THE UTILIZATION TECHNOLOGY OF GOOGLE CLOUD VISION AND GPS CENSOR FOR APPTEKTIF APPLICATION BY WAY OF BRAINY SERVICE IN SEEKING THE LOST

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ABSTRACT

Human's living cannot be detached by various kinds of needs. According to the its traits, there are three components of the needs, primary needs posed to the basic needs, secondary needs pointed to support needs, and tertiary needs intended for completing both of primary and secondary needs. Through the headway of science and technology, researcher tried to detract the risks of missing the external objects by an application which is based on Android platform for helping user to announce the lost goods to other user, and verify its goods identity after the other user found that lost goods which have been registered before by the user finder. This application provides chat room to discuss the lost goods. Based on the analysis and test, researcher conclude, this mobile application will be easy to use, interesting and corresponding to the aims of research. In purpose to develop this system, researcher recommend for the next research to equip this system by allowing the finder place access and also the notifications.

Keywords: Android Mobile Application, Cloud Vision, Lost Goods

INTRODUCTION

1.1 Problem Identification

Human life is inseparable from a wide variety of needs. According to the nature of human work are classified in three parts, apply a primer of basic needs the US superbly, superbly secondary us supporting the primary needs of the superbly, and tertiary needs superbly complements superbly u.s. primary and secondary. The secondary is superbly needs to its complement of primary necessities, but still must be met in order to make human life more of a good run. secondary needs urgent and not conducive to its basic needs, can be suspended and if not met does not threaten the survival of humans [1].

Secondary needs include newspapers, magazines, television, fan, watches, mobile phones, car keys, house keys, keys and identification cards. Often lost or forgotten secondary on the needs of the owner. *Short term memory* is the process of forgetting a stimulus quickly or process considering that in have not being able to last long on the individual, as well the reception of the information obtained so long Matsumoto (2009:492), and the lack of places to provides information about lost items missing and give ownership of the lost items matching. External objects include any loss of ownership have become outdated move, stolen, or damaged due to natural disasters. The depth of the grieving person's perceived against the missing object depends on the value that the value, and usefulness of the object.

Technology *Google Cloud Vision* is the tech developer from google to understand image content with sophisticated machine model mengenkapsulasi with a REST API is pretty easy to use, the analysis of the images uploaded in the form of a request or be integrated with the storage of images in the *Google Cloud Storage* [2].

Global Positioning System (GPS) is a satellite navigation system in its use. GPS is usually used to indicate a location that resides on the surface of the Earth with a pretty good degree of accuracy that is less than 10 meters for no solid objects that can inhibit the signals to get a location user [3].

On the issue that has been described, then the researchers hold a questionnaire to amplify these problems, by taking a sample of 30 respondents, which results from a questionnaire as much as 100% stated that ever find the missing items, as many as 100% stated lack of media information to hold the info lost, as many as 100% declare willing to inform you of the missing items, as many as 57% expressed confusion when found goods, as many as 53% stated the difficulty to find the missing personal items of information and as much as 100% of the stated need media to inform or find the missing goods [4].

Through the development of science and technology, researchers are trying to reduce the risk of loss of such external objects through an android-based applications that support the user to locate the

missing items. These applications are prepared also for android users to report all goods found by registering information about the item through this application, the users as people who lost items can verify the identity of the goods are lost through logging reset the attributes of the object, and will be tailored to some of the goods that had already been registered by other users as rapporteur items it finds.

Based on the problems that have been presented, then it can be concluded the necessity of establishing Utilization Software Technology *Google Cloud Vision* and GPS Sensors for the Apptektif Application as a service Smart Search Items Lost Based User Generated content on the Android platform.

1.2 Purpose and Objectives

The purpose of this research was to make "the Google Cloud Vision Technology Utilization and GPS Sensors for the Apptektif Application as a service Smart Search Items Lost Based User Generated content on the Android platform." that can be accessed in the android based on goods lost data to facilitate in the "Find and Match" lost goods.

As for the goals of this research are as here

a. Facilitating the public to search for information of missing items.
b. Provides media information to provide the information items found missing
c. Facilitate the matching of items lost based on the characteristics and the type of the item.

2. RESEARCH CONTENTS

2.1 Android

Android is an operating system for Android is a linux-based operating system for cell phones like Smartphones and tablet computers. Androd provides open platform for the pemengembang to create their own applications for use by various mobile device. Some other uses of Android, that is

1. Is an open platform (open source) for programmers to create applications.
2. Is the operating system that Google bought Android Inc. of Inc.

2.1 Uses Case

Analysts and design of information system with object-oriented we based

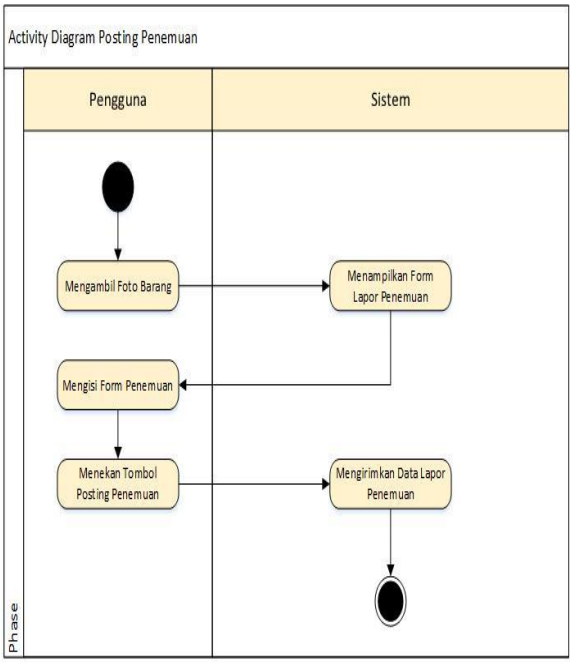


figure 2. 1 Uses Case

2.3.1 Supporting software

2.3.2 PHP

In this case PHP (Hypertext Preprocessor) is a programming-driven web. PHP includes Language programs that only run on the server, or a Server-Side Language is often called.

2.3.3 Java

Make it the concept of compilation and software-software used to accelerate the process of program development in Java, otherwise it will be known with object-oriented concept of pememograman, which is the core of Java programming.

2.3.4 Android Studio

Android Studio is official IDEAS for building Android applications based on IntelliJ IDEA. IntelliJ IDEA in itself is a Java Integrated Development Environtment (IDE) developed by JetBrains, to develop computer software. IntelliJ IDEA serves in helping you in the world of percodingan both in terms of navigation, supports productivity, to the code editor that intelligently [19]. Based on the http://developer.android.com website, android studio has advantages:

a. Android studio based on intellij DEA which gives the possibility of fastest in doing coding and running workflows so that updating the coding and conduct iteration can be done quickly.
b. The structure of Android Development Studio and project based gradle provides the flexibility needed to generate the APK for any

type of device so that the configuration can be pemangunan first without limit.

c. Android Studio provides features that make developers be confident and able to make the best code.

d. *Android Studio knowing that not all code is written in java and not all code can be run on the user's device. With features that owned the Studio then Android applications became rich and connected to each other.Android Studio*.

e. Provides a GUI tool to ease developers in designing the look of the application so that the developer does not get tired.

Using the android application developer studio can be working on the application to be dibangunya. On the construction of application of Bandung city tour guide android studio used for running or debugging programs built to find and reduce bugs, or damage in a program, so that the application can work in accordance with the hope.

2.4 Google Map API

Google Maps API is a service (service) provided by Google to the Google Maps memfaatkan for users in developing applications. Google has been providing services for Android application developers to use the GOOGLE Map API in their applications. The API itself is an acronym for Application Programming Interface.

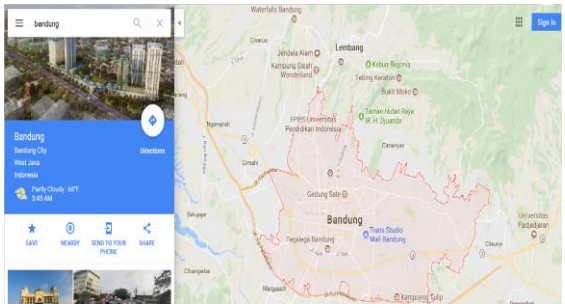


Figure 2. 2 example Google Maps

2.5 System Analysis

System analysis can be defined as a system with the intention of identifying and evaluating the problems and needs of the proposed fixes so it can be expected. Analysis of the existing problems include such things as follows:

a. The community is still having difficulty giving or seeking information about lost items.

b. not the special applications to accommodate information loss and the search for the missing items.

c. Determine the characteristics and types of items are missing.

2.6 A Analysis Of The Method Of Case Base Reasioning (CBR)

The facts in the form of a previous case that ever existed and potentially experiencing unplanned to check Groove for checking, counting, and concluded a solution of a given problem into a Case Base Reasoning. On the stage of the case base reasioning there 4: retrieve, reuse, and retain the revised.

2.6.1 Retrieve

The result of the case which resembles with the new case. with the outcome as the problem and in the end if found fit to the problem before. The following is a table of the data attribute and its value. The following is the formula for calculating similarity algorithm of case-based reasoning:

$$Similarity = \frac{(S1*W1)+(S2*W2)}{W1+W2+W}$$

Keterangan :
S1 : *similarity* location that is = 1, 0,5, 0,3
S2 : *similarity* times that is = 1, 0.8, 0.5
W1 : value location
W2 : value times
the proximity of the attribute values will also be counted. The value of proximity is usually located on the value 0 to 1 where the value 0 means that the second case is not similar to while a value of 1 means that both cases are similar. Below is a table of the data attribute and its value.

Table2. 1 The data attribute and its value

No	Name Atribut		Value Atribuct
1	location		a. Distance <= 100m than value = 1 b. Distance > 100m and<= 500m than value= 0.5 c. Distance >500m than value = 0.3
2	Times		a. Date same than value = 1 b. Difference date > 1 day and < 7 day than value = 0.8 c. Date same > 7 day than value = 0.2

Research on attribute weighting is calculated using weighting method.
Rank Order Centroid (ROC) where pendefenisian weights are based on the most influential attribute to determine the type of recommendations. Here is the calculation of weighting values using ROC method.

Tabel 2. 2 Table the calculation ROC

Based on the results of the calculation by using the method of rank order Centroid (ROC) then the result value weights for all attributes. The following is a table of attribute weighting.

Name Atribut (k)	The level of interests	Equation ROC Wk = 1/k $\sum_{n=1}^{k}\left(\frac{1}{i}\right)$	weight (W)
Location	1	$W1 = \frac{(\frac{1}{1}+\frac{1}{2})}{2} = \frac{1+0.5}{2}$	0,75
Times	2	$W2 = \frac{(0+\frac{1}{2})}{2} = \frac{0+0.5}{2}$	0,25

weight Atribut	Value Weight	Persentase (Weight x 100%)
Lokasi	0.75	75%
Waktu	0.25	25%

Tabel 2. 3 Bobot Atribut

The following is an example of the case of Apptektif recommendations as a service Smart Search Items Lost based on the type of goods, where the weights are the origin of the already determined and on a knowledge base recommendation missing goods already 5 cases that can be seen in the following table:

Tabel 2. 4 *Knowledge base* the missing Goods recommendations Apptektif

No	Id case	Type	Location	Times	Color	brand
1	1	Smartphone	Unikom	12/8/2017	white	Samsung
2	2	Smartphone	BEC	15/8/2017	Black	Samsung
3	3	wallet	Unikom	9/9/2017	Brown	-
4	4	Key	Taman Fitness	10/10/2017	Silver	-
5	5	Id Card	Unikom	21/10/2017	Silver	KTP

Tabel 2. 5 example case new

No	Id case	Type	Location	Times	Color	Brand
1	x	Smart phone	Unikom	15/8/2017	Putih	Samsung

a. the calculation Case X dan 1

Tabel 2. 6 The calculation Case X and 1

Id case X	Similarity	Id case 1
Unikom	1	Unikom
12/8/2017	1	12/8/2017

Weight atribuct :

Location :0.25 Times: 0.75

$$\text{Similarity}(X,1) = \frac{(S1*W1)+(S2*W2)}{W1+W2}$$

$$= \frac{(1\times 0.75)+(1\times 0.25)}{0.75+0.25}$$

$$= \frac{1}{1}$$

$$= 1$$

b. The calculation case X and 2

Table 2. 7 The calculation Case X and 2

Id kasus X	Similarity	Id kasus 2
Unikom	1	Unikom
12/8/2017	0.8	15/8/2017

Weight atribuct :

Times : 0.25 Location: 0.75

$$\text{Similarity}(X,1) = \frac{(S1*W1)+(S2*W2)}{W1+W2}$$

$$= \frac{(1\times 0.75)+(0.8\times 0.25)}{0.75+0.25}$$

$$= \frac{0.95}{1}$$

$$= 0.95$$

2.6.2 Reuse

From the results of the calculations on the stage then retrive obtained similarity values for each case in the show on the following table:

Table 3. 8 Value Similarity Case Comparison

Id Kasus	Value Similarity with Case New (X)	percentage (Value Similarity x 100%)
1	1	100%
2	0.95	95%

2.6.3 Revise

In the example case, case Id 1 has produced a solution with 100% similarity level so the missing item recommendations based on location and time of the loss, the resulting can be directly given. However, when it turns out that after the process of calculation and no cases similar to those new cases will be done of the revised process. When there is no semblance of it will be in a capacity to *knowledge.*

2.6.4 Retain

At this stage the system is starting to add the new case data capacity in Knowledge. For compatibility permalasahan next

2.8 analysis Architecture System

Software architecture on mobile platforms describe how interacting software such as illustrated in Figure software architecture on Mobile platforms. The image illustrates the overall architecture of the system on a mobile platform.

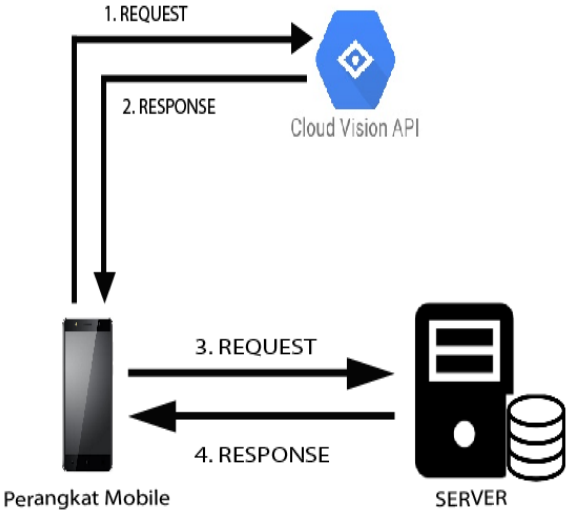


Figure 2. 2 Software architecture on Mobile platforms

The following is a description of the image software architecture on Mobile platforms:

a. Mobile devices request tags of text type stuff into google cloud vision fire from pictures sentAPI cloud vision response hasil tag dari gambar atau objek yang dikirim ke google cloud vision
b. Smartphone results storage request tag from the image to the server to be stored Server respone data berupa tag berdasarkan jenis barang yang diminta.

2.9 Analisyis The Groove system

Flow analysis system aims to identify which will be built based on application needs into two systems:

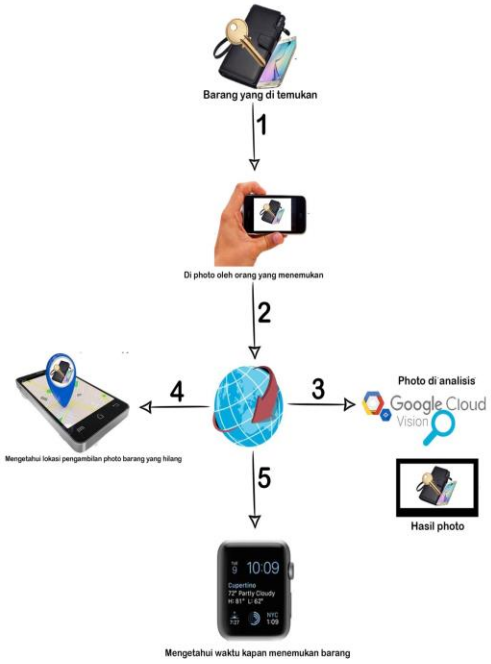
a. Find An Item

- People who find the goods
- Items posted to the application by taking a photo.

- The item later in the extract location data and time using geogtagging.
- photos in posts will be on identification using the Google Cloud Vision for the kind of stuff in the know, colors and brands.
- The post data will be stored in the database as the data of the case or the knowledge base with the parameter type stuff, location is found, the times found, etc..

b. The Misising Item

- The man who lost the report or the announcement of the loss in applications with input data type stuff.
- Approximate location of the loss, estimated time of kehilanagan etc.
- This data will become test data, then using Case Base Reasioning compared with data of cases in the database, which has a high similaritas it will be recommended to people who are lost, if true it will send notification using the firebase Cloud Messaging to the person found.



2.10 The Desain of interface

a. The design of interface Mobile

Here is a picture of the interface m. 01 Splash Screen to describe draft interfaces Splashscreen.



Figure 2.3 The Design of interface login

b. The design of interface registration

Here is a picture depicting the design of the interface registration



Figure 2.4 The Design of interface registration

c. The design of interface Discovery Reports
Here is a picture depicting the design of reporting interface Discovery



d. The Design of Interface Report Lost

Here is a picture depicting the design of reports of loss.



3 Conclusion

3.1 Summary of Findings

Based on the results of the analysis and implementation of obtained in making this final assignment. You can take the conclusion that, from the Google Cloud Technology Utilization purpose Vision and GPS Sensors for the Apptektif Application as a service Smart Search Items Lost Based User Generated content on the Android platform.The following are the result of the utilization of technology development goals google cloud vision tlah in analysis and tested so that the obtained results are as follows:

a. Facilitating the public to search for information of missing items.
b. Provides media information to provide the information items found missing.
c. Facilitate the matching of items lost based on the characteristics and the type of the item.
d. Applicationapptektif accommodate the information items that have been lost.

3.2 Recomendations

In building the Google Cloud Vision Technology Utilization is still a lot of shortcomings. By karna was necessary in developed and in further refinement. As for the recommendations to make sistes built can work even better, should do the following things for future development

1. The addition of the recommendation of the rapporteur places the missing items
2. The addition of the notification to the person who finds the missing item
3. The addition of objects of the type of goods

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