

Application of Learning Sciences Animalia Class-Based Android

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Abstract: Animal biology learning application for Android is an application that displays a variety of information about the Animalia that exists in animal kingdom. It is made for Android because at the time this research was made, Android is growing rapidly. This application is made in order to display the material about animal Animalia Class, and there are exercises to test the user's knowledge. Currently, because many students are using Android, this application can help students to learn animal without having to carry the book.

This application is also equipped with the function for downloading materials, images, and video. It is intended to help the user in the learning process. This application can also run on Android with various sizes up to phablet and tablets.

Keywords: Android, Biology, Learning, and Animal.

1. INTRODUCTION

At this time, the development of technology, especially on Android to experience rapid growth. It can be seen from the last few years, many people who initially using a smartphone, at this time have started to switch on Android because Android system is open-source and more easily when used by communities. Smartphone has developed quite rapidly in gives users the ability to stay connected to the world.

Therefore, the Android system is open-source, so this system can be arranged such that it can be a new and different system than before. Real impact is can be seen from the number of people who use Android at this time and many can also be seen that Android is such an important item that should not be forgotten, and in general, Android is almost never out of the hands of users.

The use of Android can be used to help the students as a means to keep learning through Android. Also remember that the subjects of Biology, especially about animals is one topic that is quite difficult for the pupils in the process learn about this topic.

2. BASIC THEORY

2.1 Animalia Class

Animalia is divided into two parts, namely invertebrates and vertebrates. Invertebrates are animals without backbones. While Vertebrates are animals that have a backbone. Invertebrate consists of a sponge, Ctenophora, Cnidaria, Platyhelminthes, nematodes, annelids, molluscs, arthropods, and Echinodermata. Vertebrate animals consists of Chodata [5].

2.2 Eclipse IDE

Eclipse is a tool which will assist a programmer in the process of making Android apps. Eclipse at the moment is one of the favorite IDE due to the free and open source, meaning anyone can view the programming code of the software [2]

2.3 PhoneGap

PhoneGap is a framework / open source framework that is used to create a cross-platform mobile applications with HTML5, CSS, and JavaScript. PhoneGap be an ideal solution

for a web developer who is interested in making an application on the smartphone. With PhoneGap framework then only need to do one coding and can then compile all of the platform as well [1].

2.4 Java Standart Edition

Java is a programming language where the use of object-oriented in the making. The programming language used to create applications that can be implemented in desktop and mobile programs. There are 3 types of java at the moment, namely the Java Standard Edition (Java SE), Java Enterprise Edition (Java EE) and Java Micro Edition (Java ME). Java SE is the java standard that is generally used to create simple programs such as the Java programming console [3].

2.5 Construct 2

Construct 2 is an artificial product Scirra, companies from the city of London, England. By using the game's engine, it can facilitate in making the game. The program is designed for the game based 2D. By using Construct 2, a game developer can publish it to multiple platforms such as: HTML 5 Website, Google Chrome Webstore, Facebook, Phonegap (Android), Windows Phone 8 and Windows 8 [4].

3. SYSTEM DESIGN

3.1 Analysis of System Requirement

Android application that contains the material Animalia consisting of Vertebrates and Invertebrates. There is also a material, video, games, online exams, leaderboard, and gallery are included in the learning process of this Animalia. There are also exercises that are aimed to determine the level of user knowledge of the material being studied. Meanwhile, there is also an online exam contained on the website is intended to test the extent to which the user's knowledge to master the material Animalia.

Making the idea of this learning application has basic goal that the Senior High School students today who are using Android, almost never out of their Android's. Also viewed Biology is one of the hard lessons learned by the students, one of which is about Animalia. Thus the lesson of this Animalia quite numerous and diverse, the students become lazy to study, in addition to the size of the book Life is big enough

and thick enough. So with so they invented Animalia learning application on Android. With the aim to help students learn in the class of animals Animalia.

3.2 System Application Design

In the design of the system will be divided into two parts, namely on the side of Android and the website. Explanations on the Android system design will be explained with the aid of the Hierarchy Chart. The hierarchy from each menus can be viewed in Figure 1.

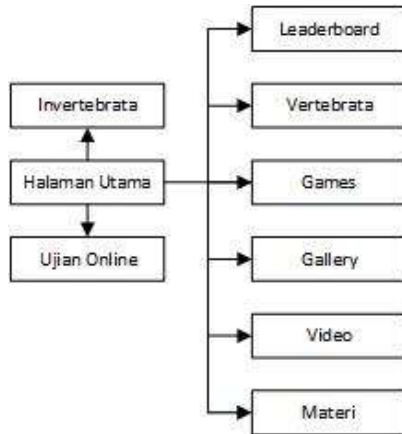


Figure 1. Hierarchy Menu

3.3 Entity Relationship Diagram (ERD)

Entity Relationship Diagram (ERD) is a diagram which is used to explain and demonstrate how the relationship between a data table with the other tables. With the use of this ERD will help to understand the relationships among the data tables. The ERD relations can be seen in Figure 2.

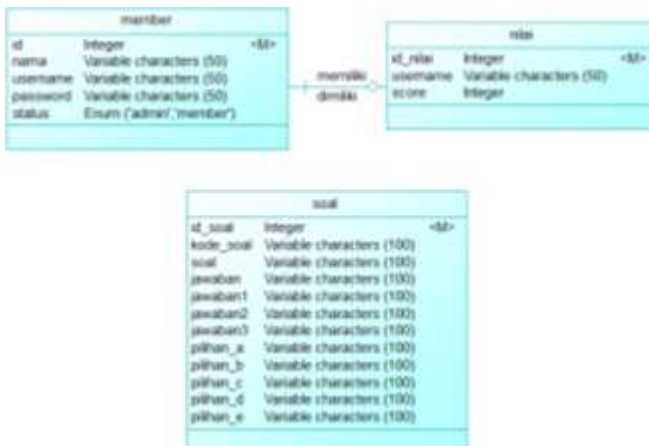


Figure 2. Entity Relationship Diagram

4. APPLICATION IMPLEMENTATION

This chapter will explain the implementations of the application based on Android.

4.1 Implementation Website

The website used for the online exam, which is used by users as a means to train their knowledge of Animalia. Making the function insert, update, delete, view built using PHP and connect to the database. Problem of online exam has three

types of matter, ie multiple choice questions, a matter of stuffing, and multi-answer question. The following example of a form online test, can be seen in Figure 3. and to show the value of the tests can be seen in Figure 4.



Figure 3. Testing Test Online



Figure 4. Value of Test Online

4.2 Android Application Implementation

Implementation of an application to get the data from the database is used to obtain the necessary data to be displayed on Android. Because using Phonegap then not be able to use PHP directly, and therefore how to call them should be invoked via the HTML using ajax. In addition there are implementations for download on Android. For the data that you want to download must be located on the server. So that the data can be downloaded.

Testing the application display is intended to see how the application if run on Android. Each page of the view that there should be examined in order to look perfect. Examples of the application main view that can be seen in Figure 5.

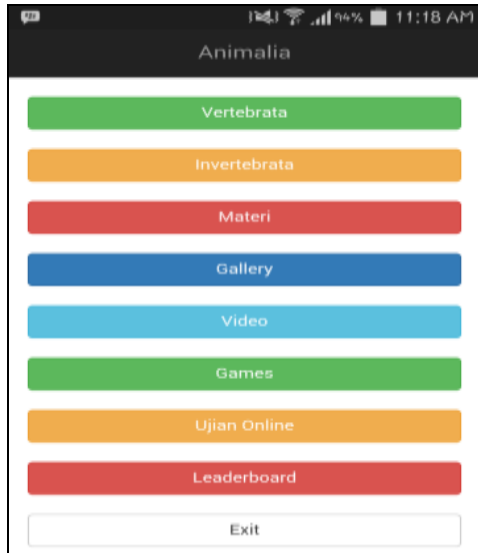


Figure 5. Main Menu

In addition there is a download function is also important. Download function is used to download images, additional materials and video. Maps of material used to deliver learning materials selected. Screenshot material page can be viewed at Figure 6. Example output of these downloads can be seen in Figure 7. and see if the download is successful can be seen in Figure 8.

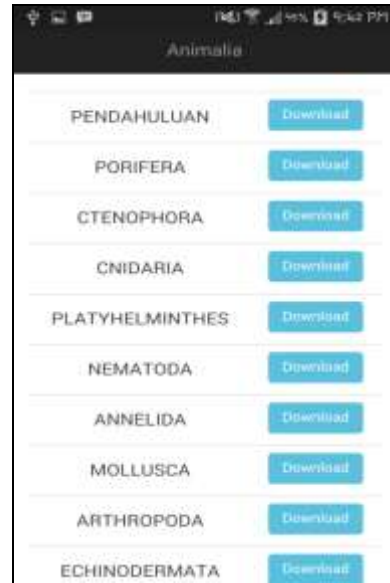


Figure 7. Download Materials



Figure 6. Materials of Animalia



Figure 8. Download Succeeded

4.3 Mobile Devices

Mobile application can be used in Android mobile devices that runs on Android Jelly Bean and Kit Kat operating system. The login page from the mobile device can be viewed in Figure 9. and Figure 10.



Figure 9. Home Mobile Devices on Android



Figure 10. Content Animalia Mobile Devices on Android

5. CONCLUSIONS

Based from the result of the testing, conclusions made are :

- Based on the results of testing of applications that have been created can run on a variety of screen sizes. Ranging in size from Android like in scope to the size fablet and tablets.
- The application displays questions, answers, and images corresponding to that of the database server.
- Applications may download material, pictures, and videos as desired.
- Applications online exam can show you the questions and answers according to the database server and can display the results of the test with the correct results.

6. REFERENCE

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