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M-Directory- Informative Tool at Your Fingertip on Android Smartphone

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ABSTRACT: M-Directory stands for mobile directory. The motivation to create this android application was out of concern to simplify the task and lower down the hardship of tourists arriving at Goa especially in the coastal area connected to Mapusa city, North Goa District, Goa, to identify and locate various daily need base services such as restaurants, hospitals, doctors, local shops etc. The coding of the application is done by customizing as per our product need using free Android source code from the open source Apache License. Systematic planning of data flow, schema design, use case diagram and description, sequence diagram and appropriate user interface forms key aspects of this application.

KEYWORDS: M-Directory; Android; Schema Design; Use Case diagram; Sequence diagram

I. INTRODUCTION

Android is a mobile operating system that is based on a modified version of Linux. In 2005, as a part of its strategy to enter the mobile space, Google purchased Android and took over its development work. Google wanted Android to be open and free; hence, most of the Android code was released under the open source Apache License, which means that anyone who wants to use Android can do so by downloading the full Android source code. Moreover, vendors can add their own proprietary extensions to Android and customize Android to differentiate their products from others. This simple development model makes Android very attractive and has thus piqued the interest of many vendors. When the iPhone was launched, many of these manufacturers had to scramble to find new ways of revitalizing their products. These manufacturers see Android as a solution — they will continue to design their own hardware and use Android as the operating system that powers it. With the concept of Smartphone's and mobile commerce you have world on your finger tips. Literally any information is available at the touch of your finger tip in the existing System. You can access the information using your Smartphone's from any corner of the world. In present work, M-Directory (Mobile directory) is an android application designed to help users especially tourists in Goa to find and locate various restaurants, doctors, supermarkets, pharmacy, banks, shops, etc in the Mapusa City of North Goa District, Goa, and avail the services of their choice. This application provides detail and relevant information of particular restaurants or doctors, etc. There is a map provided to locate the position of service centres.

II. RELATED WORK

Android base applications have covered many areas providing services within no time for the benefit of common people's life. Valhavankar et al. [1] worked on intelligent traffic control system using android application to give message about the traffic condition time to time to the android users and also provides the count of the vehicles which are present at the traffic junction. Nutan Dhange et al. [2] provided e-Voting concept using Android phones for student council elections in colleges and universities to speed up the counting of votes and decrease the cost required for human labour and other difficulties. The idea of controlling the robot through Android Smartphone which would allow a non-expert to interact with and adjust the functionality of robotic systems for Improving efficiency of agricultural activities such as obtaining data regarding soil moisture, temperature and humidity etc. was discussed by Priya Khachane et al. [3]. Nikhil Palde et al. [4] has introduced android approach for car parking system to assist driver to find vacant spaces in available parking places in a shorter time. The concept of smart Android phone handling the wheel chair system using voice-recognisation system to facilitate and increase the mobility of handicapped and old aged people was tried by Rakhi Bhardwaj et al. [5].

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III. PROPOSED WORK AND METHODOLOGY

The aim of this project is to design M-directory an android application to find and locate various restaurants, doctors, supermarkets, pharmacy, banks, shops, etc in Mapusa City of North Goa District, Goa, and avail the services of user's choice. Firstly, user can select the category which includes like Doctors, Restaurants, Pharmacy, Supermarkets, Jewellery shops, etc. Depending on user's selection he will get a list of doctors, restaurants, etc of Mapusa City, of North Goa District, Goa. From the list, user will choose one of the options and further for his option he will get the information like address, phone number and also the exact location on the map. Entire database is stored in a tabular form. The database fields are id, name, address, phone number, map image etc. The database is classified on the bases of different categories like doctors, restaurants, pharmacy, etc. The user can opt for any of the above depending on his choice and interest. Depending on the user selection, information from the database can be retrieved and displayed on the screen. In our app one can have access to information of the most of the daily useful services. You have to just install this android app on your Smartphone and the information is available at your finger tips. Our app will help largely to the people who are new in the city or tourist who don't have any idea about the various nearby services.

A. *Use case diagram*

The use case diagram of the application is shown in Fig. 1. This diagram includes all the categories of services and can be updated as per the need.

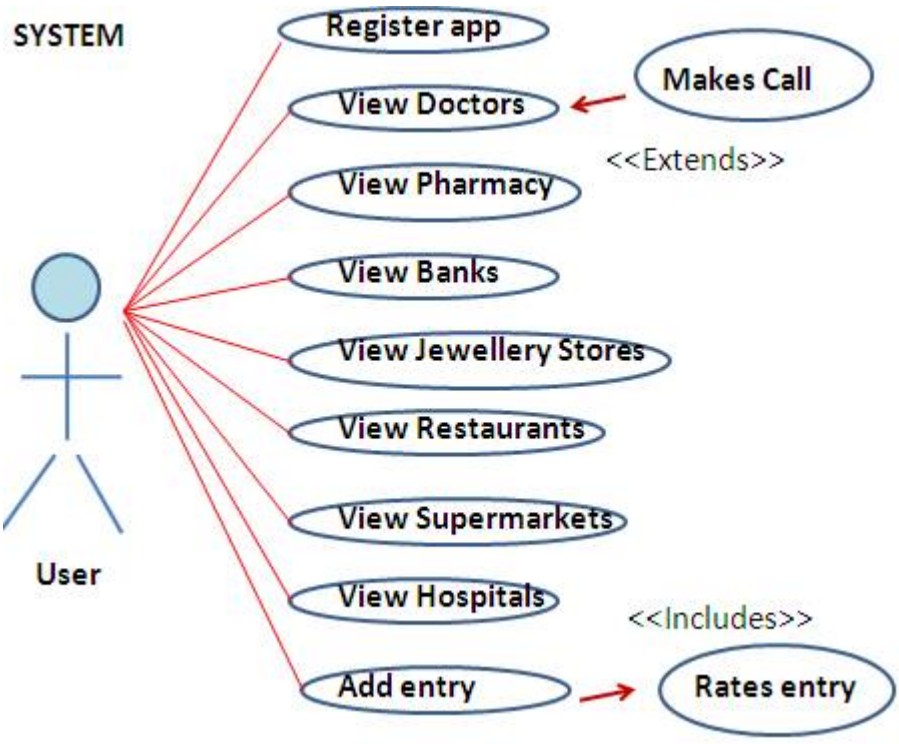

Figure 1. Use case diagram

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B. *Data flow diagram*

The systematic data flow of the application starting from categories of services, list of selected services, data retrieval from the system and information on display is as shown in Fig.2.

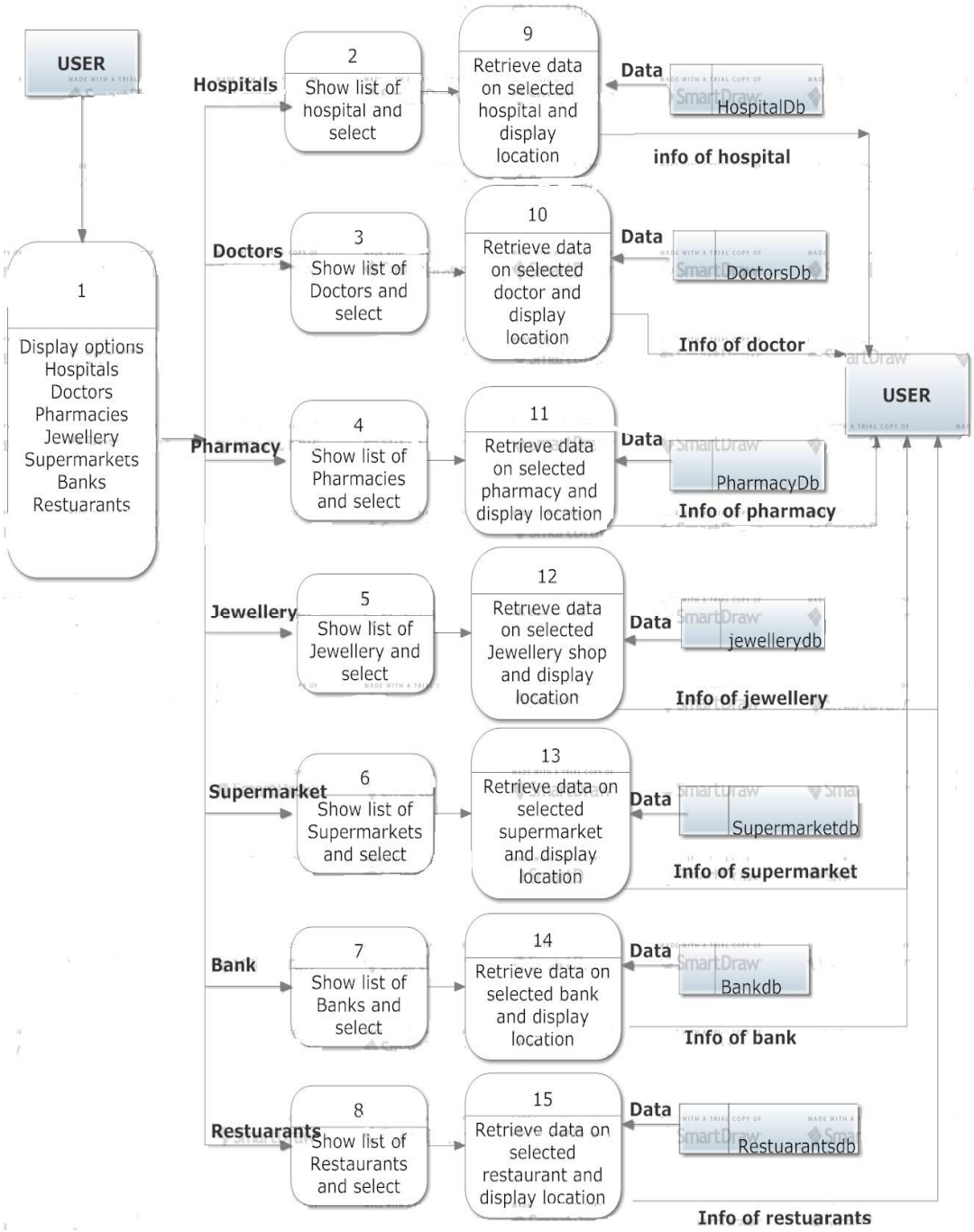

Figure 2. Data flow diagram

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C. *Use case description*

The description of Register app and View Doctors fields from use case diagram are given below and all the remaining fields can be described in similar manner.

1 .Register App:
Use case name: add new entry
Scope: Mobile Directory
Level: Business use case
Primary Actors: User
Precondition: App should be registered
Post condition;
Main Success Scenario:

1. Enter user name, age, gender, location, contact.
2. Validate details.
3. Generate unique id.
4. Update user database.

Extensions:

2a. Display message: “Invalid user details”.

2 .View Doctors:
Use case name: view doctors
Scope: Mobile Directory
Level: Business use case
Primary Actors: User
Precondition: App should be registered
Post condition;
Main Success Scenario:

1. Click on view doctors.
2. Get doctors list from doctor db.
3. Select doctor.
4. Depending on did get information from doctor db.
5. Display.
6. Make a call (optional).

D. *Schema design*

The schema design of data for categories and services were designed in tabular form. The schema table for registering various primary members providing field name, description of id, type of constraint etc. is as shown in Table 1. Similarly all other categories were designed.

Table 1. Schema design with table name as Member with Primary Key: m_id

Sr. No.	Field name	Description	Constraint	Data type	Size
1	m_id	Stores member id	Primary key	Integer	11
2.	m_fname	name	Null	Varchar	256
3.	m_lname	name	Null	Varchar	256
4.	m_age	Age	Null	integer	256
5.	m_location	Location	Null	Varchar	256
6.	m_contact	Contact no	Null	Varchar	256
7.	m_gender	gender	Null	Varchar	256

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E. *Sequence diagram:*

The diagrammatic presentation of sequence of operation of doctor's view field is as shown in Fig.3. The sequence diagram of all other categories/parameters like restaurants, supermarkets, pharmacy, banks, shops etc. were designed similarly.

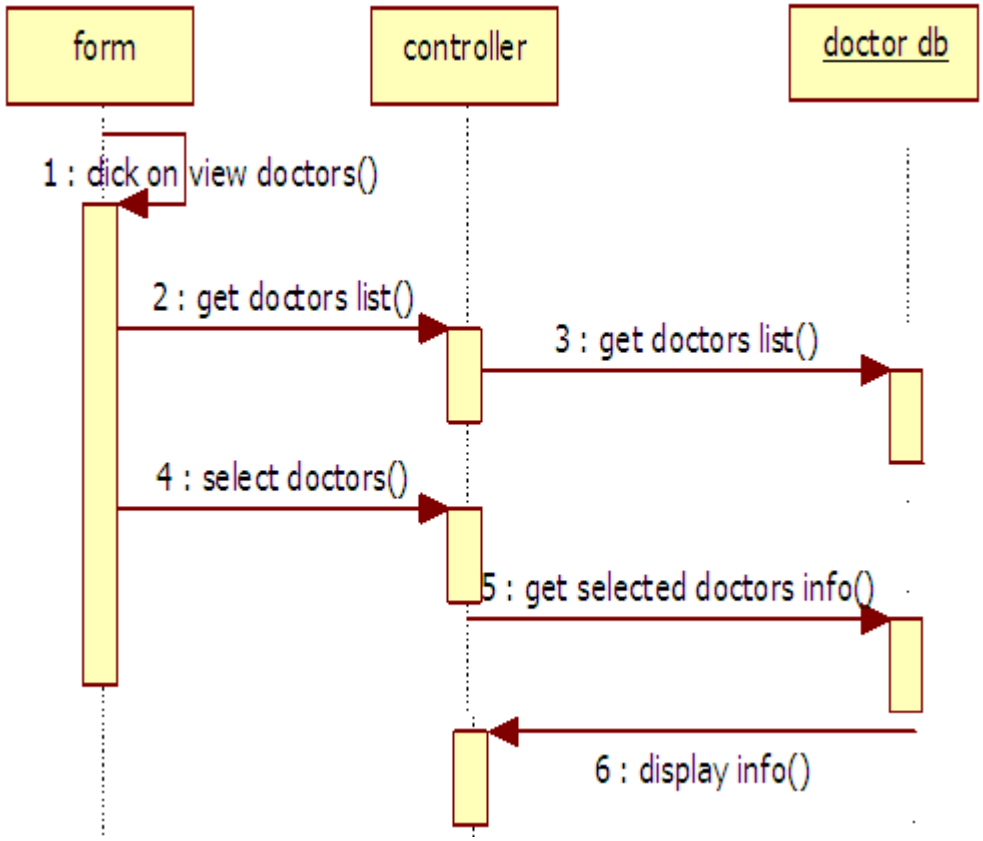

Figure 3. Sequence diagram for view Doctors field

F. *System Requirements*

- Mobile-Hardware: Dual Core Processor, (1GHZ, 512MB RAM, 190MB Internal Memory).
- Computer-Hardware: Dual Core Processor (1.5GHZ, 1GB RAM, 40GB Hard Disk)
- Software: Android 2.3 Gingerbread and above, Eclipse Kepler, SQLITE Database Server

G. *Input and Output:*

Select the category, for example, Doctors. If user selects Doctors then he will get the list of doctors. He can choose any one of the doctor and he will get the information like address, phone number, and also the exact location through map on the screen.

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IV. RESULTS

The display screen or user manual is as shown in Fig. 4 and Fig. 5. Screen no.1 shows how a user can get register. The user has to provide his name, age, gender, location and contact details. The user will be then given a unique id to log into the application. Screen no.2 displays the information of registered person. It also shows an option for addition of a new entry. Screen no.3 shows different categories which can be selected by the user according to his/her needs. Screen no.4 shows the list of Doctors.

Figure 4. Display screens or user manual

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Screen no.5 in the Fig. 6 shows personnel details such as name, residential address, contact number, qualification, and specialty of a selected doctor. An option for user is available to call a doctor as well as send message.

Figure 5. Display screen showing personnel details of a selected doctor

V. CONCLUSION AND FUTURE WORK

We have successfully designed a simple and user friendly M- Directory, an Android base application that will provide solution to basic problems of locating various services in the Mapusa City of Goa to users at their fingertips. This application will be more effective and highly useful to tourist arriving in Goa. Presently, we operate this Mobile Directory offline and can be made online by providing Google map services for better location accuracy. In future, we can add data of other cities in Goa, and then subsequently idea can be extrapolated for different states and so on.

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