ATTENDANCE FACE RECOGNITION APP FOR TALANGAN INTEGRATED NATIONAL HIGH SCHOOL

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Abstract - *The Attendance Face Recognition App for Talangan Integrated National High School is an application designed to track and record the attendance of those students studying at Talangan Integrated National High School. The main objective of this project is to help the school, especially the teachers, track and have a more accurate attendance record for the students. The developers use a modified waterfall model as their methodology, which includes six phases: the requirements phase, the design phase, the implementation phase, the testing phase, the deployment phase, and lastly, the maintenance phase. The project is evaluated by 40 non-IT respondents and 10 IT professionals. The developers use FURPS (functionality, usability, reliability, performance, and sustainability) to evaluate the project. The system overall gathered an average of 4.20 that is considered very acceptable by non-IT professionals and an average of 4.60 from IT professionals. This indicated that the system is not only functional and reliable, but it is also user-friendly, demonstrating good performance and supportability. Overall, the positive evaluation from both groups underscores the system's effectiveness and suitability for its intended purpose.*

Keywords – *Application, FURPS (functionality, usability, reliability, performance, and sustainability)*

INTRODUCTION

In the world we live in today, technology is practically everywhere. Today, technology is used in many different areas, including education. As we all know, student attendance plays a big role in determining the participation of a student in a certain class.

By having an attendance it helps teachers to determine if their students are really going to school, attendance is also one of the basis on how a student will be graded in some school or universities. That's why keeping an attendance record of every student is very important but having it manually recorded can also bring difficulties. Using facial recognition technology for managing attendance presents a viable way to improve productivity and expedite administrative procedures in learning environments. Teachers can devote more time and resources to engaging learning activities, creating a more favorable learning environment for students, by automating the attendance roll call procedure.

One kind of academic ERP system that keeps track of students' attendance in a school is an automatic monitoring system. In contrast to conventional attendance systems, automated attendance software lets instructors efficiently manage the classroom while gathering, storing, and tracking students' attendance records. The purpose of the automated attendance system is to monitor student attendance (Hyedutin, 2022).

Meanwhile, face recognition is a kind of a biometric that is commonly used to identify using their faces, based on Amazon (n.d), using facial recognition is faster and more convenient compared to other biometric technologies like fingerprint or retina scans.

TINHS manual attendance comprises teachers manually taking attendance in schools using paper, paper-based

attendance attendance to record students attendance, by roll call and signing students they have the attendance in that.

Based on Smitha, Pavithra S. Hegde, and Afshin (2020), the traditional method of attendance marking is a long task in many schools and colleges. It is also an extra burden for the faculties, which should mark attendance by manually calling the names of students, which might take a long time. They can also save time as recording the attendance is fully automatic. The project also provides scheduling features so that students know where and when they have classes.

In TINHS, taking manual attendance is prone to errors and time consuming when it comes to manual attendance, said that one of the issue when taking attendance manually can consume more time because each subject has 45 minutes to discuss the lesson, and taking the attendance of the students takes almost 5–10 minutes because each class includes 38–45 students. Due to some problems in manual attendance the researchers intended to create a face recognition application which can be utilized in Schools like Talangan Integrated National High School.

The application can be utilized in schools where monitoring attendance is significant. It provides a method of attendance tracking that is both more efficient and accurate than traditional approaches like manual registers. Educators and students can easily track their attendance using the face recognition application. Moreover, all of the details about the attendance are being updated in real-time, including the students' attendance and schedules. In general, the attendance face recognition application boosts productivity while having great accuracy and a safe way to keep track of attendance.

The development of a Face Recognition System is intended as a means of improving the school's attendance management by automating the process of taking attendance. The system makes it easier to record information about students and also assists teachers in tracking their students' class attendance.

Objectives of the study

General Objectives

The general objective of the project is to develop an attendance face recognition application for Talangan Integrated National High School.

Specific Objectives

Specifically, this project aims to:

1. Design a system which uses a face recognition camera system to record and monitor student's attendance.
2. Develop a system where teachers are able to see their schedules and monitor the attendance of students.
3. Develop the system that gives the students the ability to view their attendance record, view their schedules and upload excuse letters through it in case that they're not able to attend school.
4. Evaluate and test the desired project using FURPS and Functionality Testing.
5. To document the project.

MATERIALS AND METHODS

Research Design

Since the application is a support tool for teachers, students, and the school as a whole, along with the school principal's supervision, the developers chose to use modified waterfall model for the attendance face recognition app for Talangan Integrated National High School in order to complete the project.

Participants

This study was participated with forty (40) non-IT respondents (Students of TINHS)

and ten (10) IT practitioners. The respondents were chosen through convenient sampling.

Instrumentation

The developers choose to use FURPS to evaluate the project. With the help of FURPS, the developers will be able to know if the project has reached its specific objectives. FURPS will be able to determine if the users are satisfied with what the project is capable of doing.

RESULTS AND DISCUSSIONS

The following tables present the findings of the application's assessment for both IT and non-IT respondents.

Table 1 shows the final results of the evaluation of IT experts.

Table 1

Functionality	4.7	Highly Acceptable
Usability	4.4	Very Acceptable
Reliability	4.6	Highly Acceptable
Performance	4.7	Highly Acceptable
Supportability	4.8	Highly Acceptable
Overall Score	4.6	Highly Acceptable

The **Functionality** evaluation gained 4.7 approval rate means that the function of the web-app is highly acceptable.

The **Usability** evaluation gained a 4.4 approval rate, which means that the reliability of the web app is very acceptable.

The **Reliability** evaluation gained a 4.6 approval rate, which means that the reliability of the web app is highly acceptable.

The **Performance** evaluation gained a 4.7 approval rate, which means that the reliability of the web app is highly acceptable.

Lastly the **Supportability** evaluation provided a highly acceptable result as it gained an average of 4.8 approval rate.

The system achieved an overall average of 4.6, indicating it was considered "highly acceptable" by IT experts.

Table 2 shows the final results of the evaluation of IT experts.

Table 1

Functionality	4.1	Very Acceptable
Usability	4.1	Very Acceptable
Reliability	4.2	Very Acceptable
Performance	4.3	Very Acceptable
Supportability	4.2	Very Acceptable
Overall Score	4.2	Very Acceptable

The **Functionality** evaluation gained 4.1 approval rate means that the function of the web-app is very acceptable.

The **Usability** evaluation gained a 4.1 approval rate, which means that the reliability of the web app is very acceptable.

The **Reliability** evaluation gained a 4.2 approval rate, which means that the reliability of the web app is very acceptable.

The **Performance** evaluation gained a 4.3 approval rate, which means that the reliability of the web app is very acceptable.

Lastly the **Supportability** evaluation provided a very acceptable result as it gained an average of 4.2 approval rate.

The system achieved an overall average of 4.2, indicating it was considered "very acceptable" by non-IT experts.

CONCLUSIONS AND RECOMMENDATIONS

This study determines what solution can be implemented to improve the attendance of the students at Talangan Integrated National High School. In particular, this study seeks to find a solution for the problem by implementing a face recognition application for Talangan Integrated National High School.

Attendance Face Recognition Application for Talangan Integrated National High School.The purpose of this application is to help the teacher’s as well as the students

monitor their attendance in the most effective way.

Conclusion

1. The Developers were able to design an application which uses a face recognition system to record and monitor student's attendance at Talangan Integrated National High School.

2. The Developers were able to develop an app with the following features.
a. The develop project was able to see the schedules and attendance of students
b. Students can upload their excuse letter when they are absent
c. The develop project enables the teacher to see their schedule of their class and the students.
d. The teachers were able to scan the faces of students to record their attendance. e. The admin was able to edit, add, delete and update information of the users. 89

3. The developed project was tested using Functionality Testing and Compatibility Testing

4. The developed project was evaluated using FURPS.

5. The developers were able to document the project.

Recommendations

The following recommendations are offered for improving the Attendance Face Recognition Application for Talangan Integrated National High School.

1. Add a feature where reports and analytics can be generated. Generate comprehensive attendance reports, providing insights into individual student attendance patterns, attendance trends across classes, and overall attendance rates.

2. Include personalized notifications and reminders where the system can send personalized notifications and reminders to students and teachers regarding their attendance record upcoming classes or important deadlines.
3. Offer multilingual support to cater to users from diverse linguistic backgrounds.

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