



## Development of Android-based New Student Admission Application at National University

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### ARTICLE INFO

Article history:  
Received: 04/14/2020  
Revised: 15/05/2020  
Accepted: 25/01/2020

**Keywords:**  
Android  
Application,  
New Student Registration,  
PHP, Postgresql, and Waterfall.

### ABSTRACT

Admission registration for new students will be entered or commonly known as PPMB is a route of years in every private and public university every year. Various information about the PPMB also published from: various media, among others: sources in various web campuses, as well as the following info about the registration, schedule and test location as well as information about graduation or absence. Many of the info also often forced students to always see the PPMB sites, if missed then: will always remain in the information about obtaining the latest information about PPMB. Therefore, the need to build an Android-based PPMB application into a proper alternative and with PHP programming language with PostgreSQL and Waterfall method is also a good choice. The research conducted in this phase is based on gradual, namely: the need for analysis, designing and design of the system, implement the system, and also test the system. According to the test tests that have been conducted, it can be seen that: a PPMB application with the Android base could be used as an intermediary list for the new students. Other things from the analysis of the making of PPMB are also able to become intermediaries new information about the information registration with real-time, so that the candidates from students have the convenience of getting the latest information on the PPMB site.

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## 1. Introduction

Developments in technology that are also increasingly advanced at this time require humans to be able to make a variety of equipment- as: aids in carrying out a variety of activities one of which is: New Student Admission Registration at the National University, is a routine at the University to accept prospective new students.

All movements that increase in density in life make half the population has: a very high level of activity[1].

Sometimes a desire is delayed, because: the distance and time factors are very limited[2]. The problems encountered at the National University in PMB activities are: when announcing results to prospective students. The prospective students were finally forced: to wait until the exam results were calculated and announced on campus[3]. This results in: comfort in students while registering also not a good impression on campus. This is caused: because the quality of service has a major effect on the loyalty of consumers in this case are: prospective students. As an information technology campus, it is also very appropriate for this National University to spoil candidates and students with IT services[3]. However, the Committee was assessed: still limited in maximization because there is a government call for: there is no activity on campus due to the spread of this Corona Virus. Then at this time: even in the process, there is not yet a maximum of several stages: candidates must come to the University for payment and also fill out forms, and follow the procedures that must be followed[4].

Also, along with the very high level of mobility, there are currently a lot of mobile devices introduced / commonly referred to as: mobile devices. The fact is now in Indonesia: growing very fast. That includes things like: mobile phones, smartphones and tablets. The operating system on: mobile devices which are also constantly being developed, are now one of them: android. Android is a operating system in this Linux-based mobile device which: includes an operating system, application middleware. This Android presents API (Application Programming Interface) features and on Android also offers access to: hardware / mobile data as well as own system data. Moreover, users can also: delete core applications or also to be replaced: third parties[5].



Android technology has also begun to spread in society from: middle to upper middle to lower classes, especially students. Students sometimes want to continue their education to the undergraduate level often using Android: looking for information related to campus info[5].

This can be overcome by: developments in mobile technology having huge capabilities such as: Android Operating System. Its use is also appropriate, because: It is also often used. So that candidates also follow the procedures that have been made by the University, an Android-based student registration system will also be developed to be able to facilitate the registration process and be easier to access[4].

In this section: describe the results of research related to this system on the campus that has been developed and also related to the decision support system "SPK"[6].

First research: recipient of candidate selection at: AMIK Labuhanbatu. The design of this system uses the waterfall method in its development with the system: systematic and sequential. Also in the design also involves the application: Unified Modeling Language (UML)[6]. The application was developed by various applications such as eclipse and MySQL as the media database[6]. Next is: offers on prototype new student registration provided in the smartphone system. And that sophistication is expected to immediately increase in special reception[7]Analysis and design used in this system are: with the Data Flow Diagram: connecting with data, and the Unifield Modeling Language for the flow of the application to be made. This method is also expected to be able to bridge a great distance for candidates in PPMB[7]. Further Research: designing programs that manage the work well to improve effectiveness in decision makers and facilitate planning of activities for the long term specifically within the framework of PMB at Telkom Academy Jakarta. Work management is also very needed for the committee to be able to act efficiently and also coordinated with the achievement of satisfactory results[8]. Based on the results of several studies in a number of related journals that serve as a reference in this system, it can be concluded that: the development of the PPMB Registration at the National University is needed for employees to process campus data annually.

## 2. Research Methods

In this library information system also uses the method namely: System Development Life Cycle (SDLC) newfangled: Waterfall shown in Figure:

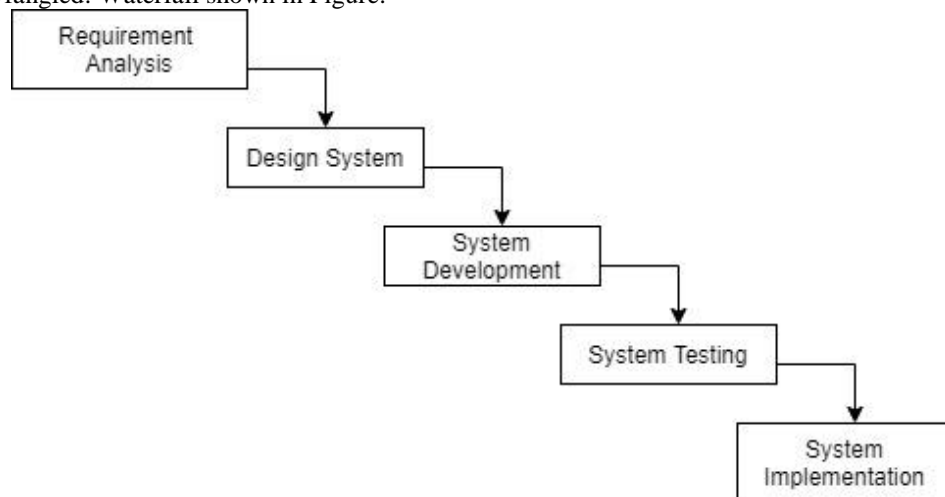


Fig 1. SDLC Model Waterfall

The SDLC method in the waterfall System Development Life Cycle (SDLC) model is: the approach used in the software industry to be able to develop various projects starting: the size of small-scale, medium-scale and large-scale projects [9].

### 2.1 Activity Diagram Running

To see and know the flow of the system currently running can be seen in the activity diagram of the admissions system on campus that has been shown below:

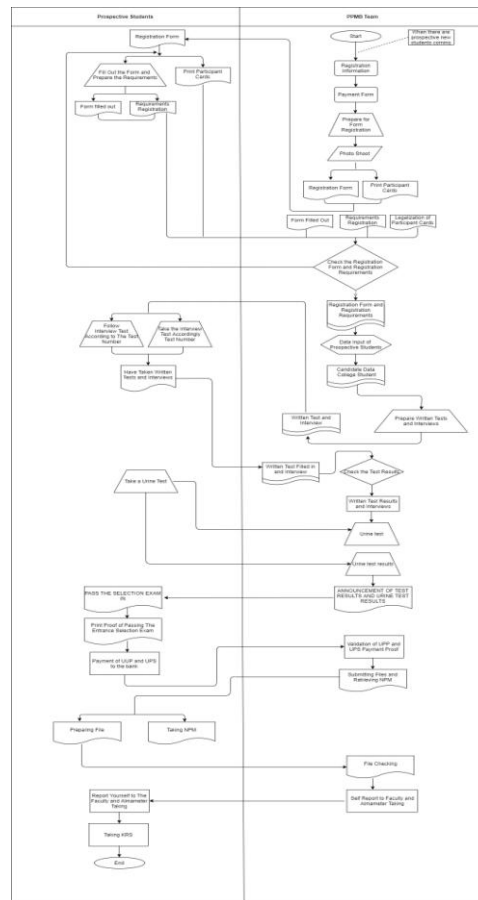


Fig 2. Activity Walking Chart

2.2 Proposed Use Case System

The following is a use case that will also be proposed for making this system, which can be seen in the image below:

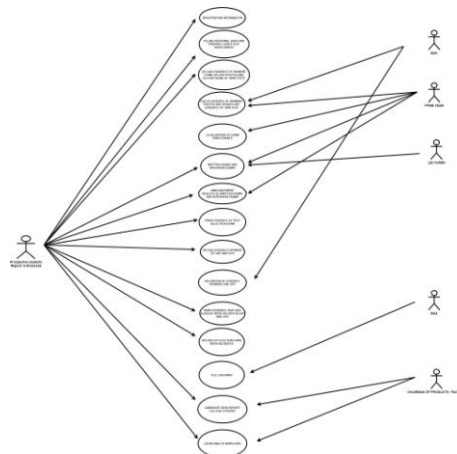
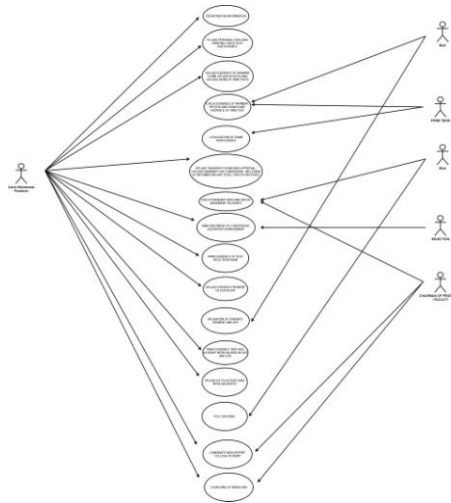


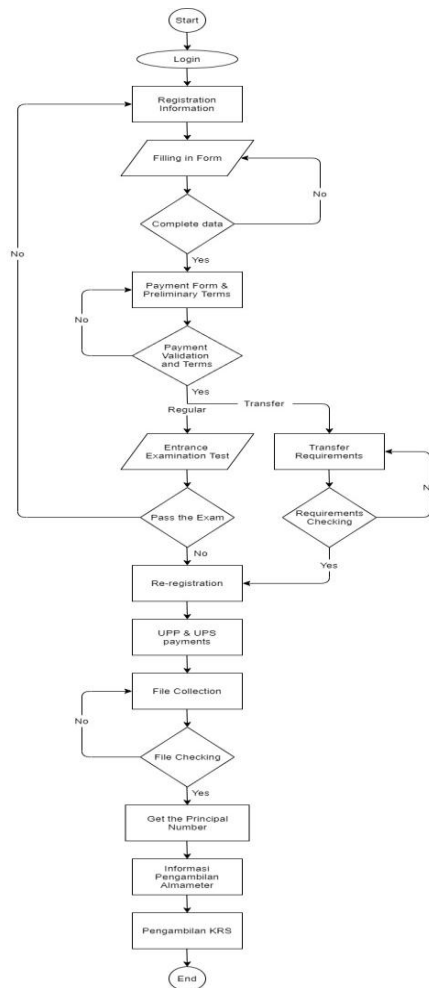
Fig 3. Use Case Information System for New Student Admissions: Regular and Employees



**Fig 3.** Use Case New Student Admission Information System: Transfer

### 2.3 Proposed Flowchart System

The following is a flowchart that will also be proposed for making this system, which can be seen in the picture below:



**Fig 1.** Class Library System Diagram

### 3. Results and Discussion

The following are the results of the implementation of the android application that has been made using several depictions of the grooves that have been made, the following is the description:

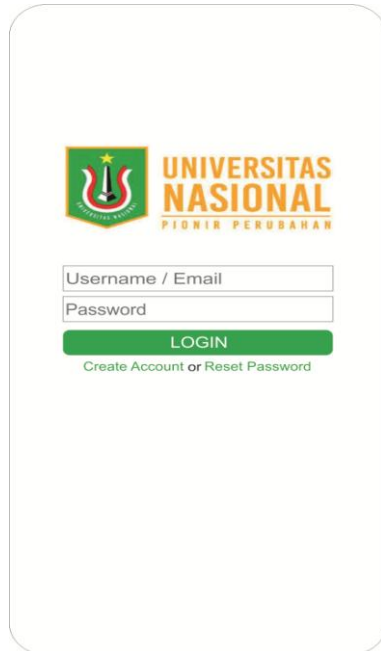


Fig 5. Login page on the application

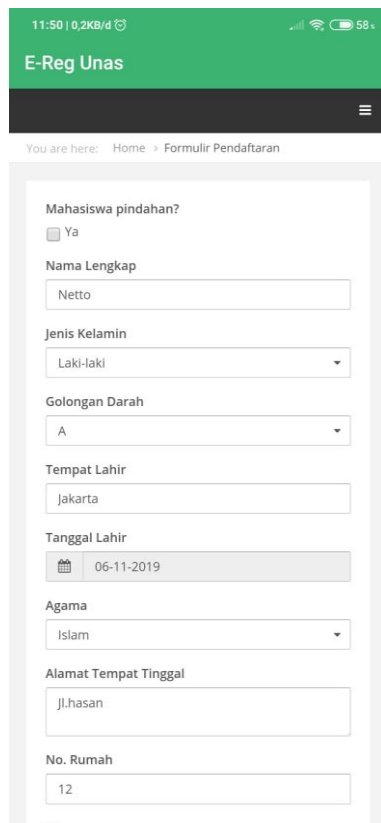


Fig 2. Registration page on the application

In this application after logging in with your email and password you can directly: go to the android registration form.

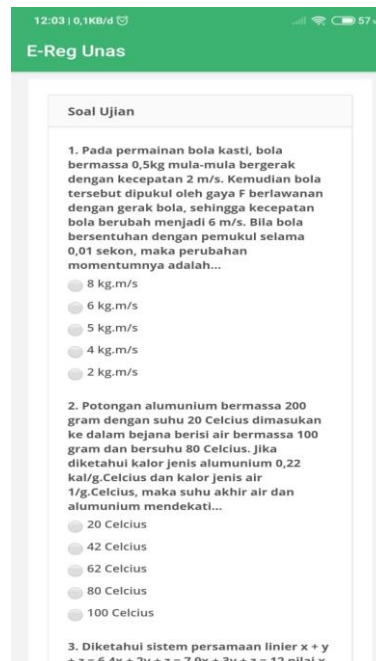


Fig 3. Exam Test Page on Application

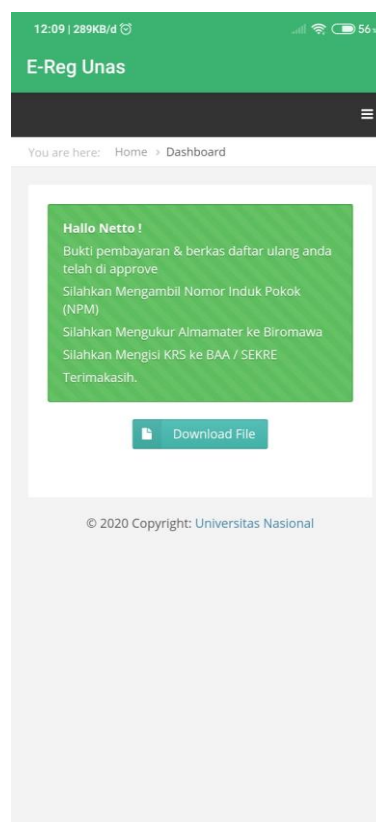


Fig 8. Final Page Registration on the Application

After registering we will be diverted into the test function to enter the university and in the test must be carried out in accuracy because after the test pass we are immediately presented with various information about: numbering from: Student Number (NPM), Almamater and KRS.

### 3.1. Results of the Implementation in the Questionnaire

The graph in this chart is: a framework in the formation of visual data objects from the table. Usually consists of a combination of data: numbers, symbolic, pictures, symbols and other things that compile the information[10]. The graph usually also explains various: developments / comparisons / events contained in the object briefly and clearly[10]. The following are the results of the implementation in the questionnaire that was made using the goggle form and made a depiction on a chart that has been through ms. excel, here is an example image:

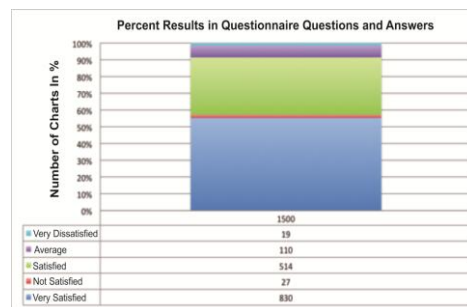


Fig 9. Graphic Chart in the Questionnaire

### 4. Conclusion

Based on the discussion of the study: this application, can be concluded as follows:by this application it is hoped that quality in the service of existing services will be better. Then to facilitate work on the accuracy and accuracy of: archiving files. And from the results of trials that have been carried out, show that: PPMB-based Android application can also be applied to facilitate prospective students who want to register [11].

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