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A DESIGN OF VOTING SYSTEM BY USING AN ANDROID APPS FOR FISHERMAN

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ABSTRACT

A voting system consists of rules which must be followed for a vote to be considered valid and counted to yield a final result. The project explained where normal process of election in Marine society, that is Persatuan Nelayan Kebangsaan (PNK) Daerah Manjung Utara, Perak to select their organization for the community. Basically counting ballots need to consider a long time that dragged the results to be published on the next day. Furthermore, process of calculating requires manpower whom could be bias or dishonest person while doing the calculation. In additional, the result could be taking a long time to show up. Thus, it will make the voters keep on waiting to know the result. The Voting System using Android Application is more efficient that the classic method to do an election. The project has develop an interactive GUI panel for voting system. Besides, Apps Inventor 2 had been used to design the entire project. The database that created also does the calculation of the data before transfer the data to the official website. This system has better accuracy compared to the traditional method of counting.

Keywords: android application, voters, voting system, ballot.

INTRODUCTION

Voting is the method for choosing a person who is being selected by the community member for a position at entire country. Voting process not just only in the election for selected the candidates who will be in the requirement position like a President. The process also will do for choosing the person that needs to vote who will in the position for handle the task for example for the choosing the leader in the class. As known, the voting process was using the ballots paper to ensure the process system. It is difficult because the problem which the ballots need to calculated by manually calculating. In manually calculating, the problem that can be happen when the person who calculated the ballots will miss counting or maybe the person more bias at one person candidates.

In 1964, the use of electronic voting technology in election was introduced in 1964 to the public [3, 7]. Since then, other technologies like direct recording electronic (DRE) voting machines have been introduced in some countries to improve the efficiency and transparency of voting and counting procedures [4]. Others technology that had been existence was an Electronic voting machines (EVMs) that are more popular right now in entire world. It is the electro-mechanical or electronic equipment that can be used to define ballots, cast and count votes, report or display election results, or maintains and produces audit trail information [3, 4, 7].

Technology development of mobile applications nowadays is more popular and used by authorised body. [10]. The advent of various mobile applications on time currently has influenced the style of life than can help users to facilitate the activities of their daily lives. Android is one of the major operating systems in the growing market in nowadays [1]. Also, Android is the first operating system that used the complete for their runway and it is open and free for application developers mobile to develop the new application [8].

VOTING SYSTEM

By using the ballots for the voting process progress in the Election Day, the vote will be counted by their voters itself [3]. It will be have a bias in their community itself that counted the vote. So there is no efficiency and honestly while the votes under counted. Also the result will come out late that make the voters keep waiting in the whole day. It sure will make a chaos in their community because it was take a long time to announce the results. If they votes might be miscounting, the votes need to re-count again until the Person in Charge for the Election Day was satisfied.

The application that develops is the Android Voting System apps. The Android Voting System apps were developing by using Android operation system. This application purpose for make the fisherman community was easier while the Election Day being held. The fisherman community chosen is Persatuan Nelayan Manjung (Pantai Remis).

This application will show the picture of the candidates to make the voters recognized which candidates that they will vote. Also it includes the information about the candidates themselves. If the voters are not sure whom that they vote, the review session was been program in this system before they submit their votes. Thus, the system will only finish the session when the voters completing vote for 10 candidates. If the vote less than or more than 10 candidates, the system will give a warning to the voters that the voting process shown not completed.

This project can reduce the cost to organize the Election Day. The application can be replaced the ballots that was using before during the Election Day. Furthermore, the results can be calculated automatically

and it will not miscount. This is because the result will be calculated by the database collector that created. Thus, the result will not taking a long time to show up which is the existence method to do voting that used a ballots will taking a very long time to do a calculation and show up the result as shown in Table-1.

Table-1. Result calculation time taking.

	Method	Result time taking
5 person votes	Ballots	5 minutes
5 person votes	Android Apps	30 seconds

DEVELOPMENT OF SYSTEM

The Android application can be developed by using Apps Invertor 2 that available in Google website. With this method, the application can be design and the application can be developed smoothly. In this software, the application that design by using a block diagram structure to develop the design of application and it can be drag the shape of layout design in the Android Emulator shown in Figure-1 and Figure-2.

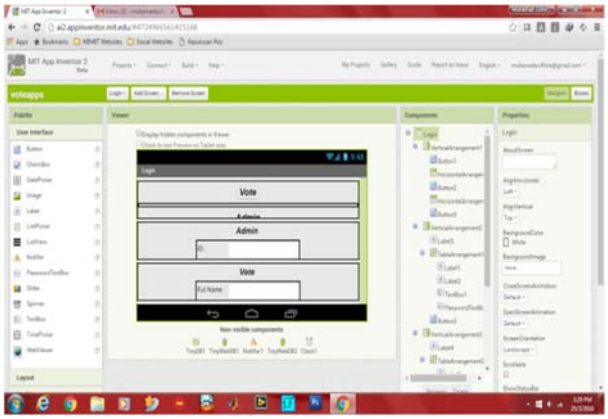

Figure-1. Apps invertor.

Figure-2. Function for each button.

SYSTEM SIMULATION

The Apps Invertor 2 is to develop the display of voting system process that makes an easier to the user for votes the candidates. The display is about the welcome display to the voters when their start the voting process. In the welcome display, when the Vote button had been touch it will proceed to another display which is the candidates display with the selection button. The selection button provide for every each candidates.

In the voting process display, the images of the candidates will be appeared in the voting section display that makes the voters easier to recognize the candidates that they will vote. This system could not finished the session when the voters was not done vote their candidates and the system will loop to the earlier voting section display. After the voting process was done the final display is to thanks to the voters for their cooperation while do the voting.

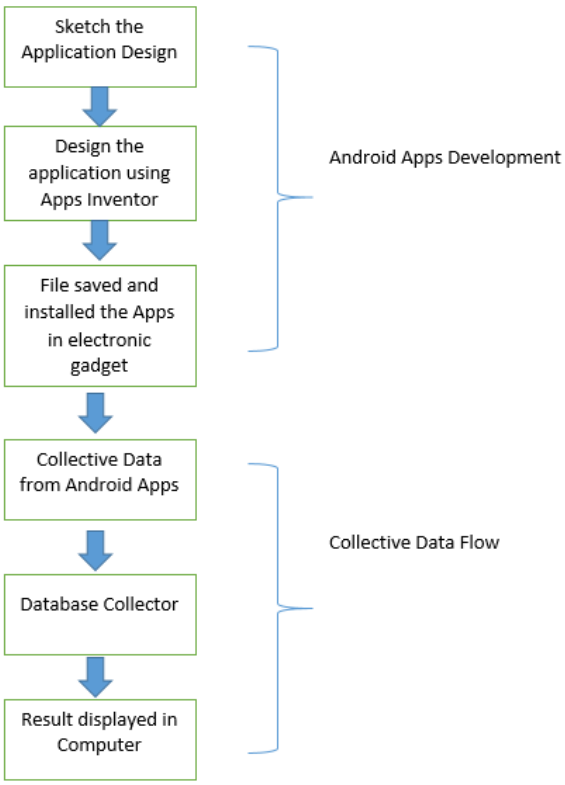

Figure-3. Android apps development and collective data flow.

DATA COLLECTION

The collective data is the data that collected from the Android application. It can be assume like a ballot paper in the ballot boxes. The mobile phone need have an internet services because the system was linked with the database collector as referred to Figure-3.

The database collector is the part of the calculation of data. The data that collected will be calculated in the database before show up in the same application but only admin can view the result.

EXPERIMENTAL RESULT

The application was divided by two applications which are a Vote Apps and Admin Apps. The Admin Apps was included with the voting selection because the

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Admin Apps have a voter page viewer selection in the Admin Apps. As a required, that is need to login as an admin. So Admin can be secure because Admin Apps have a lot of activities for the Voting Apps as shown in Figure-4.

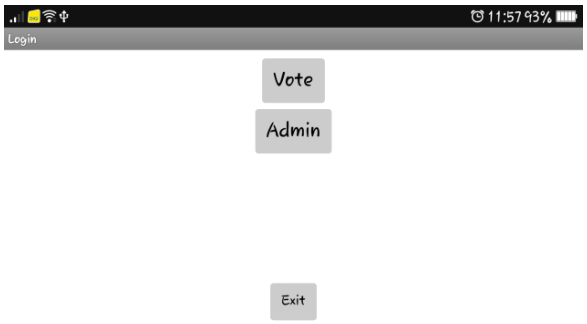

Figure-4. Administration apps.

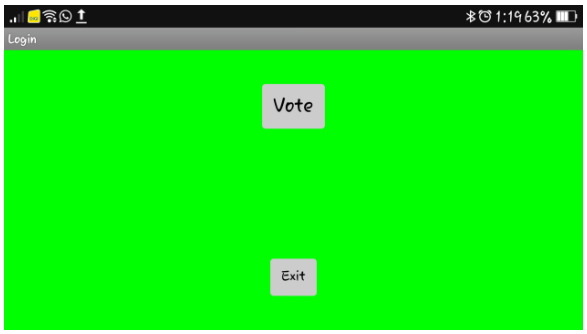

Figure-5. Vote apps.

PART I - ADMIN WINDOW APPS

Admin Apps is the session for add, edit or reset the candidate info and can be viewed the entire result that had been updated. It is shown in Figure-6. The total the candidate that can be registered is 50 persons with the candidate image for make the voters more recognized the candidate that the voters before make a selection.

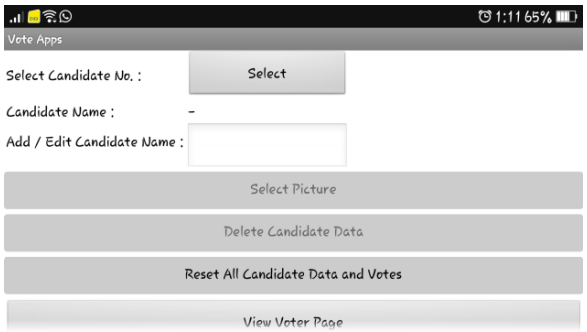

Figure-6. Administration activities.

For Admin Apps, only the original Admin will have the Admin Apps for make it more secure. The ID and Password of Admin login can be changed by using the Apps Invertor 2. There is not included in the database because to make it more secure. The result of the votes can be view in this application with select the 'View Overall Result' button as shown in Figure-7.

Figure-7. View overall result.

PART II – VOTE WINDOW APPS

In the Vote Apps, only for voting activities was provided in this application. No more activities were provided because the application was created for the voters only. It can be assume as a replacement of ballots for voting activities. The candidate's images will only show the 5 candidates by each candidate's pages. Thus, the voters need to click the entire pages to make a wisely selection.

Referring Figure-9, the submit button was inactive because the 5 candidates need to select. If the candidates selected was less or more than 5, the selection cannot be submit. Thus, the selection need to complete selected for 5 candidates.

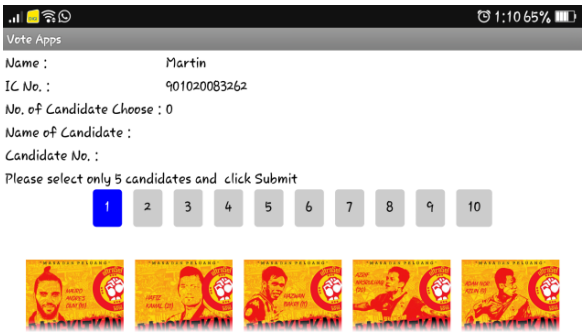

Figure-8. Voting activities.

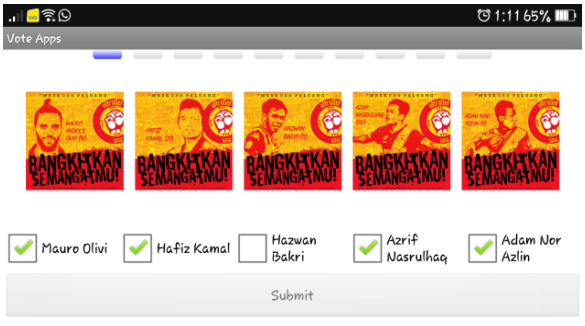

Figure-9. The selection activities.

PART III - APPS SIMULATION PERFORMANCE

The evaluation was doing in 4 phase which are with the first phase for testing the Checkbox button works. The first step was included the design of the application to produce the display the application.

The second phase was quite difficult which is to testing the database collective and calculated the result. The database collective was created by Custom Tiny WebDB Service that available in the Apps Invertor 2 to create it.

The third phase was simulated the application with the Bachelor Marine Electronic Engineering student batch 4 for choosing their leader. For doing this simulation, the students had been provided to install the Vote Apps in their Android Smartphone.

The final phase was simulated the application the Persatuan Nelayan Manjung Utara (Pantai Remis) staff for get their feedback about the application.

Table-2. Phase simulation.

	Evaluation	Date	Performance
Phase 1	Testing the checkbox button which is it works well.	28 March 2016	OK
Phase 2	Testing the data collector for calculated total of votes.	6 April 2016	OK
Phase 3	Simulate with the friends to get the result accurately.	20 April 2016	OK
Phase 4	Simulate with the LKIM sides for their requirement.	3 May 2016	OK

CONCLUSIONS

The existence voting system which having a problem which is the cost to provide the ballot papers and the electronic voting machines that produced in India can be attacked to demonstration which is the system has been solved. Thus, the voting system in the Android application has their disadvantages. It included the problem when the phone was corrupted or damage, it will cause the error of the voting. Otherwise, the Android application for voting system was more efficient than the voting system that using a ballot papers.

The android voting system apps was shown that the new system for the election day. Normally, their community used the ballots paper for Election Day progress. That was used a lot of cost to organized the events. Thus, with this project the problem of using a lot of cost can be reduced. In additional, the Android application can be automatically calculated the data which is the votes can be calculated without using a man power to calculate the votes. Also reduced the time taken to publish the overall result.

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