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# *SENSOR FINGER PRINT AND GPS FOR APPLICATION OF MEDICAL REPRESENTATIVE BASED ON ANDROID IN PT. CORONET CROWN BANDUNG*

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**Abstract**

Pt. Coronet Crown is a company is engaged in the field of pharmaceutical, many drugs sold by PT Coronet Crown the more labor that is called *medical representatives* is one of the representatives of the company that introduces each type of drug and usefullness to the doctors with the aim of promoting drugs that remembered and written in the recipe by the doctors to every patient.

*Medical representative* on duty to bring the book of the visit during a visit to the doctors one of the proofs of the medrep (*medical representative*). The problems that arise is the number of the *medical representatives* who forged the signature of doctors and make the names of false doctors or doctors that does not exist in the field due to the number of doctors who are very much. In addition the doctor also often feel confusion about what drug is in PT. Coronet Crown Bandung. To avoid problems on during a visit then required a system that is able to give the sign or attributes namely with *finggerprint sensor technology* that have actually been in the visit by every officer medrep (*medical representative*).

Based on the results of the analysis and implementation that acquired in the making of this last task. can be take the conclusion that, from the purpose of the development of Sensor application *layer of Print* and GPS To Visit Application Android-Based Medical Representative is helping companies in avoid signature counterfeiting doctors, provide recommendations availability and the presence of doctors in each area, help the company overseeing the medrep on duty and provide media drugs information tool in PT

**Key Words :** visit work, *medical representative,* fingerprint, GPS.

## 1. Introduction

*Medical representative* on duty to bring the book of the visit during a visit to the doctors one of the proofs of the medrep (*medical representative*) to the company that they have already visited several doctors with how to request a signature or nor initialed to every doctor who suda visited.

The problems that arise is the number of the *medical representatives* who forged the signature of doctors and make the names of false doctors or doctors that does not exist in the field due to the number of doctors who are very much. In addition the doctor also often feel confusion about what drug is in PT. Coronet Crown Bandung.

In addition to the signature counterfeiting is not a little also from some less mengetehaui medical representative information about the schedule and hours visits to each of the doctors because there is no media information that is also one of which cause less effective *medical representative performance*.

The next issues every *leader* in each *team* could not directly monitoring every *medical representatives* who are working in the field because there is no media connect each medrep and *leader* each.

To avoid problems on during a visit then required a system that is able to give the sign or the characteristics that have actually been in the visit by every officer medrep (*medical representative*).

### 1.1 The identification of the Problem

Based on the background briefing blakang above can be identified the problem is as follows

1. Many false nor initialed signature and false doctor.
2. The lack of information and the schedule doctors in each area.
3. *Leader* cannot monitor every medrep working in the field.

The lack of info about drugs in PT. Coronet Crown Bandung

### 1.2 The intent and purpose of

This research aims to build an application visit *medical representative* while the purpose of which will be achieved in this writing is as follows :

1. Help companies in avoid signature counterfeiting doctor.
2. Provide recommendations availability and the presence of doctors in each area.
3. Help the company overseeing the medrep on duty.
4. Provide media drugs information tool in PT. Coronet Crown Bandung.

### 1.3 Research Method

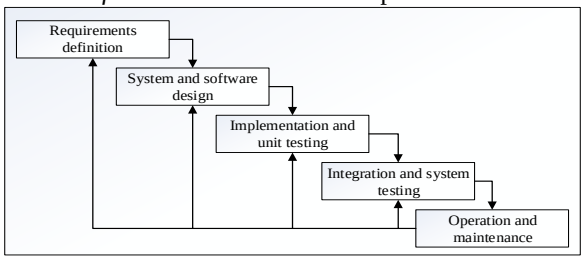
#### 1.3.1 Data Collection Method

The data collection methods used in this research is as follows :

a. Literature Study
   Data collection with how to read, learn and analyze several books related to *mobile application* android, Java, MySQL and LBS..
b. The observation
   The technique of data collection with research and direct review of the problems taken.
c. The questionnaire
   The technique of data collection to provide a list of questions to the respondents where the data will be processed so that obtained new information.

#### 1.3.2 Software Development Method

Software development stage in the development of this application is using the *waterfall method* such as in the picture 1




Picture 1.The Scheme Waterfall

That includes some process including :

1. *Requirements Analysis and Definition*

   This stage is a collection of activities in full needs and then analyzed and defined the needs that must be met by the program that will be built. This phase must be done in detail to be able to produce a complete system design.
2. *System and Software Design*

   Is the stage of analyzing the things that are needed in the implementation of the project the making of the software.
3. *Implementation and Testing Unit*

   The design of the program is translated into the code - the code using a programming language that has been determined. The Program is built directly in test in the unit.
4. *Integration and System Testing*

   Units of the union of the program then tested overall (*system testing*).
5. *Operation and Maintenance*

   Operate the program participations were and do maintenance, as adjustments or changes for the adaptation to the real situation.

### *1.4 Pt. Coronet Crown*

Pt. Coronet Crown is the pharmaceutical companies that produce many types of medicines for both the drug with prescription only (*ethical*) or drugs without prescription only (OTC- *Over the Counter*). This pharmaceutical company has been established since 1960 with the name "PT CORONET SYNDYCATE" in the way the lips 14 Surabaya. This pharmaceutical company only produce powders and vitamin only. This time PT Coronet Crown has 3 main distributor namely PT Dulcimer Farma, PT Cempaka Beautiful pure, and PBF Coronet Bandung. Since 1988 until now located at Jalan Raya Garden km 15, Sidoarjo, Surabaya, with President Director Mr Singgih Darmawan. Alarm from PT Coronet Crown is "quality is number 1". The awards have been achieved by Herocyn, among others an appreciation of the Top Brand Award in 2007 until today. Pt Coronet Crown continue to perform these efforts in order to more closely with the users faithful, among others to make or become *sponsorship event fun bike*, world children, or forms of other promotion.

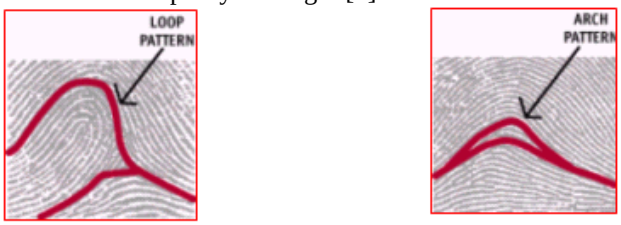
The growth and development that occurred in the world of business in Indonesia of late exponential, so that the cause of the tight competition among companies. Therefore, PT Coronet Crown must have the right business strategy in order to maintain and even increase sales of products owned. In addition to the business strategy of qualified, PT Coronet Crown also must have the resilient and patient to be made as a *medical representative* or better known with the title medrep.

*Medical Representative* Can be defined as ambassadors of the company or a person who is believed to represent perusahaan in order to promote products professionally, credible, and

integrity. The other term is *Detailer*, Because in carrying out their tasks, a *Medical representatives* Must be able to explain the details of the products offered in detail to kostumernya. This Medical representative needed by The pharmaceutical companies As an extension of the hand so that its products are known by the doctor or pharmacy [2].

***Fingerprint***

*Fingerprint* is a tool that is used as the identifier identity, protect your computer from data or computer usage by those who are not responsible. By using the *Fingerprint* as a replacement for the signature can know the identity of the owner of the fingerprint. A fingerprint is lateral-lateral located in the skin of the tip of your finger [4].




Picture 2. The process of Fingerprint Pattern Detection

| | | |
|---|---|---|
| Ridge | Ridge | Mempunyai ketegasan jarak ganda dari permulaan ke-akhir, sebagai lebar ridges satu dengan lainya |
| Evading Ends | Evading Ends | Dua ridge dengan arah berbeda berjalan sejajar satu sama lain kurang dari 3mm. |
| Bifurcation | Bifurcation | Dua ridge dengan arah berbeda berjalan sejajar satu sama lain kurang dari 3mm. |
| Hook | Hook | Ridges merobek; satu ridges tidaklah lebih panjang dibanding 3mm |
| Fork | Fork | Dua ridges dihubungkan oleh sepertiga ridges tiddak lebih panjang dibanding 3mm |
| Dot | Dot | Bagian ridges adalah tidak lagi dibanding ridges yang berdekatan |
| Eye/Island | Eye | ridges merobek dan menggabungkan lagi di dalam 3mm |
| Eye/Island | Island | Ridges merobek dan tidak ber menggabung lagi, kurang dari 3mm dan tidak lebih dari 6mm. Area yang terlampir adalah Ridge. |
| Enclosed Ridge | Enclosed Ridge | Ridges tidak lebih panjang dibanding 6mm antara dua ridges |
| Enclosed Loop | Enclosed Loop | Yang tidak mempola menentukan pengulangan antar dua atau lebih ridges paralel |
| Specialty | Specialties | Rare ridge membentuk seperti tanda tanya dan sangkutan pemotong |

Picture 3. patterns on detection sensors

## 2. The contents of the research

### 2.1 Problem Analysis

Analysis of the problem is an elaboration phase problem is before the layer of Print and GPS Sensor To Visit Application Android-Based Medical Representative in PT. Coronet Crown Bandung, built. The first problem is the number of the signature nor initialed and false false doctor. The lack of information and the schedule doctors in each area, Leader cannot monitor every medrep working in the field. The lack of info about drugs in PT. Coronet Crown Bandung. .

### 2.2 Functional needs analysis

#### *2.2.1 Use Case Diagrams*

*Use case diagram* is a diagram showing the functionality of a system or class and how the system interacts with the outside world and explain the functional system that is visible user. *Use Case Diagrams* can be seen in the picture below.

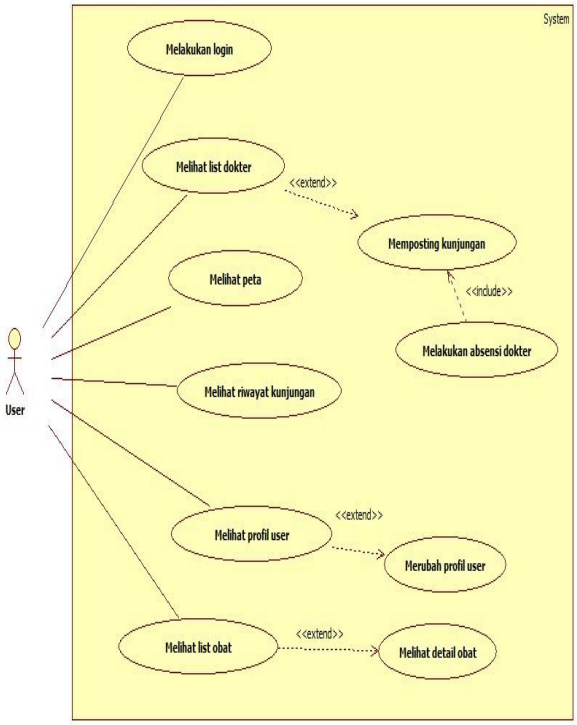
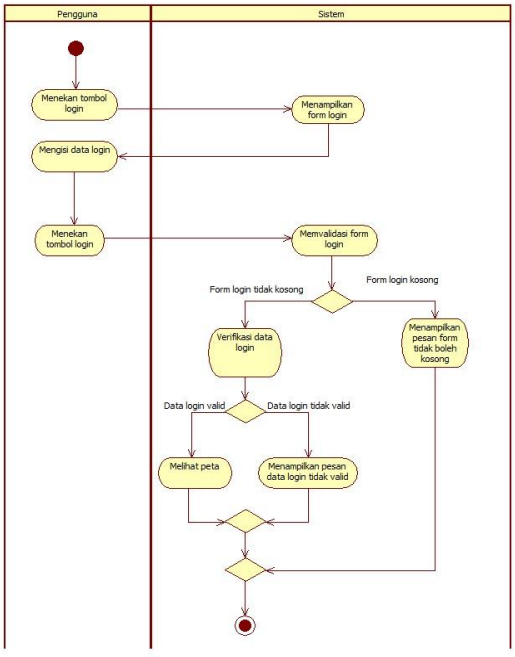



Figure 4 *Use Case Diagram*

### 2.2.2 Activity the Diagram

*Activity diagrams* are modeling the flow of work or *workflow* from the sequence of activities in a process that refers to the *Use Case diagram* there.

1. *Activity diagrams* on the Menu Log In




Picture 5 *Activity diagrams* on the Menu Log In

2. *Activity Diagrams* Post a Visit

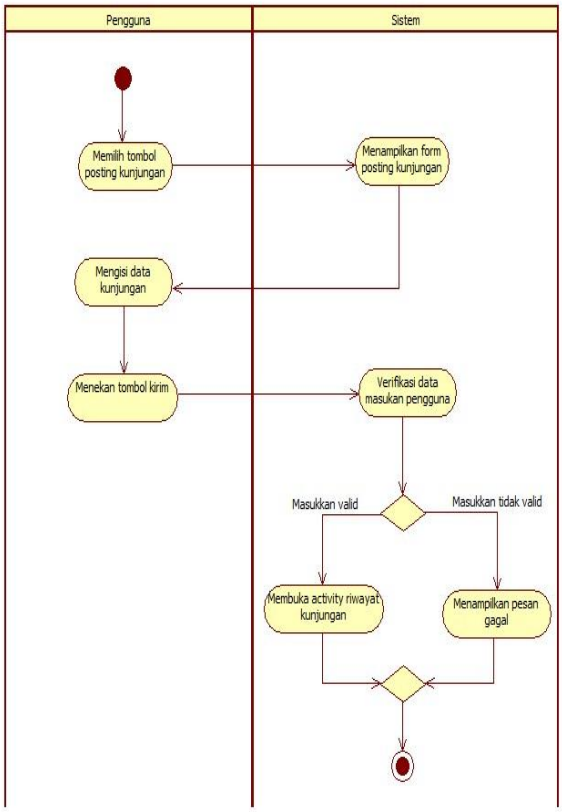
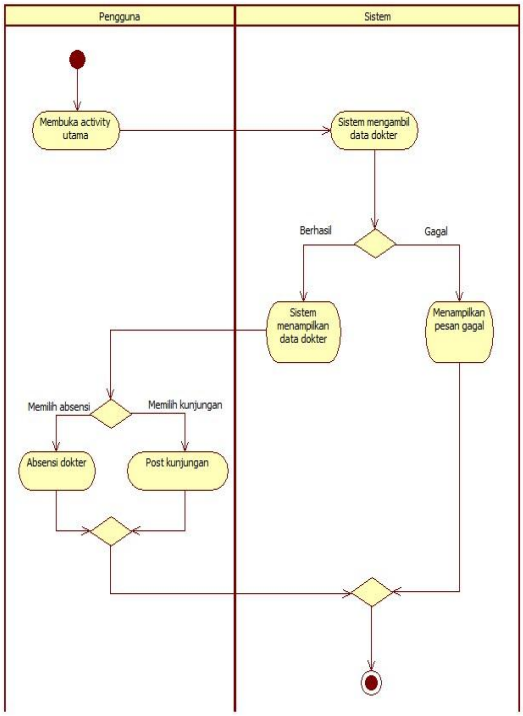



Figure 6 *Activity Diagram* Post a Visit

3. *Activity the Diagram* View List of doctors.




Picture 7 *Activity the Diagram* View List Doctors

### 2.2.3 Class Diagram

*Class diagram* describes the types of objects in the system and the various static relationships that there are among them. *Class diagram* also shows the property and operation of a *class* and the limits of which there are in the relationship of the object.

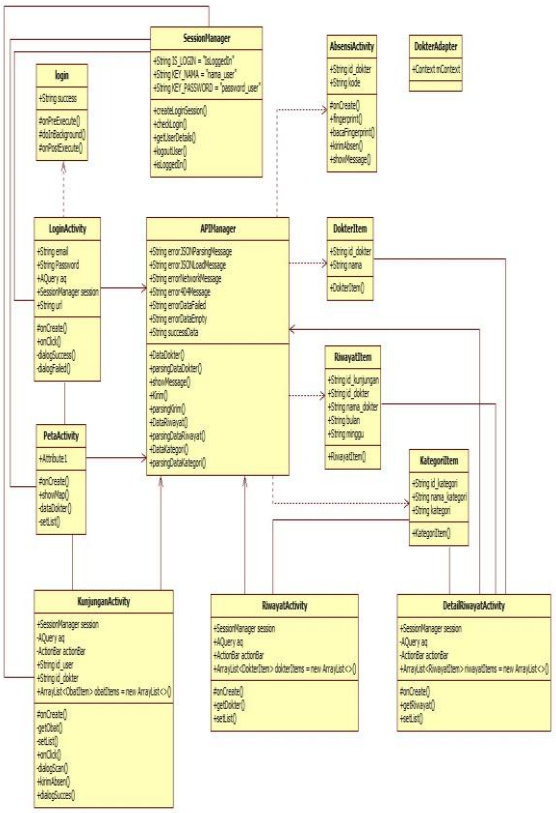



Figure 8 *Class Diagram*

## 2.3 Interface design

1. The Menu Interface design

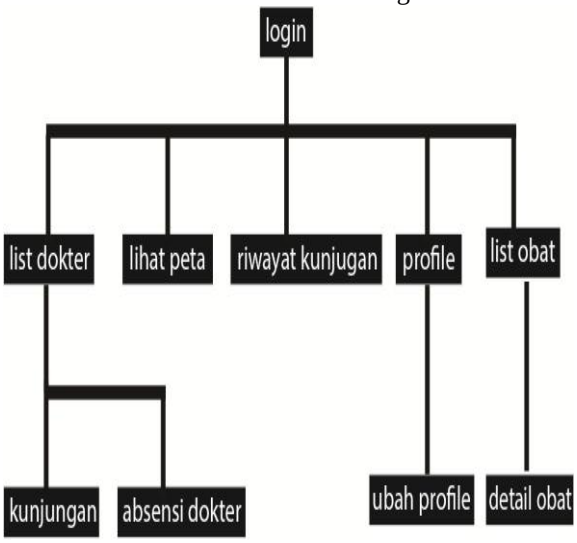



Figure 9 design of the Menu Interface

2. Login Interface design




Image of 10 Login Interface Design

3. The Interface design of the List of doctors




Figure 11 Interface design List Doctors

4. Expense reporting Interface design Doctor




Image of 12 Design Expense reporting Interface Doctor

5. See map Interface design Doctor




Figure 13 Interface design see map Doctors

**2.4 The implementation of the Interface**

1. The implementation of the Menu Interface Log In

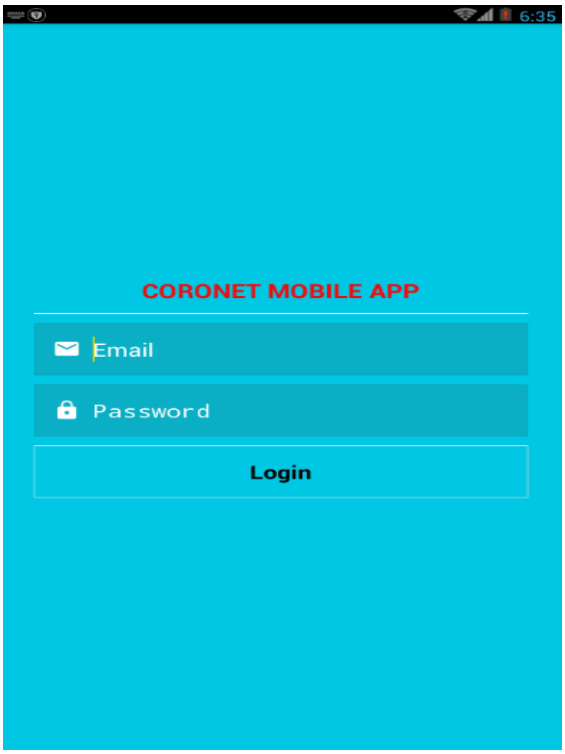



Image of 14 Implementation of the Menu Interface Log In

2. The implementation of the interface the Main Menu

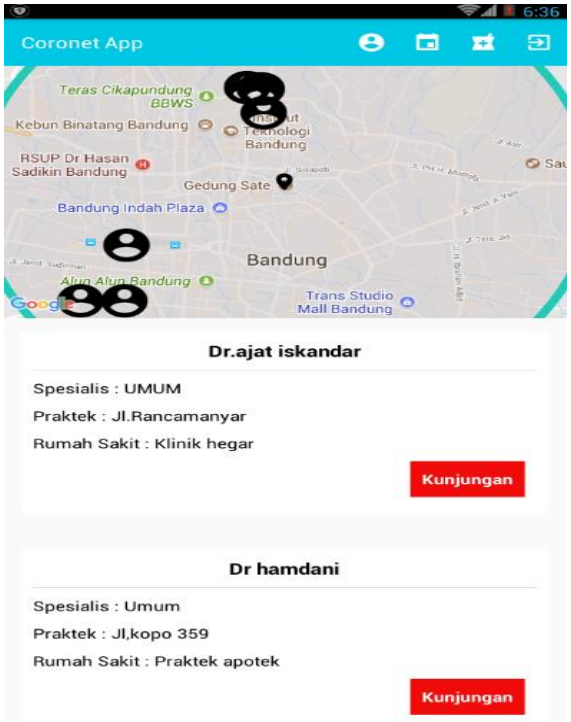



Image of 15 Interface Implementation Main Menu

3. The implementation of the Menu Interface Sales Visit

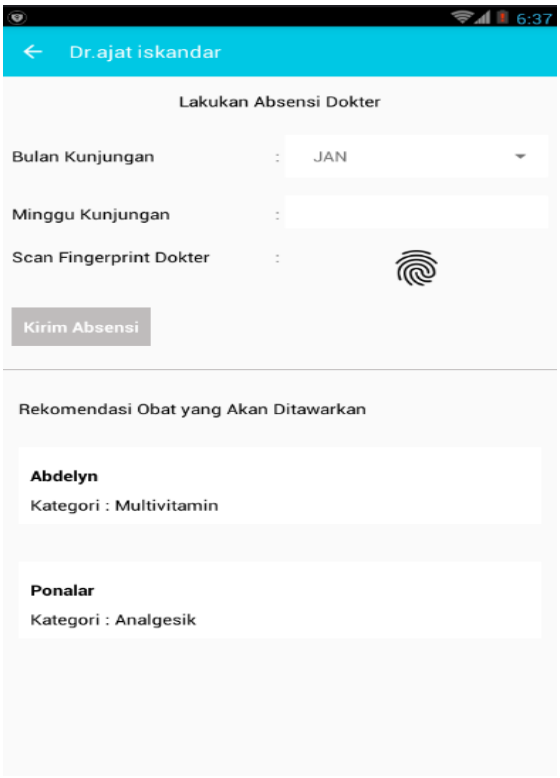



Image of 16 Menu Interface Implementation Sales Visit

### 2.5 *Black Box Testing*

Testing of the system is the most important thing that aims to find errors or keurangan the flaws in the application that will be tested. Testing the means to know the application has been made to meet the performance in accordance with the purpose of design.

*The Black box* is the testing method that will be used to test the new system, testing *black box* testing is focused on the functional requirements on the application that is built.

Based on the results of the test of the *black box* that has been done can be drawn the conclusion that the process still allows for error, but by the functionality of the system has been able to produce the expected output.

### 2.6 *Beta Testing*

Beta testing is conducted by the testing objective. Beta testing is done for about *user satisfaction* with the womb point *user friendly conditions* for the next distributed to the user. Beta testing done by giving the format of the questionnaire against 30 of the employees of PT Coronet Crown.

## 4. The cover

### 4.1 Conclusion

The results obtained from the research done in the preparation of this bachelor theses and refers to the aim of the research, it can be concluded

1. The making of the application Coronet help companies in avoid counterfeits the signature of doctors are met because of this application provides Expense reporting with *fingerprint facility* is where a fingerprint cannot be forged reducing fraud at the expense reporting.
2. The making of the application Coronet provide recommendations availability and the presence of doctors in each area are met because the system using technology geofancing to see doctors in each region that has been set up so that makes it easier in the distribution or marketing drugs.
3. The making of coronet application help the company overseeing the medrep on duty are met because the application can store the history data the visit each - each medrep on duty.
4. The making of the application provides media drugs information tool in PT. Coronet Crown Bandung are met because on the application has been given information about the portfolio of drugs in sales and can see details drugs information with information such as drug kompisisi drug description and officers no longer need to remove paper drug promotion to give information to the doctor.

### 4.2 Suggestions

In building the Sensor application *layer of Print* and GPS To Visit Application Android-Based Medical Representative is still many kekurangnnya. Therefore needs to be developed and further enhancements. Now the suggestion that built system can work with better to be done the following matters for the next development :

1. Security Penambaham as use for rentina sensor eyes as Expense reporting
2. The addition of notification that entered into the mobile device users if there is a doctor listed on the application if there are around the medrep officer
3. Improve the interface display so that more interesting for use

.

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