Android Application of visually impaired person

A work submitted in partial fulfillment of the requirements for the degree of
Bachelor of Science in Computer Science Engineering

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Android Application of visually impaired person

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Certificate of Approval

It is certified that the work presented in this Project titled

Android Application For Visually Impaired Person

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Under my supervision and that in my opinion, is fully adequate, in scope and quality, for the degree of BS in Computer Science.

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Iqra Nasir

Zainab Fatima

Amna Kanwal

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Chapter 1

INTRODUCTION

1.1 OBJECTIVE:

The aim of developing this application is to facilitate the visually impaired people. Application for detecting any object using the mobile video camera and giving voice message about the distance of users current location to designation address given by user. Many of us need to make a call or send a message at anytime from anywhere. So In this application, any blind person can easily make a call and send a message to any desired person. Also the proposed system converts the text into audio for giving the notifications to the blind person and for such conversion the Speech synthesizer technique gets used. Also the proposed system converts the text into audio for giving the instructions about the directions to the blind person and for such conversion the Speech synthesizer technique gets used. The camera of the phone is enough for this purpose and no special hardware is required, ensuring that it requires minimal effort from the user to use the application during everyday life. System gets used in social approach where the object in place or in path everyday life and with the help of this system blind person easily travel or visit common places such as school, college, hospital, shopping mall and travel on roads.

1.3 Five factors about the project

Complex:

Our application of traditional algorithms (BLOB) and techniques (OCR) developed for project is ambiguous. It is time taking because it will interact to the real time server, server will respond to the user when he/she requests.

The core complexity in our project is the use of algorithms for detection of object according to the shape and tries its best to deliver the appropriate name of object. It is time taking because it will interact to the real time server through some defined keywords which are embedded on backend then server will respond to the user when he/she requests.

Innovative:

The lookout app, which G**oogle announced last year**, which helps blind and visually impaired people to identify **objects through phone camera**. We are adding this feature in our project with some other features like calling, messaging, **and distance measuring with proper** speech to speech system. This application will bring all the features in one.

Applicable:

This project is specifically designed for those people who are unable to see and have to face difficulties. It would be used for the visually impaired person very easily without help of another person with only use of mobile phone camera. This project give ease to those people to perform many functions only using mobile phone.

Significant scope:

The visually impaired application hopefully the best choice for visually impaired person. It is simple, efficient and cost effective only based on android application using mobile camera of android phone. This application will be enough intelligent to tell the user about the objects to walk easily and easily contact with others through message and calling.

Suitable size:

As there are certain complexities in our projects. Plus the time estimated for completion of project is 4.5 months. The size of our project in term of LOC is about 5 lac LOC.

Chapter 2

Research and Requirements

2.1. Functional requirement

- User will provide login information.
- User must provide the valid contact details.
- Blind user can install application to call, message, measure distance, read material and to detect object.
- User will give voice command to run application.

2.2. Non Functional requirement

2.2.1 Perform Requirements

The application should have a very quick performance capability to make the application efficient enough to act upon the generated command. All tasks will perform within Nano-seconds after getting the voice command from user. All the modules are well integrated and process is running in a adequate flow.

2.2.2 Availability

The application will be available 24/7 if data connection is on. It will keep responding on the user's voice command. User can give the voice command of any one from all features at any time application will respond the user well.

2.2.3 Security

The application will provide database security. Only the registered person that has been installed the Ogle Eye application would be able to use the application at any time.

2.2.4 User Documentation

On the first startup of android application. There will be a splash screen with name and icon of application with welcoming voice note then a small description with voice in order to guide the particular user so that he/she could easily use the application. User will guide with proper guideline. Application also have a feature of Help which will guide the user about the application.

2.3 SOFTWARE Requirements:

Following are the software used for the application for visually impaired people:

Software used	**Description**
Android Studio	Software where we design the interface (language defined for frontend by Xml and backend by java)
MySQL lite	Database we use in our project.
Android cell phone	Use to see the output/use as a emulator

2.4 Assumptions and Dependencies

It is assumed that the user is familiar with the windows operating system. It is assumed that information collected through experiment will be used for providing the demo for the presentations. There is a need for the internet. It will be assumed that the user will possess strong internet connection.

Chapter 3

Detailed Design and System Architecture

3.1 ER model

In Fig-1Entity Relationshipmodal show the whole system modal

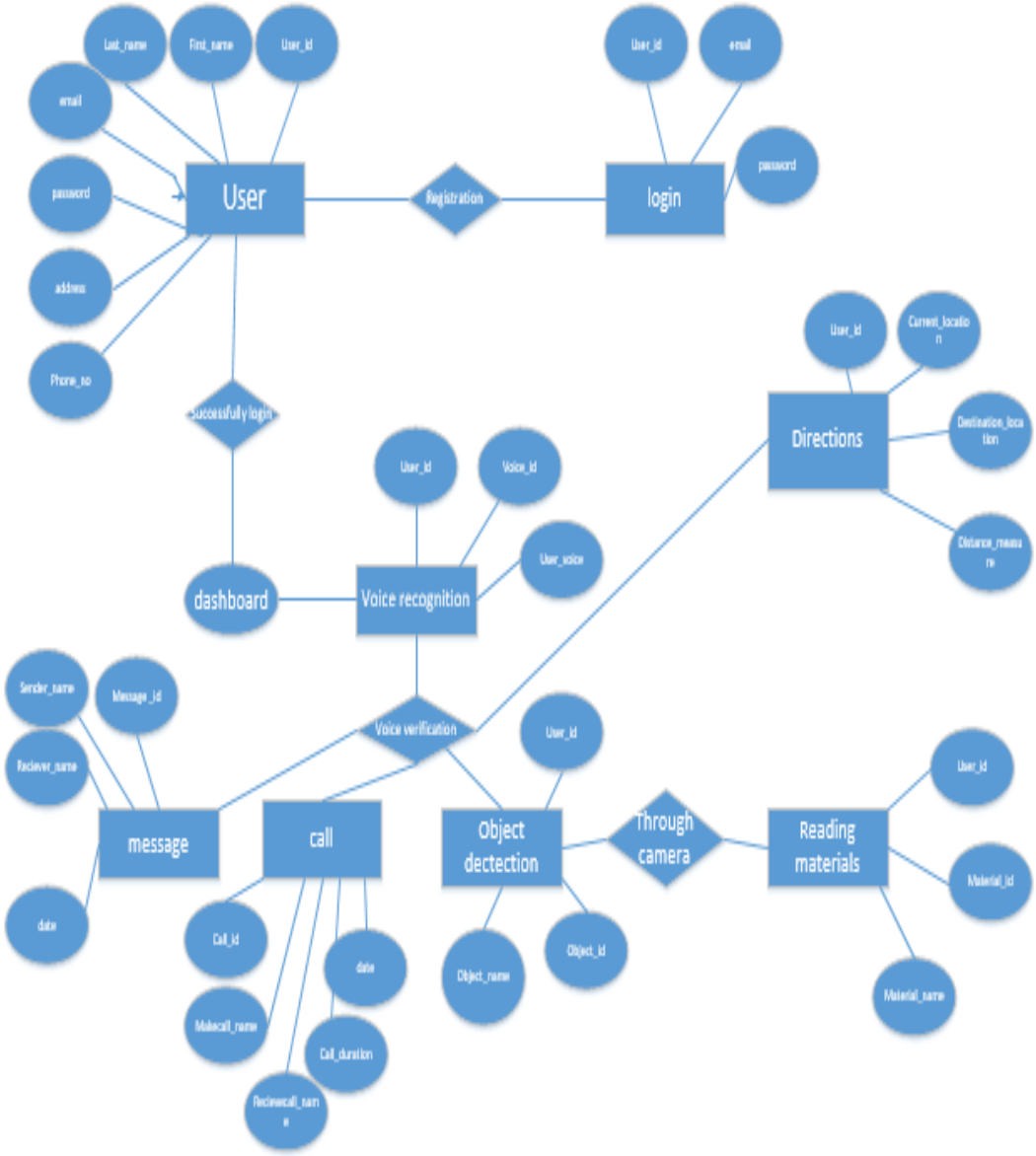


Fig1: ER Modal

3.2Entity Relationship Diagram(ERD)

In Fig-2 Entity Relationship diagram show the whole system working.

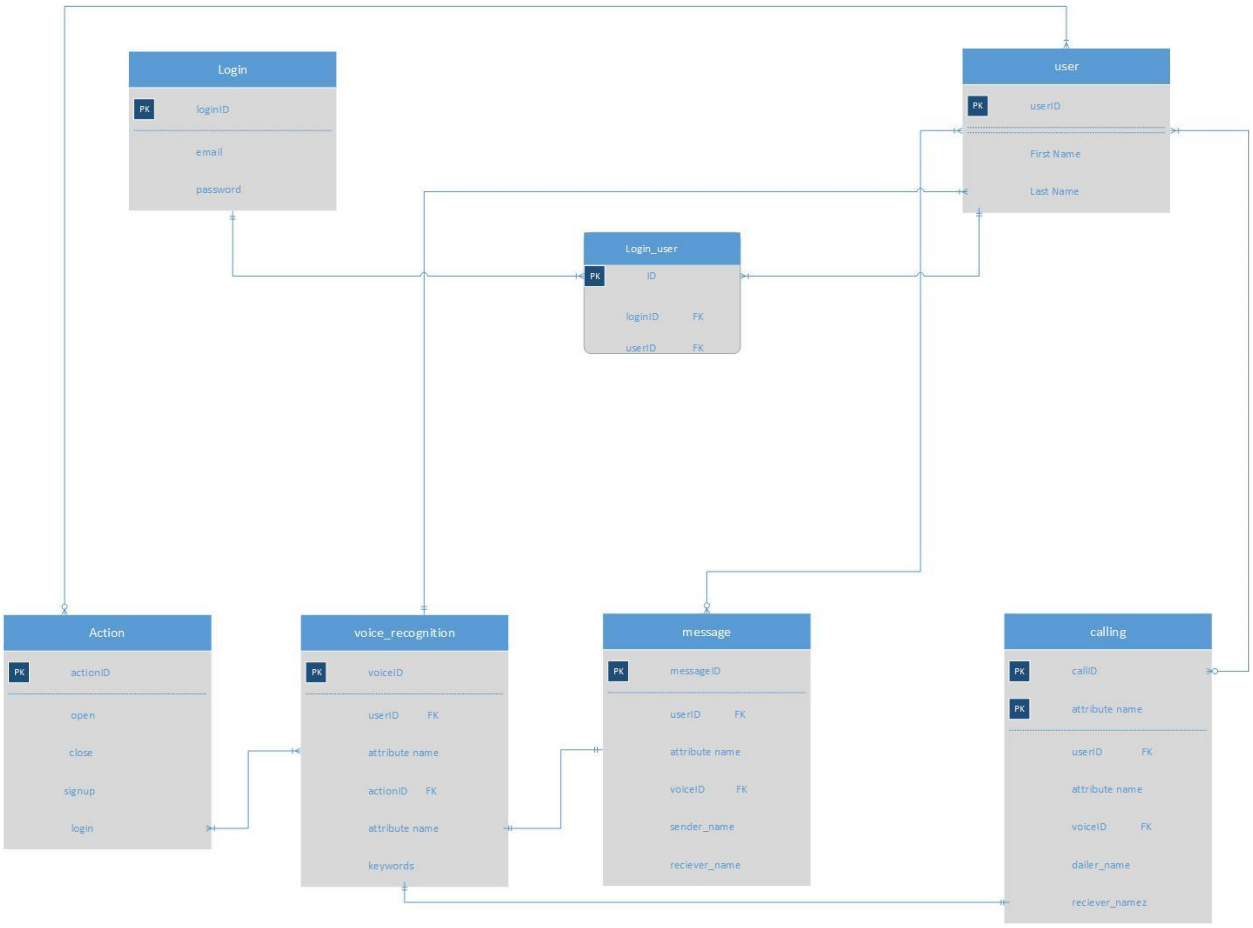


Fig-2: ER Diagram

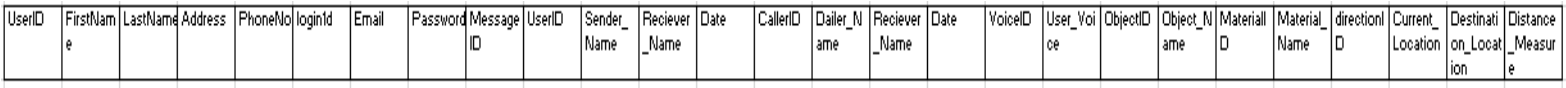
3.3 Normalization

1. First normal form(1NF)

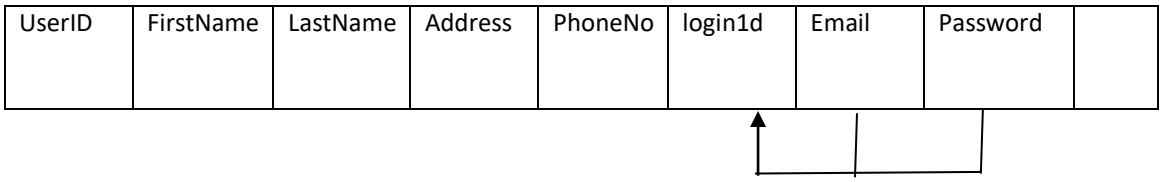
A relationin whichif there are no multivalued attributes in the relation.A primary key has been defined, which uniquely identifies each row in the relation.

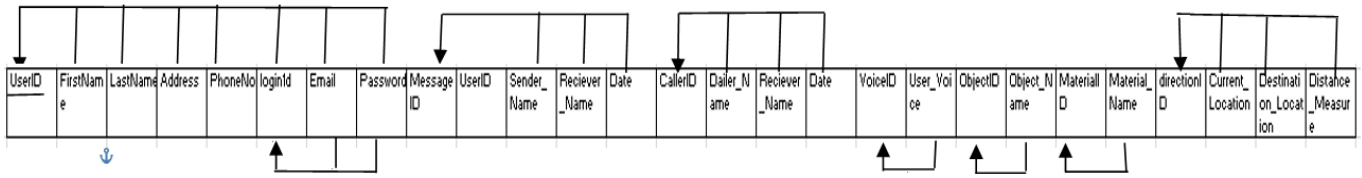
Dependency

2. Second normal form (2NF)



In which we remove a partial dependency.



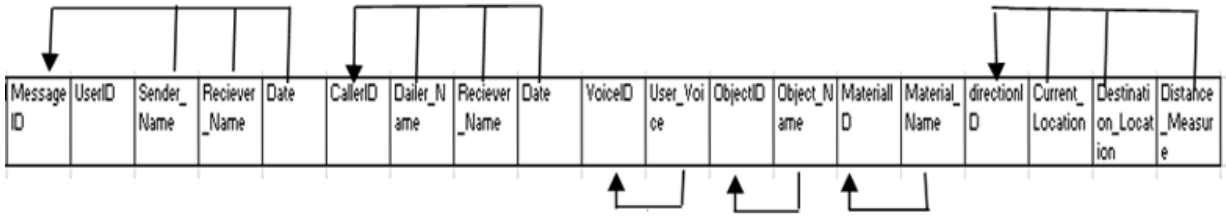


PartialDependenciesTransitiveDependenciesTransitive Transitive

Transitive TransitiveTransitive

3. Third normal form (3NF)

In which we remove a transitive dependency.



Transitive Dependencies **Transitive Dependencies**

TransitiveTransitiveTransitive

UserID	FirstName	LastName	Address	PhoneNo

login1d	UserID	Email	Password

MessageID	UserID	Sender_Name	Reciever_Name	Date

CallerID	UserID	Dailer_Name	Reciever_Name	Date

VoiceID	UserID	User_Voice

ObjectID	UserID	Object_Name

MaterialID	UserID	Material_Name

directionID	UserID	Current_Location	Destination_Location	Distance_Measure

3.4 Data Flow Diagram

Diagram shows the flow of application. After starting application the voice command gives as an input to application which will then recognize by google speech recognition after recognition the application responds against the voice command after some analysis.

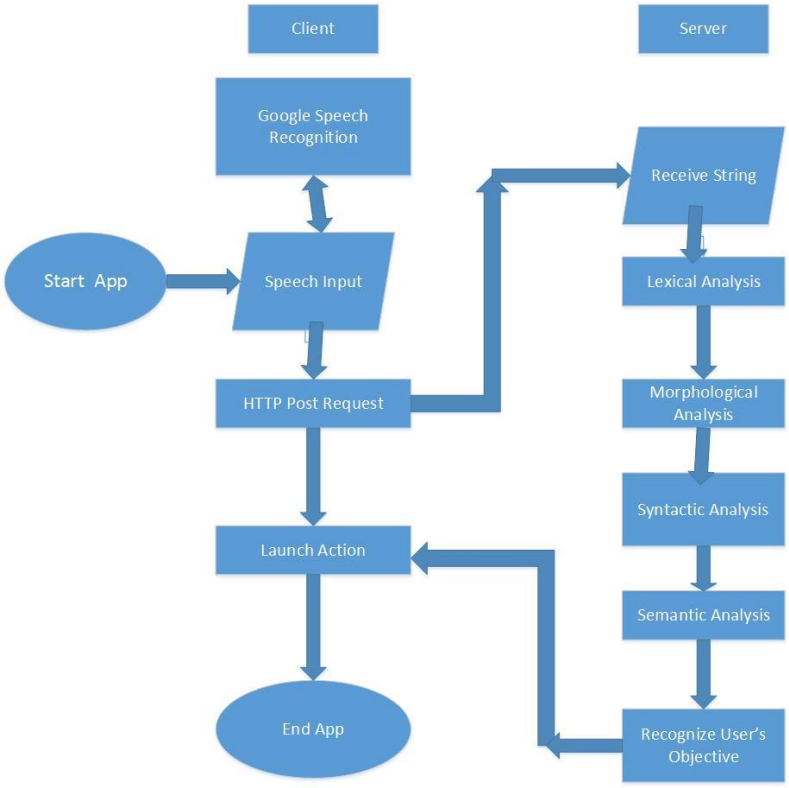


Fig-3: Data Flow Diagram

3.5 Activity Diagram

Our application will work with voice to voice system in which some keywords are defined using in user interface by giving these keywords as input voice command to application blind user can make call, message, measure distance, read material and can use camera for object detection. Application takes the voice command from user and match with embedded keywordsAnd perform task against the command. After every task application notify the user with voive.

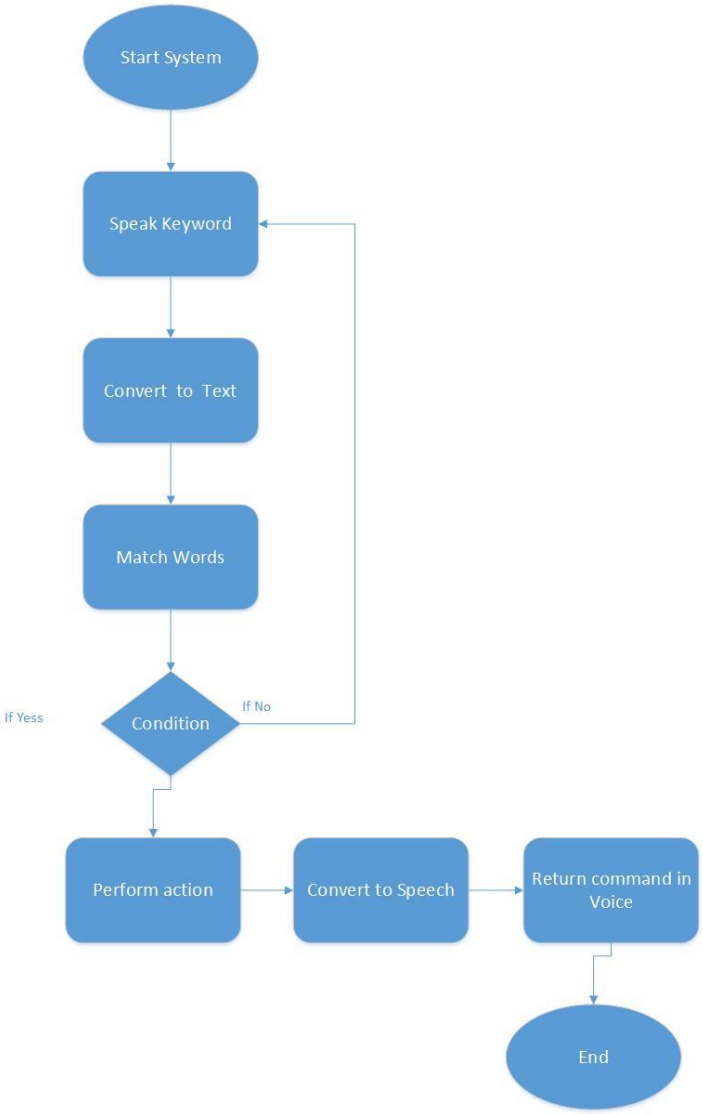


Fig-4:Activity Diagram

3.6 Use Case Diagram

In Fig-5 shows Use Case diagram of system level architecture

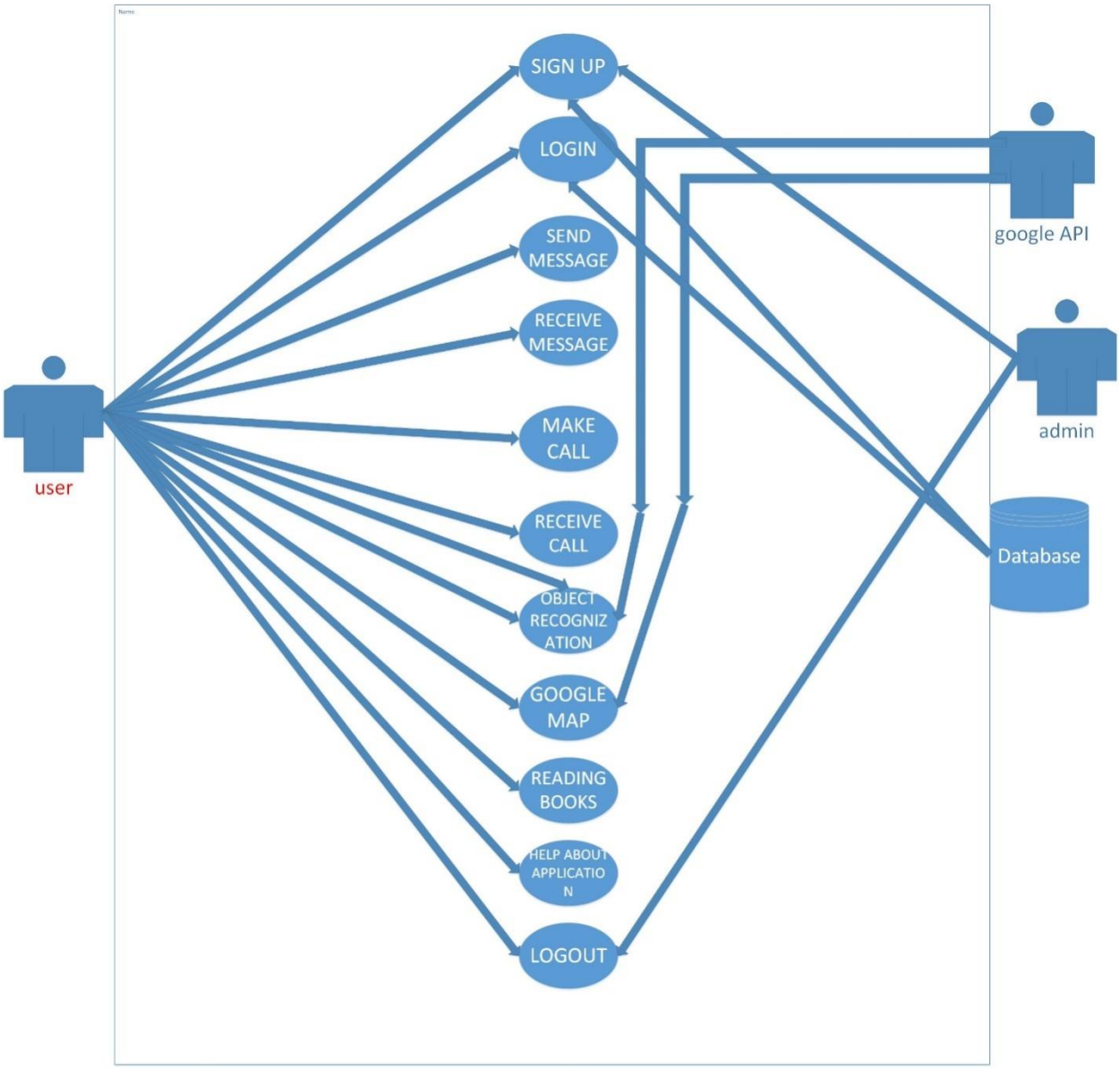


Fig-5: Use Case Diagram