DESIGN AND DEVELOPMENT OF ANDROID-BASED TRADITIONAL INDONESIAN CLOTHING IMAGE GUESSING GAME

Nicodemus Rahanra [*1]**, Dila Erlianti** [2]**, Rissa Megavitry** [3]**, Dicky Jhon Anderson Butarbutar** [4]**, Zulfahmi HB** [5]

[1]Universitas satya wiyata mandala,Jl. Sutamsu, SH Nabire, Indonesia
[2]STIA Lancang Kuning Dumai, Jl Gunung Merapi no 1 Bumi. ayu, Dumai. Riau, Indonesia
[3]Universitas Negeri Makassar, Jl. A. P. Pettarani, Tidung, Kec. Rappocini, Kota Makassar, Sulawesi Selatan, Indonesia
[4]STIE Ciputra Makassar, Jl Sunset Boulevard, CitraLand City Losari, Kota Makassar, Sulawesi Selatan, Indonesia
[5]UIN Imam Bonjol Padang, Indonesia

Email: [1]nicorh73@gmail.com, [2]dilaerliantierlianti@gmail.com, [3]rissamegavitry@unm.ac.id, [4]anderson.butarbutar@ciputra.ac.id, [5]Zulfahmihb@uinib.ac.id

Abstract

In terms of cultural traditions, Indonesia is home to a wide variety of very diverse practices. As a result of different regions of the country, Indonesia is home to diverse cultural traditions. Traditional clothing is an important aspect of the Indonesian culture. The traditions and culture of each region are reflected in the clothes worn at traditional ceremonies; in addition, traditional clothing is a decisive feature of the culture of each region. Concern for the maintenance of national culture, which relates to the wearing of indigenous clothing, has been significantly reduced because of the passage of time. For example, one of the main reasons why people's interest in traditional clothing is not as strong as it used to be is because there is not enough socialization and presentation of Indonesian culture in society. The goal of this study project is to create a learning app for Android based on the guesswork of traditional Indonesian clothing. Research and Development techniques were selected as the proximity used for this investigation. Research and Development As a consequence of this research, an educational game that allows users to predict photos of traditional clothing from Indonesia will be produced on the Android platform. This game will also provide information to players about traditional musical instruments that can be found in Indonesia. It is hoped that educational video games will help in the process of exposing children to pre-existing cultures, and such games can also be seen as offering new perspectives to children. It is possible to draw the conclusion, based on the findings of tests conducted using the black box approach, that this application is capable of functioning in an appropriate way. Moreover, it can provide android smartphone customers with instructional games.

Keywords: *Traditional Clothing, Android Smartphones, and Educational Games*

RANCANG BANGUN GAME PAKAIAN TRADISIONAL INDONESIA BERBASIS ANDROID

Abstrak

Dalam hal tradisi budaya, Indonesia adalah rumah bagi berbagai praktik yang sangat beragam. Sebagai hasil dari berbagai daerah di negara ini, Indonesia adalah rumah bagi tradisi budaya yang beragam. Pakaian tradisional merupakan aspek penting dari budaya Indonesia. Tradisi dan budaya masing-masing daerah tercermin dari pakaian yang dikenakan pada upacara adat; Selain itu, pakaian adat merupakan ciri khas budaya masing-masing daerah. Kepedulian terhadap pemeliharaan budaya bangsa, yang berkaitan dengan pemakaian pakaian adat, telah berkurang secara signifikan karena berjalannya waktu. Misalnya, salah satu penyebab utama minat masyarakat terhadap pakaian tradisional tidak sekuat dulu adalah karena sosialisasi dan presentasi budaya Indonesia yang kurang di masyarakat. Tujuan dari proyek studi ini adalah untuk membuat aplikasi pembelajaran Android berbasis tebak-tebakan pakaian adat Indonesia. Teknik Penelitian dan Pengembangan dipilih sebagai kedekatan yang digunakan untuk penelitian ini. Penelitian dan Pengembangan Sebagai konsekuensi dari penelitian ini, sebuah game edukasi yang memungkinkan pengguna untuk memprediksi foto pakaian tradisional dari Indonesia

akan diproduksi di platform Android. Game ini juga akan memberikan informasi kepada pemain tentang alat musik tradisional yang dapat ditemukan di Indonesia. Video game edukatif diharapkan dapat membantu dalam proses memperkenalkan anak-anak pada budaya yang sudah ada sebelumnya, dan game semacam itu juga dapat dilihat sebagai menawarkan perspektif baru kepada anak-anak. Dapat ditarik kesimpulan, berdasarkan temuan pengujian yang dilakukan dengan menggunakan pendekatan black box, bahwa aplikasi ini mampu berfungsi dengan baik. Selain itu, dapat menyediakan pelanggan smartphone android dengan permainan instruksional.

Kata kunci: Pakaian Adat, Smartphone Android, dan Game Edukasi

1. INTRODUCTION

Due to Indonesia's diverse population and rich cultural heritage, many ethnic groups in the country each have a distinctive traditional style of clothing[1] . Indonesia's population is spread among its 33 provinces[2]. There are clear differences between the traditional clothing of one region and another, and this difference is since each region has a different culture. To give it an exact name, for example batik, this type of fabric is not only recognized in the country but is also quite well known everywhere in the country[3], [4]. Indonesians really enjoy batik because it represents their culture and country. The existence of differences in every culture in Indonesia is what gives the country a reputation because it has a rich cultural heritage. The conditions that exist between the location of one area and another are one of the elements that come into play. The islands that make up the territory of Indonesia, which stretches from Sabang to Merauke, the face of the nation[5]. Due to the differences between the different regions of the nation, the routines, and customs that people follow every day are not the same from one part of the country to another.

The students can learn more about their own regional culture through playing educational games, which can also be taught to them. The students begin their formal education throughout the teenage years of their development. The students gain the capacity to participate in games that adhere to the guidelines that the fingers have learned while attending school. The age range of 12 to 21 years is often considered to represent the boundary between childhood and adulthood by professionals.

The age range is often broken down into three categories, the first of which is early adolescence, which is between 12 and 15 years. Operational time begins at the age of 12 and continues for those older than that. During the moment in which the operation was being performed, he began to think about the probable future that would be faced as well as what he would become in the future. They have taken a methodical approach to issuing resolutions, formulating theories about the reasons for the occurrence of events in a certain pattern .

Currently The number of people using Android has continued to increase at a substantial rate in Indonesia over the past few years[6]. Even Android users in Indonesia have risen to fifth place among the countries that actively use the drug. There are about 14 percent of the total world population who use mobile phones, which amount to about 47 million people [7]. The use of educational games as a means of presenting culture to children is something that can be achieved by combining Android devices and learning media to introduce Indonesian culture. Because so many students use Android devices, this partnership may be used to spread knowledge about Indonesian culture through mobile applications on the Android platform.

Several studies regarding android learning applications have been carried out, namely research[8]–[13]In the research that has been carried out, the results obtained that android learning applications can support the learning process because they can stimulate students to be active in learning. others were also performed by [14]–[18][19].In this study has resulted those android applications improve students' skills in the learning process. Based on the background of the problems that have been raised, the main problem faced is how to design an Android-based clothing recognition education *game* application in Indonesia ?

2. METHOD

Research and Development techniques were chosen as the approach used for this particular investigation. Research and Development Research and Development Procedures are methods used in the production of a software product as well as testing the feasibility of software that has been produced. According to [20], the Research and Development process is a method used to produce a certain product and assess the efficacy of the product. For the purposes of this investigation, the researchers built a program using the V-Model methodology. The concept of a waterfall has been expanded in the form of this model. Since the steps are very comparable to those in the waterfall model, "expansion" is the term used to describe this process. In the waterfall model, the process is conducted linearly; in the V model, on the other hand, the process is carried out in a branched manner. The relationship that exists between the software development stage and the testing stage is shown in this model, which is referred to as the V model. The process of collecting information about the end-user requirements for the software to be produced is

known as the needs analysis. In the future, we will use this information to have conversations to choose which features to include in Android-Based Educational Games. In-Depth Analysis of Specifications The requirements for the system outlined in the specification analysis are the requirements that must be met to function properly. The pose for the analysis of specifications is to determine the types of systems that can be successfully implemented, as well as the necessary components in terms of hardware and software, and to identify the user who will operate the system. Game Design The game design stage is the planning stage carried out by a developer during the creation of the game. During this stage, the developer decides on the genre or type of game, how the game is played, and the level of difficulty or level of the game. System Design Using Unified Modeling Language

3.   RESULT AND DISCUSSION

The newly developed software system architecture will, in the future, serve as a reference for developers as they produce code. The design of this software system must be able to simplify and explain the process of making software for developers, as well as meet the quality of the software to be purchased. This research utilizes the unified modeling language (UML) model system design because this model is considered one of the most suitable for the development of object-oriented systems. The construction of a user-friendly interface is a very important part of the software industry, especially when it comes to creating gaming applications. The user interface is a bridge of interaction between the user and the system; in addition, the character designs and characters in the game must also be prepared appropriately and beautifully. Inside or in der for consumers to have a pleasant experience and maintain their interest in playing games. In addition, the design of the user interface must be able to describe the experience that users will have while playing the game and the value they will take from it. After that, the prepared essay is first interpreted, and then translated, into the code so that the logic of the program can be implemented. This implementation procedure is carried out on software that is under development.
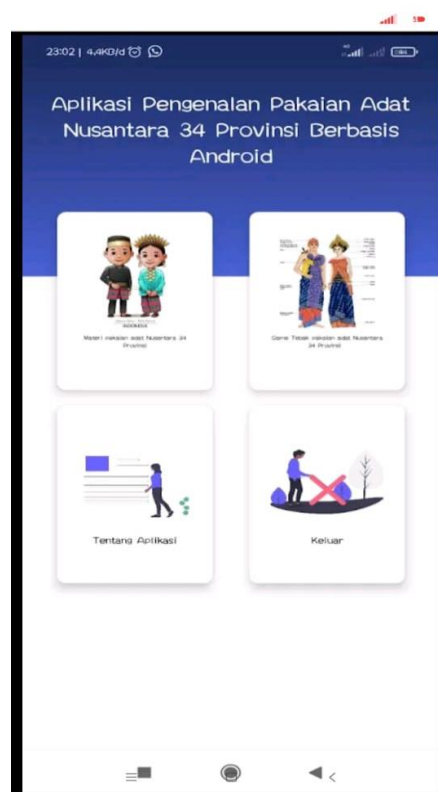

Figure 4.10: Clothing Worn at Javanese Traditional Ceremonies

The process of studying or analyzing the difficulties that have been set in line with the final goal being evaluated is referred to as the feasibility analysis. It is possible to establish how likely it is that the suggested solution will be successful by conducting a feasibility study. In this step, it is helpful to check that the suggested solution can really be realized by taking advantage of the available resources, paying attention to the

restrictions applied to this problem, and taking into account its effect on the environment that exists around us.

There are several other types of feasibility analysis for systems, the most common being technical feasibility, economic feasibility, and operational feasibility. If we want to judge the feasibility of this application based on its technological feasibility, we find that it is feasible. This happens because the technology needed to support this application is readily available, inexpensive, and easy to use. One of our advantages in this educational game application is that it helps strengthen memory of the names and forms of various kinds of traditional clothes used in Indonesia. In addition, this educational game application is also a learning tool that will help you remember and expand your knowledge about the various forms of traditional clothing used in Indonesia. The creation of this system does not exclude the potential to have vulnerabilities at the time of deployment or use by a significant number of users. As a result of the shortcomings of the system that has been implemented, it is hoped that future developments can overcome and overcome these shortcomings. In the process of developing this instructional game application, we faced a number of challenges, including the following: It was impossible to find a suitable replacement for Splash Screen when developing educational game applications. When played on some devices with higher resolutions, certain Outfits will appear pixelated and indistinct. It was revealed that the root of the difficulty was the program that produced the educational game application itself, in this case MIT because in the free version MIT cannot change the splash screen. This was found by analyzing some of the challenges discussed earlier. The reason why some of the parts that represent the clothes appear to be unclear is because the pre-made sizes are reduced first. Due to the factors mentioned above, parts that were previously considered blurry have been corrected to have a larger file size, so that they are seen more clearly. Once the update is applied and the program has been recompiled, it's clear that the app is ahead of its previous state.

4. DISCUSSION

Testing is a challenging part of the application development process because it is necessary to obtain information about the quality of the application that has been developed and to determine whether the application functions have been carried out in accordance with the desired results or not. In this investigation, a black box testing approach is used to determine the reliability of the system under inspection. The application for this game based on Indonesian customary clothing is designed according to the recommendations given by the System Development Life Cycle. Needs analysis,

specification analysis, design, and execution are the steps that have been completed and passed. Once the program is entered, the researchers will conduct tests to complete the verification and validation procedures. The verification process consists of conducting a unit test with a white box approach and an integration test using the black box method. While the validation process involves testing the system with techniques such as stress tests and instability tests, the admissions testing process involves testing using methods such as expert review and playability tests.

5. CONCLUSION

It is possible to draw the conclusion, based on the implementation and results of the tests that have been carried out, that this application performs well in accordance with the designed objectives. The program is designed to operate on smartphones supported by the Android operating system. At its core, this application is an educational game with the aim of increasing the knowledge of users, especially children and teenagers in the context of presenting onal traditi wear. This entertaining and informative video game may not only be played for the purpose of having fun, but also for the purpose of being able to play while simultaneously gaining knowledge. It contains informative media material, namely traditional clothing and its history. The program has its drawbacks, and the downside is that, despite the large number of historically significant outfits that can be found in Indonesia, developers have chosen to include in the game only a small selection of such outfits.

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