INTRODUCTION OF INTERACTIVE APPLICATION OF TRADITIONAL INDONESIAN MUSICAL MULTIPLATFORM BASED ON SMARTPHONE

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Abstract. Traditional musical instrument is a musical instrument that found in all of regions in our country. There are a lot of kinds of it, because almost every region has its own musical instrument. From how to play, traditional musical instruments can be divided, percussion (percussion), wind instruments, stringed instruments, and stringed instrument. Music also has a function as a means or media ritual, media entertainment media self-expression, communication media, dance accompanist, and economic means. To support this means there should be a media to help in order to introduce traditional Indonesian musical instrument to the public both national and international. One of the promotional media that can help to introduce and help the public to better understand and know the musical instruments that exist in Indonesia is by utilizing mobile phones that use the Android operating system and the iPhone using iOS operating system. With the android and iOS users enable to access the software applications traditional musical instrument Indonesian without any user restrictions.

Keywords: information, traditional musical instruments, mobile phones, android, iOS

I. INTRODUCTION

Along with the high level of development, a few years mobile device are booming. One of the most rapid mobile device is a phone where almost everyone has it. Just like on computers, mobile phones can install a wide range of demanding applications. Android as a Linux-based operating system that can be used in a variety of mobile devices. In addition there is also the Android operating system iOS is derived from Mac OS X, which is therefore characterized as the Unix operating system. Until now, Android and iOS continue to grow, both in the system and application. As the development of mobile technology media started to spread to mobile devices are constantly being developed, including those that will be developed by the author of the introduction of traditional Indonesian musical instrument that will be implemented into mobile devices Android and iOS. By leveraging technology and iOS andoroid so that the citizen can know all information clearly about traditional musical instruments across Indonesia. And this will be enough to help the community in recognition of traditional musical instruments ranging from its shape, their role, where it comes from and how to play a musical instrument in Indonesia can be accessed anywhere.

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II. LITERATURE REVIEW

A. Indonesia's Musical Instruments

Musical instrument is an instrument that intentionally created or adapted with the aim that can produce the sound of music. Although in principle, anything that could produce sound with certain tones that can be played by musician / musician it can be argued that such a device is a musical instrument but specifically a tool created for the sole purpose of music.

the history of musical instruments were originally made from objects around the ubiquitous shells or skins, and also parts of the plant. Seiring berkembangnya zaman alat musik berevolusi dengan muncul berbagai macam variasi dan kualitas bahan pun ikut diperhatikan. Hampir semua yang terdapat dialam telah digunakan oleh setidaknya satu budaya untuk membuat alat musik.

There are so many kinds of musical instruments because almost every region has its own musical instrument. From how to play, traditional musical instruments can be distinguished, namely: Percussion instruments, Wind instruments, stringed musical instruments, stringed musical instruments.

B. Android's Architecture

Android consists of several *stack software* consisting of: *Applications, Application Framework, Libraries, Android Runtime* and *Kernel Linux*. Complete architecture of this platform can be seen on figure 2.1 below :

Fig. 1 *Android Platform Architecture*

C. iOS

iOS is the operating system of Apple's handheld devices. Originally created only for the iPhone, iOS later evolved to be able to support the Apple device, Inc. others such as the iPod touch, iPad and Apple TV. Apple, Inc., does not license iOS for use on other hardware. This is in contrast to Android, which is where we can find it in various brands of handheld devices.

The system iOS is derived from Mac OS X, which is therefore characterized as the Unix operating system. IOS interface is based on the concept of direct manipulation with multi-touch gestures. IOS response on user input interface is straightforward with smooth flowing.

III. RESEARCH PROCEDURE

The steps of research conducted can be described in the following chart:

1) Analysis System Requirements

The analysis was conducted to look at the various components used running system includes hardware, software, network and human resources. The analysis also includes the information systems activity input, processing, output, storage and control furthermore undertake a feasibility study to formulate the required information the end user, resource requirements, costs, benefits and feasibility of the proposed project. Analysis of system requirements as part of the initial study aims to identify the problems and specific needs of the system.

Activities undertaken at this stage is the grouping of data by categories of traditional musical instruments, which include the category of the region where the instrument originated and then by type of instrument that is inflatable, hit, pick, string and shakes. Data in the form of information about Indonesian traditional musical instruments are obtained from the Department of Culture of the Republic of Indonesia.

2) Design Systems

System analysis is describing what the system must do to meet the information needs of the user. The system design determine how the system will meet these objectives. The system design consists of design activities that produce functional specifications. The system design can be seen as interface design, data and processes with the aim of producing specifications for the product and interface method user, the database structure as well as the processing and control procedures.

3) Testing System

Prototyping software packages tested, implemented, evaluated and modified repeatedly until acceptable user. Testing the system aims to find mistakes that occur in the system and revise the system. This stage is important to ensure that the system is free of errors. At this stage will be tested using black box method.

4) Implementation System

After the prototype is accepted then at this stage is the implementation of the system are ready for operation and further the learning process of the new system and compare it with the old system, technical and operational evaluation and user interactions, systems and information technology.

A. System Design

To learn more about the process of a use case diagram of the system used. With the use case diagram can be seen that occur in the application process. Figure of use case can be seen below:

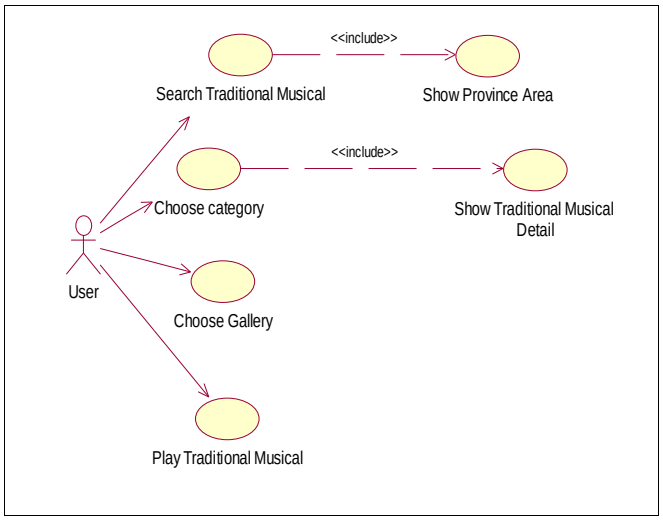

Fig.2 Use Case Diagram Introduction of Indonesian Traditional Musical Instruments

B. Activity Diagram

Activity diagram is one way to model the events that occur within a use case. Here is an activity diagram of a process that occurs in the system of traditional musical instruments recognition applications:

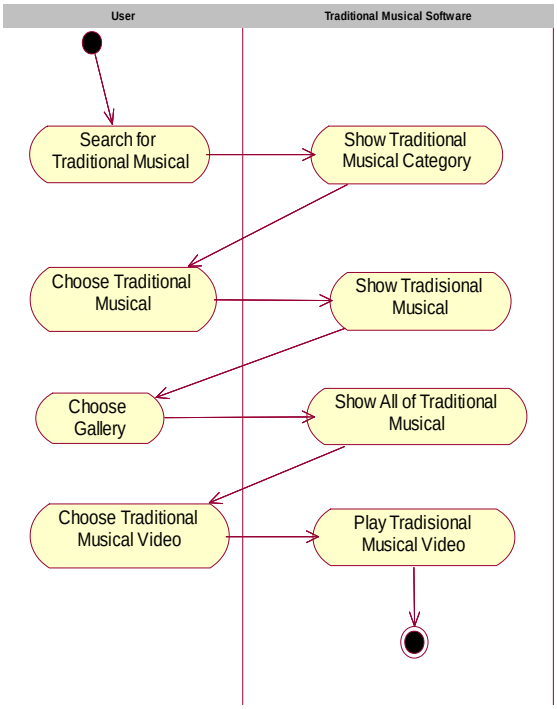

Fig.3 Activity Diagram Applications Introduction to Traditional Musical Instruments Indonesia

C. Sequence Diagram

Here is a figure of sequence diagram from traditional Indonesia's musical instrument application. This diagram describes about all of the systems.

1) Sequence Diagram traditional Indonesia's musical instrument.

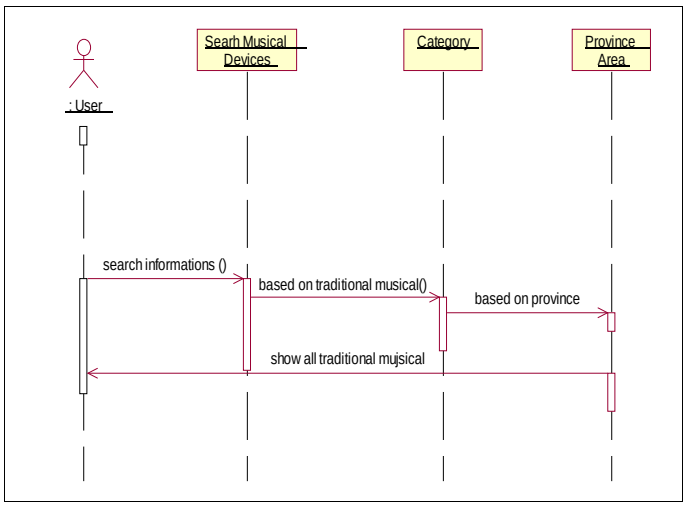

Fig. 4 Sequence Diagram Search Traditional Musical Instruments Indonesia

V. RESULT

A. Result

1) first display of Indonesia' Musical Instrument

Fig.5 The initial view of introduction of Indonesian Traditional Musical Instruments

2) Figure of Indonesian Musical Instruments' Information

On this page displays detailed information or complete about Indonesian musical instrument.

Fig.6 Information's Page Indonesian Traditional Musical Instruments

3) Main Display of Playing Musical Instruments Indonesia

To play a musical instrument the user can choose to play amtindo menu, here the user can select multiple kinds of music available

Fig.7 A Play Atmindo

4) Figure of Musical Instruments to be played

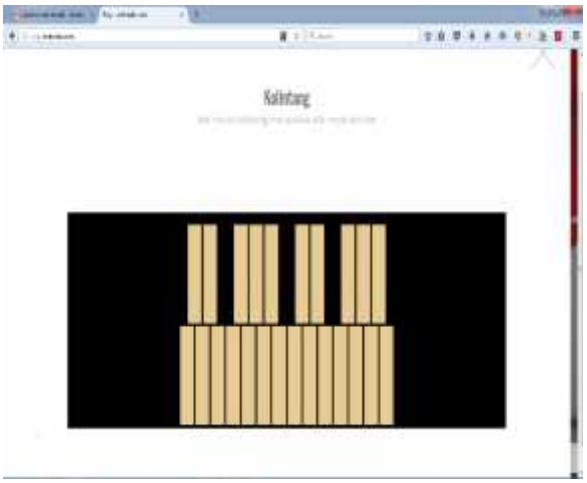

Fig.8 Display instrument kolintang

VI CONCLUSIONS

Based on the research results, we can conclude some of the following :

1. The software generated is the introduction of Indonesian traditional musical instruments on iphone smart phone with android operating system.
2. The software generated is the introduction of Indonesian traditional musical instruments on iphone smart phones with the iOS operating system.
3. The software can provide complete information on Indonesian traditional musical instruments.
4. The software can display images or videos on a traditional Indonesian musical instrument.
5. The simulation software can provide in playing traditional musical instruments.

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