

MEEKRAI: AN ANDROID APP FOR ATTENDANCE MONITORING

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Abstract. Attendance monitoring is something important in every school as it manages and keeps a detailed record of each student's attendance. However, the manual way of checking attendance takes too much time and effort, prone to dirty records due to erasures and could easily get lost or crumpled. For these reasons, the researchers developed an application that solved these problems. Through it, attendance checkers were able to check it easier and efficient.

The researchers used qualitative research to identify the struggles of attendance checkers and figure out the features needed for the application in order to build an effective solution to the problems. An interview from the 5 class monitors from grade 12 ICT animation and 3 CCS sections was also done to gather the needed information. The researchers sought help from 4 technical people to be able to develop the application.

The interviews showed that an application for attendance checking is more efficient than the current traditional system. Through the gathered information, the researchers were able to figure out the causes/struggles experienced by the attendance checkers that was used to develop the

needed features for the application such as, auto summarize, being able to see the database, creation and deletion of student accounts, and editable attendance.

By developing an attendance monitoring application with better features, the manual process of attendance monitoring was enhanced and the users which are the class monitors were able to address the issues they struggled with the traditional method of attendance checking.

I. INTRODUCTION

Technologies have made and are still making almost all the things easier and better to be equipped. One of the useful things that are made from the use of technology are mobile phones and almost none among people are not still using such devices. Most schools nowadays are implementing automated techniques and processes to meet their growing needs, and it can be best aided by widely used of computers and other devices [4]. One of the problems that University of Cordilleras is facing is the burden of manual attendance monitoring and implementing an application for attendance checking to mobile phones could be the key to aid this problem.

Attendance monitoring is something important in every school as it manages and keeps a detailed record of each student's attendance. Many teachers and class monitors are still stuck in the manual process of attendance checking which makes their tasks more difficult. The time that is

supposed to be for their jobs is being spent and consumed by checking attendance.

A class monitor is a student officer in a classroom whom a teacher appointed or was chosen by the other students to take the said position. He/she is the one who checks or monitors the class attendance.

Salac [9] discussed the manual way of attendance checking as a time and effort consuming process. A roll call is done by the teacher where students normally raise their hands or answer "Present!" when called for class attendance. She also stated that the traditional mode of attendance management leads to a lot of paperwork and it is hard to maintain attendance sheets for a long period. It is prone to inconsistency in terms of data entry of attendance records and it is hard to generate attendance reports.

The inefficiency of the manual process of checking attendance could also result in errors since there are times when a student's loudness of voice is not enough to be heard or the student's hand when raised is too

short or improperly raised to be seen by the checker. It can also be defrauded, as the checker is also sometimes a student who can defraud the attendance sheet and may even be robbed, which is even worse.

The importance of class attendance is one of the most important factors that help students complete their understanding and improve their knowledge and skills. The study explained the different problems encountered as a result of monitoring an attendance in an inefficient manual process. These problems hinder the supposedly accurate attendance records of students. As a response, the author proposed an application for attendance monitoring that helped address these problems [9].

According to Akhila [1], over the years the process of manual attendance has been carried out across almost all educational institutions. The process is not only time consuming but also sometimes inefficient resulting in the false marking of attendance.

MEEKRAI is an attendance monitoring system that will provide better data integrity, ease of use for the users to manage data, works fast and accurate in terms of processing performance and can be interlinked to other information systems.

The platform that can support MEEKRAI'S Attendance Monitoring

System is the ANDROID OS platform. Majority uses ANDROID OS than iOS. Android devices have the greatest global market share and it may be the best bet in targeting a large global audience. Developing an Android app makes apps more versatile [1].

ANDROIDOS would be best for implementing the proposed application. It would be easier to use this platform since it is open source and more flexible. The makers and the users would both benefit from this.

Sinicki [10], explained that Android is open-source and there are many things that are available in android like (Google Play Is More User – Friendly, have some Custom Keyboards, More App Choices, Infrared, Better Hardware and etc.) that other platform does not have.

Buenas [3], presented an app that is called the ATTENDROID which is an android application that will be used by the students and instructors to have an easy checking of attendance. They stated that the implementation of this kind of system will make a huge change in the field of technology especially in the field of education. This kind of implementation will not be too difficult because nowadays, people are much more able to use

smartphones and other high tech gadgets like android phones. On the other hand, the amount of time for checking the class' attendance will be lessened.

With the proposed MEEKRAI's attendance monitoring system, errors would not likely to appear. It is an automated attendance system that can lessen the time-consuming checking of attendance in a manual process. The researchers aim to develop an attendance monitoring application that would answer the problems encountered in the manual way of attendance checking.

Specifically, the study aims to:

1. Provide a systematic and effective solution for class monitors and their adviser to manage the student's attendance record; and
2. Identify the causes/struggles experienced by the attendance checkers.
3. Identify the features of the app

II. MATERIALS AND METHODS

Research Design

In this study, the researchers would be using qualitative research utilizing the phenomenology approach since according to

Crossman [5], stated that qualitative research is designed to reveal the meaning that informs the actions or outcomes that are typically measured by quantitative research. Qualitative research investigates meanings, interpretations, symbols, and the processes and relations of social life.

Phenomenology is the study of experience from the perspectives of the individual, and it describes rather than explains [5].

The researchers would be using this method to gather the data from understanding the different experiences and perspectives of the people who have used the manual process of monitoring the students' attendance. Through this method, the researchers would be able to describe the purpose/goal of MEEKRAI's attendance monitoring system and arrive at a more profound understanding of the phenomena.

Population and Locale of the Study

Purposive sampling is a judgmental, selective, or subjective sampling wherein it is a non-probability sample that is selected based on characteristics of a population and the objective of the study. Given those definitions, a purposive sampling would be used in this study as it would allow the researchers to choose the right respondents

who could give the right answers needed based on the objectives of this study [5].

Given that the study is all about attendance monitoring, the researchers will specifically choose the personnel who have experience in the said field. Specifically, the class monitors and advisers of each class section around the grade 12 ICT - Animation and CCS sections of the University of the Cordilleras of the school year 2019-2020. Grade 12 ICT- Animation does have five sections while CCS has 3 sections and the researchers will choose their advisers and class monitors as the respondents so it will be 16 respondents.

According to Joshi [7], the advisers and the class monitors know attendance monitoring better than anyone else as they are the ones who manage it. They are the ones who have been greatly affected by the different struggles that they might have experienced from attendance monitoring.

The researchers also chose grade 12 advisers and class monitors because they have a wider experience as they have been doing class monitor duties during their previous school year; and as for particularly choosing ICT – Animation and CCS sections, they are the ones who generally have more knowledge about technology compared to other sections. Their

experiences are what the researchers are looking for and so they think that these particular respondents would fit the best as the respondents for this study.

ICT knowledge as “the ability to use digital technology, communication tools, and/or networks appropriately to solve information problems to function in an information society [7]. Therefore ICT student have more knowledge or skills about technology.

Also, the researchers will seek help from 4 technical people in developing this app to be ensured in the ways of making this app.

Data Gathering Instruments

According to McNamara [8], interviews are particularly useful for getting the story behind a participant’s experiences. It would be best to use this kind of tool as this study also aims to understand the respondents’ experiences.

The researchers would be using an interview guide as the main tool in gathering the needed data. An interview guide is a list of questions that will be asked during the interview [8]. A series of questions will be formulated based on the concept of this study and then it will all be asked to the chosen respondents. For the validation, the

ICT and English teachers will be the ones to validate the questionnaires that will be formulated by the researchers.

Data Gathering Procedures

The researchers will document the interview using pen & paper along with the interview guide questions. A camera for video recording / audio recording/ paper and pen for listing would also be used to list the answers of the respondents if they would allow the interviews to do so.

Treatment of Data

Thematic analysis will be employed to analyze the gathered data. According to Braun and Clarke [2], Thematic Analysis is a flexible data analysis plan that qualitative researchers use to generate themes from interview data. This approach is flexible in that there is no specific research design associated with thematic analysis. This data analysis plan is perfect for both novice and expert qualitative researchers because the steps are easy to follow but rigorous enough to generate meaningful findings from the data.

According to Wroblewski [11]. A theme is a major and sometimes recurring idea, subject or topic that appears in a written work. A dominant theme usually

reveals what the work is really about and can form insights and analysis.

The researchers would be using thematic analysis to get the data from the interview guide, the first step is familiarization wherein the researchers would be repeatedly reading the interviewed data to be familiarized with the gathered data. After this, the researchers would be typing the interviewed data through laptop or computer; and then the creation of initial themes wherein the researchers will find out what features will be inputted in this mobile app – this is the last step wherein findings and interpretation would be presented

III. FINDINGS

The researchers were able to gather the needed information regarding the experiences on using the traditional method of attendance checking through interviews from a total of twelve class monitors, eight from the ICT-Animation sections and four from the ICT-CCS sections of the Senior High School department in the University of Cordilleras.

All of the respondents in the interview agreed that using an application for attendance checking would be more efficient than the current traditional system

In the application the features are the following: auto summarize, being able to see the database, creation and deletion of student accounts, editable attendance, less paperwork's. The possible drawbacks are, the user need to be familiarized about the system on how it works, has limited features, still done by the user since it's not automatic.

IV. DISCUSSIONS

The results of the interviews indicate that the features that the users would like to see in the application are editable in case of error marking in the attendance record database so that the user could be able to change the incorrect markings, readable fonts so it is understandable, neat to make the records clean with no erasures, secured to keep the data safe from intruders, hackers, because the app requires the users to login before accessing the records to avoid personal information being leaked and to avoid the tendency of changing the record and easy to use to make sure everyone understand how it works. [3]

Most of the respondents' struggles were the misplaced, destroyed, unclean attendance sheets and time consuming process of the current traditional method.

Class monitors misplace and even destroy attendance sheets because of an unorganized way of keeping and since it is done in a hand written way, erasures are also inevitable [6]. They also find it as a time consuming process as a roll call for each student is needed to be done [9].

Making an application for attendance checking could be an effective solution to help the class monitors under their daily struggles [9]. Through an application with the said features for attendance checking, class monitors will be able to manage attendance records better.

V. CONCLUSIONS

Through interviews, the researchers were able to gather the needed data from eight class monitors of the ICT-Animation sections and four class monitors of the ICT-CCS sections at the University of the Cordilleras' Senior High School Department. All of the respondents agreed that using an application for attendance checking would be more efficient than the current traditional system.

The attendance monitoring application was created through using JAVA which is a desktop application that is online, with the records stored in database. Through this app

with better features, the users would not have to struggle with erasures, a lot of paper works and storing of record. The users which are the class monitors will be able to address the issues they are currently struggling with the traditional method of attendance checking.

The findings show that the needed features for attendance monitoring apps are: auto summarizes, being able to see the database, creation and deletion of student accounts, editable attendance, less paperwork's.

VI. RECOMMENDATIONS

The next researchers of this study could further make the application compatible for all devices and lower megabyte size. To take account of the situation where the checker uses an iOS, it's best to make an iOS version of the application so that anyone will able to use it because not all people have an ANDROID phone. The application can also be further improved by adding a feature where users can directly send the attendance record to the adviser/subject teacher after checking when the class monitor goes online. Also, further improvement is to add a messaging feature or SMS feature for the parents/guardians to notify them about the

situation if the student is absent, late, excused and present.

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