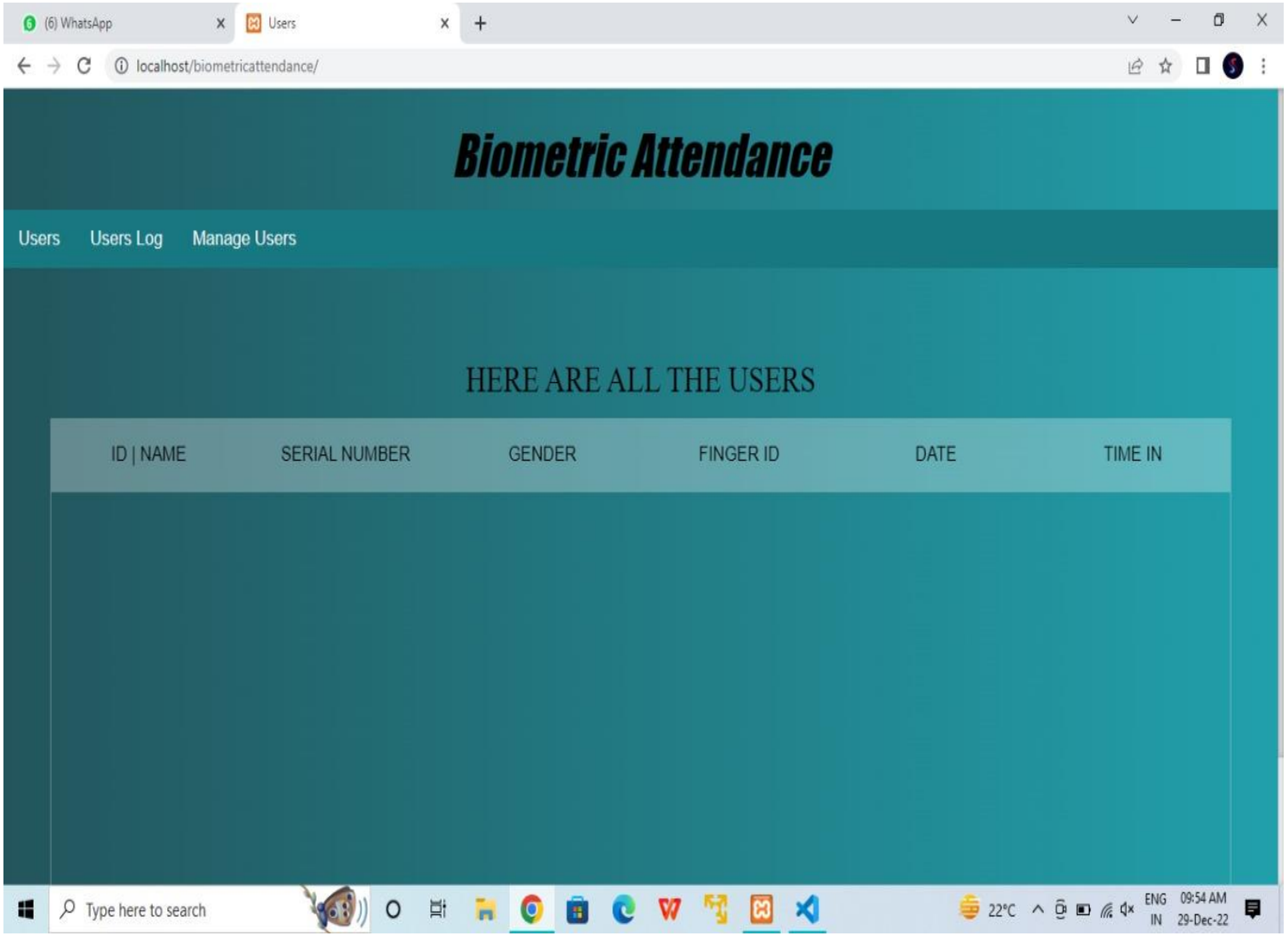
Methodology

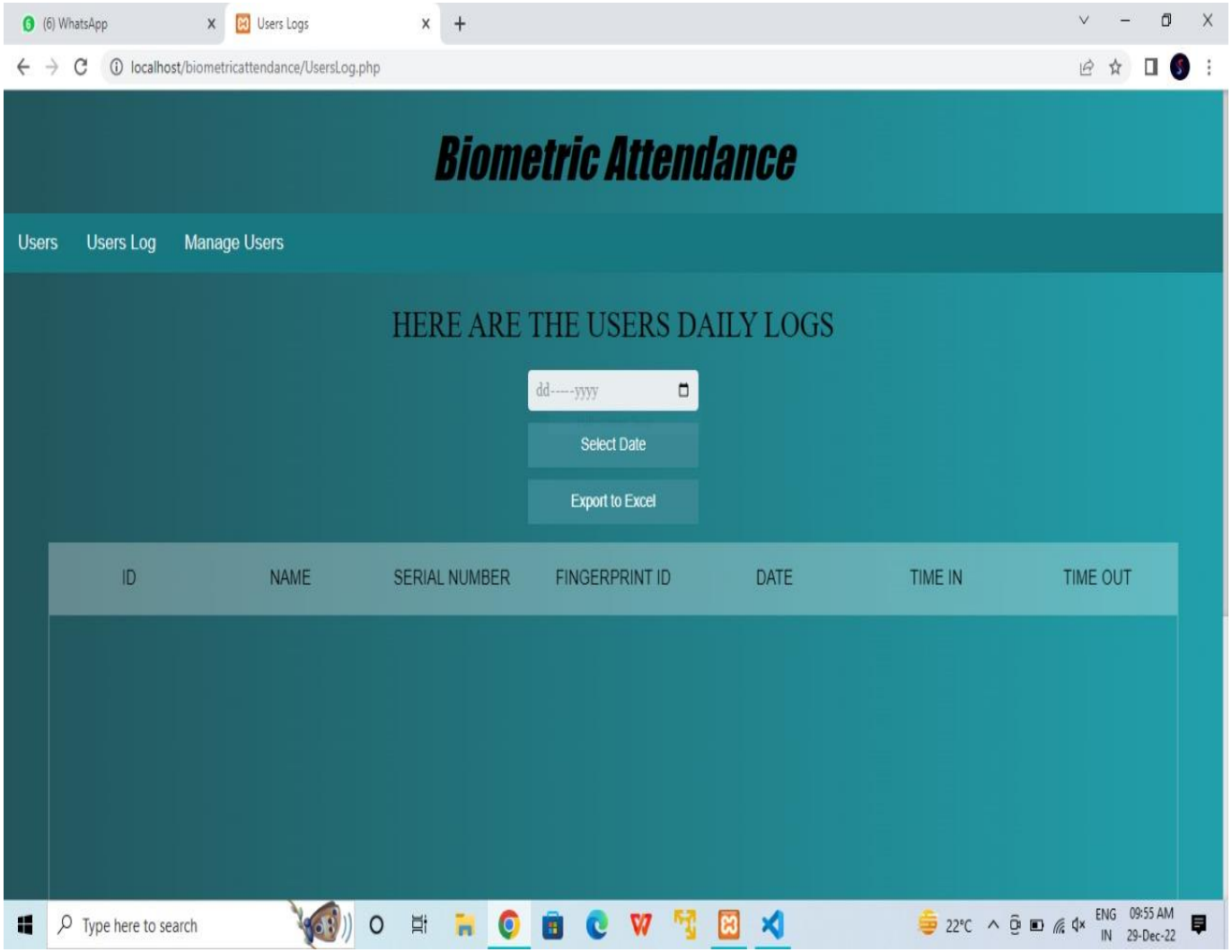
- To get a biometric attendance system going, first and foremost, every individual worker's fingerprint is scanned and further mapped out to specific coordinates that are defined by the system.
- Further, each fingerprint's coordinates are plotted against a graph and stored in the system.
- The individual's entry is clocked only if the latest image matches the stored one.
- The coordinates generated of any single fingerprint is unique and cannot be duplicated.

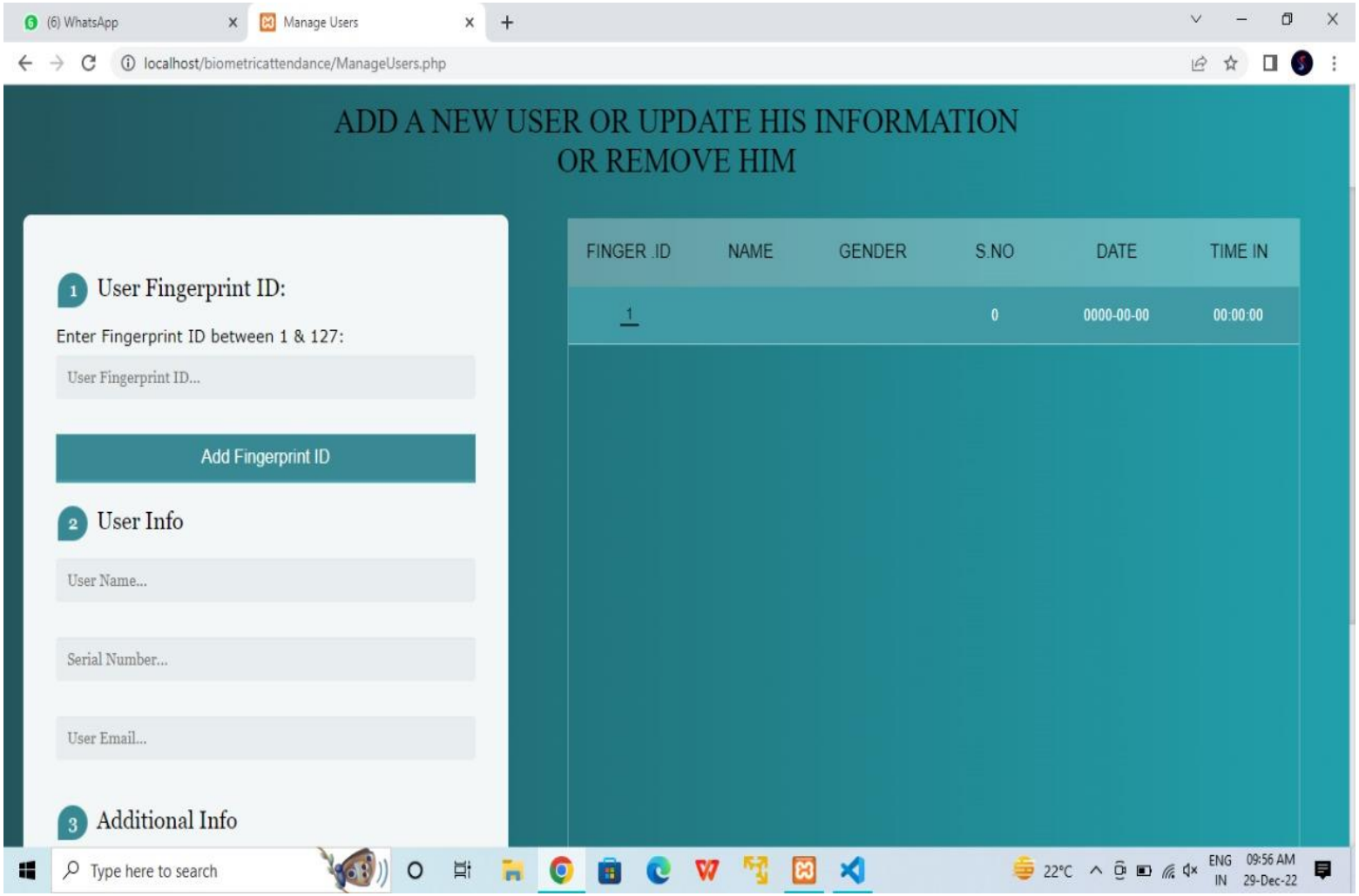
Approximate Cost Estimation

- Nodemcu – 450/-
- Fingerprint sensor – 1400/-
- OLED – 500/-
- PCB -100/-
- Other 1000/-

Progress Till Dates




(6) WhatsApp
Users Logs
localhost/biometricattendance/UsersLog.php
Biometric Attendance
Users
Users Log
Manage Users
HERE ARE THE USERS DAILY LOGS
dd-----yyyy
Select Date
Export to Excel
ID
NAME
SERIAL NUMBER
FINGERPRINT ID
DATE
TIME IN
TIME OUT
Type here to search
22°C
ENG
IN
09:55 AM
29-Dec-22


(6) WhatsApp
Manage Users
localhost/biometricattendance/ManageUsers.php
ADD A NEW USER OR UPDATE HIS INFORMATION
OR REMOVE HIM
1 User Fingerprint ID:
Enter Fingerprint ID between 1 & 127:
User Fingerprint ID...
Add Fingerprint ID
2 User Info
User Name...
Serial Number...
User Email...
3 Additional Info
FINGER .ID
NAME
GENDER
S.NO
DATE
TIME IN
1
0
0000-00-00
00:00:00
Type here to search
22°C
ENG
IN
09:56 AM
29-Dec-22

Future scope

- Security
- Convenience
- Protection
- Checkout-free shopping
- Multimodal authentication
- Sharing economy

Result/Conclusion:-

- Biometrics proves to be a reliable, faster, and accurate method of time clocking as it identifies an employee's identity based on his/her biometrics fingerprint attendance system.
- Biometric attendance systems are also beneficial to businesses in many ways, including accurate time and attendance tracking, heightened security, and enhanced productivity from staff.
- Biometric system provides and helps to verify identity of the user.

References

- Colin Dow, "Internet of Things Programming Projects: Build modern IOT with the Raspberry Pi 3 and Python", Paperback, October 31,2018, Packet Publishing.

- Pradecka Seneviratne, "Ilands-On Internet of Things with Blynk: Build on the power of Blynk to configure smart devices and build exciting IOT projects". Paperback, May 28,2018, Packet Publishing.

- Snehal R. Shinde, A. H. Karode and Dr. S. R. Suralkar, Review on IOT Based Environment Monitoring System, International Journal of Electronics and Communication Engineering and Technology, 8(2), 2017, pp. 103-108.

Thank you