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ICONS: a Mobile Application for Introduction Culture of North Sulawesi

Tini Mogea, Salaki Reynaldo Joshua

Abstract: Indonesia has a very artistic and cultural diversity. Currently the lack of knowledge about the culture and art of their own country is an issue that is being experienced. Now the lack of means of support in getting information about Indonesian art and culture, thereby lowering the curiosity about the culture and art of Indonesia itself. North Sulawesi is a province in Sulawesi islands where lies the province on the northern tip of Sulawesi island directly adjacent to the Philippines Country. North Sulawesi as an area that has a lot of cultural diversity begins from historic sites, traditional houses, traditional clothing, to the beautiful tourism place in North Sulawesi. With provided a means of education in the information provider will provide a media to share information about the culture in North Sulawesi. Therefore, it is necessary to develop applications Introduction to Cultural North Sulawesi, which is the application of information systems to the concept mobile based application that is expected to attract interest in giving and receiving information about the cultures that exist in North Sulawesi. In the development of this application using methods developed Multimedia Development Life Cycle (MDLC) which starts from the concept phase to the distribution phase.

Keywords : Culture, Application, Mobile, MDLC

I. INTRODUCTION

Indonesia is one of the largest archipelagic countries in the world that has a large variety of ethnic groups and cultures [22]. Indonesia also has a variety of cultures and characteristics of each region. The characteristics and culture of each province consist of customs and traditions, regional clothing, regional languages, regional songs and even traditional weapons from each of these provinces.

As Indonesian citizens, it is appropriate to know and preserve Indonesian culture. The introduction of Indonesian culture must have started when it was still in childhood, which is where the period of learning about life around it, so that the culture of Indonesia in the future will be preserved and preserved by the next generation. But along with the rapid development of science and technology, people are increasingly following new technological developments and often people forget the cultures that exist in their own countries [16].

One part of current technological developments is in the field of Android Mobile, where currently the contribution of development in the field of Android has undergone many changes and progress [15,19]. The use of Android-based Mobile is currently in demand by the community due to

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access and costs that are in accordance with the community's existence [4].

Indonesia is a great nation that has characteristics and customs called culture, which are the work and knowledge possessed by humans [14]. The variety of cultures makes this country a country that is rich in culture so that it becomes a big capital for the growth of national culture that has a national personality and awareness. The same thing is also part of North Sulawesi Province. At present North Sulawesi, which is one of the tourism destinations in Indonesia, encourages cultural information which local people and visitors from outside Sulawesi can know and understand.

Media for North Sulawesi's cultural information is currently needed, both as a source of information for tourists and for those who want to know and learn more about culture in North Sulawesi. Android is a mobile operating system that has recently become popular among smartphones. Android is a Linux-based operating system designed for touch screen devices such as smartphones and tablet computers so that users can create new applications in it.

Indonesia has a very artistic and cultural diversity. With what is owned, Indonesia became a tourist destination of foreign.

With Indonesian art and culture that many were expected to or be able to preserve and develop the Indonesian art and culture. North Sulawesi is one of the provinces in Indonesia which is located at the tip of the island of Sulawesi is located next to the Philippines country rich in culture.

The background of the conditions that occur the author has the aim to develop the Application for Introduction to North Sulawesi-Based Culture of Android Mobile which is expected to later be a medium of information and knowledge for users.

The problems that have been identified successfully will then be limited to the main problems. Problems that are the focus of attention in the scope of the author's research are as follows:

1. Application for the Introduction of North Sulawesi Culture Based on Android Mobile that is developed enables the presentation of interesting multimedia information (text, images, sounds, animations, videos, etc.) and can be updated according to user needs.
2. Information that can be seen by the public, including:
- History.
- Traditional House.
- Traditional dance.
- Tourist attraction.
- Language.
- Traditional costume.

- Songs / Musical Instruments.
- Traditional food.

II. LITERATURE REVIEW

A. Culture

In the Great Indonesian Culture Dictionary (Ministry of National Education, (2008) culture is a mind, reason, while traditional is derived from the word tradition that is customary from generation to ancestry which is still carried out in the community, whereas according to experts namely Mitchell culture is a set of values - core values, beliefs, standards, knowledge, legal morals, and behaviors conveyed by individuals and society that determine how a person acts, feels, and sees himself as well as others.

Indonesia is one country that has a very diverse culture. This also attracts other nations to know and even learn about Indonesian culture, because culture is also an embodiment of national identity where embedded values must be respected, guarded, and even preserved so that good existing culture can continue to be carried out. and won't fade. Every environment in an area must have a basis for values and culture that grows and develops in the environment of its community. The basis in a community environment is a view of life as well as becoming a social control of society in behaving. The values contained are the results of long and long social constructions [20].

B. Application

According to experts there are many understandings about applications including:

- Application is a software soft unit that is made to serve the needs of several activities [5,21].
- Application is a complete system that performs specific tasks [1,17].
- Application is software created by a computer company to do certain tasks, for example Microsoft word, Microsoft Excel [7,18].
- The application is the application of the use or addition of the above understanding, it can be concluded that the application is software that functions to perform various forms of work or certain tasks such as the application, use and addition of data [2,10].

Some applications that are combined together into a package are sometimes referred to as a package or application suite (application suite) [24,26]. Examples are Microsoft Office and OpenOffice that use a word processing application, worksheet, and several other applications. Applications in a package usually have a user interface that has the ability to make it easier for users to learn and use each application. Often, they have the ability to interact with each other to benefit the user. For example, a worksheet can be embedded in a word processing document even if it is made on a separate worksheet application.

Application Classification Applications can be classified into several classes, including:

- Software company (enterprise).
- Software infrastructure of the company.
- Job information software.
- Soft media and entertainment.
- Educational software.
- Media development software.
- Product engineering software, In general terms, applications are applied tools that are specifically functioned and integrated according to their capabilities.

C. Android

Smartphones are mobile phones that have the ability to use and function that resemble computers and present advanced features such as e-mail, internet and e-books. Android is a touch screen (touchscreen) cellular telephone and tablet computer operating system [9,13]. But along with its development, Android turned into a platform that is so fast in innovating. This is inseparable from the main developer behind it is Google. Google, which acquired Android, then created a platform. The Android platform consists of a Linux-based operating system, a GUI (Graphic User Interface), a web browser and applications that can be downloaded and also developers can freely create and create the first and open applications for use by various devices. Android is a mobile operating system modified from the Linux operating system. At first Android was developed under the name Android Inc. In 2005 Android was acquired and further developed by Google. In 2016 Android released the latest version version 5.1 with code name Nougat. The advantages of Android compared to other OSes are having a user interface that is easy to operate, easy to develop, and the number of users that dominates the smartphone market in Indonesia and the world [11].

Table- I: Strengths and Weaknesses of Android [8]

No	Strengths	Weaknesses
1	Multi-tasking. The Android system is able to run several applications at once which are unlimited, both applications that can be defaulted to the system or additional from the Android market place.	Connect with the internet: Android is arguably very much in need of an active internet connection.
2	Flexible Home Screen. The concept is indeed like Windows Mobile where all notifications can be monitored from the Home Screen or the main system window.	Device companies sometimes slow to issue the official version of your Android. Although sometimes there is no significant difference in terms of UI.

3	Many Device Options. As said before. There are many supporting vendors of this system, so the choice of devices that you can use is also diverse.	Android Market lacks control from the manager, sometimes there is still malware.
4	System Modification. A lot of freedom is given by Android, including the choice of operators used. In addition, you can also jailbreak like iOs on iPhone to modify the system.	As a direct service provider, sometimes users are very difficult connect with google.

D. Application for Software Development

Define abbreviations and acronyms the first time they are used in the text, even after they have been defined in the abstract. Do not use abbreviations in the title unless they are unavoidable.

Adobe Flash software, which is currently called Flash, used to be called Macromedia Flash, is a superior multimedia software that was previously developed by Macromedia, but has not been developed and distributed by Adobe System. Since 1996, Flash has become a popular method for creating animation and website interactions. Flash is used to create animations, entertainment, and various web components, integrated with videos on web pages so that it can become a rich multimedia application [6].

The Adobe Flash program has also a variety of versions, the Adobe Flash research used is Adobe Flash CS6 Professional. Adobe Flash CS6 Professional is software designed to create vector-based animations with small size results. Initially this software was indeed directed to create animation or internet-based applications (online). But its development is widely used to make animations or applications that are not internet based (offline). With actionscript 6.0 that it carries, professional Adobe Flash CS6 can be used to develop games or teaching materials such as quizzes / simulations [12].

The following is a general description of the contents of the Adobe Flash CS6 program:

- Start Page. The start page is the display that first appears when we access Adobe Flash C6 Professional. The first way to access Adobe Flash CS6 Professional is to double click on the icon on the desktop or see it from the list of programs.
- Adobe Flash C6 Work Environment. Broadly speaking, the Adobe Flash CS6 workspace consists of several main components: Menu Bar, Timeline, Stage, Toolbox, Properties, Panels.
- Toolbox. The toolbox facility as explained earlier is a set of tools or tools that have their own functions for design

purposes.
- Library. The function of the library is as a container to store separate programs that have been made, such as buttons, graphic objects, audio, video, and others.
- Actionscript. One of the advantages of flash compared to other animation software is the actionscript. Actionscript is an Adobe Flash programming language that is used to create animations or interactions, actionscript allows to make action-oriented instructions (do commands) and logic- oriented instructions (problem analysis before performing commands). One of the actionscript functions is to provide a connectivity to an object, namely by writing commands in it.

E. Relevant Research

In conducting research, researchers conduct literature studies and research studies that are relevant to the research that will be carried out by the author. In Table 2 research will be described that is relevant / related to the research of the author.

Table- II: Relevant Research

No	Research Title	Description
1	Designing Learning Media Introduction to Android-Based Indonesian Culture Using Phonegap [16]	Design learning media for introducing Indonesian culture. This application contains learning media, traditional clothes, traditional dances, regional traditional songs, traditional houses, musical instruments, and traditional weapons in Indonesia. This application runs on devices on Android-based smartphones and is designed using Phonegap with web programming languages such as HTML, CSS and Javascript blackbox. The results of this study are the design of learning media for the introduction of Indonesian culture, this application is specifically intended for students.
2	Development of Biological Learning Module Based on Local Wisdom in Gunung Merapi	This study has three objectives. First, knowing the local wisdom of the people around Merapi and the potential biodiversity of Mount Merapi

	National Park for High School / MA Class X Biodiversity Material [3]	National Park (TNGM) associated with it. Secondly, developing a biology module based on local wisdom in TNGM class X high school biodiversity material. Third, knowing the quality and feasibility of the module based on the results of material experts, media experts, peer reviewers and biology teachers, and student responses to the module. The method used is based on two stages, namely research on the potential of local wisdom of the Turgo Pakem community and the development of a biology learning module based on local wisdom of the community around TNGM. The technique of collecting data about the local wisdom of the Turgo community is done through in-depth interviews (in-depth interviews) and non-participatory observation. The data on local wisdom was then raised as the main material for the module material. Module development uses a Four-D model consisting of define (definition), design (planning), develop (development) and disseminate (spread), which in this study only focused on the stage of development.
3	Java Based Learning Application Android [25]	The purpose of this study is to make an application for learning Javanese culture based on mobile android made using Eclipse software, which is the software used to create android mobile-based

		applications. Making this application is expected to make it easier for users to know and learn Javanese culture. The author makes this learning application with several stages. The first stage of application design uses Eclipse as a development tool that is already connected to the ADT plugin, Photoshop to process images and Audacity 1.3 Beta for audio design, then testing the system to application users as an assessment of the results of the application design. The result of the design is that the application of Javanese cultural learning is read-only and contains traditional material, musical instruments, folk songs, traditional dances, traditional clothing, traditional houses, traditional weapons, traditional games originating from Banten province, DKI Jakarta, West Java Central Java, East Java and Yogyakarta, problem training and Javanese language, which makes it easy for users to get to know and learn Javanese culture.
4	Development of Interactive Module for Learning Modules Based on Adobe Flash CS 6 on Competence of Adjusting Journals for Students of Class XI IPS High School N 1 Paste [6]	This study aims to 1) know the development of Adobe Flash CS 6 based Interactive Module Learning Media on Adjustment Journal Competence for XI IPS students in SMA N 1 empel, 2) Know the feasibility of Adobe Flash CS 6 based Interactive Learning Media as learning media in Journal Competence

Adjustment, 3) Knowing student assessment in the use of Adobe Flash CS 6 based Interactive Learning Media in Competency Journal of Class XI IPS Adjustment High School 1 Paste, 4) Knowing the effectiveness of using Adobe Flash CS 6 based Interactive Learning Media Module on competence Journal Adjustment for students class XI IPS A N 1 Tempel. This research is a development research & D) following the development model of Borg & Gall (1983). At the development stage the initial form of the product is validated by one material expert, one media expert, and one practitioner of Accounting learning. This module is tested on students in three stages, namely the individual trial stage (3 students), the small group trial stage (9 students), and the field trial stage (28 students). The data collection technique in this study used a questionnaire. The data obtained from the questionnaire were then analyzed descriptively qualitatively and quantitatively.
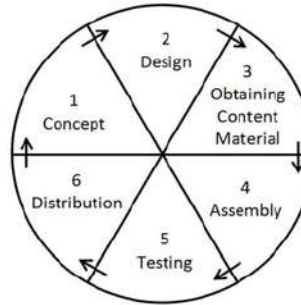
Fig. 1. Multimedia Development Life Cycle [23]

Stages in the Multimedia Development Life Cycle (MDLC):

- Concept This stage is the stage to determine the purpose and who is the program user (audience identification). The purpose and end use of the program refers to the nuances of multimedia as a reflection of the identity of the organization that wants information to the end user. User characteristics including user capabilities also need to be considered because it can affect the design. In addition, this stage will also determine the type of application (presentation, interactive, etc.) and the purpose of the application (entertainment, training, learning, etc.). The basic rules for design are also determined at this stage, for example the size of the application, target, etc. The output of this stage is usually in the form of narrative documents to reveal the objectives of the project to be achieved.

- Design At this stage the specification of the program architecture, style, appearance, and material / material requirements for the program is made. The specifications are as detailed as possible so that in the next stage, namely obtaining content material and assembly. New decision making is no longer needed, just use a decision that has been determined at this stage. Nonetheless, in practice, working on a project at an early stage will often experience additional or reduced parts of the application, or other changes.

- Obtaining Content Material This stage is the stage of collecting materials that are in accordance with the needs being worked on. These materials, including clip art images, photos, animation, video, audio, etc. that can be obtained free of charge or by ordering to other parties in accordance with the design. This stage can be done in parallel with the assembly stage. However, in some cases, the obtaining stage of material content and the assembly stage will be carried out linearly and not parallelly.

- Assembly Obtaining Content Material is the stage where the collection of materials is in accordance with the needs that are worked on. This stage can be done in parallel with the assembly stage. In some cases, the material obtaining stage and assembly stage will be carried out linearly and not in parallel.

III. RESEARCH METHDOLOGY

In conducting this research, the type of research conducted is system development research, using the method of developing the Multimedia Development Life Cycle (MDLC) [23], which will contain six stages of development starting from the concept, design, Obtaining Content Materials (collection of material), Assembly, Testing and Distribution.

- Testing The testing phase is done after completing the assembly stage by running the application program and seeing whether there is an error or not. During testing, the application is run and checked to ensure that multimedia development is carried out in accordance with what was designed.
- Distribution At this stage, the developed application is duplicated and given to the user to use. Distribution can be in various forms, both for projector presentations, as well as in the form of CD-ROMs, mobile devices, and websites. This stage can also be called the evaluation stage for developing finished products to make it better. The results of this evaluation can be used as input for the concept stage of the next product.
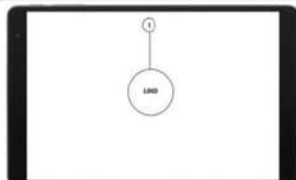
The data source in this study is to use the Library Research which is a way of collecting data from several books, journals, theses, and discussing information systems, websites, other literature that can be used as references in this issue and online or internet data sources. The data collection method will be done by:

- Interview. The interview is a technique of data collection carried out through face-to- face and direct question and answer between data collectors to data sources.
- Field Study (observation). Field study (observation) is a technique of collecting data by directly plunging into the field to observe problems that occur directly at the scene systematically events, behaviors, objects - objects that are seen and other things needed to support the research being carried out.
- Study of literature (research). The study of literature (Research) is a method carried out by the author by looking for references from books, library and studying the web or sites related to this research. In this study, the authors chose a literature study to collect references from journals, web-web and books and theses related to academic information system problems that have similarities in making this system.
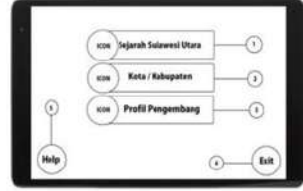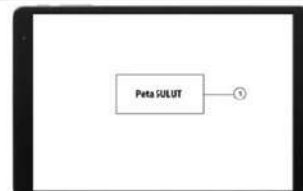
IV. RESULT AND DISCUSSION

Concept and Design Application. At this stage, the concept and initial application design are proposed for application development, and the result will be used as a reference for application development stage (Table- III).

Table- III: Concept and Design Application

No	Design	Description
1		1: Logo
2		1: Button History 2: Button City 3: Button Profile of Developer 4: Button Exit 5: Button Help
3		1: Map of North Sulawesi
4		1: Button Language 2: Button Traditional dance 3: Button Songs / Musical Instruments 4: Button Traditional food. 5: Exit Button 6: Button Back 7: Button Tourist attraction. 8: Button Traditional costume 9: Button Traditional House 10: Button History

Results in the development of application introduction culture of North Sulawesi created an application that can be used in the learning in particular the introduction of culture material. Application development is done by starting the analysis phase of the material to be loaded into the application which is taken from the resources (Journals and Articles of North Sulawesi), and further analysis of the existing resources of both hardware and software

support in application development. Applications developed an android based applications, where the application can be used on smartphones that use the Android operating system.

Table- IV: Application Development

No	Design	Description
1		Page Sign Application Display. This page is the first page when the application is running.
2		Page Main Menu. In this page will be displayed three options to user. Starting from History of North Sulawesi, Regency / City and Profile of Developer.
3		Page Map of North Sulawesi. On this page, information for the Regency / City is visualized in the form of a Map. User can search for information by pressing the logo.
4		Page of Features provided in Application. After selecting Regency / City. Next will be displayed an information of History,
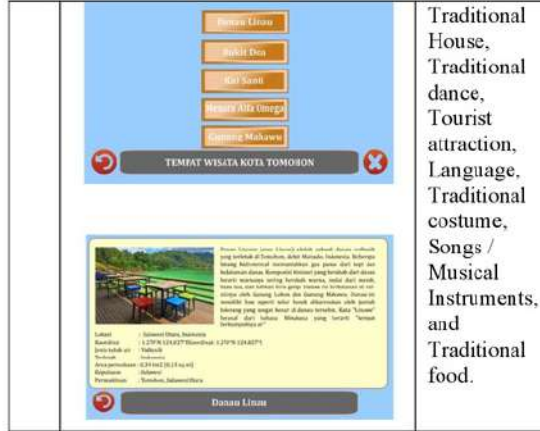
Traditional House, Traditional dance, Tourist attraction, Language, Traditional costume, Songs / Musical Instruments, and Traditional food.

In this development for the use of applications facilitated by buttons of options available on every page. The information contained in the application is also made with an easily understandable and included with the images are loaded into mobile application pages which is expected to facilitate the user to know and learn about the culture of North Sulawesi.

Testing is carried out in the developer environment by involving user samples. The user evaluates the application using the questionnaire media. From the results of the questionnaire it can be concluded whether the application that was built was in accordance with the objectives or not. Tests carried out on several application users using a questionnaire. To find out the responses and ratings from users of this application, questionnaires were distributed to 10 respondents. This questionnaire was distributed using a sampling technique that is Simple Random Sampling which was distributed to several users. From the results of the questionnaire will be calculated so that conclusions can be drawn on the assessment of the application that was built. Following are the results of the percentage of each value of the questionnaire answers tested to 10 respondents.
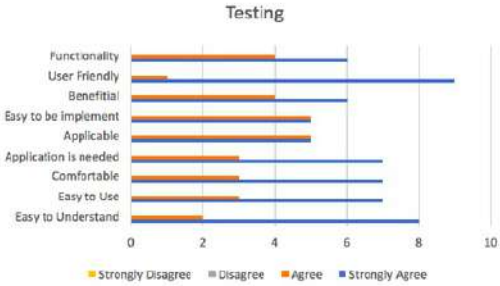

Fig. 2.Testing Result

From the respondents' result can be concluded that the application is made easy to understand, according to needs, and it is expected that in the future this application can help users who want to know information about attractions in North Sulawesi, and can also be developed further and added information and even features that suit your needs.

V. CONCLUSIONS

Development of this application based on android mobile has resulted in the application of learning and promotion material that contains about culture of North Sulawesi. This application can be used on smartphones with Android operating system.

In the design of mobile application android based there are several characteristics that must be considered include the suitability of use of animation and images with the material, the appearance of the image, selecting a combination of background, as well as the adjustment of the application on the smartphone display and also required accurate reference about culture of north Sulawesi.

The development of this application can be used as a reference for researchers and practitioners in developing application mobile based and presumably for further development could be considered again and adapted to the needs of the materials to be loaded into the application and application capability would not only focus on one just like the android operating system but can also function in other operating systems with hopefully this application can be spread across all mobile devices.

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