

# P-EYE The Android Application to Track Students' Academic Performance (Study Case: Al-Nahdah School).

Mohammed Bawazir  
Narotama University  
[zezoo.2315@gmail.com](mailto:zezoo.2315@gmail.com)

Aryo Nugorho  
Narotama University  
[Aryo.nugorho@narotama.ac.id](mailto:Aryo.nugorho@narotama.ac.id)

**Abstract—** This paper describes the design and implementation of a software application, the application been designed for smart mobile devices with an android operating system, the app is created to be considered as a tool for parents to help them on tracking their children's performance in elementary school. The implemented application entitled parents to know the most important details about their children's academic status, by providing for them a set of features in the app they can use, and also to be connected with the school's administration.

**Keywords—** Android app, P-Eye, Academic monitoring system

## I. INTRODUCTION (HEADING 1)

Mobile phones have become very important and popular tools in our lives. A significant aspect regarding the mobile devices is that there are many available apps, there are many studies showing that including the technology in our daily lives can help us making easy, especially when we involve them with the education[1]. There are many applications regarding to the education purpose, there are a variety of apps matches with the purpose of creating it, there are apps for educations purpose, and its effects on academic achievement on the students[2]. In this study we create an app for educational purpose. Since the education is one of the most important aspects in improving the nation[3]. parents have to involve in the activities on the student's academic performance[4]. But mostly the parents don't give a lot of attentions on their children's performance in school because of several reasons[5]. like they don't have much time to go to school, the distance between the school and the parent's home is far away, and many other reasons, along with the school's system in Yemen is still manually, like putting the student's grade in papers and give them to homeroom teacher. On this case will have many several problems of the manual system of the school such as:

- The teacher will accidentally loose the student's data
- Wasting a lot of time for checking attendance
- Putting the files that has the student's data on the in a room which will create a chance that anyone can access that room and see the student's data.

On the other hand, if there is no a software to help parents to monitor their children's this will cause several problems such as:

- The parents will be barley to go to school
- The communication between the parents and the school will be rare
- Lacking of monitoring will effect on the student's performance

Therefore, we need a solution to eliminate the problems by designing a software app that can help on monitoring students and make the work easy for the school's administration. The involvement of the parents on children's education plays a vital role. Educated parent chose the good school and good teacher for the children[6]. P-EYE is one of these systems which works to help parents to track their children from home the system will carried out at middle school in Yemen, Moreover, the app helps administrations to interact with student's parents. One of P-EYE system advantages is that the system will be running in mobile and will make it easy to use. Also, it will solve the problem that a lot of parents have which is they are not well aware of their children performance at school and don't know the grades of their children, because they don't have the time to go to school and ask the teachers.

## II. RELATED WORKS

This research[7] it aims to discuss the role of parents in monitoring student academic performance in the new learning system, the respondents of the study were students from a private secondary school in the Philippines. The data were processed, analysed, and treated using the Statistical Packages for Social Sciences.

Therefore, since the communication of the parents with their children is not always in its best way. In this study the authors trying to see how does the communication of parents to their children aged 13-18 when they are having a software app to interact with their children.

The main goal of this[8] study is to see how can the parental involvement effects on students' academic achievement, and to determine whether there is significant impact of family involvement on academic success of the students, also there are some data showed in this research been collected by the authors

shows how much the parental involvement can impact in their children's achievements and how that will affect in their academic journey. The authors took a sample of students in doing this research the sample were consisting of 100 students, among them 50 were boys and 50 were girls in the age group of 14-16 years old.

The aim of this study [9] is to develop an android application for monitoring class attendance to facilitate checking attendance and monitoring and make it faster, the author mentioned the issued that the traditional ways have, which is for checking the attendance the teacher has to call every student's name one by one, and the students raise their hands and answer 'present' this process take time and effort, another traditional way for checking students attendance is to tell the students to write their names in a paper, this will make some students write the names of their friends who are not present, thus, making an android app to solve such problems, and make the work accurate

This study[10] aimed to develop an android system as a proposed solution to monitor the various works that are carried out by a school or a collage and to provide an operating platform for faculty and parents to monitor their child's academic activities, and since the school and parents need to continuously monitor the students' activities, the author indicated that developing an android application with a name 'Mahithi' will help on that. It will provide the benefit for users like students, faculty, and parents, to get the everyday updates about the students' academic details like: attendance status, exam results, placements, time table, feedback, and other notifications.

The main core of this paper[11] is to examine the impact of internet use on student school performance, the survey responses in this study were one hundred twenty, and were collected from plus two-level students. The study was selected from class 11 and 12 students randomly. The author mentioned that as the use of technology growing fast, and most of people use internet, and how this thing changed the world, since it has so many benefits to make you able to do a lot of things with low cost, and save time.

### III. METHODOLOGY

#### A. Collecting Data

- Questioner

Questioner is a method to collect information that allows us to analysis and to observe the attitude, behavior, and characteristics of some of the teachers in the targeted school.

- Interview

On these methods, we conducting direct interview by ask some question to some parents and some of the school's teachers.

#### B. SDLC Model

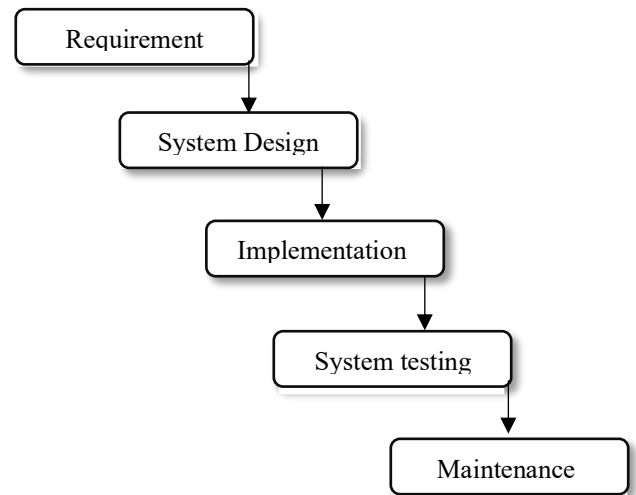


Figure 1 SDLC Model

- Analysis Stage: In this stage we analysis system requirements such as
- Functional requirements and non-functional requirements.
- System Design: Make planes for how the system will work and finding solutions of the problems that we might have.
- Implementation steps: putting analysis and algorithm design into programing language been choose by the programmer, also build a database as a storage place.
- System Testing: In this stage we encountered some errors at the start where we had them fixed by the programmers to maintain the quality of the system.
- Maintenance: on this stage we modify on the process of the system if needed.

### IV. RESULT AND DISCUSSION

From last decade due to the development of the technology in the e-learning has become so advanced[12].This student's academic performance tracking system been built with Android operating system to make processing of tracking the student's performance in school to become easier and faster for the parents. The users(parents) can just input their mobile number and their password to login and to access all the categories in the system and it will automatically give all the data they need to know about their child.

#### A. Requirement

Requirement analysis of this system in which researchers conduct the process of getting information by using observation and questionnaire techniques. Researcher conducted observation technique on data processing in Al-Nahdah school.

While interview technique conducted by selecting some information at Al-Nahdah school including teachers and some parents.

Based on these 2 techniques will be a result of functional requirements that seen in table 1.

Table 1 Functional Requirements.

No.	Required
1.	The admin can login into web application
2.	The system allows admin to perform CRUD operations for students, parents, homework, grade, level, activities, etc.
3.	The system allows admin to search
4.	The system allows admin to send notifications to parents
5.	The system allows to receive messages from parents
6.	The user (parent) has to have an exist account
7.	The parent can login to mobile application by providing phone number and password
8.	The system allows the parent to view student information, marks, notifications, homework
9.	The system allows the parent to send message to admin.

*B. Design*

On design stage, researchers used the UML (Unified Modeling Language) design as a tool in making the design of this system, the reason that made the researcher to choose the UML is that it's excellent to abstract a system or software. UML are divided into categories of groups can be seen as follow:

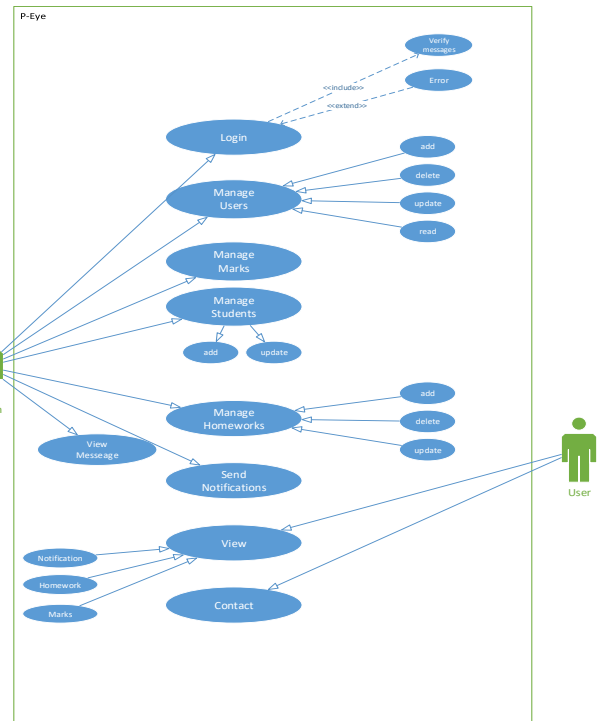


Figure 2 Use Case

The admin has full access rights to the system. Admin able to manage user's (parent) account, manage absences, manage classes, manage students' grade, manage sending notifications, manage home-works, manage student's activities.

In addition to the use case diagram there is also class diagram (can be seen in Figure 2.) Class diagrams are designed because they make it easy for programmers to convert designs into object-oriented programming languages. Class diagram illustrates the description and structure of classes, packages, and objects along with their relationships with one another.

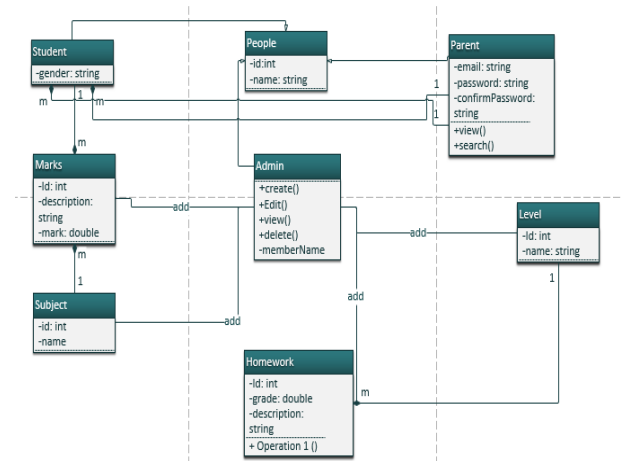


Figure 3 Class Diagram

In designing the database, the researchers describe it in a database diagram to make it easier for programmers to generate databases built into database management system software directly.

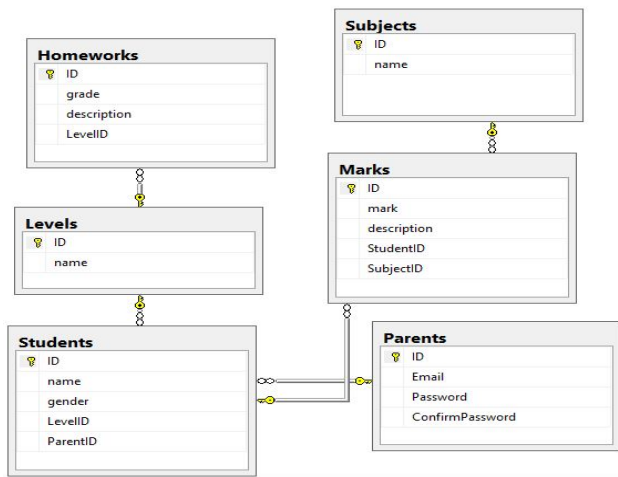


Figure 4 Database Diagram

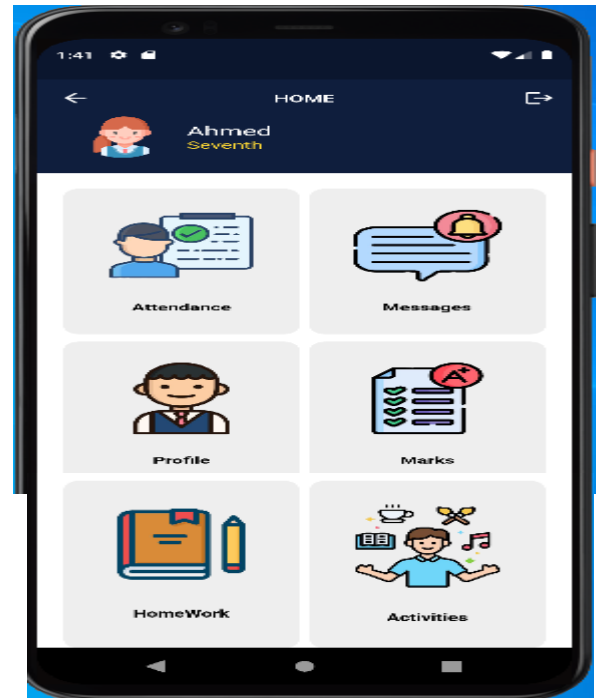


Figure 6. Dashboard Menu

C. Implementaion

Implementation is the creation or development of application from the design that has been made so that it can be used as goals.

- Interface of the application



Figure 5. Login menu

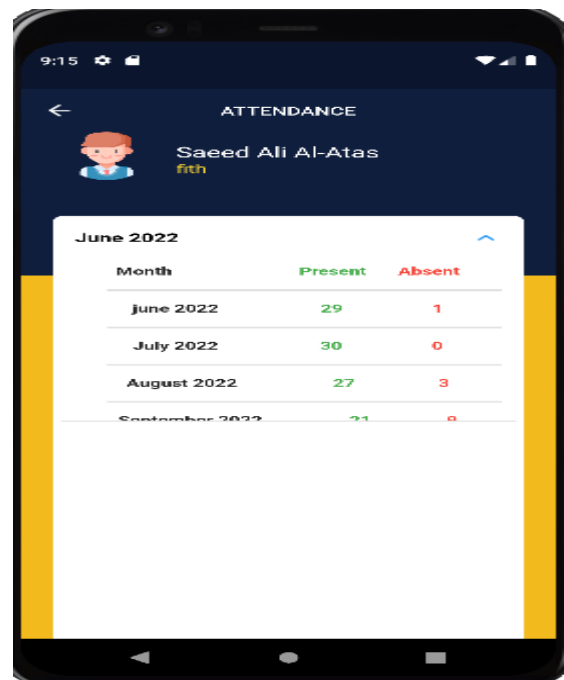


Figure 7. Attendance Page

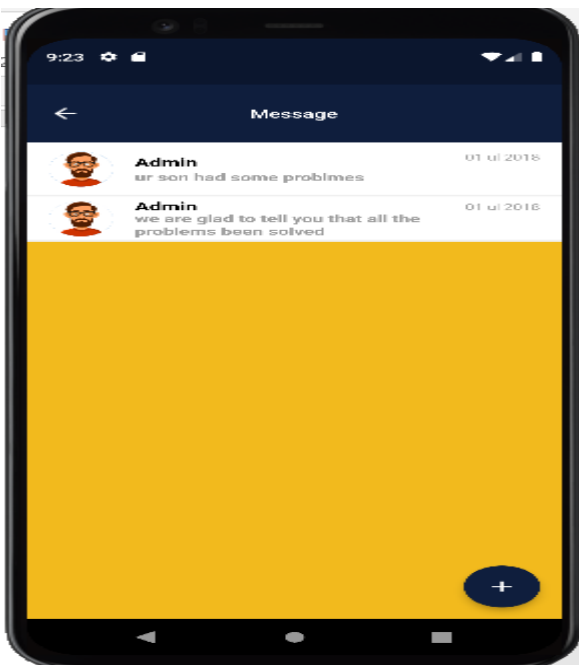


Figure 8. Profile Page



Figure 10. Home-Work Page



Figure 9. Marks Page

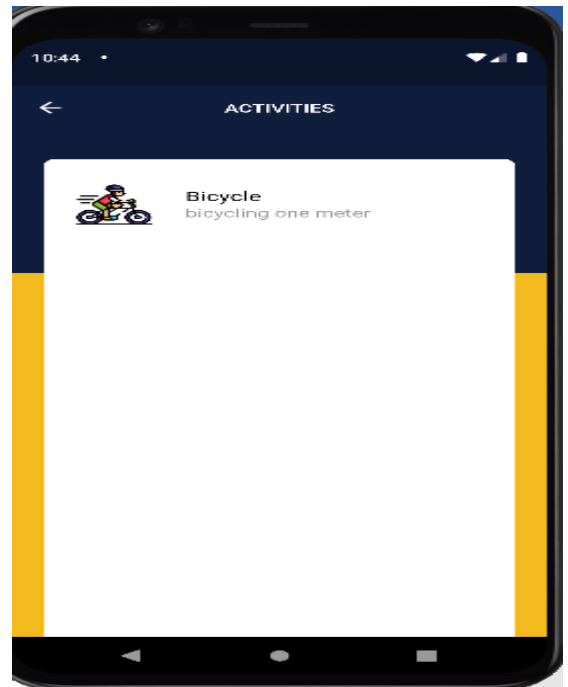


Figure 11. Activities Page

## V. CONCLUSION

We must focus on boosting education if we want to create a great country. Making it easier for the kids and improving it in any way that is possible would help produce generations of educated people. In our study we ran in to various challenges that making the quality of the schooling low. Some of these problems that we noticed is that the parents not monitoring their children regarding their performance in their school. Some parents claim that they are finding it difficult to frequently go to school as the cause of this lack of supervision. The distance between the school and the home of the parents is one of the significant barriers.

Since the majority of parents work, they don't have enough time to monitor and go to school. Thus, in order to tackle these challenges that the parents are facing. A mechanism for monitoring student performance has been devised. The parents will benefit from this arrangement. Our system's design allows users—parents—to view data about their kids' academic performance at Al-Nahdah School. The student's data will also be gathered and saved in the system database for school's administration. They won't have to be concerned about the students' grades being ruined or lost.

We used the waterfall model technique to construct the system for monitoring student performance. The five steps of the waterfall paradigm include system requirements, analysis, design, implementation, testing, and maintenance. The distribution of questionnaires and interview techniques were the methods used in this study.

## REFERENCES

- [1] S. Papadakis and M. Kalogiannakis, "Mobile educational applications for children. What educators and parents need to know.," *International Journal of Mobile Learning and Organisation*, vol. 11, p. 1, Jan. 2017, doi: 10.1504/IJMLO.2017.10003925.
- [2] H. Miller and J. Cuevas, "Mobile Learning and its Effects on Academic Achievement and Student Motivation in Middle Grades Students," *International Journal for Scholarship of Technology Enhanced Learning*, vol. 1, pp. 91–110, Aug. 2017.
- [3] [A. Jauhari and F. A. Mufaroha, "The Development of Information Systems for Measuring Student Performance at MTs Al-Azhar Paseseh Tanjung Bumi," *International Journal of Science, Engineering and Information Technology*, vol. 4, no. 1, Art. no. 1, 2019, doi: 10.21107/ijseit.v4i1.6559.
- [4] S. L. P. Masabo, "Parental Involvement in School Activities in Kibondo District, Tanzania: Challenges and Remedies," vol. 5, no. 10, p. 8, 2017.
- [5] P. Kaptich, H. Kiplangat, and J. Munyua, "Monitoring Pupils' Academic Performance at Home through Parental Participation in Educational Activities: Focus on Public Primary Schools in Ainabkoi Sub-County," *IRA International Journal of Education and Multidisciplinary Studies*, vol. 15, p. 62, May 2019, doi: 10.21013/jems.v15.n2.p2.
- [6] M. Naveed, S. Shaheen, and M. Javed, "The Impact of Parental Involvement on Children's Education in Primary Level at District Vehari," *International Journal of Learning and Development*, vol. 9, p. 134, Jun. 2019, doi: 10.5296/ijld.v9i2.14938.
- [7] D. Flores *et al.*, "The Role of Parents in Monitoring Students Academic Performance in the New Learning Modality of their Children," *International Journal of Multidisciplinary Studies*, vol. 5, pp. 22–25, Jan. 2021.
- [8] D. S. Talluri, "Impact of parental involvement on academic achievement of secondary school students", Accessed: Jun. 21, 2022. [Online]. Available: [https://www.academia.edu/37737539/Impact\\_of\\_parental\\_involvement\\_on\\_academic\\_achievement\\_of\\_secondary\\_school\\_students](https://www.academia.edu/37737539/Impact_of_parental_involvement_on_academic_achievement_of_secondary_school_students)
- [9] D. Salac, PRESENT: An Android-Based Class Attendance Monitoring System Using Face Recognition Technology. 2020.
- [10] "mahithi-an-android-application-to-monitor-students-academic-activities-IJERTCONV6IS15117.pdf." Accessed: Jun. 22, 2022. [Online]. Available: <https://www.ijert.org/research/mahithi-an-android-application-to-monitor-students-academic-activities-IJERTCONV6IS15117.pdf>
- [11] T. Ijbmt, "Internet Use and Academic Performance of the Students," *THE INTERNATIONAL JOURNAL OF BUSINESS MANAGEMENT AND TECHNOLOGY*, Jan. 2019, Accessed: Jun. 22, 2022. [Online]. Available: [https://www.academia.edu/40353931/Internet\\_Use\\_and\\_Academic\\_Performance\\_of\\_the\\_Students](https://www.academia.edu/40353931/Internet_Use_and_Academic_Performance_of_the_Students)
- [12] I.-I. J. for I. R. in S. and Technology, "E -School Android Application", Accessed: Jun. 22, 2022. [Online]. Available: [https://www.academia.edu/32422709/E\\_School\\_Android\\_Application](https://www.academia.edu/32422709/E_School_Android_Application).