MOBILE TRACKING ATTENDANCE OF BRANCH MANAGER PT. STARS INTERNATIONAL

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ABSTRACT

Nowadays technological developments in daily life are increasingly developing. In the world of work, information technology is needed, especially in absenteeism this is still mostly done manually and fraud often occurs. At PT. Stars International in doing absenteeism the presence of managers is still using the manual method so the process absenteeism cannot be monitored directly. Likewise in the making Report managers have also been using the same method and very consuming time. Then made the system Mobile Attendance Tracking Branch Manager's goal is to avoid cheating in attendance at PT.Stars International. After doing Mobile Manager Attendance Tracking testing company admin can be directly monitor managers during visits based on the distance between store locations and manager positions and attendance process at PT. Stars International, a comparison between using methods Euclidean Distance with Google Maps has a percentage error of about 16.4% after it is done testing with 10 different sample data with Rungkut Stars Stars as points reference.

Keywords: Information Systems, Staffing, Attendance, PHP, Android

1. INTRODUCTION

Attendance is an important thing in the company in improving performance and discipline, fraud in absenteeism at the Company is still common, companies need good absenteeism in controlling control, one the way to minimize fraud is a tracking system that includes latitude and longitude. PT.Stars International is a developing company engaged in retailing shoes, sandals and various accessories. Obstacle in this company is still having trouble monitoring the location of the store manager's visit caused absent i used this time still using attendance manually with a sign hands that cannot be monitored in real time by central officers so often there are fraud. The company needs a system that can monitor locations and hours visits in real time, the aim is to overcome fraud in absenteeism, then in this study the authors conducted research for making the system Mobile Tracking Branch Manager Attendance, the goal is to avoid deep cheating absenteeism in PT.Stars International.

2. BASIC THEORY

2.1. Information Systems

Information system as a system which is a collection of elements interact with each other to achieve certain goals, has several components interrelated and form a compact work relationship to achieve goals. As a system, the seven components each interact with one another forming a unity to achieve its goals [1].

2.2. PT. International Stars

PT.Stars Internasional is a growing company engaged in the field of retail shoes, sandals and accessories such as socks and shoelaces. More and more developing business in the field of footwear, PTStars International tries to sell other types besides shoes, namely clothing for women, men and children in the form of boutiques.

2.3. Definition of Attendance

Attendance is a presence data collection, part of reporting an activity institution, or component of the institution itself which contains attendance data compiled and arranged so that it is easy to find and use if at anytime required by interested parties [2].

2.4. Definition *Global Positioning System (GPS)*

Global Positioning System is a system to determine the position and navigation in a manner globally by using satellites. The system was first developed by the Department The American defense is used for military and civilian purposes (survey mapping and geographic information).

2.5. Framework

According to reference that the framework can be interpreted as a collection or a collection of program pieces arranged or organized in such a way, so that it can be used to help create apps without having to create them all the codes from the start [3].

2.6. MySQL

According to reference MySQL (My Structure Query Language) is a database management system software SQL (Database Management System) or DBMS [4].

2.7 PHP

PHP (Personal Home Page) is programming (interpreter) is the process of translating source lines into machine code that is understood computer directly when the line of code is run [5].

2.8 Euclidean Distance

Euclidean distance is a calculation of the distance of 2 points in Euclidean space. Euclidean space was introduced by Euclid, a mathematician from Greece around the year 300 BCE to study the relationship between angle and distance. Euclidean is related with the Pythagorean Theorem and is usually applied in 1, 2 and 3 dimensions. But also simple if applied to higher dimensions. In 1 dimension. Such as want calculate 1-dimensional Euclidean distances. The first point is 4 points,

$$d = \sqrt{(x^1 + x^1)^2 + (y^1 + y^1)^2}$$

So from the formula above we can implement it into:

$$\text{Distance} = \sqrt{(lat^1 + lat^1)^2 + (long^1 + long^1)^2}$$

second is -10. The trick is subtracting -10 by 4. To produce -14. Look for it the absolute value of the value - 14 by ranking it so that it gets a value of 196. Then rooted so as to get a value of 14. So that the euclidean distance from 2 points it is 14. In 2 dimensions.
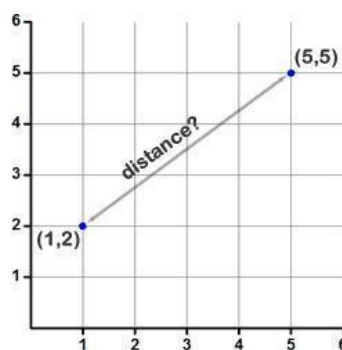

Figure 2.1 Example 2 Dimensions

The method is almost the same. Suppose the first point has coordinates (1,2). Second point in the coordinates (5.5). The trick is to subtract each coordinate of the second point with the point that first. Namely, (5-1.5-2) so that it becomes (4.3). Then rank each one thus obtaining (16.9). Then add everything so that it gets value 16 + 9 = 25. This result is then rooted to 5. So the euclidean distance is 5. The calculation results (Distance) above are still in decimal degree units (according to format longlag used) so to adjust it needs to be multiplied by 111,319 km (1earth's degree = 111,319 km).

3. ANALYSIS AND DESIGN SYSTEM

3.1. System Analysis

In developing a mobile-based application that can implement location manager PT. Stars International. Next do some analysis.

3.2. System planning

At this design stage a little description of the Mobile Tracking program Attendance Branch Manager of PT. Stars International.

3.3. *Flow chart*

System flow section (system *flow chart)* is a part that explains in detail steps of the system process. The flow part of the system is made from the derification of the flow part program. The system flow section here consists of two types, namely the User system flow section manager and the User Admin system flow section. Figure 3.1 shows the following flowchart system logic flow Mobile Tracking Attendance Manager Branch PT. Stars International.
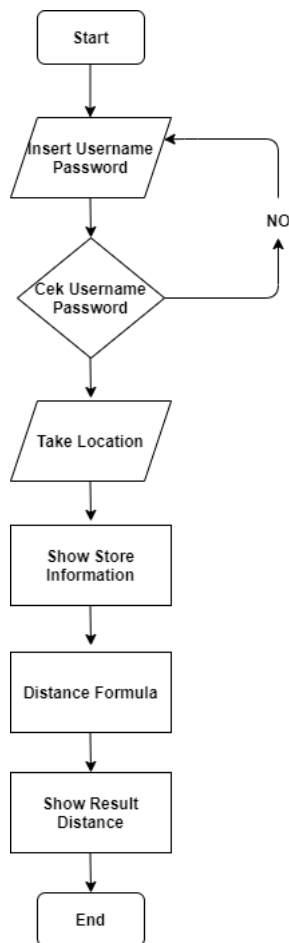

Figure 3.1 Flowchart User Manager

3.4 Data Flow Diagaram (DFD).

Data Flow Diagrams (DFD) are possible modeling tools professional system to describe the system as a network of functional processes which are connected to each other by data flow, both manually and computerized.
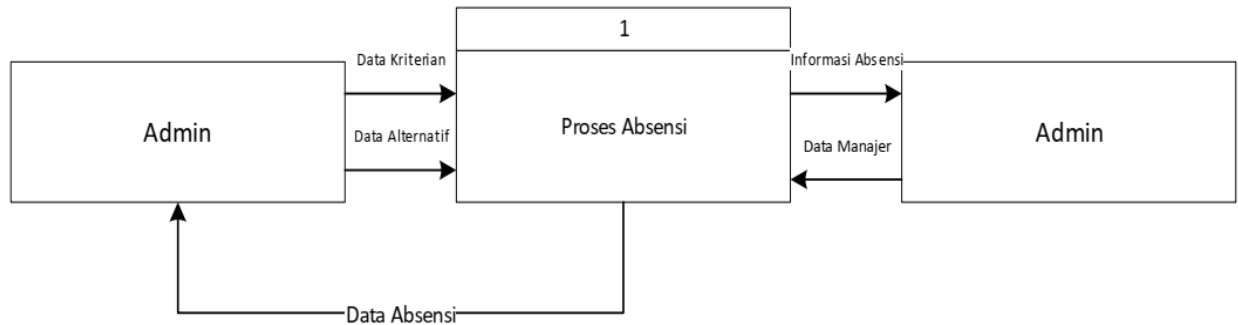
Figure 3.2 Context Diagram

System context diagram *Mobile Attendance* in the Branch of PT. Stars International Shown in Figure 4.3. Admin inputting data obtained from the company branch and location from the GPS Manager, while the Admin will receive attendance data by the system, after the system calculates the radius using the Ecludean Distance method, after found the calculation results the system will store the calculation results.

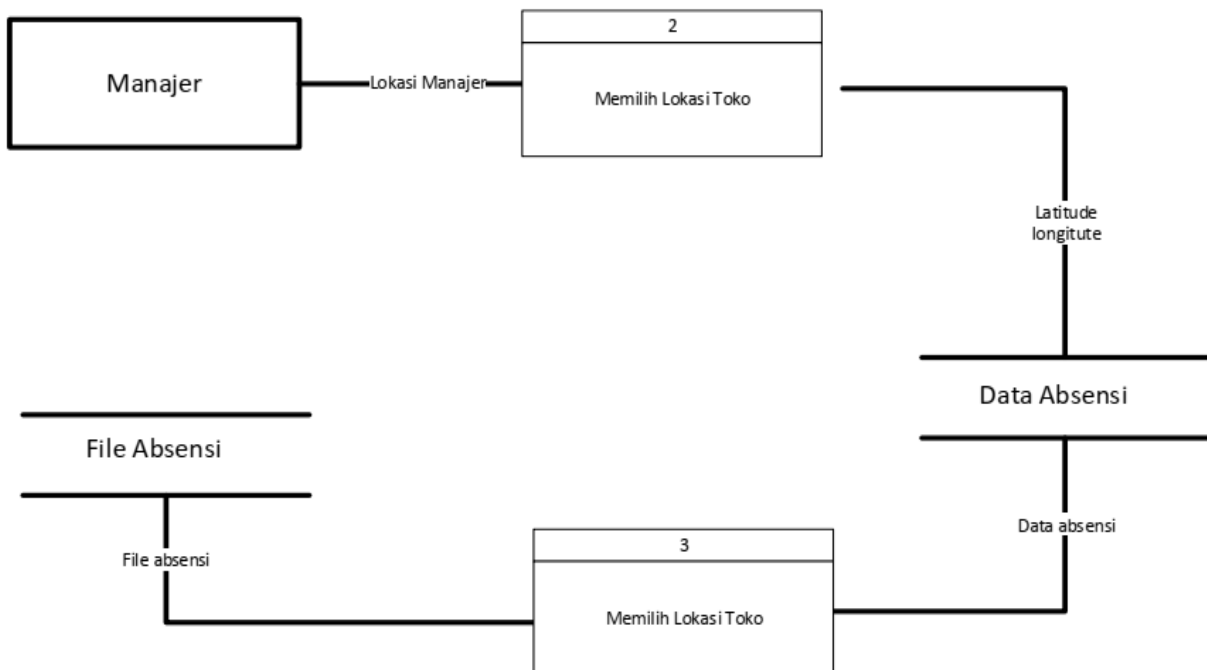### 3.4.1 Data Flow Diagram (DFD) Level 0

Figure 3.3 Data Flow Diagram Level 0

DFD level 0 Figure 4.4 consists of three processes namely selecting the location of the store, calculate distance by method. The first process serves to determine the point of location of the store The second process serves to find the manager's location in the form of longitude and latitude data points store location and manager location. The third process serves to calculate the distance between locations store and user manager position.

3.4.2   Data Flow Diagram (DFD) Level 1
DFD level 1 is a Continued process from DFD level 0, In level 1 the data are explained in more detail.
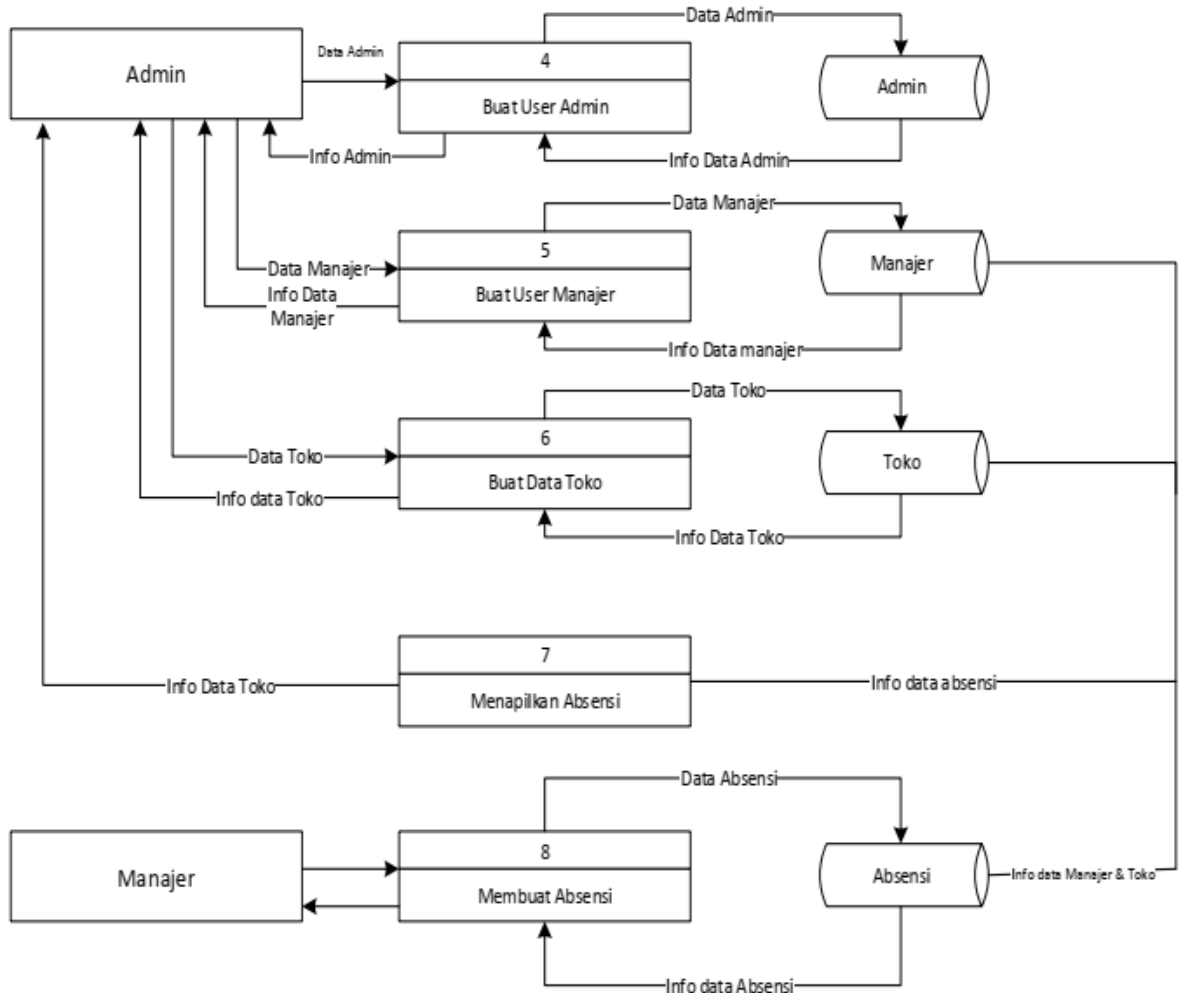

Figure 3.4 Data Flow Diagram Level 1

Explanations of DFD Level 1 images are as follows:
a) The Process for Creating Admin Users, This process carries out the process of creating a new User Admin to access logins to admin system to control the attendance process.
b) The Process for Creating a User Manager, This process carries out the process of creating a new User Manager to grant access tomobile application.
c) The Process for Creating a Store Data, This process admin to input data in the form of coordinates and store information to the system.
d) Attendance Process, This process managers input data in the form of store information that has been specified system and coordinates to be retrieved automatically from the manager's mobile.
e) Attendance Display, This process the admin can monitor the attendance process.

3.4.3 Data Flow Diagram (DFD) Level 2

DFD level 2 is an Advanced process of level 2 DFD, in level 2 the data can be explained in more detail.
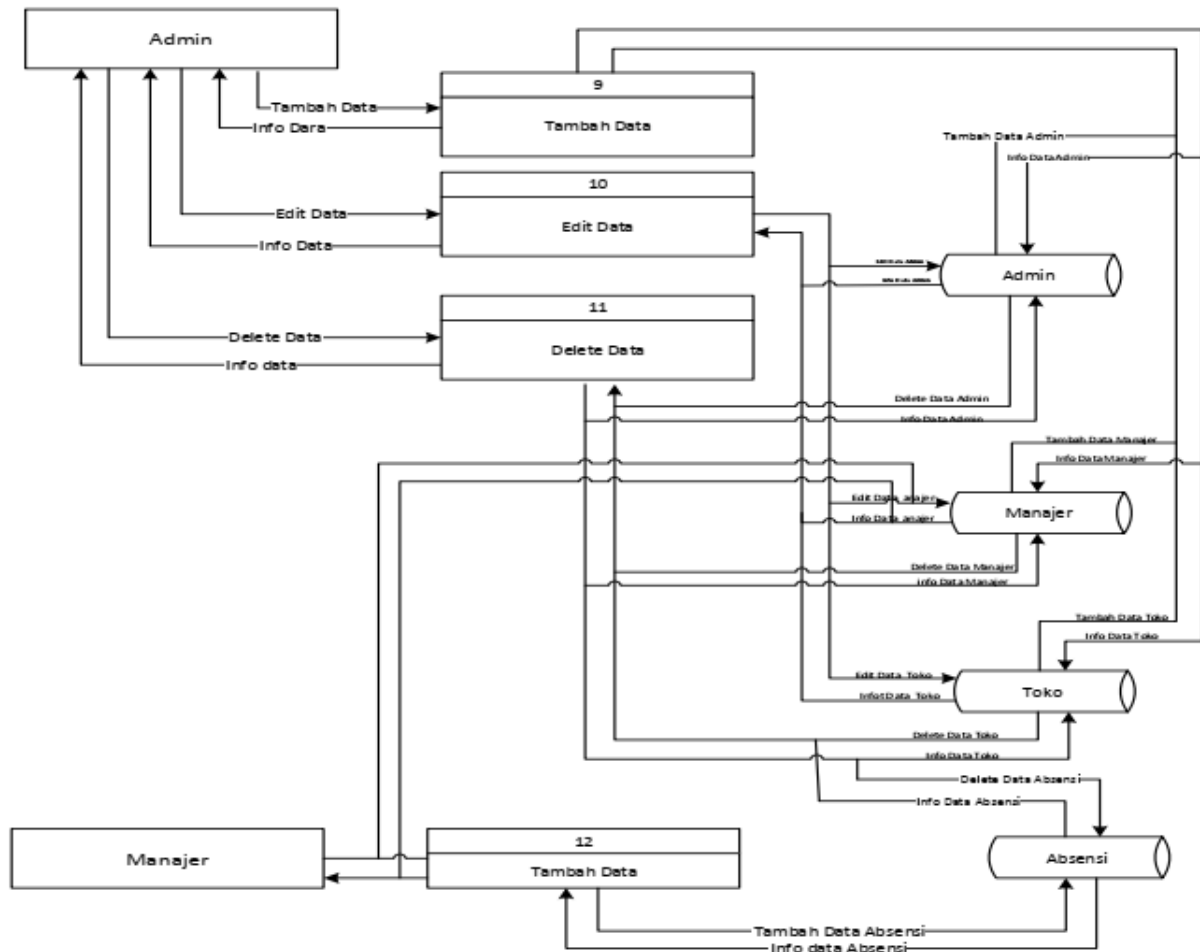

Figure 3.5 Data Flow Diagram (DFD) Level 2

3.5 *Entity Relationship Diagram* (ERD)

Entity Relationship Diagram (ERD) is the main data model that helps organizing data of one object into entities and determining relations of relations between entities. ERD also explains the relationships between attributes where attributes have functions To describe the characteristics of the entity, the contents of the attribute have something which can identify the contents of one element with another. This system has 3 table entities that are in the database which are as follows:

1. Manager Table
2. Shop Table
3. Attendance Table

For more details can be seen in Figure 3.6.
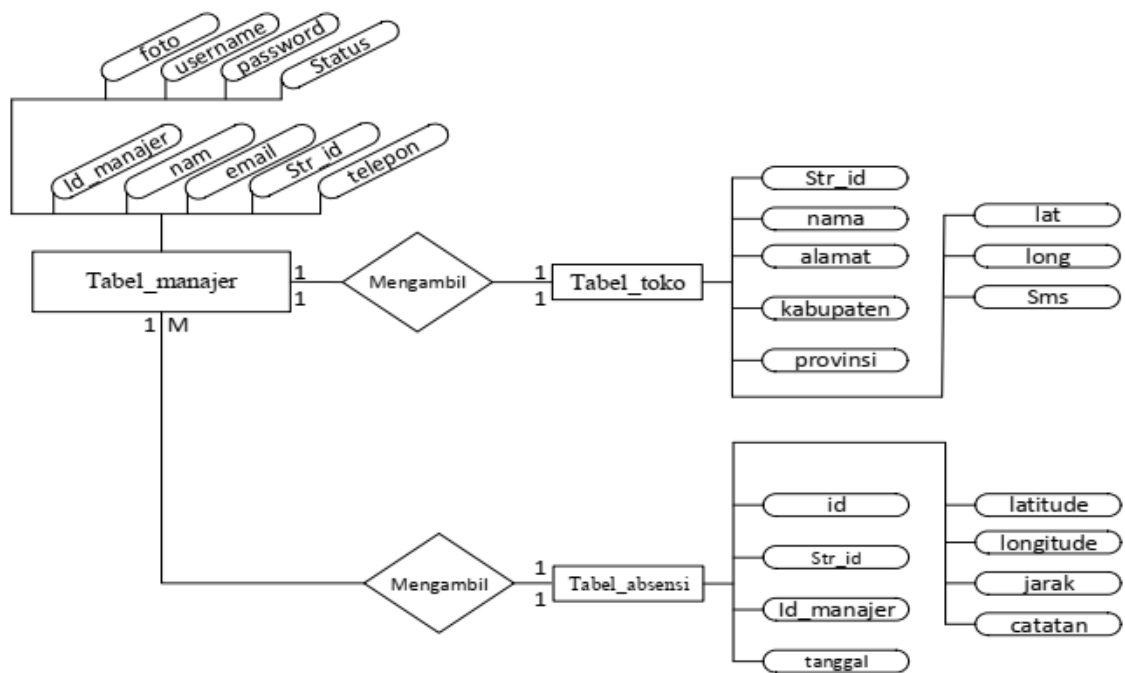
Gambar 3.6. (ERD) *Entity Relationship Diagram*

4.1. TESTING AND RESULTS

The results of testing using a system that has been built and google maps, Stars Store Rungkut branch which will be used as the location of reference points, this testing is done by filling out absences at different locations, with locations as in Table 4.1 follows:

Table 4.1 testing results table

No	Timesheet Location	Google Maps	Euicledean Distance	Presentase Eror
1	Kost	3040	3076	1%
2	Depan Stars Cabang Rungkut	6.09	5	21%
3	Kost dedy	4580	4617	0,8%
4	Warkop coc	4620	4663	0,9%
5	Masjid ubhara	4240	4132	2,5%
6	Kfc A.yani	4090	4438	7,8%
7	Royal plaza	4410	4173	5,3%
8	Rumah Pak Dimas	3570	3592	0,6 %
9	Panggung Ubhara	4140	4170	0,7%
10	Masjid al-ikhlas	3690	3461	6,6%

5. Conclusions and recommendations

The conclusion obtained in this final project work can be concluded and give some advise as the following:

a.) As is *Mobile Tracking Attendance* the company is more effective in minimizing naughty managers who often cheat in absenteeism, because they can monitored directly by the company admin,

b.) From the data of the results of ten trials, it can be concluded that overall both the Euicledeaan Distance method and google maps *Measure Distance* have a gap of 1 to 25 percent where one of the tests the error percentage reaches above 20%.

c.) From the distance measurement test data using the method *Euclidean Distance* more closer to the original distance than google maps *Measure Distance.*

d.) By using a method *Euclidean Distance,* this application is able to provide alternative solutions in distance measurement.

e.) This Product Can be combined with Internet Of Things technology by installing IOT devices and webservice in Stores [6].

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