

Implementation of Cloud Based Biometric Attendance System

Prof. S. M. Pangavhane¹, Prof. S. S. Gore², Sakshi. S. Kale³, Tushar K. Khairnar⁴

Department of Electronics & Telecommunications Engineering^{1,2,3,4}

PVG's College of Engineering & Shrikrushna S. Dhamankar Dhamankar Institute of Management, Nashik

Abstract: *This paper presents the development and implementation of a Cloud-Based Biometric Attendance System designed to offer a flexible and efficient solution for attendance tracking in various contexts. Leveraging the advancements in cloud computing and biometric technology, CBBAS eliminates the constraints of traditional attendance systems by providing portability, scalability, and enhanced security. It can make the users' attendances more easily and effectively. This paper discusses the architectural design, implementation strategies, security protocols, and potential applications of CBBAS, highlighting its ability to revolutionize attendance management processes with its flexibility and scalability.*

Keywords: IOT, NodeMCU

I. INTRODUCTION

This paper introduces the concept and implementation of a Cloud-Based Biometric Attendance System (CBBAS), aimed at addressing the limitations of traditional attendance tracking methods while offering enhanced flexibility, efficiency, and security. The CBBAS integrates biometric identification techniques, such as fingerprint or facial recognition, with cloud-based infrastructure to provide a robust and portable solution for attendance management. The portability aspect of the CBBAS is particularly significant in today's dynamic work environments, where remote work arrangements, off-site meetings, and mobile workforce management are increasingly prevalent. By harnessing the power of cloud computing, the CBBAS enables seamless access to attendance data from any location with internet connectivity, facilitating real-time monitoring and management of attendance records.

In this introduction, we provide an overview of the challenges associated with traditional attendance tracking methods, discuss the benefits of integrating biometric technology and cloud computing in attendance management, and outline the objectives and scope of the CBBAS implementation. Subsequent sections will delve into the architectural design, implementation strategies, security considerations, and potential applications of the CBBAS, demonstrating its potential to revolutionize attendance management practices across diverse organizational settings.

II. PURPOSE

The implementation of a Cloud-Based Biometric Attendance System (CBBAS) serves several key purposes aimed at addressing the limitations of traditional attendance management methods and leveraging advanced technologies to enhance efficiency, accuracy, and security.

CBBAS enables convenient access to attendance data from any location with internet connectivity, facilitating real-time monitoring and management of attendance records. This accessibility is particularly beneficial for organizations with distributed workforce or remote work arrangements.

Overall, the implementation of CPBAS aims to revolutionize attendance management practices by harnessing the power of cloud computing and biometric technology to provide a flexible, efficient, and secure solution for organizations of varying sizes and operational contexts.

III. OBJECTIVE OF SYSTEM

Develop a robust and user-friendly Cloud-Based Biometric Attendance System (CBBAS) that integrates seamlessly with existing organizational infrastructure.

Implement biometric identification techniques, such as fingerprint or facial recognition, to accurately and reliably identify individuals and record attendance data in real-time.

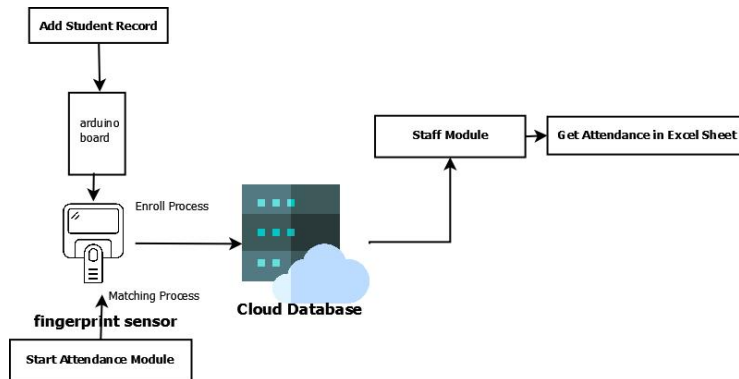
Ensure the portability of the CBBAS, enabling deployment in diverse settings, including remote work environments, educational institutions, and event management scenarios.

Utilize cloud-based infrastructure to facilitate convenient access to attendance data from any location with internet connectivity, enabling real-time monitoring and management of attendance records.

IV. SYSTEM ARCHITECTURE

The Cloud-Based Portable Biometric Attendance System (CBBAS) is designed to integrate biometric identification techniques with cloud-based infrastructure to provide a flexible, efficient, and secure solution for attendance management. The system architecture consists of several components that work together to capture, process, store, and manage attendance data.

V. SYSTEM ARCHITECTURE



This is IOT system using finger print sensor. This is system is use for student attendance in college and institute

V. RESULT

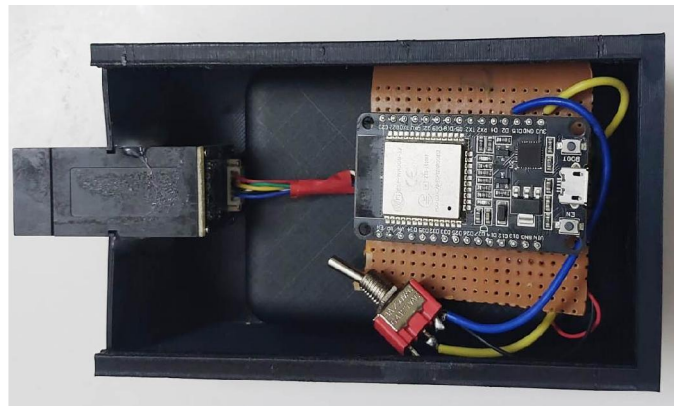
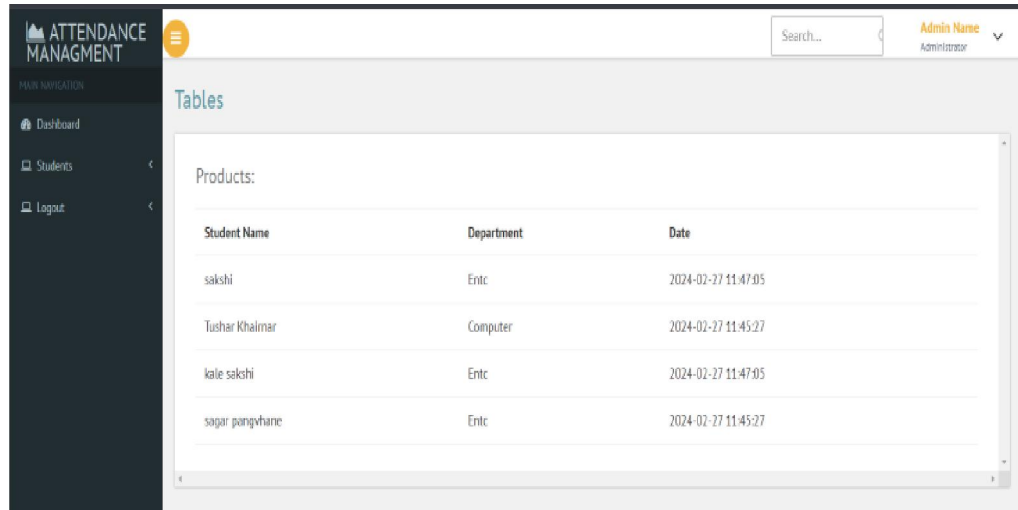


Figure 1.IOT Device



The screenshot shows a web application interface for 'ATTENDANCE MANAGEMENT'. On the left is a dark sidebar with navigation options: Dashboard, Students, and Logout. The main content area is titled 'Tables' and contains a table with the following data:

Student Name	Department	Date
sakshi	Entic	2024-02-27 11:47:05
Tushar Khaimar	Computer	2024-02-27 11:45:27
kale sakshi	Entic	2024-02-27 11:47:05
sagar pangvhane	Entic	2024-02-27 11:45:27

Figure 2. Output

VI. CONCLUSION

The implementation of the Cloud-Based Portable Biometric Attendance System (CPBAS) represents a significant advancement in attendance management technology, offering organizations a flexible, efficient, and secure solution for tracking attendance in diverse operational contexts. Through the integration of biometric identification techniques with cloud-based infrastructure, CBBAS addresses the limitations of traditional attendance tracking methods while providing numerous benefits for organizations and employees alike.

One of the key strengths of CBBAS lies in its portability, which enables organizations to deploy biometric attendance tracking capabilities in various settings, including remote work environments, educational institutions, and event management scenarios. This flexibility ensures that organizations can effectively manage attendance regardless of their operational context or geographical location, contributing to improved workforce management and compliance with regulatory requirements.

VII. ACKNOWLEDGMENT

We express our heartfelt gratitude to our esteemed mentors and professors, especially Prof. S. M. Pangavhane, for their invaluable guidance in our academic and project endeavours. We also extend our thanks to the Electronics & Telecommunication Engineering Department and its staff for their continuous support. Our sincere thanks go to Prof. Dr. M. V. Bhalerao, Principal of PVG's COE & SSDIOM, Nashik, for his support and permission to complete this project. We appreciate the assistance of our department's support staff, and we're grateful to our parents, friends, and all those who supported us throughout this project.

REFERENCES

- [1] "FINGERPRINT SENSOR BASED ATTENDANCE SYSTEM USING ATMEGA 328 AND ESP8266" Upasana Ghosh Dastidar¹,NikhitaJogi²,Milan Bansod³ ,PayalMadamwar⁴ and Prof Priyanka Jalan⁵. International Journal of Research In Science Engineering, Volume:3 Issue:2, [471-475],March-April 2017,e-ISSN:2394-8299 p-ISSN:2394-8280.
- [2] K. A, LazUzoечи, Opara F.K."Biometric-based Attendance System with Remote Real-time Monitoring system."Department Of Elec trical/Electronic Engineering. November 2013,DOI: 10.1109/NIGER-CON.2013.6715633 Conference:2013 IEEE International Conference on Emerging Sustainable Technologies for Power ICT in a Developing Society (NIGERCON)
- [3] Vishal Suryawanshi¹,Kiran Puri²,Prashant Devkar³, Dr.K.S.Tiwari⁴ ,Attendance Monitoring System-Automation-Using-Fingerprint-Module ISSN (Online): 2347- 2820, Volume -5, Issue-1, [44-47], 2017

[4] "Attendance System Using Fingerprint Identification with GUI", Prof. Vinay Suryawanshi¹, Swapnil Aundhakar², Nitin Mane³, RohitKamble⁴, Department of Electronics Telecommunication Engineering, Shivaji University Kolhapur, Maharashtra International Journal of Engineering Development and Research, Volume 5, Issue 2 — ISSN: 2321-9939, 2017.