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Creating interactive names for national parks in Indonesia using smart apps creator on android

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ABSTRACT

Indonesia faces a crisis in education due to limited knowledge about national identity, potentially leading to a crisis in the future. To address this, an interactive game using Android technology has been developed to help students understand national identity. The Multimedia Development Life Cycle (MDLC) and Smart Apps Creator technology are used in game development. The goal is to create interactive educational games to inform society about Indonesia and promote nationalism.

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1. INTRODUCTION

Indonesia has a long history, but the history of the country's independence is not limited to the declaration of its independence by Mr. Ir. Citizenship is important for those who have fought for Indonesian independence, and it is important to pass on this legacy to future generations. The Indonesian government is responsible for passing on the legacy of the past because it can affect the future of Indonesia. However, many children and students still lack knowledge of the national identity of the Republic of Indonesia, which should be taught to future generations as a priority for the education of the country's future. Indonesia, a country with a long history, is facing a crisis in its educational system because of the ongoing struggle for its national identity. The National Hero, which is a symbol of Indonesian national pride, has been criticised because the younger generation does not understand, which has led to a lack of knowledge about national identity, which is important for the future of the country. To overcome this problem, it is essential to create an educational game that helps students remember Indonesian national heroes. Interactive educational games developed using Android technology with the Multimedia Development Life Cycle (MDLC) method are used to educate younger generations. The method consists of six stages: concept, design, assembly of materials, manufacture, testing, and distribution of design results. However, the researchers in this study only perform experimental phases. The hero names used as samples in this study amounted to 25 hero

names. Smart Apps Creator uses Android technology to create practical educational games. The app built is playful, adds knowledge, and is expected to boost students' interest in learning and foster a sense of love for the homelandSmart Apps Creator uses Android technology to create practical educational games. The app built is playful, adds knowledge, and is expected to boost students' interest in learning and foster a sense of love for the homeland. The multimedia application, developed using the UCD method, aims to teach Indonesian national heroes' history and character values to children through interactive features like quizzes, games, and videos, serving as a valuable tool for character education in schools and homes. (ABADI & DEWI, 2021). The study evaluated the effectiveness of Smart Apps Creator mobile learning media on economic subjects, involving 30 students. Results showed it improved learning outcomes and was practical and easy for both students and teachers. The study suggests the MDLC method can guide the development of such media. (Aristia et al., 2023).

Previous studies on game creation included a study of the A study entitled "Design of Android-based Indonesian Hero Identification Applications" found that computer games, or games, can accelerate myelination (increasing the speed and efficiency of information transmission on the nervous system) in students and can also improve the cognitive and motor skills of children. (Wibowo et al., 2021). According to a study published under the title " Application of the Finite State Machine Method in the Desktop-Based “Heroes Of Dawn” RPG Turn-Based Game", FSM (Finite State Machine) is an artificial intelligence method used to create intelligent NPCs in role-playing games (RPGs). These NPCs respond to the player's character, enhancing their intelligence. The research focuses on the application of FSM in RPGs to make the game more engaging and challenging, utilizing Artifical Intelligence to enhance gameplay. (Sanjaya et al., 2021). "Android-based Indonesian Hero Personality Identification Educational Game", which aims to improve people's understanding of Indonesia's hero characters and their history of struggle. In this game, the Linear Congruential Generator (LCG) method is used to trace unpredictable puzzle pieces, and their sequence cannot produce the same number (Azaria & Kasih, 2022). The article "Designing Interactive Mathematics Educational Games using the Digital Game-Based Learning-Instructional Design (DGBL-ID) Method" by Rani Puspita Dhaniawaty, Sri Supatmi, and Mia Fitriawati discusses the use of educational games as supporting media in teaching and learning mathematics for elementary school students. The DGBL-ID method is a development method for creating educational games that can be adapted to learning materials. The article aims to help game developers create mathematical game applications adapted to the 2013 curriculum. Digital game-based learning is an effective educational tool for improving future classrooms, including mathematics and computer science education. (Rani Puspita Dhaniawaty et al., 2023). The article "Pengembangan Media Pembelajaran Smart App Creator3 Berbasis Android pada Mata Pelajaran Kerja Bengkel dan Gambar Teknik di SMKN 1 Sumatera Barat" by Yallah and Huda explores the development of Android-based learning media using Smart App Creator 3 for Workshop Work and Engineering Drawings at SMK Negeri 1 West Sumatra. The study uses the ADDIE development model to assess the validity and practicality of the learning media. Other studies suggest that technology-based learning media can improve student learning outcomes in various subjects, including economics and information technology. (Yuliana Kasuma Dewi, 2023).

The aim of this study is to create an interactive educational game that is suitable to get people to know Indonesian heroes and inform the public about the importance of knowing them to cultivate a sense of nationalism as well as to help students grow a love of their homeland.

2. RESEARCH METHOD

The research method used in this study is the Multimedia Development Life Cycle (MDLC) used to educate the younger generation. However, the method used in this research consists of five stages: concept, design, assembly of materials, manufacture, and testing. Smart Apps Creator uses Android technology to create practical educational games. The app built is playful, adds knowledge, and is expected to boost students' interest in learning and foster a sense of love for the homeland.

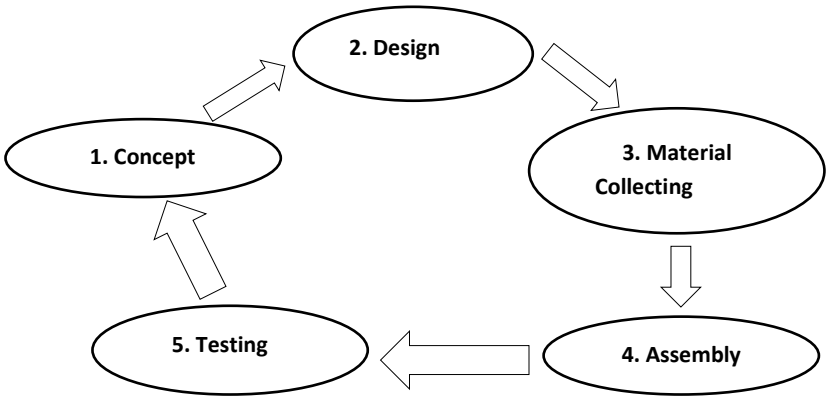


Figure 1.Methodology of System Creation

Description:

1. Ideas (concepts)—At this stage, researchers determine the idea for the game to be designed. They also determine the type of game that will be designed, whether it will have benefits, how the game will run, and other things.
2. Design—At this stage, the researcher will determine the design for the game interface, which will be the display that the player sees while playing the game. This design will include the background design and the design of the object to be displayed in a game.
3. Material collection: At this stage, researchers gather data about educational games and different types of games from books and the Internet, as well as some data from games that have been designed by others before.
4. Assembly: At this stage, researchers use the Smart App Creator (SAC) tool to start the game creation process. This tool was chosen because it is easy to use and has the features that researchers need to help the game design process and ensure that the game that has been designed works properly.
5. Testing: At this stage, the researchers will try to run the game they created. The aim of this test is to evaluate the matching function of the game

The system requirements used in this study consist of hardware and software requirements. The software allows quick and accurate data processing and is used in system building using Windows 10 Pro and Smart Apps Creator. While the hardware requirements are necessary for the built-in system to work properly, the minimum hardware specifications required for this research are computer devices with a processor of 2.0 GHz and RAM of 512 MB. Hard Disc: 20 GB. This research will build an Android-based system that is easy to use and accessible, so that users can access optimal results. System design is the process of designing or repairing an existing system so that it is better and can do its job properly. System planning is an important stage in building a research programme to find solutions to research problems and includes the planning of inputs, outputs, and files. Here is a plan to create an interactive educational game to identify the names of Indonesian heroes based on Android using Smart App Creator (SAC).

3. RESULTS AND DISCUSSIONS

Once the game is finished, games can be played by children as well as the general public. The games created can be played by children while they learn the names of Indonesian heroes. Interactive quiz games to recognise the names of Indonesian heroes can be seen in Figure 10.

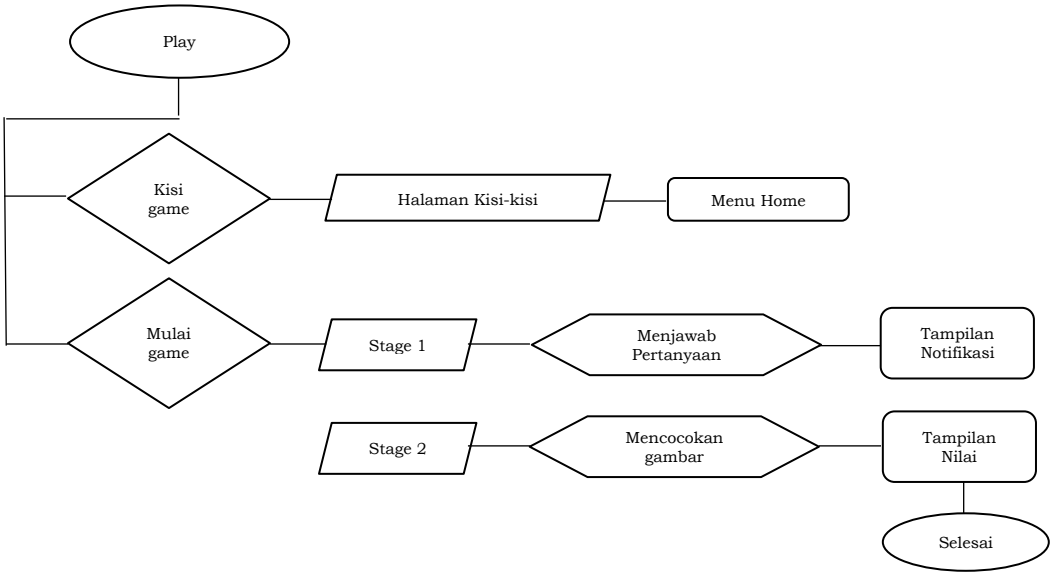


Figure 10. Flowchart Game

Description:

1. To be able to use the system, the user must log in to play the game.
2. Once the user has logged into the system, then the user can learn about the hero through the page Kisi-kisi game.
3. User can play the game over the game start page after it goes to stage1, after the answer is entered, then the system will process the result of the answer entered by the user.
4. User will get a notification view after answering all questions on stage1 page.
5. If the user's answer on the stage1 page is correct, then the system automatically unlocks the stage2 page.
6. If the user's answer is still incorrect on the stage1 page then the stage 2 page will not be opened.
7. After the user finishes the game on the stage2 page, then the system gives the evaluation notification.Using the system, the user can exit the system.

To start the system, this initial design form is used. The following figure shows the initial design of this shape:

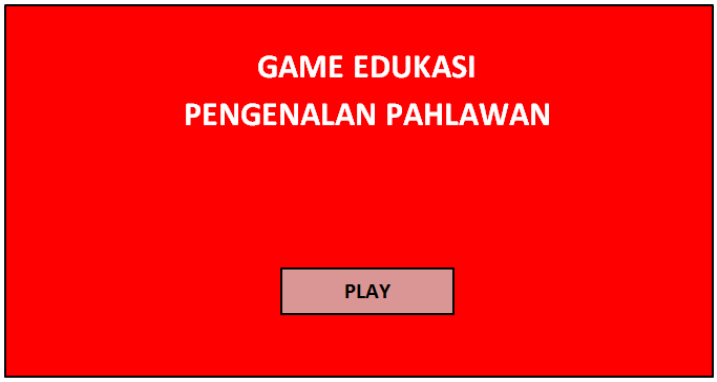


Figure 2. Form Play

Form Main Menu, The primary form is the first form to be displayed after successfully entering the initial form. In the initial view, there is also a view of the authors and lecturers' profiles. In this form, there are menus for accessing other forms. Here's what it looks like:

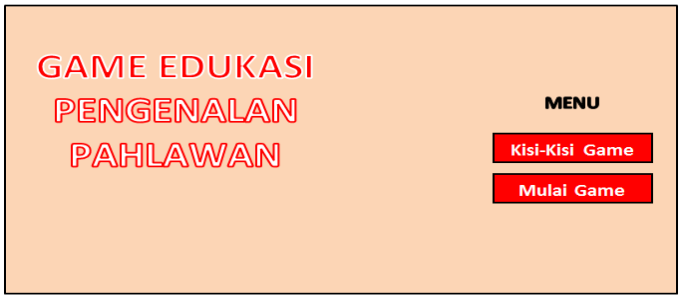


Figure 3. Form Menu Utama

Forms Menu Questions and Assessments, This form is used to answer questions and make assessments.

Figure 4. Form Menu Pertanyaan dan Penilaian

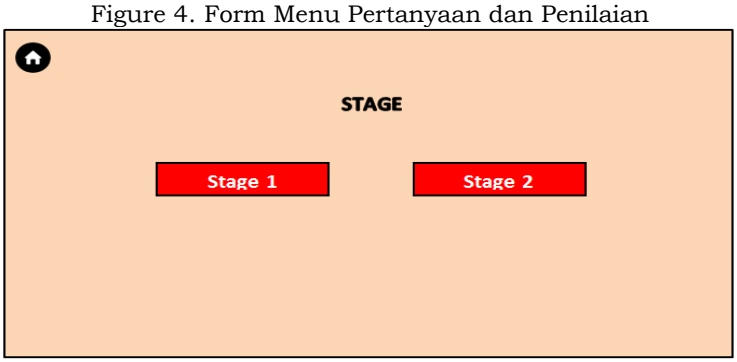


Figure 5. Form Menu Stage

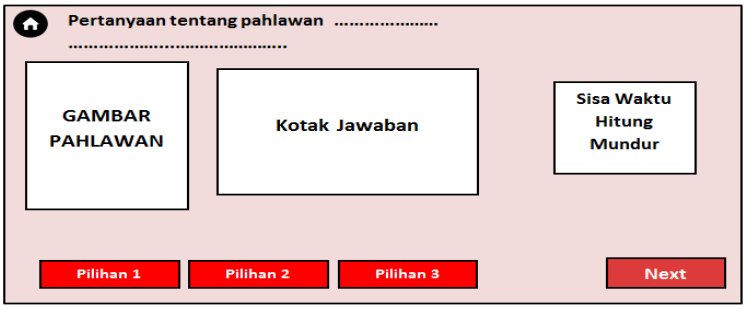


Figure 6. Form Menu Stage 1

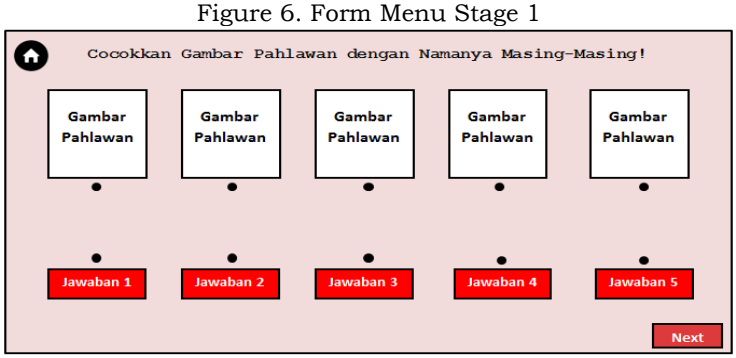


Figure 7. Form Menu Stage 2

This form is used for decision-making and assessment.

Figure 8. Form Berhasil

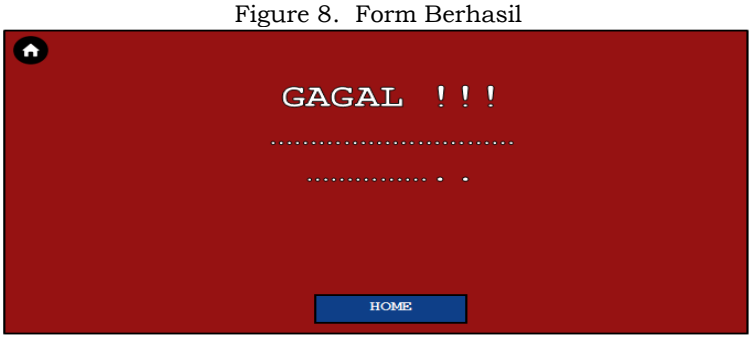


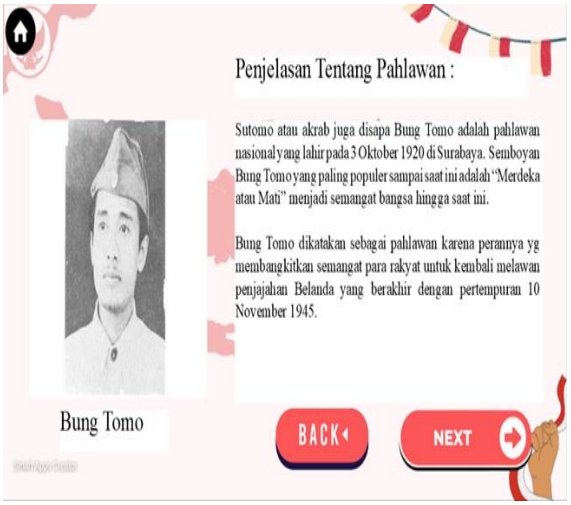
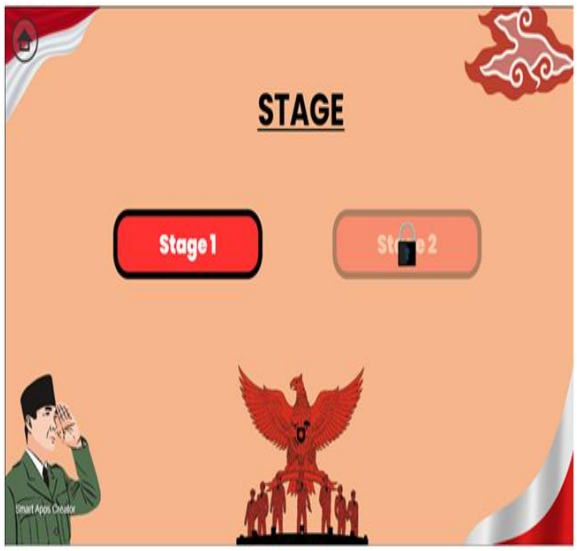
Figure 9. Form Gagal

Once the design and manufacture of the game are complete, the next step is testing. This test is done in several heroes' names, starting with grids and questions, right or wrong answers and also judgments. The authors performed tests using Black Box Testing. Test results perform all test cases according to the desired scenario. (berhasil). Black box testing focuses on testing by examining a system's function without having to be aware of how the

system created the function. In this system, testing refers to the function it possesses. Then compare the system output with the expected output. When the expected result matches the test result, this means the application is in accordance with the previously specified design. Here is a black box test against a design test scenario with an application testing scenario in table 4.1 below:

Table 1. Blackbox Scenario Game

No	Test Component		Test Scenario	Test Type
1	Initial View		Displays the game's start view with a single play button to load the home menu view on this game.	Testing View
2	Home View		This layout is the main/home menu view of this game which contains several buttons namely the game grid and start the game, on the grid button of the game function to go to the hero description view, and on the game start function button to go into the play view answering questions.	Testing Home View Functions

3	Game String View		This design is a grid view to answer the questions in this game, in this view there are several buttons namely next, back and home buttons, the next button serves to see the description of the next hero, the back button functions to view the explanation of the previous hero.	Testing String View Function
4	Stage View		This design is a stage/level game display, on this display there are two select stages namely stage1 and stage2 that are still locked and there is also the home button, on the option stage1 to start the first stage game, to go to the option stages2 which are still blocked then we have to finish the game stage1 with the answer must be correct all then the system will unlock the stage2	Test completing Stage 1, then Stage 2 will open whether or not

5	Stage1 Start View		This layout is a start-up view. In this view there are several buttons namely the next and home buttons, in the next button it serves to go to the next question view, and in the home button it functions to go back to the home menu view. Besides, in this starting view there is also a duration timetable to align questions in this educational game.	Testing Game Start View Function Stage 1
6	Stage 2 Start View		This design is a stage 2 game display, on this display there are some pictures and names of heroes, there are also timepieces and home buttons, in this game the user has to match the hero image with his name.	Testing Game Start View Function Stage 2

7	Evaluation View	 	This layout is a fumgsi assessment display to give notification that the game has been completed, in this view also shows the remaining time achieved and the value generated after completing the game played. In this view there is also one button namely the home button to return to the home menu view.	Testing Assessment View Function

4. CONCLUSION

The study uses Smart Apps Creator to create an Android educational game for Indonesian national children. The game features interactive elements that enhance children's engagement in learning processes. The platform allows for game creation without the need for registration, allowing more people to participate in educational applications, especially in the creation of educational games. The game can be further developed by adding additional features, such as achievements system, group game mode, or integration with social media platforms to share achievement. 4. Tests aimed at target users, such as children or students, will help to identify potential improvements or adjustments that are possible in the game. There is a possibility that feedback from real users will provide valuable information for future development steps.

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