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Developing of an Android – Based Application for Computer Based National Assesment (ANBK) Try Out

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Abstract— Direct observations were made of the process of carrying out trial tests (try outs) as well as student assessments at Bina Satria Mulia Middle School. This application is designed to prepare students for the Computer-Based National Assessment (ANBK) at the junior high school level. However, in its implementation, there are still obstacles such as the processing process, distribution of questions and answer sheets, as well as correction and assessment which takes time due to the large number of trial test participants. In the application being built, a randomization method called Linear Congruent Method (LCM) will be applied. And the application of this method aims to randomize the order of the questions so that they are not always the same, so that students can practice and understand the contents of the questions. It is hoped that with this try out application for Course and Training Institutions, the try out process can be more efficient and improve its image. Course and Training Institute.

Keywords: Try Out Application, ANBK Practice, Linear Congruent Method, Android Studio.

I. INTRODCUTION

The Indonesian government is currently improving and evaluating education through the Computer-Based National Assessment (ANBK) program. Quality mapping is carried out from primary to secondary education using instruments such as the Minimum Competency Assessment (AKM), character surveys and learning environment surveys. The implementation of AN uses a computer-based system, which is abbreviated as ANBK. The test mode used can be online or semi-online according to the availability of facilities and infrastructure in each school or region (Manik et al., 2022)

Previous research shows that students' readiness to face ANBK is still low. In fact, readiness to learn is something that will support the willingness to respond or react positively. Readiness arises in a person because of the learning process and maximum preparation. Readiness to learn will make students able to respond positively in the teaching and learning process. (Tampubolon et al., 2022)

Therefore, preparation for ANBK for students is very necessary, one of which is by taking a trial test known as the ANBK try out. To be able to take the trial test, students must take the ANBK test at a non-formal education institution, the procedure for which has so far been carried out conventionally using a paper test. By designing this application, it is hoped that the process of implementing the ANBK try out for middle school students can be more practical and the training can run better, and they can do it at any time via an Android cellphone so that it will have an impact on improving the quality and service for all students.

II. RESEARCH METHODS

2.1. System Design

The design of the ANBK training application using the Android-based LCM method was built using Android Studio software. The system design consists of use case diagrams, class diagrams, activity diagrams and sequence diagrams as well as application interface designs and explanations of the designs being designed. Here is the plan:

1. Use Case Diagrams

A use case describes an interaction between one or more actors and the system to be created.

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Use cases are used to find out the functions in the information system. The following is a use case diagram of the designed system:

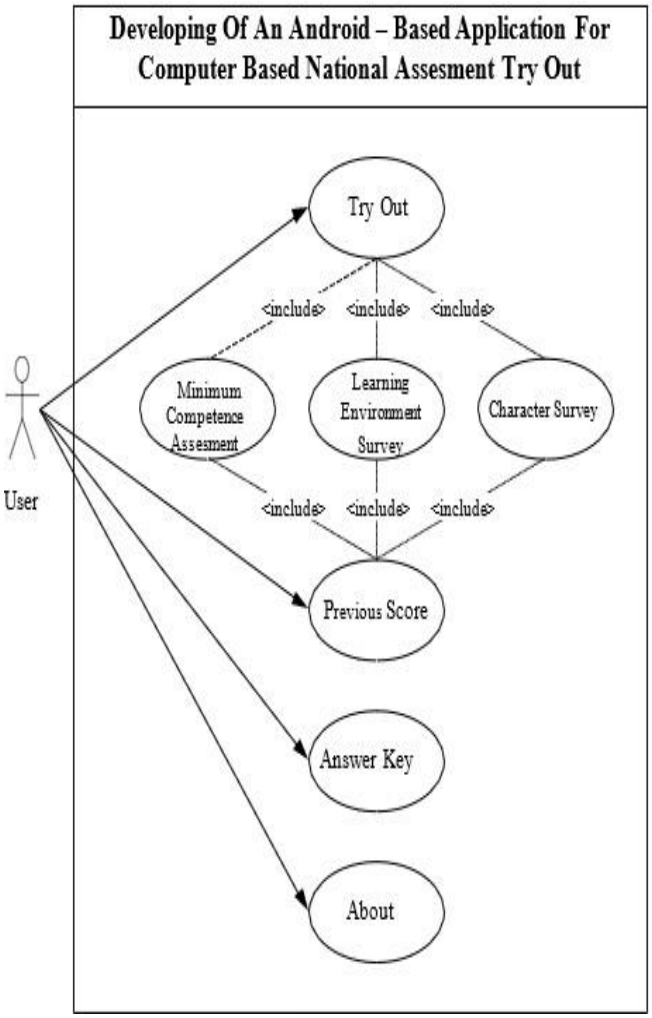

Figure 1. Use Case Diagram

2.2. Activity Diagram

Activity diagrams describe various activity flows in the system being designed, how each flow begins, the decisions that may occur, and how they end. The activity diagram contained in the application is as follows:

1. Activity Diagram for ANBK Try Out

The UN practice activity diagram describes the flow of activities carried out in the practice process of answering ANBK questions in the application. The Computer Based National Assesment activity diagram can be seen in figure 2.

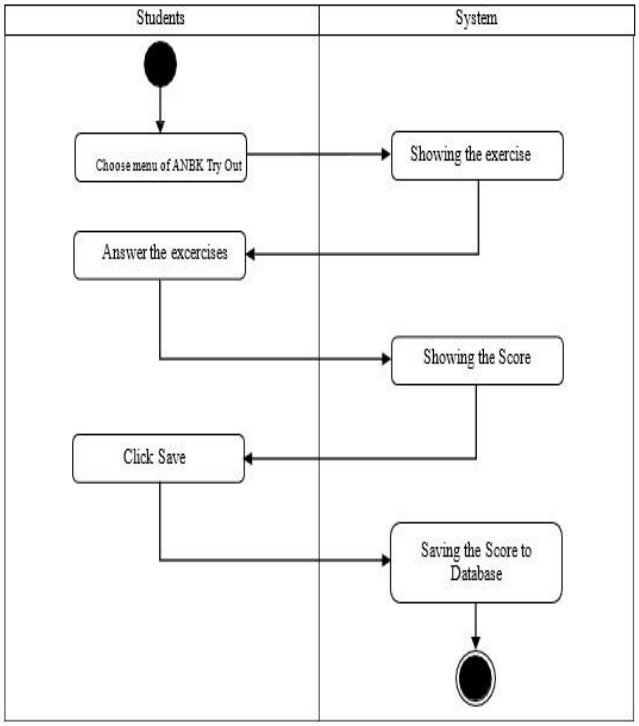

Figure 2. Activity Diagram for ANBK Try Out

2. Activity Previous Score Diagram

The value history activity diagram describes the flow of activities that occur when selecting the value history menu to see the practice values for answering examples of completed National Examination questions. Activity Value history diagram can be seen in figure 3.

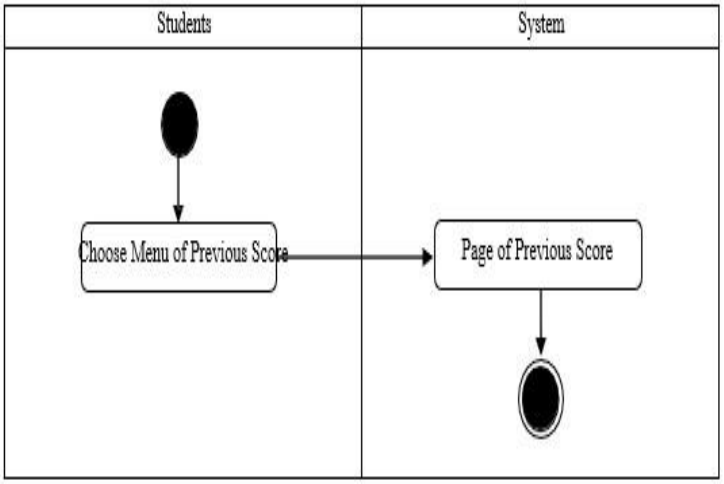

Figure 3. Activity Diagram Previous Score

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2. Activity Diagram Answer Key

The answer key activity diagram describes the flow of activities that occur when selecting the answer key menu to see the discussion and answers to the questions displayed. Activity Answer key diagram can be seen in figure 4.

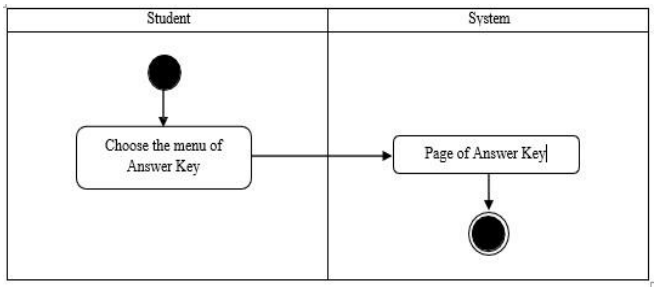

Figure 4. Activity Diagram Answer Key

4. Activity Diagram About

The about activity diagram describes the flow of activities that occur when selecting the about menu. This menu is used to display the page about the application. The Activity Diagram can be seen in Figure 5.

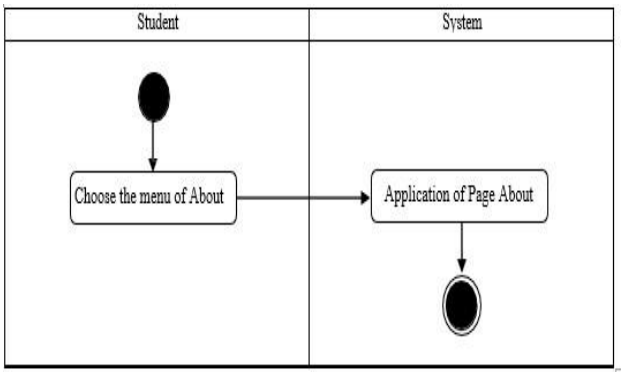

Figure 5. Activity Diagram About

2.3. Sequence Diagram

The sequence diagram in the application that will be created is: Sequence diagram for National Examination practice, score history, answer key and about.

1. ANBK Practice Sequence Diagram

The ANBK practice sequence diagram describes the interactions that occur during the practice process of answering sample ANBK questions. The National Examination sequence diagram is shown in Figure 6.

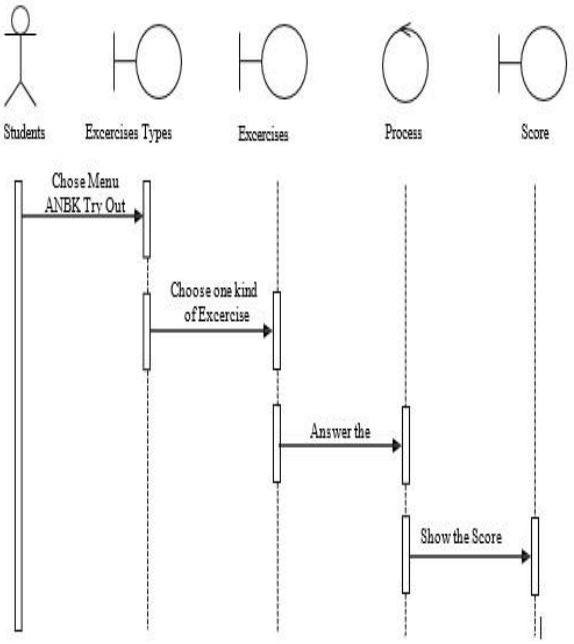

Figure 6. ANBK Practice Sequence Diagram

2.4. Design User Interface

The user interface is a program display that can be seen or perceived by the user and the commands or mechanisms that the user uses to control operations and enter data. The following is the interface design for the National Examination practice application using the Android-based LCM method, namely:

1. Main Page Design

This is the main page display design of the application. The main page design can be seen in figure 7.

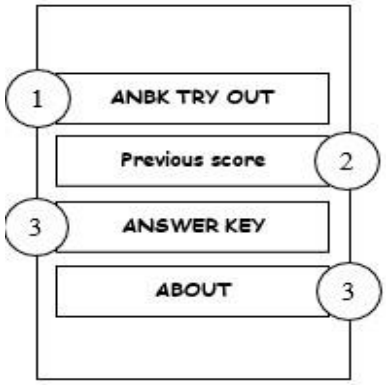

Figure 7. Main Page Design

The information is as follows:

1) Menu button to display the ANBK practice page.

2) Menu button to display the value history page.

3) Menu button to display the answer key page.

4) Menu button to display the page about the application.

2. Design the National Examination Page

This is the display of the ANBK practice page after selecting the ANBK practice menu on the main page. The design of the National Assesment page can be seen in Figure 8.

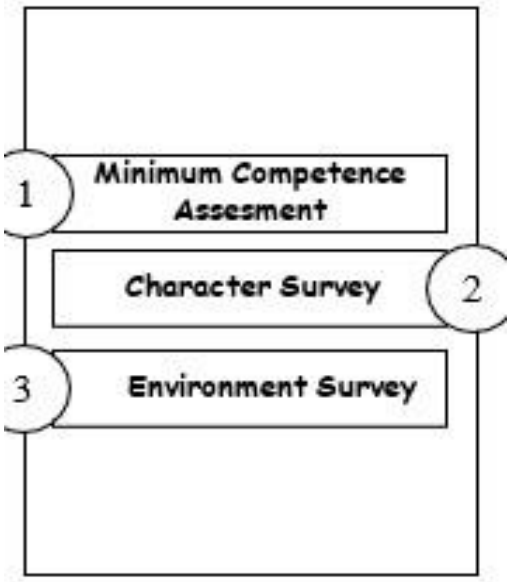

Figure 8. Main Page Design

III. RESULT AND ANALYSIS

Linear Cogruent Method (LCM) is a random number generator that is widely used in computer programs. LCM generates random numbers that are defined by equation. The design of the UN practice application using the Android-based LCM method was built using Android Studio software. The system design consists of use case diagrams, class diagrams, activity diagrams and sequence diagrams as well as application interface designs and explanations of the designs being designed. Here is the plan:

1. Main Page

On the main page there is a National Examination menu to display the National Examination question page, a Grade History menu to display the grades stored in the database, an Answer Key menu to display the answer key page and question discussion and an About menu to display a page about the application. The main page display image is shown in figure 9.

Figure 9. Main Page Design

2. ANBK Try Out View

This page is a page that displays the selected questions. On this page there is the remaining time to answer the questions. After selecting an answer, the user must select the button marked with the arrow to display the next question. An image of the question page display is shown in figure 10

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Figure 10. Try Out View

3. Value Page View

On this page, the value that the user will get after answering all the questions that have been displayed will be displayed. On this page, users can also save the scores they have obtained from answering questions. The value page display image is shown in figure 11.

Figure 11. Page View

4. Value History Page View

On the value page, the values that have been saved will be displayed after answering the questions. The format displayed is the date, questions and grades obtained. An image of the value history page display is shown in figure 12.

Figure 12. Page Question

IV. CONCLUSION

Based on the results of the discussion and trials that have been carried out, it can be concluded as the his application can be used as a medium for carrying out practice in answering examples of National Examination questions.

The application has implemented the Linear Congruent Method (LCM) which functions to randomize the questions that will appear in the application. At the end of the design and making an ANBK try out application can be done the following conclusions are drawn asANBK try out

application system This web-based can make it easier for tryout participants ANBK who took the test try with a learning scheme long distance.

Provide convenience for instructor in proofreading try out results and provide assessment of try out participants. ANBK try out application system This web-based can display value and manage grade immediately after the student finishes do the test.Does it make it easy for students to do it? review test, by downloading exam results.

THANK-YOU NOTE

Thank you to the IJCIS Team for taking the time to create this template.

REFERENCES

[1] Manik, M., SMP Negeri, G., Utara, S., Mentawai, K., & Barat, S. (2022). Student Readiness to Face Nationally Based Assessment Computer. Journal of Education Asatiza: Journal of Education, 3(1). https://doi.org/10.46963/asatiza.v3i1 ,244

[2] Mudassar, S., & Khan, A. (2023). Waterfall Model Used in Software Development Reference: Software Waterfall Engineering Requirements Model. https://doi.org/10.13140/RG.2.2.29580.69764

[3] Nistrina, K., & Sahidah, L. (2022). Unified Modeling Language (UML) for Information Systems Design Acceptance of New Students at Vocational Schools Human Clan Kamil. J-SIKA: Journal Information Systems, 04(01), 17–23.

[4] Sutrisno, M., Davy Wiranata, A., & Irawan, D. (2023). Literature Review: Methodological Analysis TOEFL Application Design (Test of English as a Foreign Language) in Indonesia (Vol. 13, Issue 2). https://jurnal.umj.ac.id/index.php/just-it/index

[5] Syaadah, R., Ary, M. H. A. A., Silitonga, N., & Rangkuty, S. F. (2022). Formal Education, Non-Education Formal and Informal Education.

[6] Mirza Sutrisno, Ade Davy Wiranata, and Dede Irawan p-ISSN 2089-0265 e-ISSN 2598-3016 Just IT: Journal of Information Systems, Information Technology and Computers 193 Vol. 14, no. 3, May 2024: 150-233 PEMA: Journal of Dan Education Community service, 2(2), 125–131. https://jurnal.permapendis sumut.org/index.php/pema

[7] Syafira, Z., & Roesminingsih, M. V. (2020). Tutor Competency and Quality of Learning in Institutions Surabaya "English is Friend" course. Journal of Education for All, 04, 82–92. https://journal.unesa.ac.id/index.php/ jpls/index

[8] Tampubolon, R. P., Siregar, L. H., & Zainy, A. (2022). Readiness Analysis Students Facing ANBK State Vocational School 1 Siabu. Journal Vinertek, 2(3), 23–29. Wicaksono, S. R. (2021). Black Box Testing: Theory and Case Studies (1st ed.). Thousand Stars.