International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 09 Issue: 05 | May 2022 www.irjet.net p-ISSN: 2395-0072

ANDROID BASED ADVANCED ATTENDANCE VIGILANCE SYSTEM USING WIRELESS NETWORK WITH FUSION OF BIO-METRIC FINGERPRINT AUTHENTICATION

Sivakumar V[1], Harsha M Terdal[2], Karan Singh[3], Mohammed Ismail[3], Nikhil R Vasisht[3], R.Swathi[4]

[1]Associate Professor, Department of Computer Science Engineering, Dayananda Sagar Academy of Technology & Management, Bangalore, Karnataka, India.
[2,3]UG Student, Department of Computer Science Engg., Dayananda Sagar Academy of Technology & Management
[4]Assistant Professor,Department of ComputerScience, Sree Abiraami College for Women, Thiruvalluvar University

---

***Abstract*— In today's digital age, some companies have begun to take attendance using biometric fingerprint verification. This keeps track of an employee's attendance However; it is also unclear if the person is completely present at work after registering attendance. In this current era of digitization, after taking attendance, it is common to see employees leave their workplace and work on their own during office hours. This study focuses on a smart attendance system that uses an Android Smartphone as a smart ID card. Using biometric fingerprint authentication, a Java mobile application is being created to ensure an individual employee's attendance. Furthermore, the entire office will function as a Wi-Fi hotspot. As a result, whether or not an employee is present at work is determined by whether or not the android device (Smart ID card) is linked to the router. The system will contain a counter that will track an employee's total time spent at work.**

Keywords: **Attendance System, Biometric fingerprint, Wireless Network, Android**

I. INTRODUCTION

Biometric fingerprint authentication has been more common in recent years as a means of identifying a person. It is widely utilized over the world because of its uniqueness and consistency. This technique is difficult to duplicate. It is safe. It is used by several companies to identify its staff. It degrades the employee's attitude when proxies are used. Fingerprint sensors are typically positioned in front of the entrance or exit door to identify the employee. Some employees take advantage of the fingerprint sensor and abused it. An employee opens the door with his fingerprint to allow someone else to exit. As a result, the fingerprint sensor is unable to verify an employee's presence in the office.

An employee's actual presence within his office cannot be guaranteed by a mobile application. We require the workspace to be connected to a router to establish a physical presence. If an employee is connected to that specific router, he can only give his attendance. This ensures that an employee is present physically. As long as someone is connected to the router, the system will keep track of how much time they spend at work. When an employee leaves, the device is disconnected, and when it returns to the router's range, the device is put back in. It is reconnected, and the counting procedure resumes where it left off. When an employee departs, the device is disconnected; when it returns to the router's (Workplace) range, it is reconnected, and the counting procedure starts where it left off. The system is a hybrid of a fingerprint authentication system and a wireless router, with attendance counting starting only when an employee enters the router range while still being registered by fingerprint authentication. To continue the attendance process, employees must re-login using fingerprint authentication within a certain amount of time.

Because the log-in procedure is session-based, an employee cannot leave the building without the device (Smart ID) because he will not know when it will be signed out and will have to log back in to resume the process. Our suggested system is as follows, which uses fingerprint technology to replace the old attendance system, offers several advantages, including high accuracy, reduced time complexity, and a router system. Our proposed advanced attendance system would be perfect for identification and authentication in a variety of organizations.

II.EXISTING SYSTEM

Under the current system, many of the work is done on paper with a pen. The attendance for the entire session entered in the ledger, which is used to generate the report.

It is impossible to revise the report Because it takes time; it is accessed in the midst of an event. The negative aspects of the current system in action include the fact that it is not user friendly, that it takes time to complete calculations, that it is not environmentally friendly because all calculations are done on paper, and that, n today's environment, where it's all automated, it's important to

remember that, The current system falls very short of that goal. Finally, but not all, the report cannot be prepared promptly if someone has to review it.

III.IMPLEMENTATION METHODOLOGY

Password identification is employed in the proposed attendance system. The user's distinct pass code is evaluated to all of the passwords stored within the program file during authentication.

A password can be generated in one of two ways. The first is Enlistment is the first step, and validation is the second, the details of the procedure. A description of how each operation works may be found below every user is validated throughout the enlisting procedure. Registered in the configuration file of the software all new users are given a one-of-a-kind password when they register. The main cause is that the procedure demands each recipient's registration in the database.

The person in charge has access to the user's registration permissions. The password of each user is validated throughout the validation procedure. Each user is assigned a pass code that has been kept in the system.

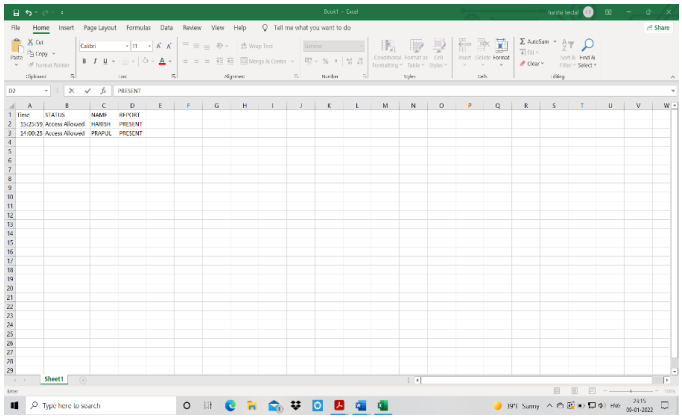

Fig.1:-Report in server Database

IV. PROPOSED SYSTEM

We suggest a new employee identification system in which employees' fingerprints are collected and the entire workplace is turned into a Wi-Fi zone. As a consequence, whether an employee is present at work is decided by whether the android device (Smart ID card) is linked to the router. The system will contain a counter that will track an employee's total time spent at work.

The constraints of the suggested system are listed below. A user's whereabouts can be traced if he or she lends his or her phone to someone. They will be marked even if they are not present. As a result of unreliable technology was seen.

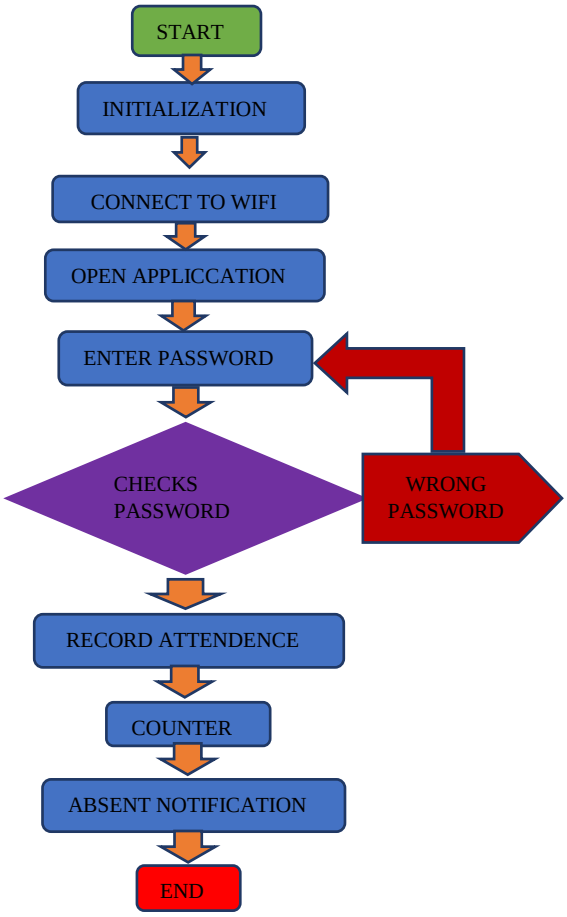

Fig.2:-Working Schema

V. WIRELESS FIDELITY

The framework notion is created using the mobile phone Wi-Fi and IP address to the database to make participation possible. The employee First and foremost, the employee is transportable. and their delicacies are stowed away in the server of information and every one of them subtleties have been saved in the database a Wi-Fi modem or switch for assistance every representative This idea was offered.

The framework has a limited scope. Like in the association, there are Wi-Fi signals. The framework will be compatible with smart phones. With the use of Wi-Fi, you can run a system like Android. In this module, the worker must use the Smartphone Wi-Fi to connect to the sodality's modem or router. For ensuring that that concrete event is attended the participation is likely to be representative when the multifarious is linked, it is branded. In conjunction with the modem or router was in the sodality. The sodality has been established. Between the database server and the switch with was used of a specialized IP address. If the employee associates the company's The closest Wi-Fi time is recorded and stored. Tucked away in a database with the denomination and the employee's subtleties

VI. CONCLUSION

We aimed to make using the Smart Attendance System as simple as eating a piece of bread off a plate. The program is user-friendly and includes a variety of functions as well as some very basic and minor requirements. There's no need to keep several records or perform manual computations. Information is available at all times. The system is more secure than the old attendance method. It is a simple, convenient, effective, innovative, and advanced program that eliminates the time-consuming challenges of manually taking attendance of each student.

VII. ACKNOWLEDGEMENT

We are grateful to our institution for providing the resources necessary to conduct this study and survey, as well as the teachers of the Computer Science Department for their insight and knowledge. We'd want to take this time to thank our family and friends for their encouragement and support

REFERENCES

[1]. Dr.Sreeja Mole S S, S. R. (2018). Smart Attendance Monitoring System using Wi-Fi and MAC address. International journal of current engineering and scientific research, 7.

[2]. J.Chandramohan, R. K. (2017). Attendance Monitoring System of students based on biometric and GPS Tracking systems. An international journal of Advanced Engineering,Management, and science.

[3]. V.Sivakumar, R Swathi, Yuvaraj.V, "An IoT-Based Energy Meter for Energy Level Monitoring, Predicting" "Challenges and Opportunities for the Convergence of IoT, Big Data, and Cloud Computing", IGI Publisher, Chapter No. 4, Pages 48-65, 2021.

[4]. MekshyamZ.Lanjewarm Sham B. Mehar, P. K. (2017). Survey paper on online android attendance application. International journal of innovations in engineering and science, 43.

[5]. Abhijeet R. Jadhav, "Efficient and Smart Attendance System using Local Wireless Network" International Journal of advanced research in Computer and Communication Engineering, Vol. 5, Issue 10, Oct 2016

[6]. SivakumarVenu; A. M. J. Md. Zubair Rahman, "Effective Routine Analysis in MANET's Over FAODV" 2017 IEEE International Conference on "Power, Control, Signals and Instrumentation Engineering (ICPCSI)", ISBN: 978-1-5386-0813-5 on 21st & 22nd Sep 2017 Published in IEEE Conference publications, page no.2016-2020

[7]. Sherman Sultana "A Smart, Location-Based Time AndAttendance Tracking System Using Android Application", International Journal of Computer Science, Engineering and Information Technology (IJCSEIT), Vol. 5,No.1, (February 2015).

[8]. Sadat Duraki,"A Mobile Application for Wireless Attendence System"International Journal of Computer Sciences and Engineering,(2019)

[9]. P. Wadhwa, "Attendance system using android integrated bio-metric fingerprint recognition", International Research Journal of Engineering and Technology (IRJET), vol. 4, no. 6, 2017.

[10]. SivakumarVenu, Zubair Rahman, "Energy and cluster based efficient routing for broadcasting in mobile ad hoc networks", Springer Cluster Computing, 2018, Vol. 22, pp. 661-671.

[11]. Dr.V.Sivakumar, BakkachennaRanadeep, Swathi, "IOT enabled Agriculture in Smart Drip Irrigation System" in Grenze International Journal of Engineering and Technology (GIJET), ISSN: 2395-5295, 2022 January, Volume no: 8, Issue No: 1, Page No: 581-586

[12]. Biswaranjan Swain, "Automated Wireless Biometic Fingerprint Based Student Attendence System " Communication and Computing Technology (ODICON), (January 2021).

[13]. V. J. A. Sharma, "Location-based attendance tracking using mobile devices," International Journal of Computer Sciences and Engineering, vol. 5, no. 4, 2017.

[14]. V. Sivakumar, Anburajan. M. N, Aravind. R, ArunPrasath. R, Muniyasamy. K, "Packet Loss Detection in MANETs Using Modified Fine Grained Approach" in International Journal of Management, Technology And Engineering, Volume 9, Issue 4, April 2019, ISSN NO : 2249-7455

[15]. V.Sivakumar, J.Kanimozhi, B.Keerthana, R.Muthu lakshmi "Capacity Enhancement using Delay-Sensitive Protocol in MANETs", Springer Lecture Notes in Networks and Systems, "Inventive Communication and Computational Technologies" Proceedings of ICICCT 2019, entitled Volume 89, Pages 901-910, Publisher: Springer, Singapore, ISSN 2367-3370

AUTHOR BIOGRAPHIES

Dr. SIVAKUMAR VENU has received the B.E. degree in Computer Science and Engineering from Anna University, Chennai, India, the M.E. degree in Computer Science and Engineering from the Anna University, and Ph.D. degree in the Department of Computer Science and Engineering from the Anna University, Chennai. Currently he working as an Associate Professor in Dayananda Sagar Academy of Technology & Management, Bangalore, affiliated to Visvesvaraya Technological University, Karnataka, India. More than 14 years of teaching experiences along with one year industrial experience. His research interests include Networks, IOT, AI & ML, Data science and Cloud Computing. He has delivered many special lectures in FDP and workshops. He has also organized several international level conferences and national level workshops. Act as a Reviewer & Technical Committee Member in many IEEE International Conferences. Act as an International Advisory Board Member, International Committee Member & Reviewer in the International Conferences. He has filed 3 patents and 1 international patent has granted. He has published more than 25 International journals & more than 30 papers are presented in the International & National conferences. 2 Book Chapters has published by IGI Global Publisher. One Book Series has published by Springer. He has reviewed Papers in the IEEE Access, IEEE Transactions on Mobile Computing, IET Circuits Devices & Systems, TAYLOR & FRANCIS - Desalination and Water Treatment, Springer Nature - SN Applied Sciences Journals.

HARSHA M TERDAL, currently pursuing UG degree Bachelor of Engineering in Computer Science and Engineering at Dayananda Sagar Academy of Technology & Management, Bangalore, affiliated to Visvesvaraya Technological University, Karnataka, India. His area of interest consists of Wireless Networks & Cloud Computing.

KARAN SINGH, currently pursuing UG degree Bachelor of Engineering in Computer Science and Engineering at Dayananda Sagar Academy of Technology & Management, Bangalore, affiliated to Visvesvaraya Technological University, Karnataka, India. His area of interest consists of Android Application Development and Wireless Networks.