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RESEARCH PAPER

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SAINT JOHN ACADEMY OF VISUAL AND PERFORMING ARTS STUDENTS AND EMPLOYEES ATTENDANCE MONITORING WITH PAYROLL AND E-BULLETIN USING RFID

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Abstract: In this study, RFID is one of the best ways to track the student's in and out. Aside from the convenience, it will benefit both the school and the parent's side by allowing them to monitor and keep track of the student's school activities with a single touch. It is applicable to the employee module. It will reveal their time in and out by tapping the RFID. This will automatically record their attendance and make it easy to compute their income based on the sort of work they have, whether full-time or part-time. If they work full-time, their salary will be determined per day; if they only work part-time, their salary will be computed per hour. If students are coming to Saint John Academy of Visual and Performing Arts, the first thing they must do is enroll and fill out a registration form. Employees must also register if they do not currently have RFID, and administrators will give them with one. They will also be held accountable if a student or employee has an issue with their accounts. Admin may also track their actual time in and out.

Keywords: RFID; SMS Notification; Payroll; Attendance and Monitor; E-Bulletin

I. INTRODUCTION

Monitoring system is an exclusive software solution. It can be integrated with RFID technology. In order to implement this project RFID reader, RFID tags and web interface are required. The card reader should positively identify ID cards and provide consistent logs and records. The records must be stored in the central database in order to generate reports and the device must be capable to communicate with the central database server.

II. BACKGROUND

In a view to ensuring the welfare of students in an institution where security is at stake, student monitoring system would help to reduce unidentified absences and will have a great help to their academic progress; Teachers will easily know the students who failed to attend the class. The management and the parents can greatly benefit from this kind of system. Monitoring the presence of students inside the school premise is one of the privileges the institution could offer. Studies show that there are some cases where the students come to school but failed to attend their classes mostly in the middle of the school year. Assuring the safety of every student by the use of modern technology will greatly help reduce drop outs due to absences and unwanted accident reports of the students. Saint John Academy of Visual and Performing Arts manually monitors the arrival and departure of students by the guards, and can no longer prevent any unnecessary situations involving the attendance whether the students attend their class or just wandered around the campus. Unexpected loss of valuable things owned by the students can also be prevented when student's ins and outs are strictly monitored. It can be easy for the security staffs to trace any incident of loss. Saint John Academy of Visual and Performing Arts Attendance and Monitoring of Students and Employees with Payroll and E-Bulletin using RFID is being developed to provide a reliable, secure, and efficient method of tracking the students' arrival and departure from school, Through SMS (Short Message Service) it can be easy to notify their parents or guardians whenever they arrived or left the school premises. This idea when implemented would also innovate the school in terms of modern technology; the management can easily access the student's individual information through their identification cards, and can monitor their time in and out, to be saved in their individual records. Teachers and department heads could also benefit from this kind of system. They can easily identify who are the students present in school, instead of looking for the

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specific student one by one. In this manner, guards' duty will be lessened.

A. OBJECTIVE OF THE STUDY

The main objective of this study is to develop software that the school and family of the student can monitor the students, and generates the compute salary of employees and to provide the announcements of Saint John Academy of Visual and Performing Arts to notify the students. This study specifically aims to design and develop software that:

- To create a monitoring system that can secure the students.
- To create a payroll system that computes and generates the compute salary of employees.
- To create an announcement system of Saint John Academy of Visual and Performing Arts to notify the students.

III. DESIGN OF THE STUDY

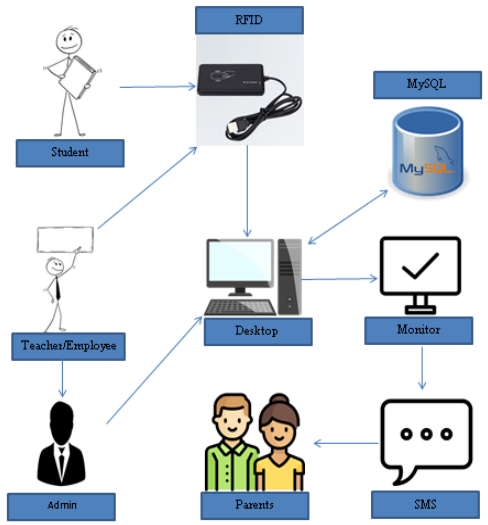

Figure 1. System Architecture

Figure 1 shows the system architecture of the system. The student and employee tap their RFID ID card to the RFID reader. The RFID tag sends the data to the RFID reader. The attendances monitoring system will checks and compare the records to the database. If the records will match the system will show in the monitor the student's and employee's information and image but the student's module is to send an SMS to parents when they tap their RFID. The teachers or employee needs permission from admin to view their salary through the system. The admin has a control to register a student and employee's RFID, can modify their account settings and can monitor the real time-in and out of them.

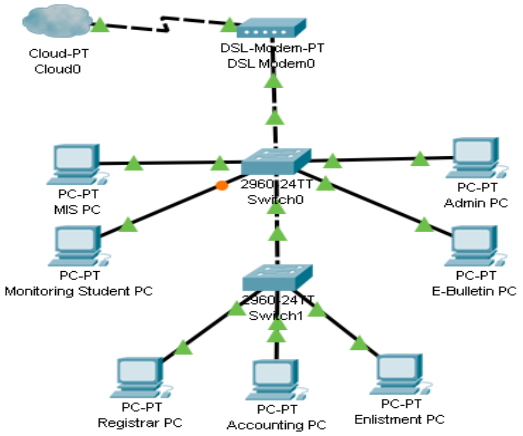

Figure 2 Hardware Interface

The figure 2 above shows the network connectivity of each department. There is only one server that caters all the system of the school such as enrolment system and grading system. This server will also cater the monitoring student desktop which will be used for monitoring the time-in and time-out of the students. Most of the employees of the Saint John Academy of Visual and Performing Arts is using Google chrome and Mozilla Firefox as their internet browser running in Windows 7 or newer. Most of the hardware components used are Dual Core System Units and I3 models.

A. FLOWCHART

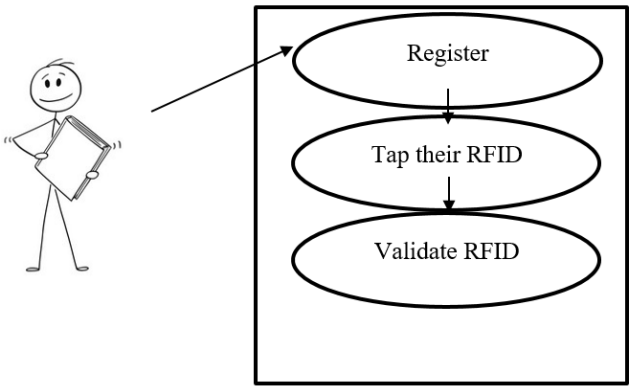

Figure 3 Validation of their RFID Interface

Figure 3 shows the validation of their RFID interface. The students will have to register in order for their attendance to be monitored. After registering the only thing, they can do is to tap their ID and validate it.

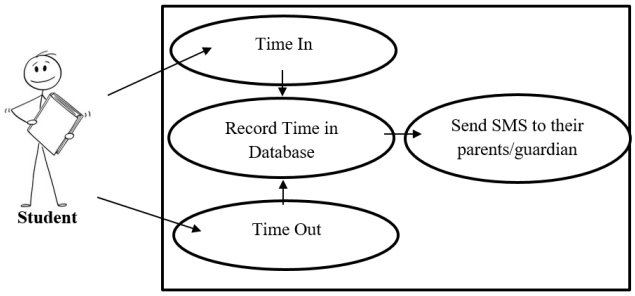

Figure 4 Time in Time out Interface

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Figure 4 shows that after the RFID machine validated the students 'ID the system will record the time in and time out being recognized then displays the information of the ID owner. Upon the student's entry and tapped the RFID the time-in will be recorded to the database then it will send the SMS to the parents. To register the timeout, the student will again tap the RFID then the system will record the time-out then it will send SMS notification to the parents. So, in this figure, it showed and stated the records of student's time-in and time- out stored in the database.

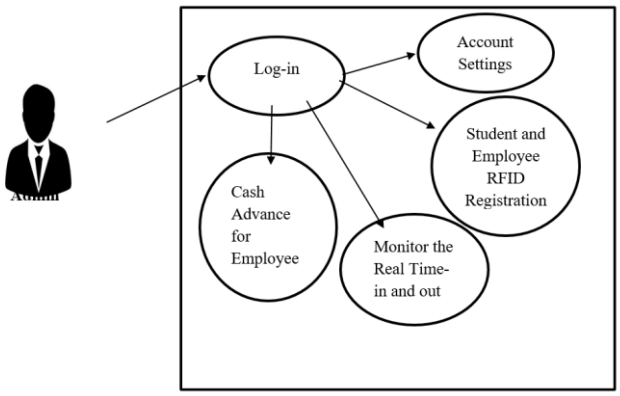

Figure 5 SMS Module

The figure 5 shows how the administrator can register RFID for students and employee and generate reports based on the time in and time out of the students. Upon enrolment the student will go to the MIS department to get the RFID and fill out registration forms, the parent also advice to accompany with the student. The admin can monitor the real time-in and time-out of the students. The admin can also help the problems of the student's account settings and can record in database the cash advance transaction.

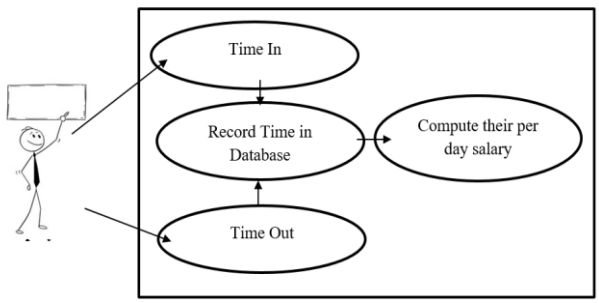

Figure 6 Employee's Payroll Interface

The figure 5 shows that after the RFID machine validated the employee's ID the system will record the time in and time out being recognized then displays the information of the ID owner. Upon the employee's entry and tapped the RFID the time-in will be recorded to the database then it will compute their per day salary. To register the timeout, the employee will again tap the RFID. So, in this figure, it showed and stated the records of employee time-in and time-out stored in the database.

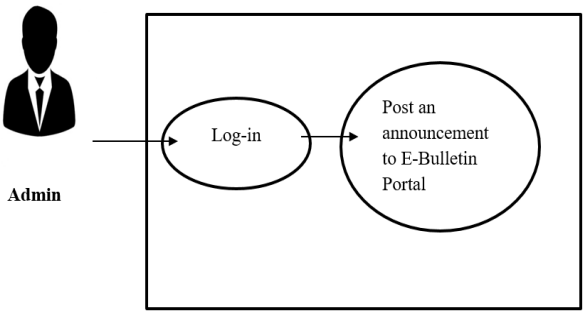

Figure 7 Use Case Diagram Admin's E-Bulletin Notification for Students

Figure 7 shows that Admin can send an announcement through posting E-Bulletin Portal if the school has an activity or any other necessary.

IV. RESULTS AND DISCUSSION

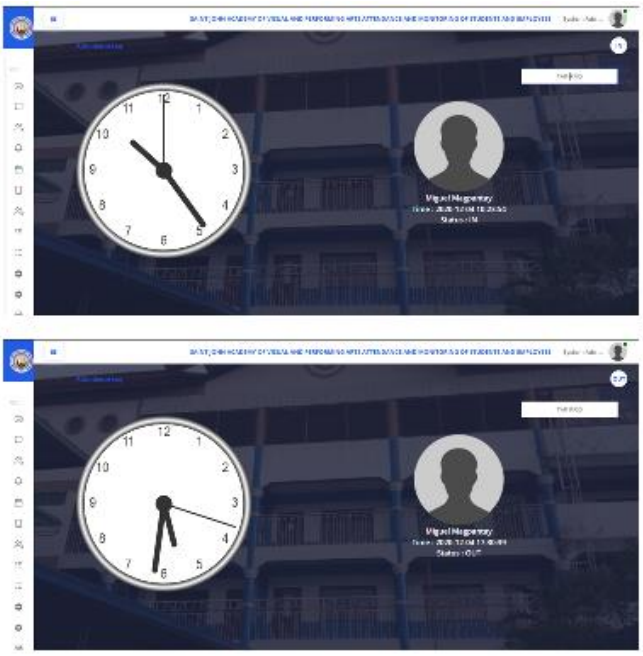

Figure 8 Attendance Log

The figure 8 shows that RFID Tag is already tap for time-in and time-out in RFID Scanner. The database will validate the registered RFID then display the picture of student afterwards sent a SMS to the parent/guardian.

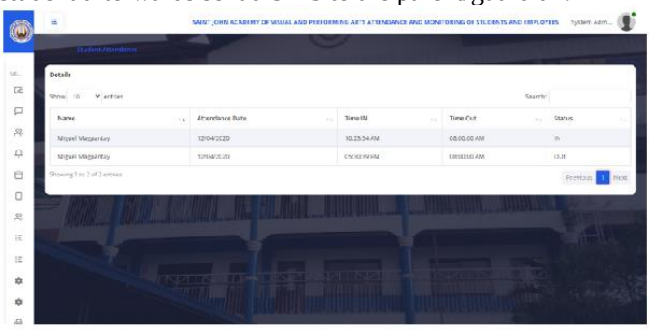

Figure 9: Student Attendance

The figure above has a detailed exact time of time-in and time-out to make sure the safety of the students.

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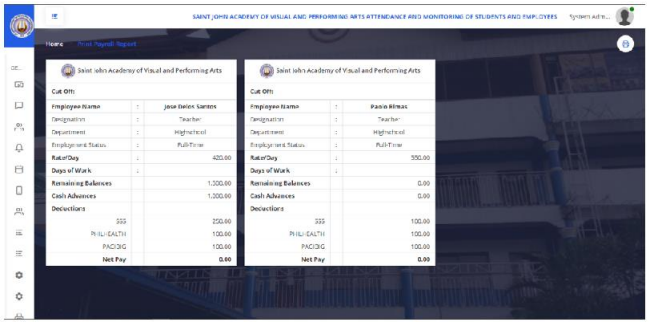

Figure 10: Payroll Report

The figure above shows employee also automatic calculate their payroll when they tap their RFID.

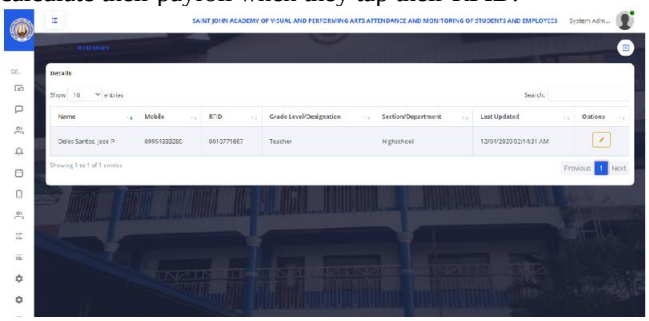

Figure 11: Payroll Settings

The figure above has a feature that can update their information it depends if there are full-time or part-time, suddenly changing of schedules and input their account number and for monthly government deduction.

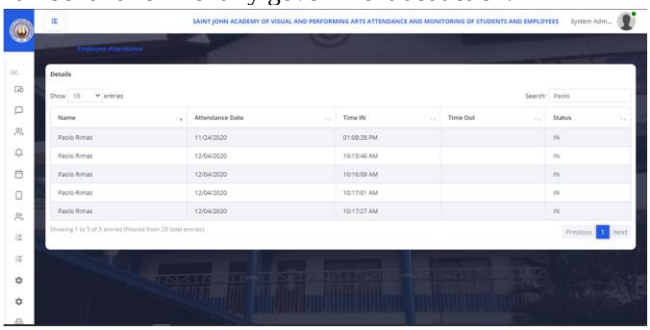

Figure 13 Daily Time Record

The figure above is the records from the time-in and time-out of the employee. It is to have a digital copy from admin to ensure that employee that already tap time-in and out.

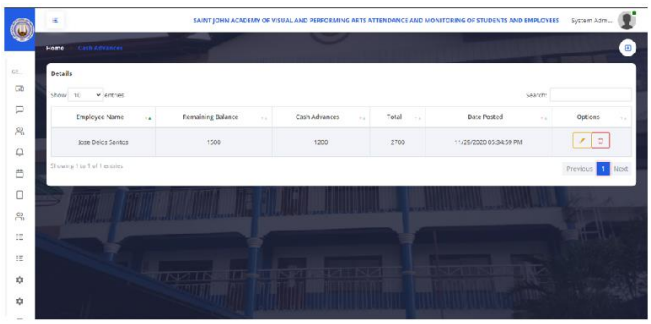

Figure 13: Cash Advance

The figure above is also an extra feature that client wants; it is to make sure that every transaction is recorded.

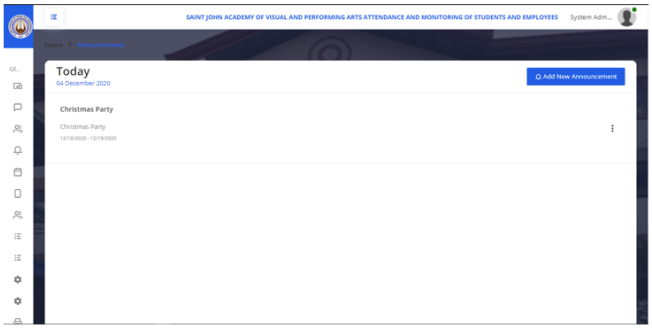

Figure 14: E-Bulletin

Figure 15 shows that admin can post any kind of announcement that related in school of Saint John Academy of Visual and Performing Arts then students can go to the lobby to see the portal for the students.

A. SUMMARY OF SOFTWARE EVALUATION OVERALL MEAN SCORE

Table 2- Summary of Software Evaluation Overall Mean Score

INDICATOR	OVERALL MEAN
Functionality	4.60
Reliability	5
Usability	4.8
Efficiency	4.9
OVERALL MEAN	4.8

This chart is a summary of the overall mean scores of 4.8 for the different criteria involved in the software evaluation, showing that the system received an overall mean of 4.8. The system received the excellent remark for each criterion, connoting that the system has passed the evaluation and proven its capabilities.

V. CONCLUSIONS

1. Based on the aims of the study and the results of the evaluation the following conclusions were drawn;
2. Using the monitoring system, the time-in and time-out of the students and employees were working properly. The implementation of this Monitoring system can notify the parents thru SMS with detailed time-in and time-out of the students when tapped. Simultaneously, the students have a discipline when it comes to punctuality or being in school every day. From the criteria they also have a rating of good to excellent. They honor to have a monitoring system.
3. With the assistance of RFID, Payroll system can now easily to calculate their payroll according to their per day or per hour salary. It can print the payslip thru the administrator. From the criteria they also have a rating of good to excellent. They honor to have a payroll system.

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4. Using the E-bulletin system, it can notify the students if the school have announcement, school activities or declaring no classes due to calamity. As for students, their safety and activity are also mentioned that they can see real time notification thru SMS. As for the E-bulletin system, they pleasure to have a E-bulletin system.

VI. ACKNOWLEDGMENT

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