



**Zagazig University**  
**Faculty of Computers and Informatics**  
Information Technology Department



# Smart Medical Care System

## Project Documentation

### Team Members

Ibrahim Mohamed Elshahat

Ibrahim Hassan AbdElaal

Mohamed Ragab Hassan

Mohamed Khairy Lotfy

Hend Magdy AbdElmotalib

Yasmin Gamal Ibrahim Mousa

### Under Supervision

DR. Ehab Rushdy

Eng. Heba Khater

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## Abstract:

[Smart Medical care system](#) our choice after studying problems of society. We found the medical field is good choice for our project ([Smart Medical care system](#)). Health and social care is often delivered in an uncoordinated way.

In emergencies, people need the nearest doctor or hospital to save their lives, Smart medical care came to help these people quickly to get the nearest doctor or clinic next to them so that we can help a small part in saving the life of a person.

Egypt have the large number of users in two platforms Social network websites and Smartphones, Ignoring Social network websites because it's not practical implementation for a graduation project we focusing on smartphones.

[Clinclick app](#) include two main parts. First part is navigation and second is notification. On navigation part we used google map and patients can arrive to theirs doctor or professor as they want whenever & wherever.

By selecting the doctor degree, the map will show nearest doc, distance, telephone and other important information about their choice.

On notification part after they go to their doctor they will send a feedback to doctor so doctor can follow their states by [Clinclick app](#). If patient state is normal or require any thing as doctor saw. Finally, clinic click app will help patients and doctors to communicate with each other, reduce patient's effort to find doctors as they want and benefit for quick and smart care.

# Contents

<b>Chapter 1   Introduction</b>	<b>5</b>
1.1   Our Idea	5
1.2   Focus on The Problem	7
1.3   Technical in Used	9
<b>Chapter 2   Project Analysis</b>	<b>13</b>
2.1   Project Analysis Techniques	13
2.2   Needs Analysis	16
2.3   Data Analysis	19
2.4   Analysis Report	19
<b>Chapter 3   Project Design</b>	<b>20</b>
3.1   Project Design	20
3.2   Data Design	25
<b>Chapter 4   Prototyping</b>	<b>26</b>
4.1   Prototyping	26
4.2   User Experience	27
4.3   Android Prototype	30
<b>Chapter 5   Implementation</b>	<b>65</b>
5.1   Data Implementation	65
5.2   Interface Implementation	68
5.3   Code Implementation	73
<b>Chapter 6   Conclusion</b>	<b>83</b>
6.1   Our final work	83
6.2   Conclusion and Future Work	85
<b>References</b>	<b>90</b>

## Chapter 1

# Introduction

### Background

In this chapter we will talk about our idea, how it comes and how we start to make it real. We will talk about the problem we are trying to solve and basically take you in the way of our project. We also talk about why we dedicated our work and time more than any idea. And in the end of chapter we will put our goals in your mind and tell you what technologies we used and why.

### 1.1 | Our Idea

In the third quarter of 2017 our team met to decide our plan for graduation project and putting our ideas on the table, we decide before the meeting the ideas must solve problems in the life, but before we launching our ideas we talking about which best platform for implementing the idea in Egypt.

Looking for statistics, Egypt have the large number of users in two platforms Social network websites and Smartphones, Ignoring Social network websites because it's not practical implementation for a graduation project we focusing on smartphones.

In 2018, Smartphone users in Egypt reach 26 million and in 2020 expect to reach 30.9 million, the most used smartphones in Egypt based on android OS. So, we find the best for our graduation project implementation.

When we decided to put our city on the Smartphones apps map, we are confusing from where to start, there are many problems the

most popular of them jam and medical field in our city waited for solving, what we do.

But as the time we discussing, one of our team members had a phone call, Emergency case so he apologized and went, in the next day he told us his uncle was very sick and his uncle wife can't know what to do, because his doctor traveled and she couldn't know any doctor at his specialist and after long searching and asking their neighbors and family members they found another doctor. He said "if they can't find this doctor or any doctor special and professor in this case and be able to follow his case with doctor may be his uncle gone".

That lets us focus on that problem. How to solve as the same of this problem immediately, communicate with right doctor that special in this case or with any case in risk and also can follow with doctor after that to reduce patient's effort and time.

We decided to calculate the data of doctors in our city, makes it easy to find any one by select his grade and time that patient want doctor in it.

So the idea comes easy, which proved the word "A coincidence could be better than a thousand meetings".

And in the next papers of that book, You will keep in touch with all steps from our team member's uncle case till make everyone finds his doctor immediately just by internet connection and android device.

## 1.2 | Focus on the Problem

In this section we will focus on the problem itself which we trying to solve, everyone knows our team member uncle it's just an effect of the problem not the problem itself so let's see it.

### Doctor searches in past: Why we better than the traditional way

The traditional way of searching for a doctor doesn't know all doctors and you will go to what you want, it's just gives you the doctors which your advisor knows and you must go to one of those small choices.

The traditional way too slow, If you need a doctor you will ask your advisor if he knows one he searches for a doctor contact info or you search if you find it you need to call the clinic when it opens and ask if reservations available by a phone if yes you reserve if not you need to go by yourself and reserve in the place and waiting in the queue. If you stomach patient and has hard pain can you wait all this?!

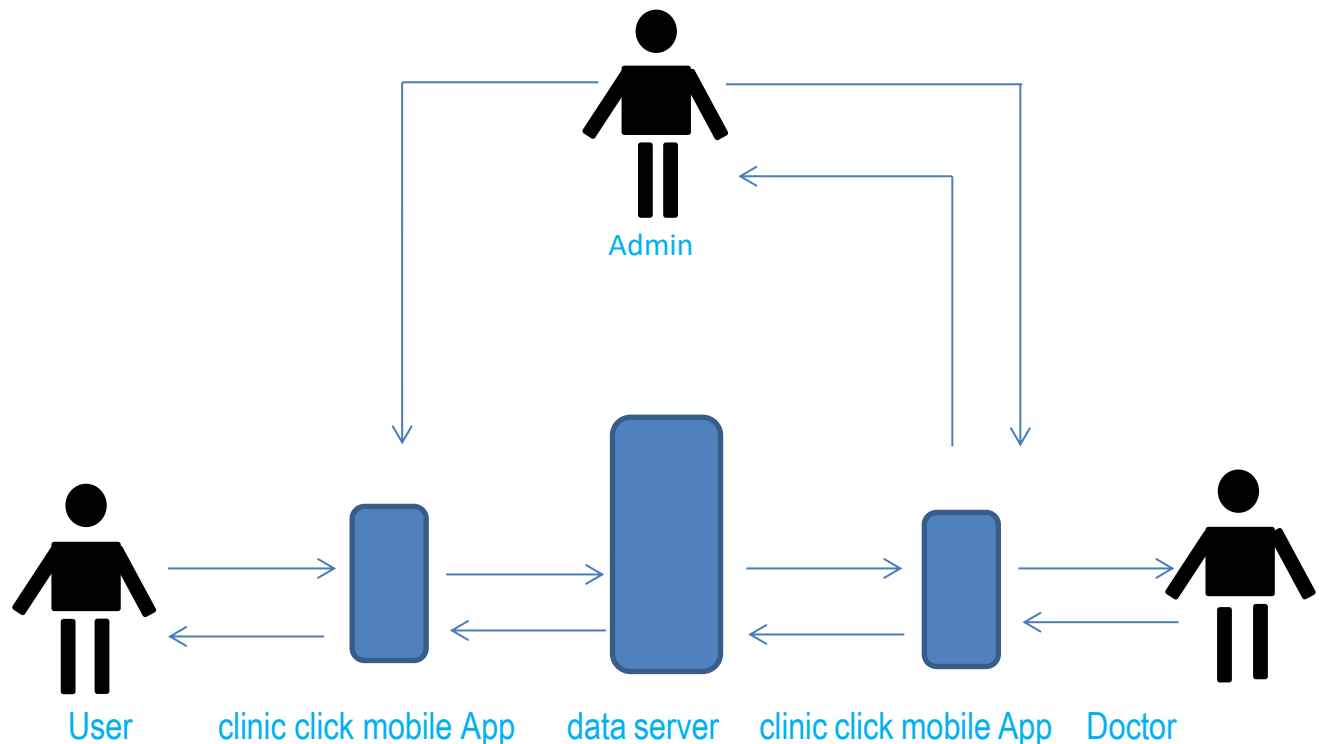
The traditional way unfair for doctors, because it's not gives them the same tools to build their reputations and advertise, it's based on everyone money he pays which not equal.

The traditional way doesn't give you the detailed way to clinic address, you lost the way and need asking people in the street to reach and in last you maybe can't reach.

### Doctor searches today: Other similar implementations of our project

In Egypt there are many android applications, but there isn't specified one for searching a doctor except some Middle East applications which includes Egypt in but it has doctor's data from Cairo only or maybe more from Alexandria and it doesn't give the ability of online reservations and other features we want to include in our application.

What features make our applications different and what's our goal?



The user can find the doctor or professor as he wants whenever and wherever by our clinic click application

The doctor has the ability to build his reputation and receive reservations at any time of the day which save time of his assistant and his patients. And all doctor's patients contact is private so we keeping the rule of secrecy of their relationship. And after that can follow his patients without needing for theirs coming so patients can feel more comfortability.

Admin can verify doctor's data and confirm it or delete it in case wrong, which keeps users trust in doctors our project presents.

**So, after all that our goals in points?**

1. Save patient's life and time.
2. Save doctor's time and give him the ability to manage his online reputation.



## 1.3| Technical in Used

In this section we will mention the technologies and the tools we used in our project

For Designing Diagrams and Relations of objects: Microsoft Visio

**Microsoft Visio** is a diagramming and vector graphics application and is part of the Microsoft Office family.

For Prototyping: Marvelapp

Marvelapp is a Simple design, prototyping and collaboration online application, turns sketches and images into realistic prototypes for any device and get feedback. No coding required.

For design: Adobe Photoshop, and Android Asset Studio

**Adobe Photoshop** is a raster graphics editor developed and published by Adobe Systems for Windows and OS X. which we used in custom graphics works, like logo and icons.

**Android Asset Studio** is a web-based set of tools for generating graphics and other assets that would eventually be in an Android application's res/ directory.

Currently available asset generators area available for: Launcher icons, Action bar icons, Notification icons, Device-framed screenshots, and Simple nine-patches.

For Mobile JAVA Programing: Android Studio

**Android Studio** is the official integrated development environment (IDE) for Android platform development. It was announced on May 16, 2013 at the Google I/O conference.

Android Studio is freely available under the Apache License 2.0. Android Studio was in early access preview stage starting from version 0.1 in May

2013, then entered beta stage starting from version 0.8 which was released in June 2014.

The first stable build was released in December 2014, starting from version 1.0. Based on Jet Brains' IntelliJ IDEA software, Android Studio is designed specifically for Android development. It is available for download on Windows, Mac OS X and Linux, and replaced Eclipse Android Development Tools (ADT) as Google's primary IDE for native Android application development.

### For database: Cloud

**Cloud** is a model of data storage in which the digital data is stored in logical pools, the physical storage spans multiple servers (and often locations), and the physical environment is typically owned and managed by a hosting company. These cloud storage providers are responsible for keeping the data available and accessible, and the physical environment protected and running. People and organizations buy or lease storage capacity from the providers to store user, organization, or application data.

Cloud storage services may be accessed through a co-located cloud computer service, a web service application programming interface (API) or by applications that utilize the API, such as cloud desktop storage, a cloud storage gateway or Web-based content management systems.

#### Advantages

- Companies need only pay for the storage they actually use, typically an average of consumption during a month.
- This does not mean that cloud storage is less expensive, only that it incurs operating expenses rather than capital expenses.
- Businesses using cloud storage can cut their energy consumption by up to 70% making them a more green business.
- Also, at the vendor level they are dealing with higher levels of energy so they will be more equipped with managing it in order to keep their own costs down as well.
- Organizations can choose between off-premises and on-premises cloud storage options, or a mixture of the two options, depending

on relevant decision criteria that is complementary to initial direct cost savings potential; for instance, continuity of operations (COOP), disaster recovery (DR), security (PII, HIPAA, SARBOX, IA/CND), and records retention laws, regulations, and policies.[12]

- Storage availability and data protection is intrinsic to object storage architecture, so depending on the application, the additional technology, and effort and cost to add availability and protection can be eliminated.
- Storage maintenance tasks, such as purchasing additional storage capacity, are offloaded to the responsibility of a service provider.
- Cloud storage provides users with immediate access to a broad range of resources and applications hosted in the infrastructure of another organization via a web service interface.
- Cloud storage can be used for copying virtual machine images from the cloud to on-premises locations or to import a virtual machine image from an on-premises location to the cloud image library. In addition, cloud storage can be used to move virtual machine images between user accounts or between data centers.
- Cloud storage can be used as natural disaster proof backup, as normally there are 2 or 3 different backup servers located in different places around the globe.
- Cloud storage can be mapped as a local drive with the WebDAV protocol. It can function as a central file server for organizations with multiple office locations.

For documentation: [Adobe InDesign](#)

**Adobe InDesign** is a desktop publishing software application produced by Adobe Systems. It can be used to create works such as posters, flyers, brochures, magazines, newspapers, and books. InDesign can also publish content suitable for tablet devices.

In conjunction with Adobe Digital Publishing Suite. Graphic designers and production artists are the principal users, creating and laying out periodical publications, posters, and print media. It also supports export to EPUB and SWF formats to create e-books and digital publications,

including digital magazines, and content suitable for consumption on tablet computers. In addition, InDesign supports XML, style sheets, and other coding markup, making it suitable for exporting tagged text content for use in other digital and online formats. The Adobe InCopy word processor uses the same formatting engine as InDesign.

### Other Tools

Including the websites which give free images for downloading and using which we used in our project designs and documentation, and we thank for that.

## Chapter 2

# Project Analysis

### Background

In this chapter we will analysis the problem, studying every technique available and choose the best for applying. We met people live in other places and they will share with us their experiences with similar implementations of our project. In the end of our analysis work we put the all needs and get the whole vision of our project and its data to be ready to the next process.

## 2.1 | Project Analysis Techniques

### what is project/system analysis?

System analysis is the process of studying a procedure or business in order to identify its goals and purposes and create systems and procedures that will achieve them in an efficient way”. Another view sees systems analysis as a problem-solving technique that decomposes a system into its component pieces for the purpose of the studying how well those component parts work and interact to accomplish their purpose.

### There are four main techniques for analysis

There are main techniques for analysis

- ◆ Interview
- ◆ Questionnaire
- ◆ Observation

### Interview

The interview is the most commonly used requirements elicitation technique. After all, it is natural—usually, if you need to know something, you ask someone. In general, interviews are conducted one on one (one interviewer and one interviewee).

The personal interview is generally recognized as the most important and most often used fact-finding technique.

Personal interviews involve soliciting requirements through direct, face-to-face interaction.

Interviewing can be used to achieve any or all of the following goals: find facts, verify facts, clarify facts, generate enthusiasm, get the end user involved, identify requirements, and solicit ideas and opinions.

There are two roles assumed in an interview.

- ◆ the systems analyst is the interviewer, responsible for organizing and conducting the interview.
- ◆ the system user or system owner is the interviewee, who is asked to respond to a series of questions. There may be one or more interviewers and/or interviewees. In other words, interviews may be conducted one-on-one or many-to-many.

Advantages of using an Interview

- ◆ If the respondent lacks reading skills to answer a question.
- ◆ Are useful for untangling complex topics.
- ◆ The Interviewer can probe deeper into a response given by an interviewee.
- ◆ Interviews produce a higher response rate.

Disadvantages of using an Interview

- ◆ the interviewer can affect the data if he/she is not consistent.
- ◆ The Interviewer may be biased and ask closed questions.
- ◆ it is very time consuming.
- ◆ it is not used for a large number of people.

**Questionnaires**

a questionnaire is a set of written questions for obtaining information from individuals. Questionnaires often are used when there is a large number of people from whom information and opinions are needed.

In our experience, questionnaires are commonly used for systems intended for use outside of the organization (by customers or vendors) or for systems with business users spread across many geographic locations. Most people automatically think of paper when they think of questionnaires, but today more questionnaires are being distributed in electronic form, either via e-mail or on the Web. Electronic distribution

can save a significant amount of money, compared with distributing paper questionnaires.

### Advantages of using Questionnaires

- ◆ scanning can be the fastest method of data entry for paper questionnaires.
- ◆ Scanning is more accurate than interview

### Disadvantages of using Questionnaires

- ◆ Scanning is best-suited to “check the box” type surveys and bar codes.
- ◆ scanning programs require additional data entry time.
- ◆ Scanning is less accurate than a person in reading a poorly marked questionnaire.

## Observations

Observation, the act of watching processes being performed, is a powerful tool to gain insight into the as-is system. Observation enables the analyst to see the reality of a situation, rather than listening to others describe it in interviews or JAD sessions.

Observation is a good way to check the validity of information gathered from other sources such as interviews and questionnaires.

Observation is often used to supplement interview information. The location of a person’s office and its furnishings gives clues as to their power and influence in the organization, and such clues can be used to support or refute information given in an interview.

### Advantages of using Observations

- ◆ you get to know the problem well.
- ◆ it enables you to gain an insight into the uniqueness of the problem.
- ◆ it allows you to obtain a better understanding of the ‘norms ‘of development.
- ◆ it enables you to chart development changes over a period of time.
- ◆ it enables you to ensure help/guidance is offered earlier than otherwise have been.

### Disadvantages of using Observations

- ❖ Relationships with other relations may become strained due to the continuous observation of the problem itself.
- ❖ Observation not available sometimes as a choice.
- ❖ Issues around confidentiality may be raised, as it may be easy for others to identify the problem.

## 2.2 | Needs Analysis

This activity is known as requirements analysis. In this step we sum up the requirements of the project from the users and the Doctors. The developed system should satisfy these requirements during testing phase.

### How we met our needs in this activity?

We find questionnaire is impractical for our project so we depend on observation, sampling and interview.

### Find by observation

Observation first at all gives us the idea itself, we collect our feelings with clinics experiences from our memory and asking our self which thing can change this experience to be better.

Which thing we miss? And which we will go to solve? But we not only depend on memory, we saw old doctor's prescription which we retain to keep doctor's information when we need it to visit him again (Traditional way), and we use our observations to find in example what information every doctor keen to display in his Prescription and what information of patients he asked about.

We also observe doctor's Banners and other advertises, to ensure about data each doctor keens on to display about himself.

We observe the Egyptian medical syndicate doesn't display doctor's data but in the other side it's have a verification system for doctors by name which helps our admins to verify registered doctors.



## Find by Interview

Find by an interview The first person we met is a heart Egyptian patient lives in France, which makes us make a meeting with him he says he had experience with applications like our application, we asking him for talking about his experience and he welcomes After talking we find the needs of users in Egypt were solved in Paris but he said the only problem he found was in waiting on the queue, when he reserves he must go from starting time, and there asking about his number in reservations, at once he goes at 8 pm and enters to doctor at 11 pm. he said It's unfair and not respectable. Finally, we thank for talking.

### User Interview Guide

#### Interviewer Question or Objective

Objective open the interview:

- ◆ Introduce ourselves.
- ◆ Thank interviewee for his valuable time.
- ◆ State the purpose of the interview

#### Question 1

what is your opinion on health care online applications you used?

#### Question 2

what the problems you face in those applications?

#### Question 3

what you hope to find in those applications?

Objective conclude the interview:

- ◆ Thank interviewee for his cooperation

#### General Comments and Notes:

He said the technology take India far away as he can imagine in very little time, not only health care applications help the people in their life but there are many applications in many specialties serves them. He recommended to us the book "Geek Nation: How Indian Science Is Taking over the World" by Angela Saini which gives you the all view in India experiment with technology applications.

His experience was with web implementation, he says the problem in web the others small competitors which fill the reservation's data with hundreds of fake patient's data and make some doctors close reservation online in the web.

He said Mobile apps handle this problem because it's more difficult to do the same attack with Mobile apps.

He said Egypt must benefit from India and their plans for transferring to the developed countries as he hopes, because the future for the science and technology finally we thank for talking.

### User Interview Guide

#### Interviewer Question or Objective

Objective open the interview:

- ◆ Introduce ourselves.
- ◆ Thank interviewee for his valuable time.
- ◆ State the purpose of the interview

#### Question 1

What is your opinion on health care online applications for doctors and users?

#### Question 2

what the problems you face in those applications as a doctor?

#### Question 3

what you hope to find in those applications?

Objective conclude the interview:

- ◆ Thank interviewee for his cooperation

#### General Comments and Notes:

Now after needs analysis we decided matching the same needs and isolating every doctor and every user in his service which connects together. In this time, we said we will use android.

### On Android

- ◆ every user must sign up an Account to prevent fake data attacks.
- ◆ we give the user ability to search for a doctor by his name and Specialties.
- ◆ we give the user ability to direct contact with a doctor.
- ◆ we give the user ability to perform immediate reservation and edit or

delete it.

- ◆ we give user ability to edit his profile data.
- ◆ No one, only just the Intended doctor can see user's reservation.
- ◆ we give the user ability to get directions of doctor's clinic.
- ◆ we give the user an easy group of doctors list with specialties of places.
- ◆ we give the doctor ability to create and update his profile.
- ◆ we give the doctor ability to follow the patient's condition.

## 2.3 | Data Analysis

After completion of Project analysis and define project needs and scope we analysis the collected data about the project to ensure that data is accurate and complete

### User's Data

- ◆ Username ◆ Password ◆ Email ◆ Phone ◆ gender ◆ Date of Birth

### Doctor's data

- ◆ Username ◆ Password ◆ Doctor Image ◆ Doctor Specialty
- ◆ Doctor Phone ◆ Doctor Clinic ◆ Doctor Work time ◆ Doctor Work day

### Clinic's data

- ◆ Clinic Location ◆ Clinic Address ◆ Clinic Phone

### Location's data

- ◆ Location longitude ◆ Location latitude

## 2.4 | Analysis Report

after completing the work of analysis, the requirements collected for the system are documented in a presentable form.

It means that the analysis report is prepared. It is done for review and approval of the project.

After reviewing the report, now we ready for going to the next step, Project Design.

## Chapter 3

# Project Design

### Background

in this chapter we will design our project and it's data which we analysis in the previous chapter. We drawing our design's diagrams to connect project and data objects and show how they work and interact together. In the end of our design work we put the all needs and get the whole vision of our project to be real and to be ready for prototyping.

### 3.1 | Project Design

In the previous chapter, we are talking about the analysis process of the problem which we trying to solve , defining the problem and it's solution, studying analysis techniques and choose the appropriate from these techniques for applying and then gathering our project data and extract our project vision.

Now in this chapter we put the analysis approach in the design process to define our project tasks in a form that focus on the speciation of a detailed computer-based solution, it is also called physical design. Thus, whereas systems analysis emphasized the business problem, systems design focuses on the technical or implementation concerns of the system.

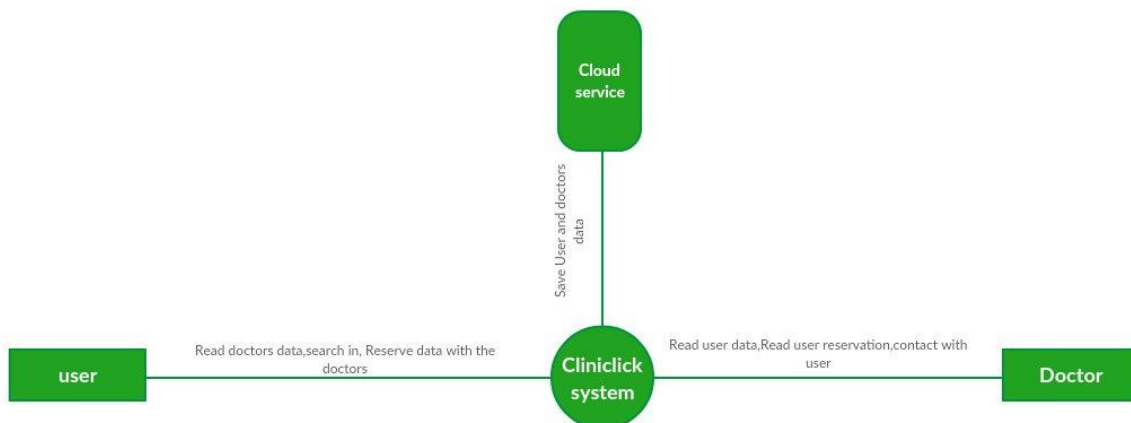
### How we implement our Project Design?

We implement high level view for our project by this Diagrams

- ◆ Context Diagram
- ◆ Flowchart Diagram

## Context Diagram:

Context Diagram (in software engineering and systems engineering) is a diagram that defines the boundary between the system, or part of a system, and its environment,



showing the entities that interact with it. This diagram is a high-level view of a system.

Context diagrams show a system, often software-based, as a whole and its inputs and Outputs from/to external factors.

It's representing all external entities that may interact with a system such our project diagram which pictures the CLINICCLICK system at the center, with no details of its interior structure, surrounded by all its interacting systems, environments and activities. In our case which representing by Users and Doctors.

The objective of the Project context diagram is to focus attention on external factors and events that should be considered in developing a complete set of systems requirements and constraints. System context diagrams are used early in a project to get agreement on the scope under investigation.

## Flowchart Diagram:

Flowchart is a type of diagram that represents an algorithm, workflow or process, showing the steps as boxes of various kinds, and their order by connecting them with arrows.

Flowcharts are used in designing and documenting simple processes or programs.

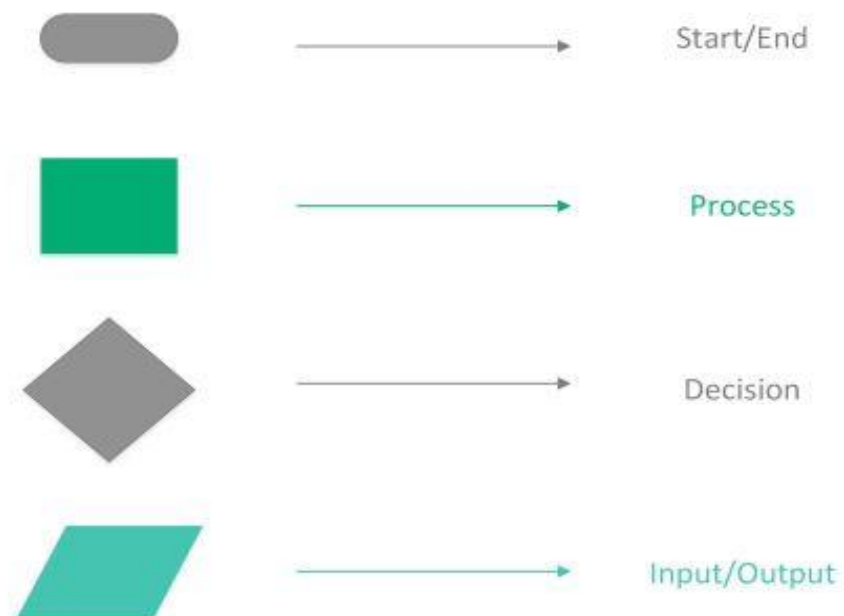
Like other types of diagrams, they help visualize what is going on and thereby help understand a process, and perhaps also find flows, bottlenecks, and other less-obvious features within it.

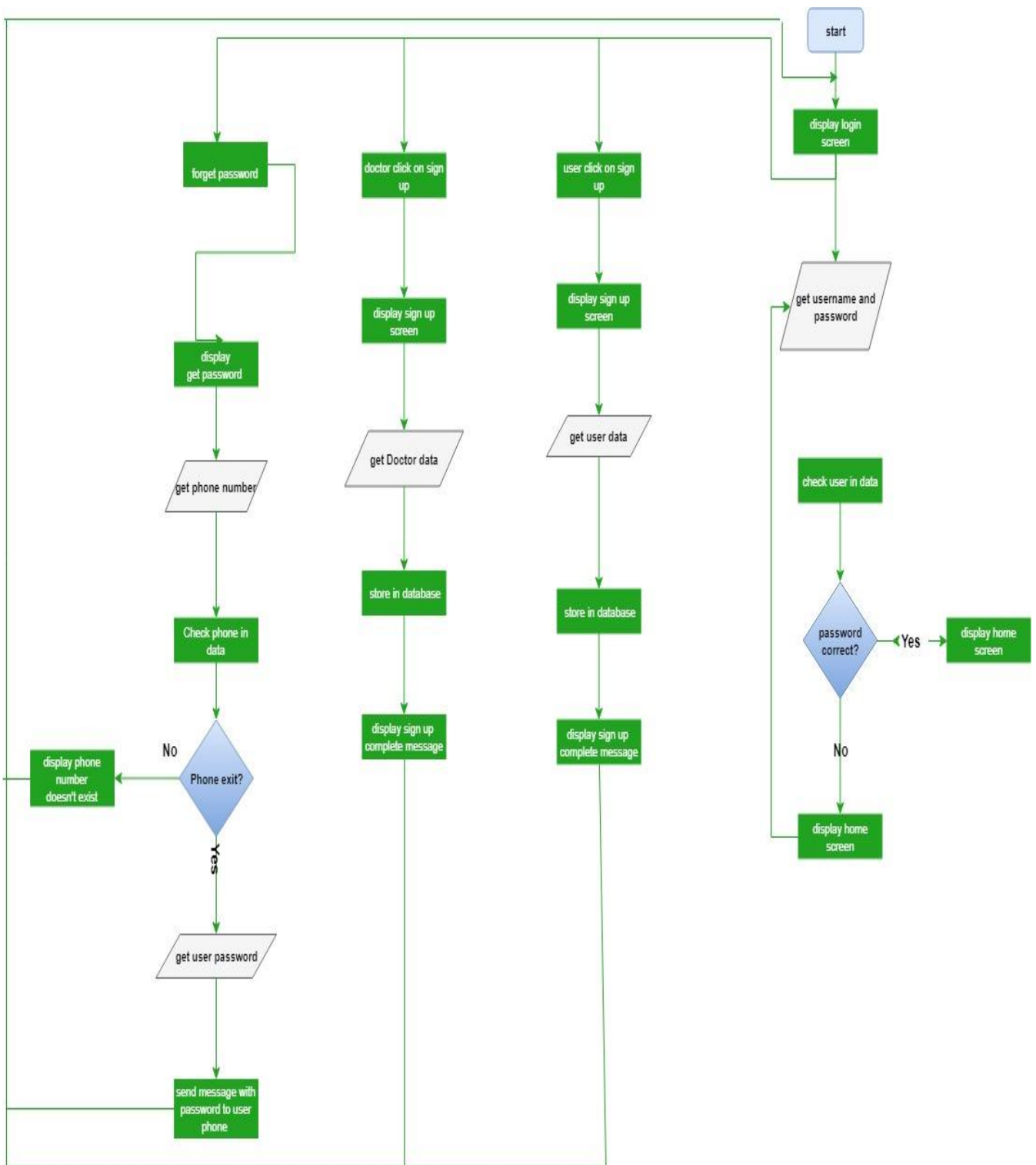
There are many different types of flowcharts, and each type has its own repertoire of boxes and notational conventions. The two most common types of boxes in a flow chart are:

- ◆ A processing step, usually called activity, and denoted as a rectangular box
- ◆ A decision, usually denoted as a diamond

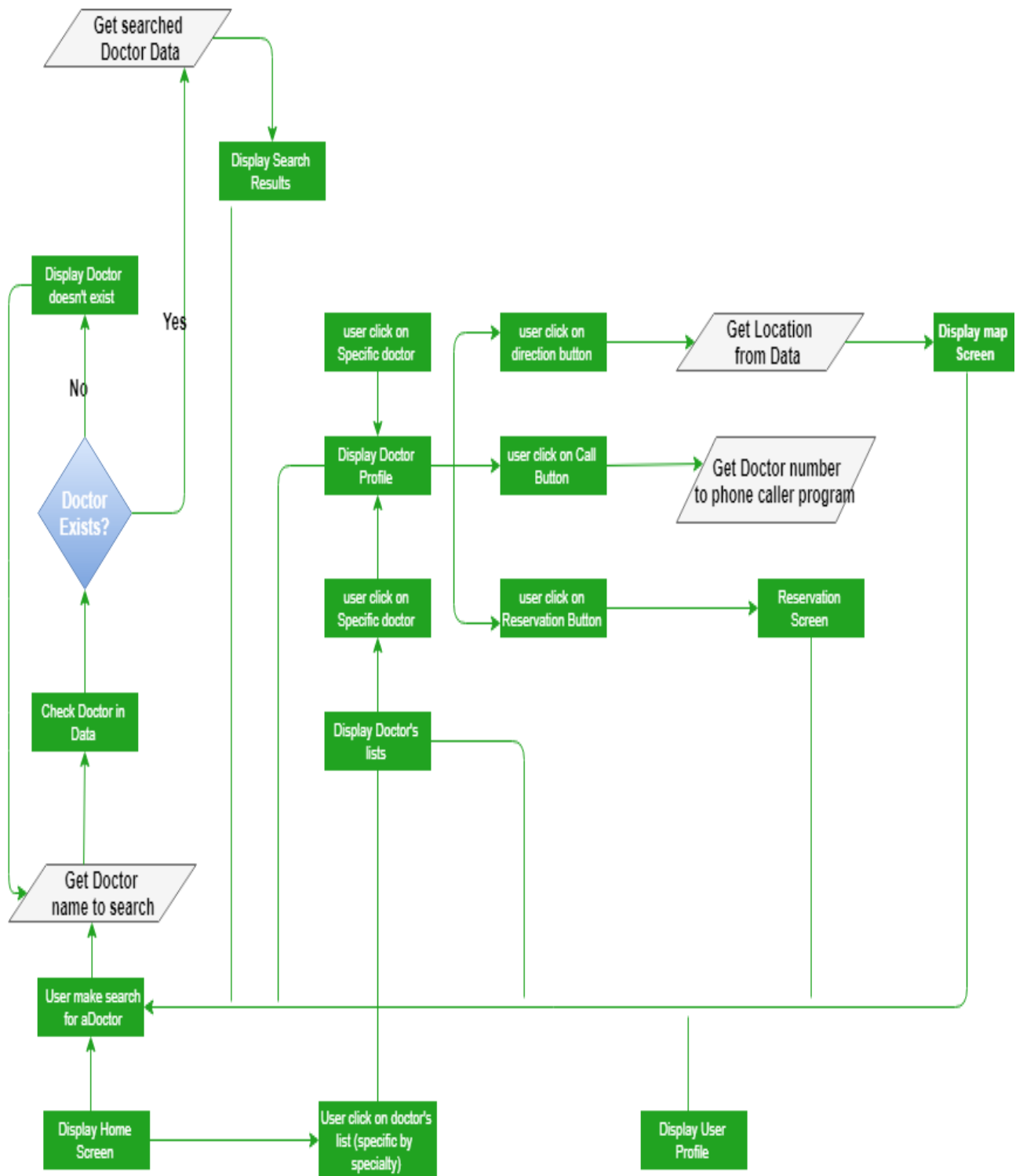
A flowchart is described as “cross-functional” when the page is divided into different swim lanes describing the control of different organizational units. A symbol appearing in a particular “lane” is within the control of that organizational unit. This technique allows the author to locate the responsibility for performing an action or making a decision correctly, showing the responsibility of each organizational unit for different parts of a single process.

In our project we working with basic flowchart which represented by the next shapes.





1st part of Android Flowchart Diagram



2nd part of Android Flowchart Diagram



## 3.2 | Data Design

An entity–relationship model (ER model) describes inter-related things of interest in specified domain of knowledge, An ER model is composed of entity types and specify relationships that can exist between instances of those entity types.

In software engineering an ER model is commonly formed to represent things that a business needs to remember in order to perform business processes. Consequently, the ER model becomes an abstract data model that defines a data or information structure that can be implemented in a database, typically a relational database.

### How we implement our Data Design?

We implement high level view for our data design by this Diagram

❖ ER Diagram

### How object related to others objects?

ER Diagram describes relations between objects like many to many, many to one relationships in the next point we explain this relation between our project objects.

#### Doctor and Specialty

- ❖ One specialty has many doctors
- ❖ One doctor has only one Specialty

#### Doctor/clinic and Reservations

- ❖ One doctor/clinic has many reservations
- ❖ One reservation has only one doctor/clinic

#### Clinic and Reservations

- ❖ One clinic has many reservations
- ❖ One reservation has only in one clinic

#### Clinic and Location

- ❖ One location has many clinics
- ❖ One clinic has only one location

#### Clinic/Doctor and Place

- ❖ One place has many clinics/doctors
- ❖ One doctor/clinic has only in one place.

## Chapter 4

# Prototyping

## Background

In this chapter we will design a prototype for our project android based on our work in the previous chapters.

We connect our layouts and screens on interactive way using our prototyping tool to be ready for the next process in designing user interface and at last coding

### 4.1 | Prototyping

Prototyping is the process of creating a prototype for a project which is an early sample, model, or release of a product built to test a concept or process or to act as a thing to be replicated or learned from.

It is a term used in a variety of contexts, including semantics, design, electronics, and software programming.

A prototype is designed to test and try a new design to enhance precision by system analysts and users.

Prototyping serves to provide specifications for a real, working system rather than a theoretical one.

In some workflow models, creating a prototype (a process sometimes called materialization) is the step between the formalization and the evaluation of an idea.

### Basic prototype categories

Prototypes explore different aspects of an intended design:

- \* A Proof-of-Principle Prototype explore some functional, but not all, aspects of the intended design.

- \*A Form Study Prototype explore the size and appearance, but not the functionality, of the intended design.

- \* A User Experience Prototype captures enough aspects of the intended design that it can support user research.
- \* A Visual Prototype captures the size and appearance, but not the functionality, of the intended design.
- \* A Functional Prototype captures both function and appearance of the intended design. It may be created in with a different method and scale from final design.

## Functional Prototype

Using Marvelapp we build a functional prototype for our project.

Marvelapp as we mention before is a Simple design, prototyping and collaboration online application, turns sketches and images into realistic prototypes for any device and get feedback. No coding required.

And in the next pages of chapter 4 we take a tour in Android.

## 4.2 | User Experience

Using information which we extracted from project analysis and design we form our Visions in our minds and visualize it on our screen using prototyping.

We reading more about user experience to make our users more comfortable with our service.

### User Experience points we focused on

#### Design for the user, really

Back when online interaction was still in its infancy, and not much thought had been given to whom we were designing for, users were all too willing to spend their time learning the interaction required to complete tasks on applications. If users were confused, people often assumed they just weren't tech savvy or well-informed on how to navigate the internet.

As more and more websites, mobile devices and tablets started popping up; users weren't as willing or patient to "learn" on their own. Nowadays, you'll see more users becoming frustrated and even angry

when they feel a product, application or website is substandard - and rightfully so.

It's tempting to design with your own preferences and tastes in mind. But that won't help user's complete tasks on the site if they have a whole different set of preferences and needs. Think about what users want to do and help them complete those tasks in the easiest and most intuitive way possible.

Are they browsing? Searching? Gaming? Watching video? Trying to complete a task? Looking for specified content? It's the UX team's job to look at the entire experience holistically and make sure that users' needs are always met.

### Think user types

Persons are vital when it comes to structuring the content. Look at all the content holistically and think about what people are trying to accomplish.

They also had difference educational and knowledge backgrounds, many of them needs simplicity in forms to can use it.

So, we make our project target for all types of users which are using our project all they need some little knowledge of using mobile for users and doctors.

### Less really is more

You may think this is obvious and doesn't need further explanation. But most sites and applications still manage to get it wrong.

The key is to cut down tasks required by users to the bare minimum. I can't stress this enough. Get rid of all that extra clutter that doesn't add value, or worse, distracts and confuses the user.

Know exactly how you want users to search through specialty of doctors or doctors in specified place and then guide the user as if you were holding their hand through the entire process. Again, users want things to be as simple, worry-free and fast as possible.

If they can see what's coming next before even clicking on something, they'll be happy users.

Using interactive features such as instant search, animated canvas page flips, enhanced canvas illustrations, offline mode, bookmarking and lights out mode, we made it simple, fun and informative for users

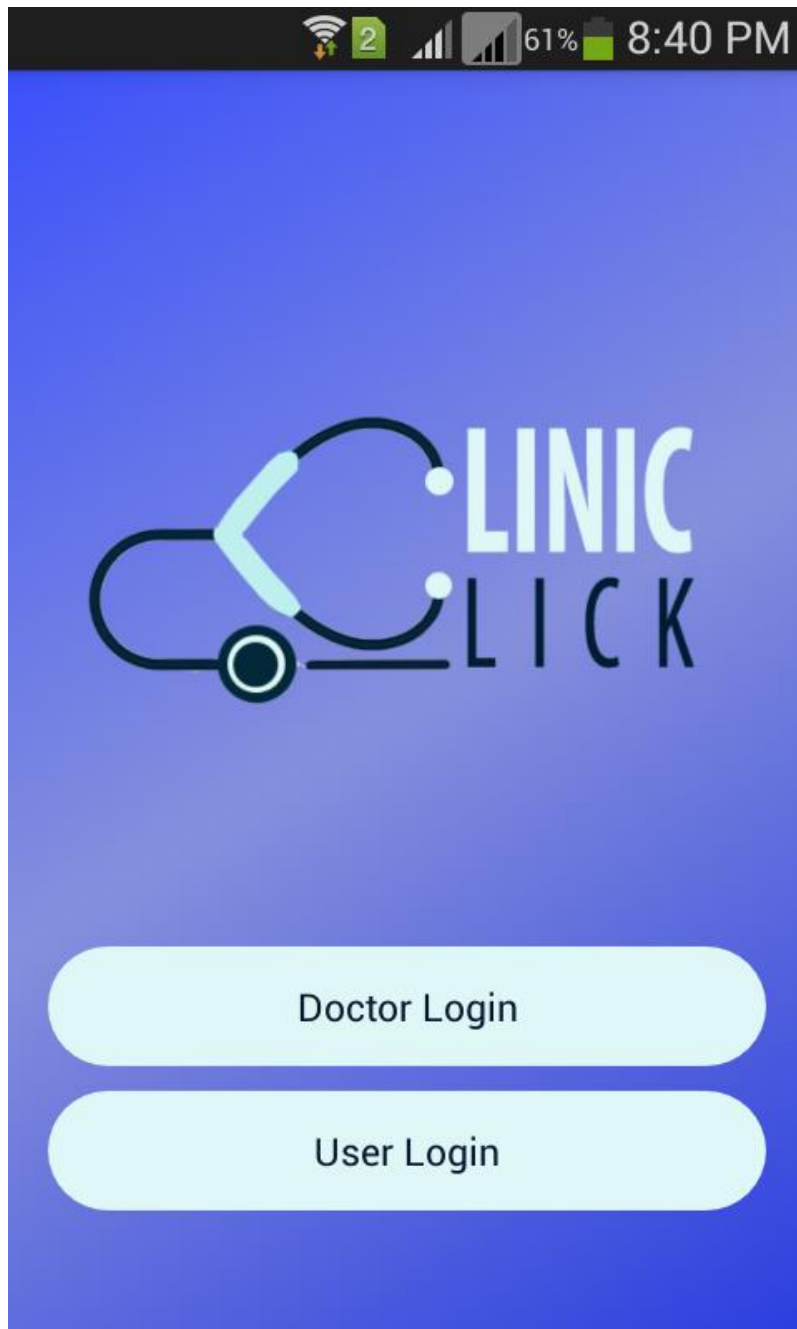
### Take cues from tablets and other screens

Because you're already limited by the amount of real estate on tablets, the need to simplify interactions is even greater.

Ask yourself if your design would work on a tablet and other screens in a perfect way as well as default screen working. If the answer is yes, you already have the two basic building blocks in place for a strong user experience: clear hierarchy and intuitive way finding.

## 4.3 | Android Prototype

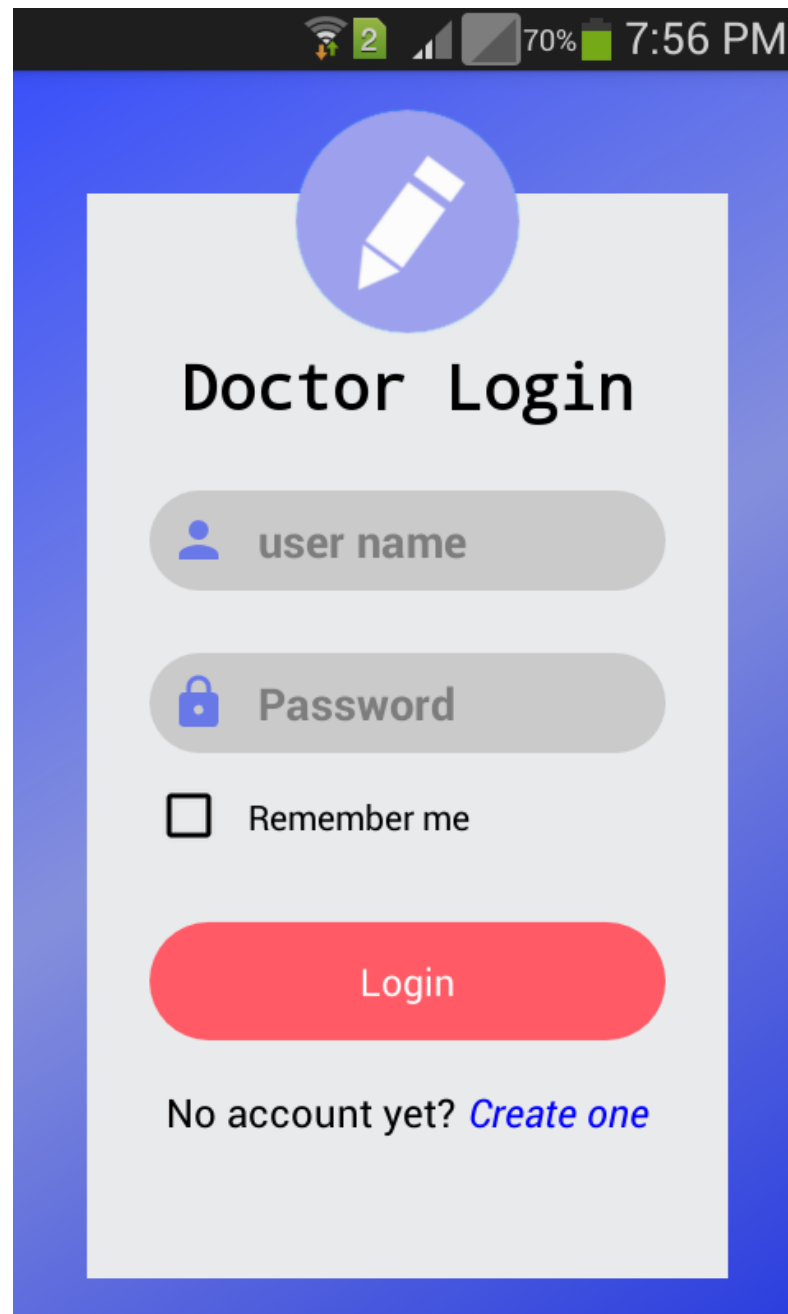
Based on our experience and articles we learning before from user experience we start designing our prototype, we will see android prototype.



**Primal login screen**

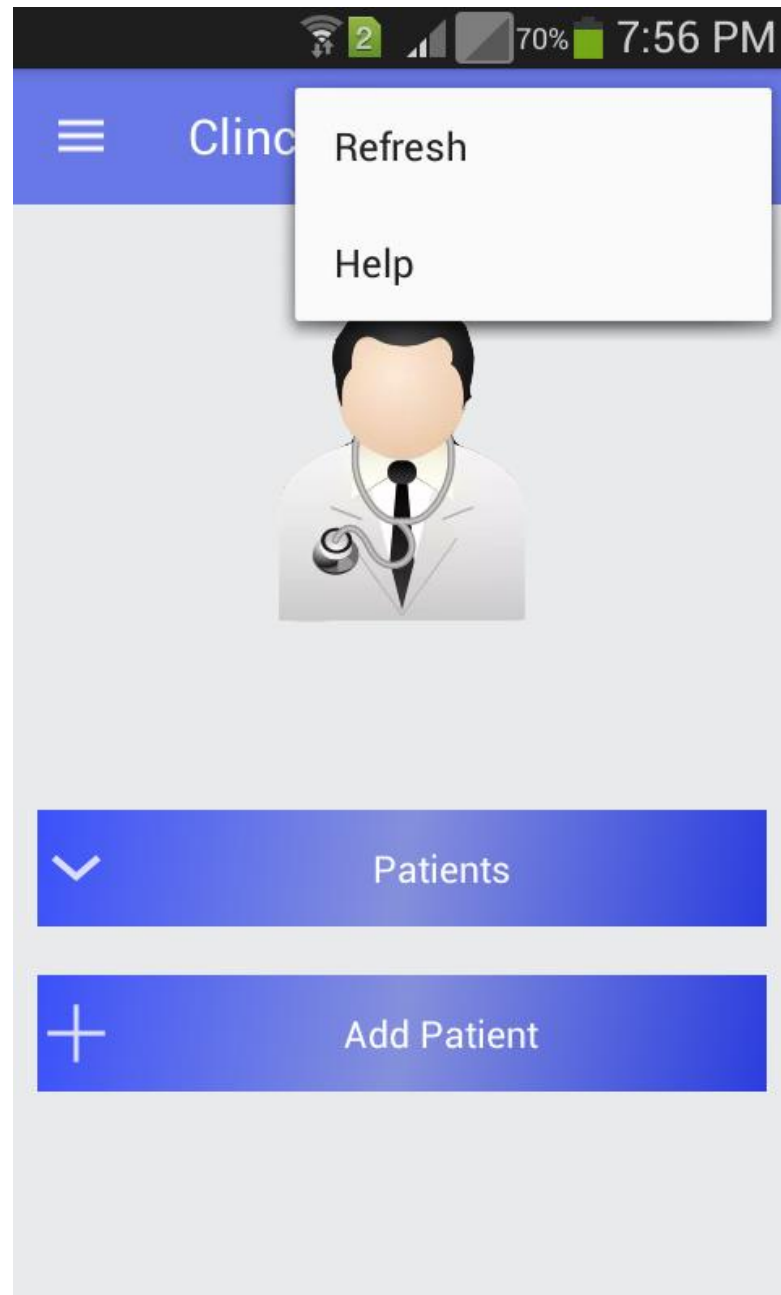
- Here you have to choose if you are a doctor or patient
- Doctor login screen will be the next page

## DOCTOR INTERFACE

A mobile application interface for doctor login. The screen has a blue gradient background. At the top, there is a status bar with icons for Wi-Fi, cellular signal, battery (70%), and time (7:56 PM). Below the status bar is a white circular icon containing a blue pen. The main content area is a white rounded rectangle. It features the title "Doctor Login" in bold black text. Below the title are two input fields: "user name" with a blue person icon and "Password" with a blue lock icon. There is a checkbox labeled "Remember me". A large red rounded button labeled "Login" is positioned below the input fields. At the bottom, the text "No account yet? [Create one](#)" is displayed, where "Create one" is a blue link.

Doctor login

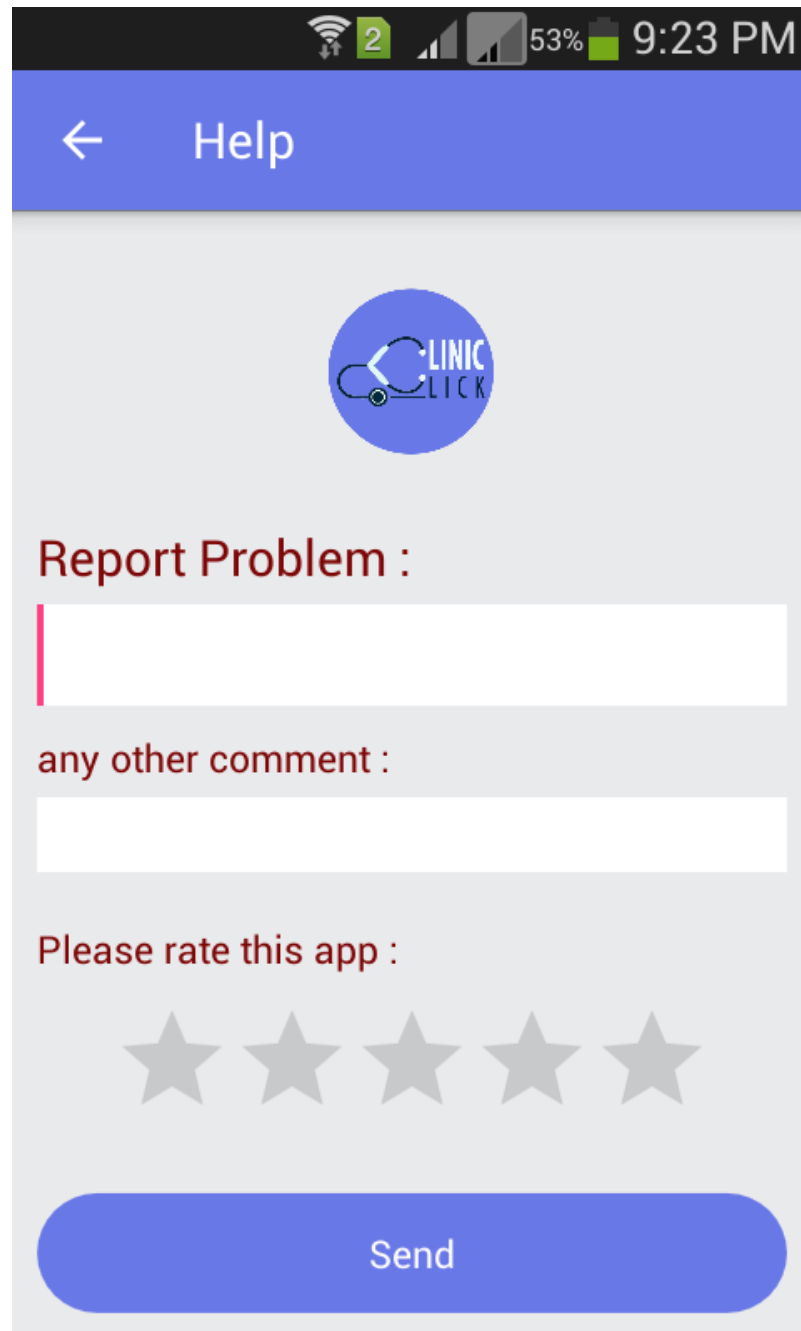
- Doctor enter here his profile user name and password and when he login he will turn to home screen
- If Doctor does not have an account he will click on create account to create one.



**Home screen**

- This is home screen, in the upper right side here is help button.

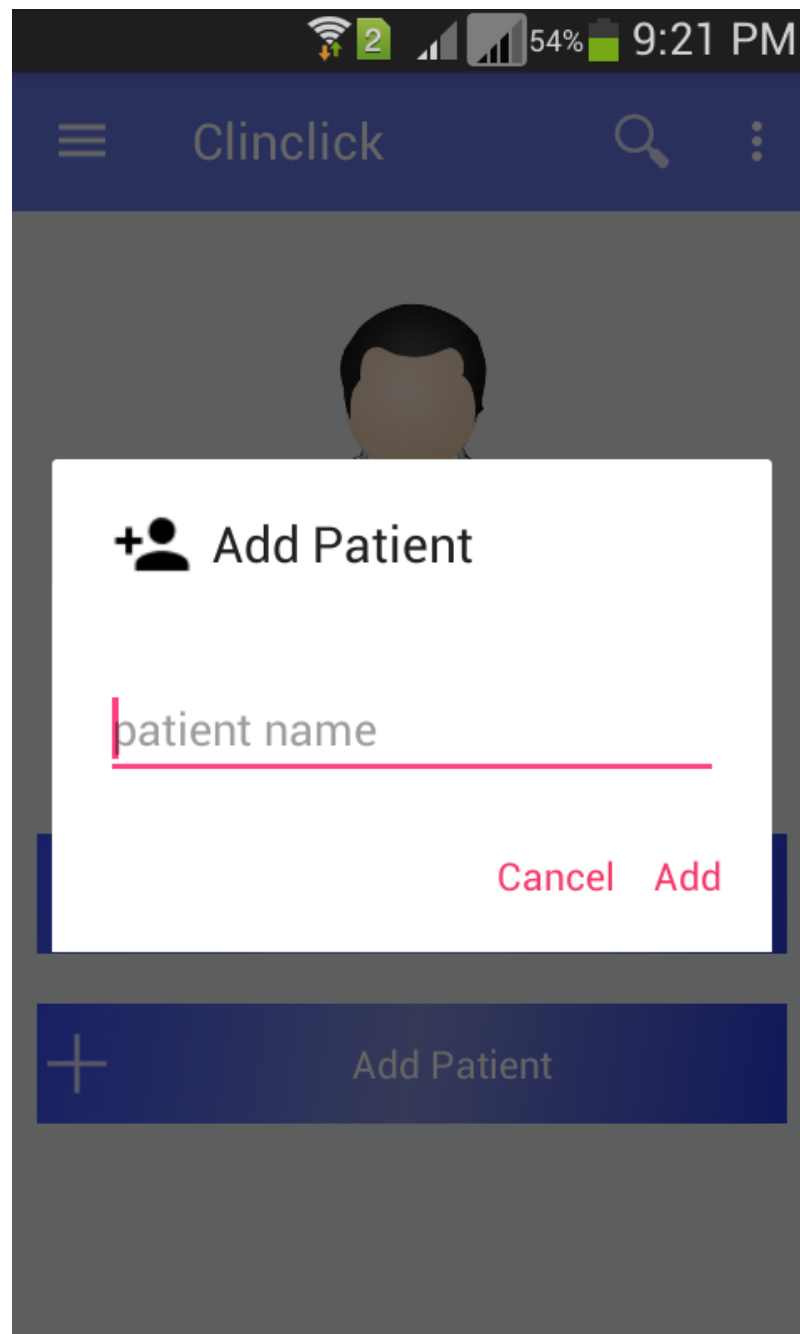




The image shows a mobile application interface for a 'Help' screen. At the top, there is a status bar with icons for Wi-Fi, cellular signal, battery level (53%), and time (9:23 PM). Below the status bar is a blue header bar with a white back arrow and the text 'Help'. The main content area has a light gray background. In the center, there is a circular logo with a blue background and white text that reads 'LINIC CLICK'. Below the logo, the text 'Report Problem :' is displayed in a dark red font. Underneath this text is a white rectangular input field with a red vertical line on its left side. Below the input field, the text 'any other comment :' is displayed in a dark red font. Underneath this text is another white rectangular input field. Below the input fields, the text 'Please rate this app :' is displayed in a dark red font. Underneath this text are five gray stars. At the bottom of the screen is a large blue button with rounded corners and the text 'Send' in white.

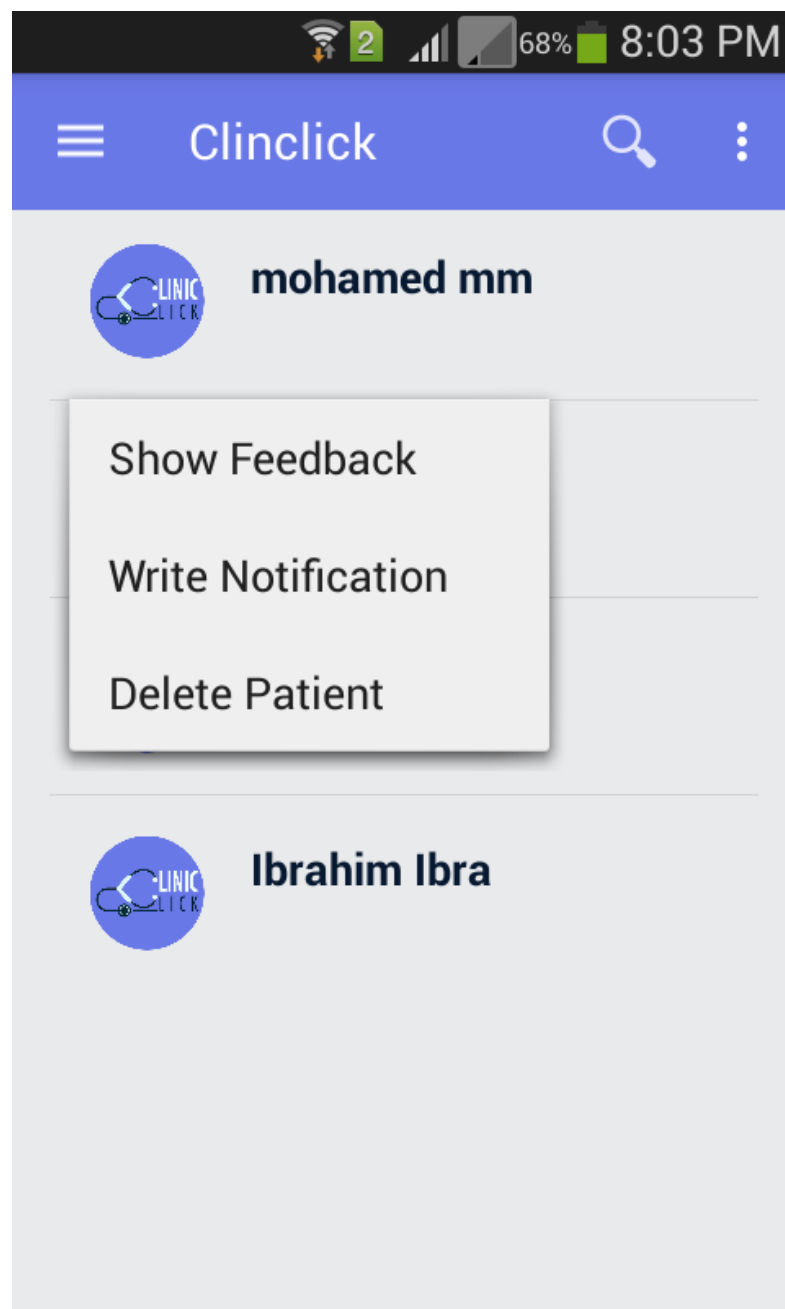
**Help screen**

- Here you can report any problem you face, write any comment or you can also rate the application.
- Then you return back to home screen.



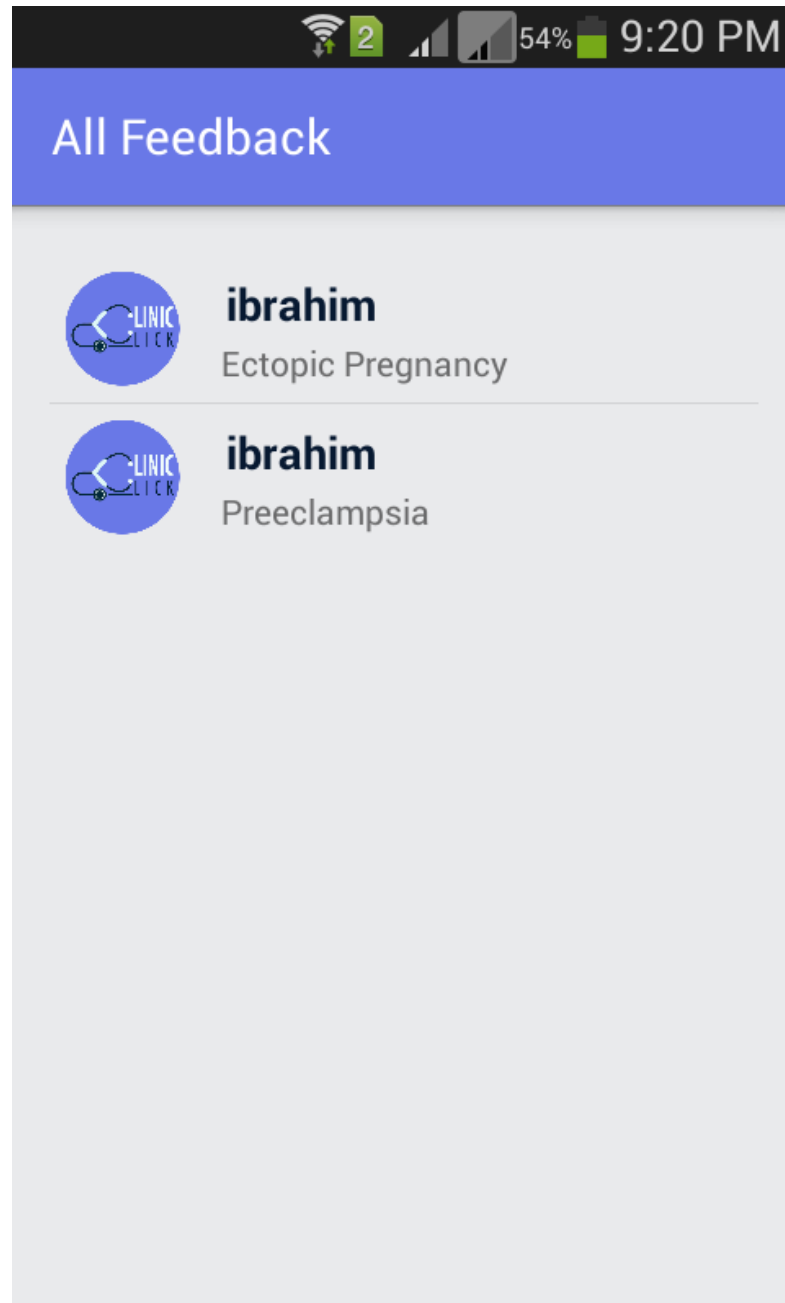
**Add patient**

- In this screen doctor can add his patients.




### Patients

- From the home screen doctor can view his patient list.
- Show feedback, write notification, or delete patient.



**Feedback list**

Feedback



**Patient Name :** ibrahim

**Disease :** Preeclampsia

**Feedback :** servers headache  
Pain at the top of abdomen  
Nausea, vomiting and  
vertigo  
Swelling of the legs, face  
and hands

**Patient feedback**

Notification

Required rays : Computed.. ▾

Required Analyzes : Compl.. ▾

Medicine	Timing	
<u>Medicine</u>	<u>Timing</u>	✖

Add Medicine

Required Foods

Prohibited

Write notification

Required Analyzes : Compl.. ▾

Medicine	Timing	
<u>Medicine</u>	<u>Timing</u>	✖

Add Medicine

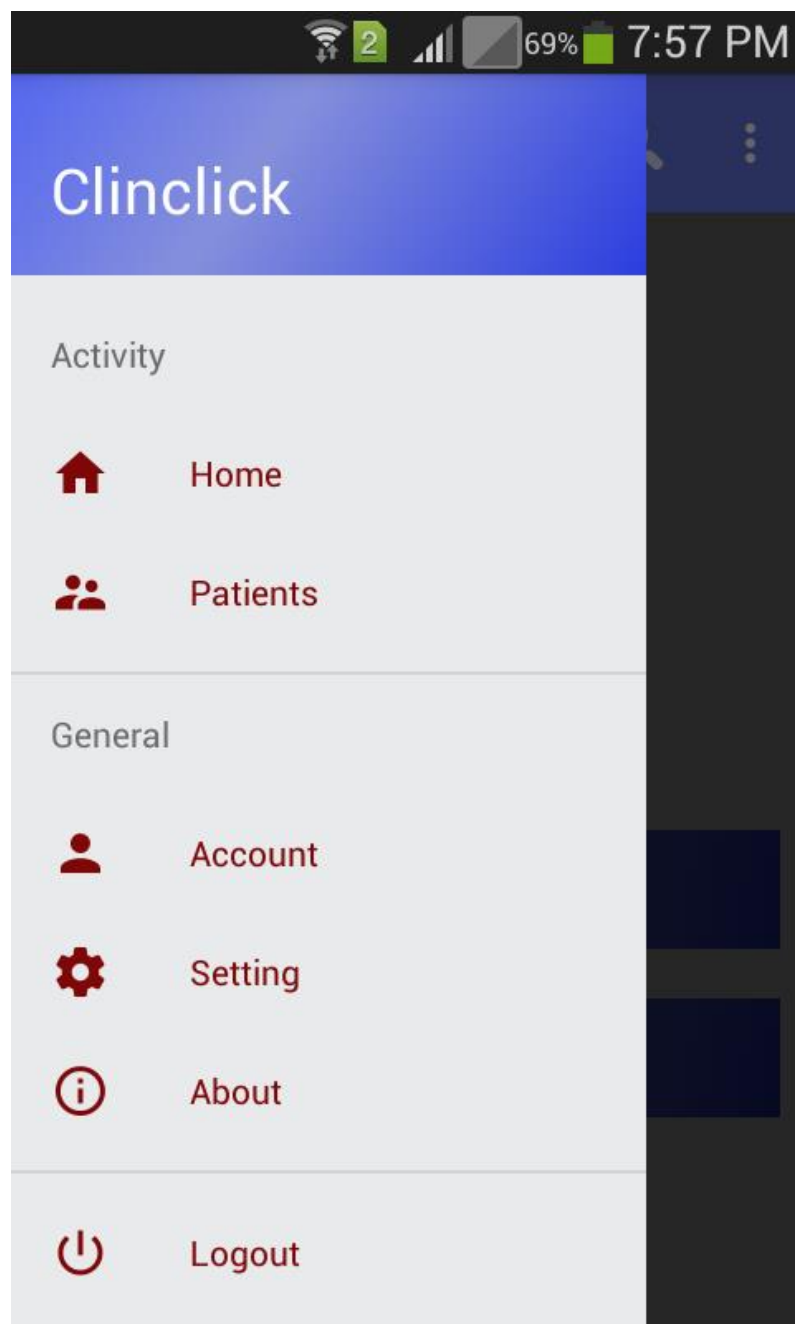
Required Foods

Prohibited

Add Extra Message

Cancel Send

- Doctor can send notifications to patients throw this screen.
- Describe medicine, required food, and the time of medicine, etc.




**Navigation list**

- In navigation list doctor can find quick access on pages.
- Home button return to home screen, patients goes to patients list.
- The next page will show screen from account button.



Account



Name : Ibrahim Ibra

User Name : ibrahim

Phone Number :

Email : ibrahim@gmail.com

Date of birth :

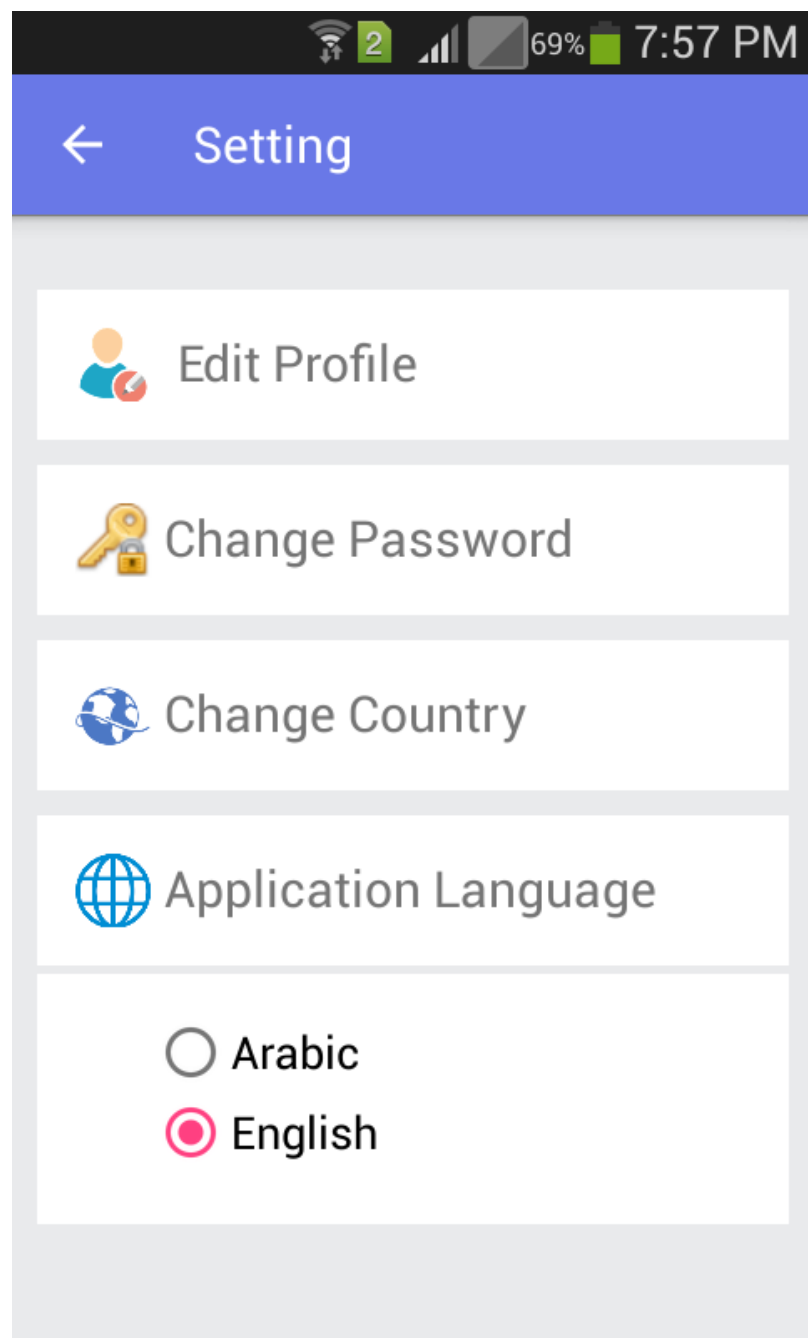
Current City :

Work :

Education :

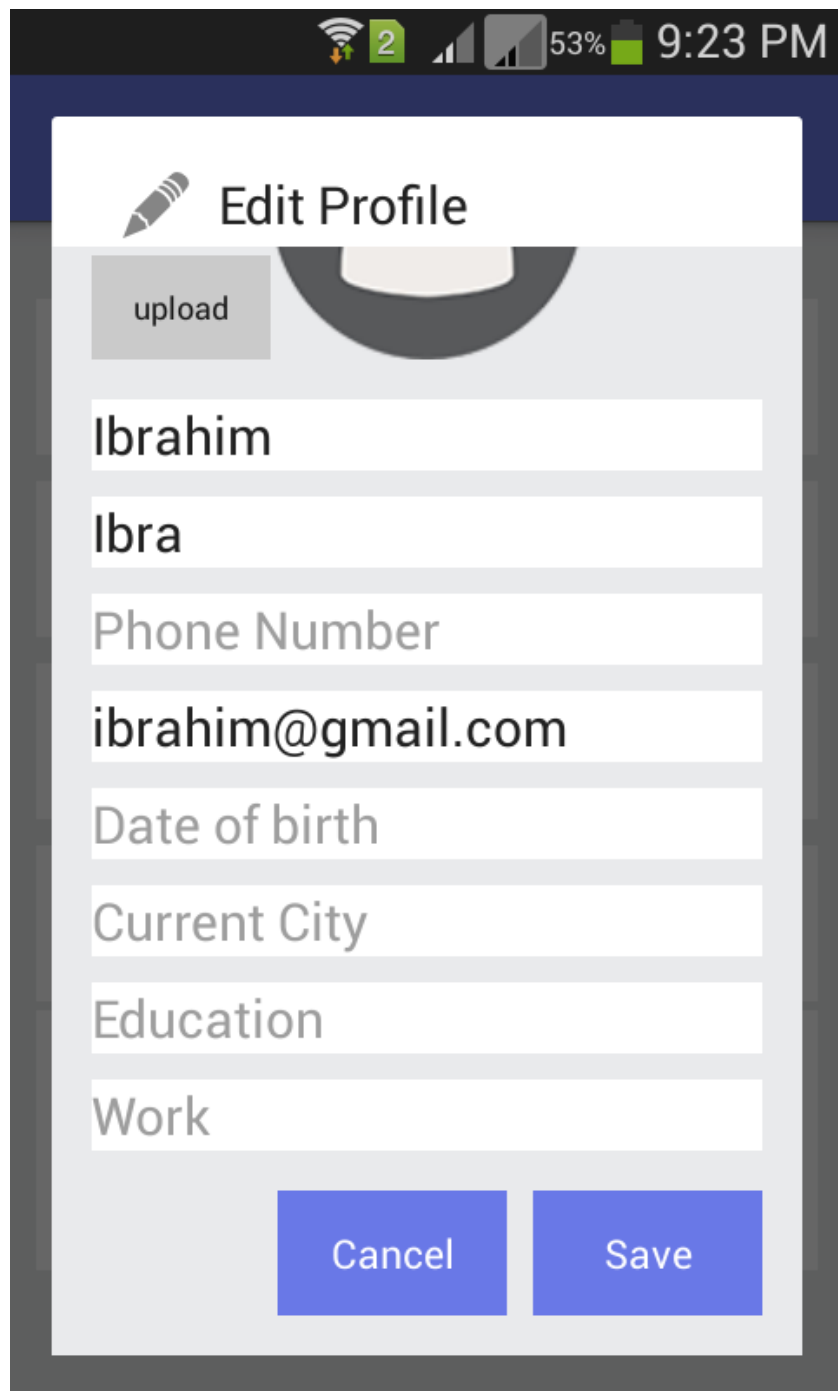
Account screen

- In account screen there are doctor profile info.
- Doctor can edit his profile from settings button in the next page.



Setting screen

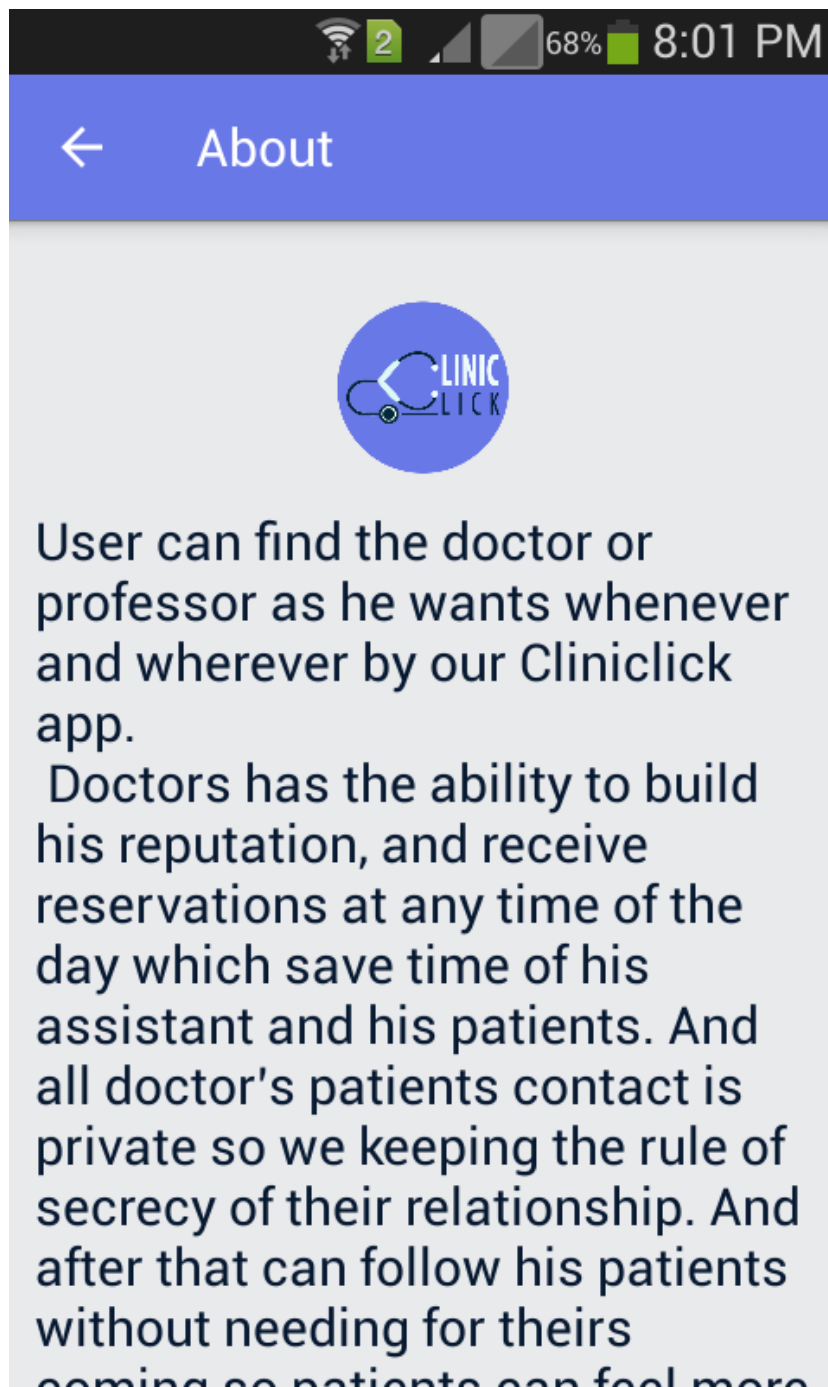
- In this screen the settings of the application
- Change app. Language, account password, country and edit profile



The image shows a mobile application interface for editing a profile. At the top, there is a status bar with icons for Wi-Fi, cellular signal, battery level (53%), and the time (9:23 PM). Below the status bar is a dark blue header with a pencil icon and the text "Edit Profile". The main content area is a light gray box with a white border. It contains a profile picture placeholder (a gray circle) with an "upload" button to its left. Below the profile picture are several text input fields: "Ibrahim", "Ibra", "Phone Number", "ibrahim@gmail.com", "Date of birth", "Current City", "Education", and "Work". At the bottom of the form are two blue buttons labeled "Cancel" and "Save".

**Edit profile screen**

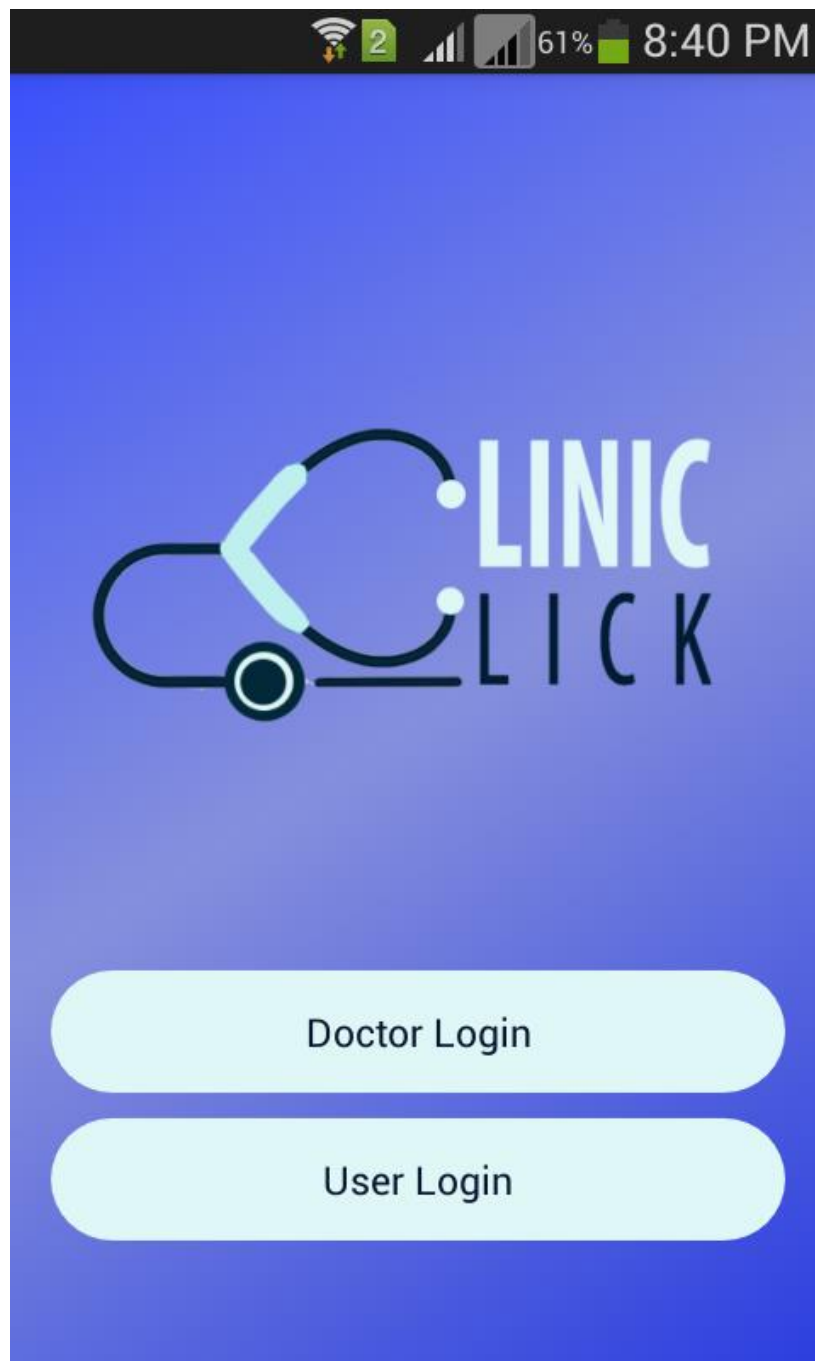
- Here doctor can edit his profile info then click save button.



**About screen**

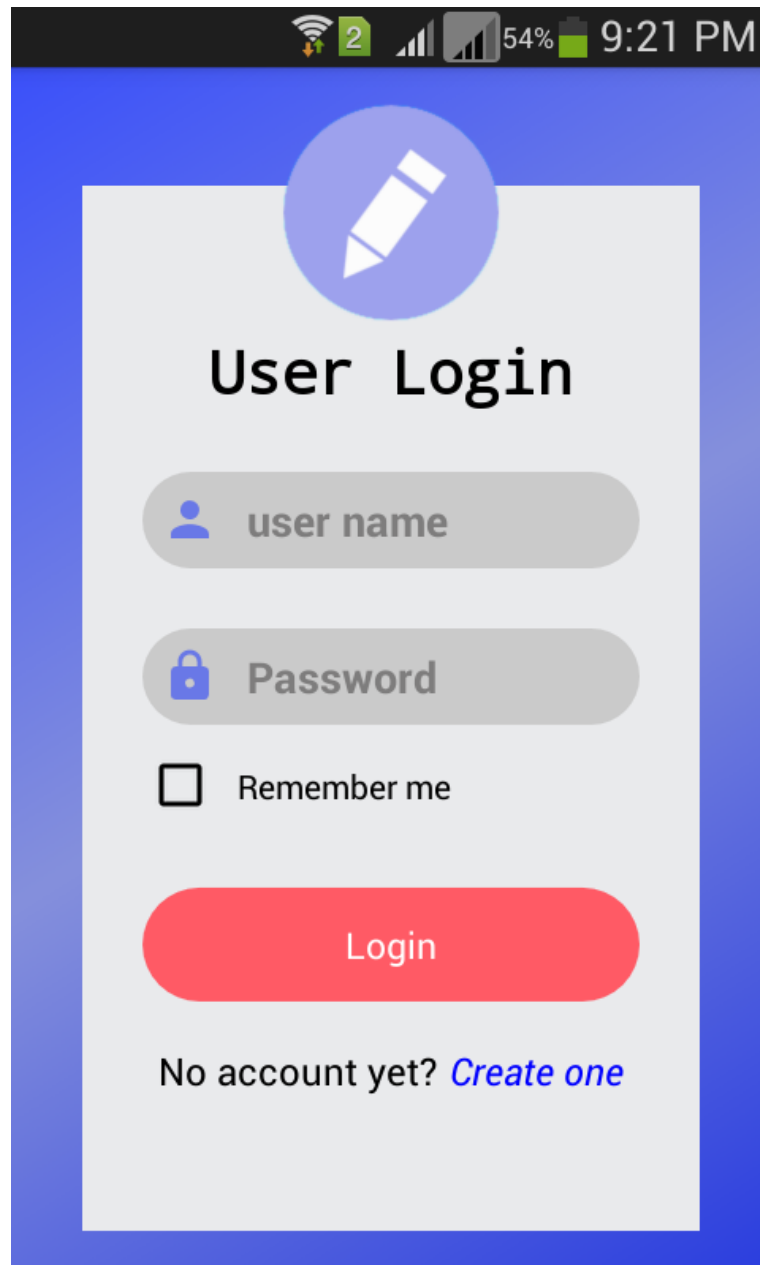
- From navigation list there is about button turn the doctor to about screen where he/ she can find information about the application.

## USER INTERFACE



**Primal login screen**


- The user selects user login to login as a user.




User login screen


- The user enters here his profile user name and password
- If the user does not have an account he will click on create account to create one


54% 9:21 PM





## Register

 First Name

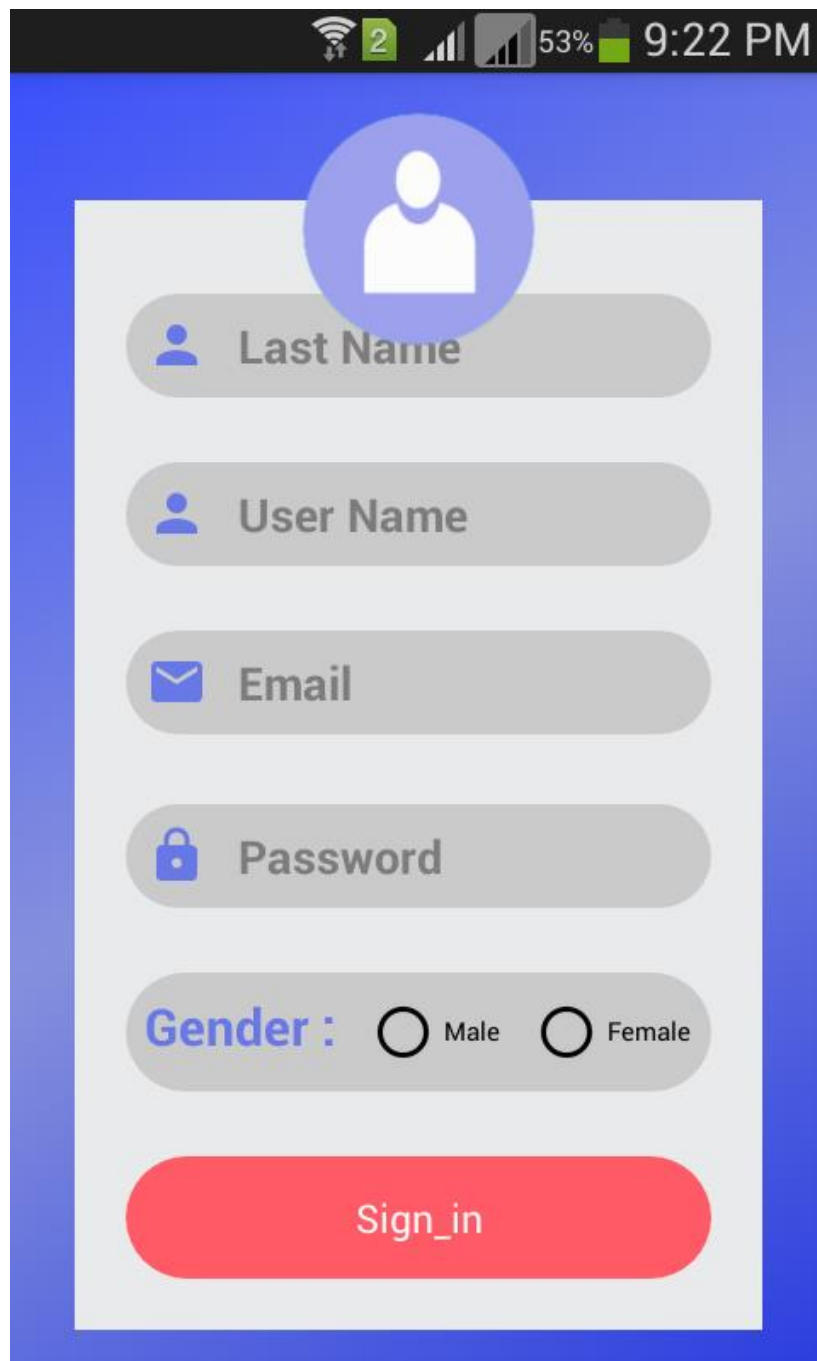
 Last Name

 User Name

 Email

 Password

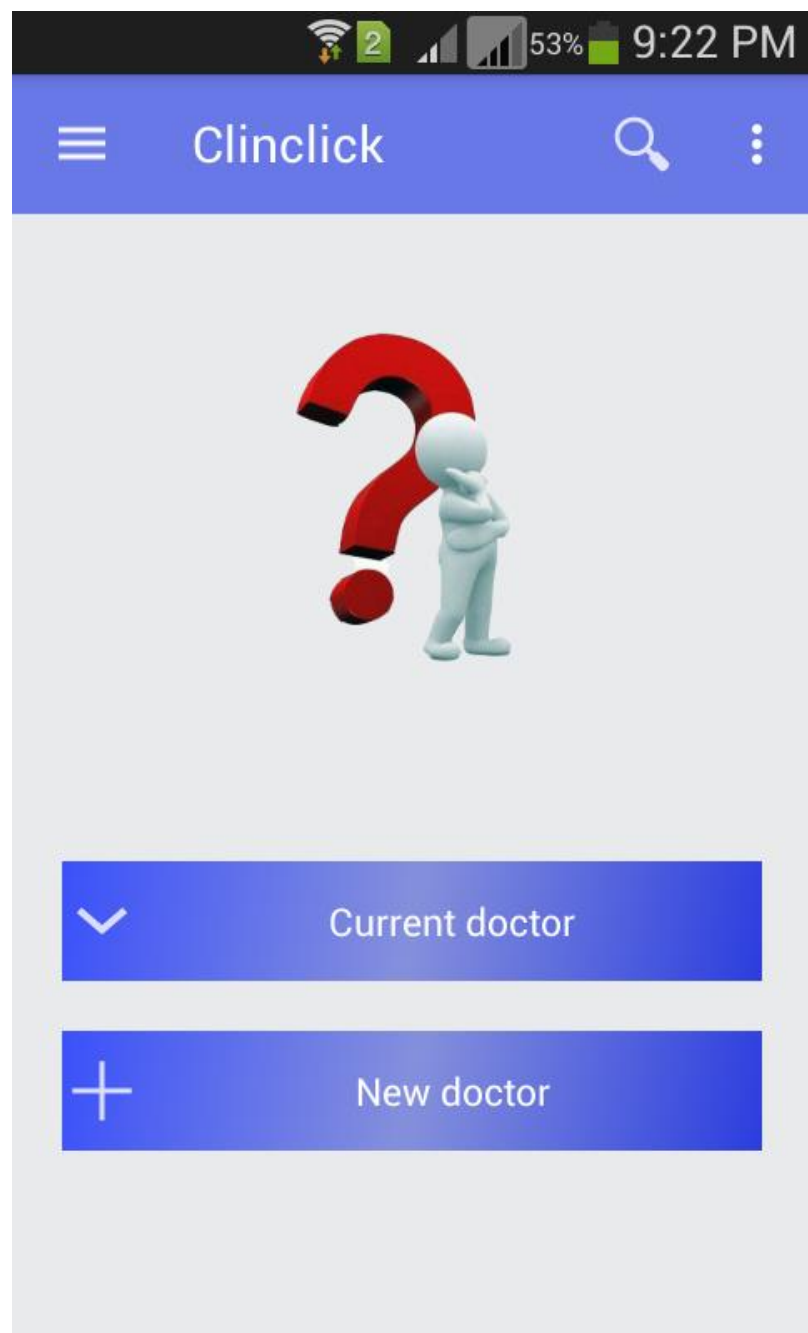
Create account screen

A mobile application sign-in screen with a blue gradient background. At the top, a status bar shows a Wi-Fi icon, a green square with the number '2', cellular signal bars, a battery icon at 53%, and the time '9:22 PM'. Below the status bar is a white circular profile icon placeholder. The main form area is a light gray rounded rectangle containing five input fields, each with a blue icon on the left: 'Last Name' (person icon), 'User Name' (person icon), 'Email' (envelope icon), 'Password' (lock icon), and 'Gender' (text label followed by two radio buttons labeled 'Male' and 'Female'). At the bottom of the form is a large red rounded button with the text 'Sign\_in' in white.

### Sign in

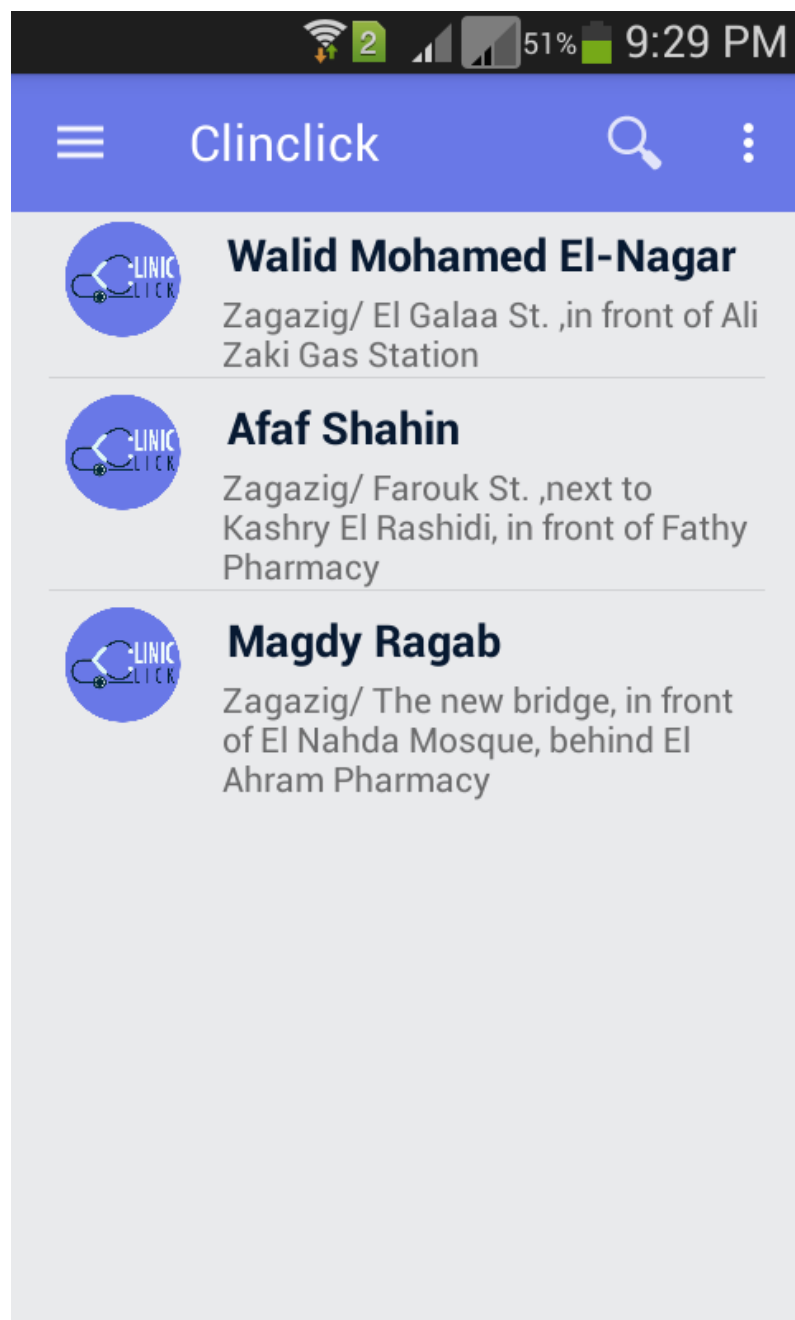
- After the user create new account he/she return to login with the account he/ she created.
- Then turn to home screen.



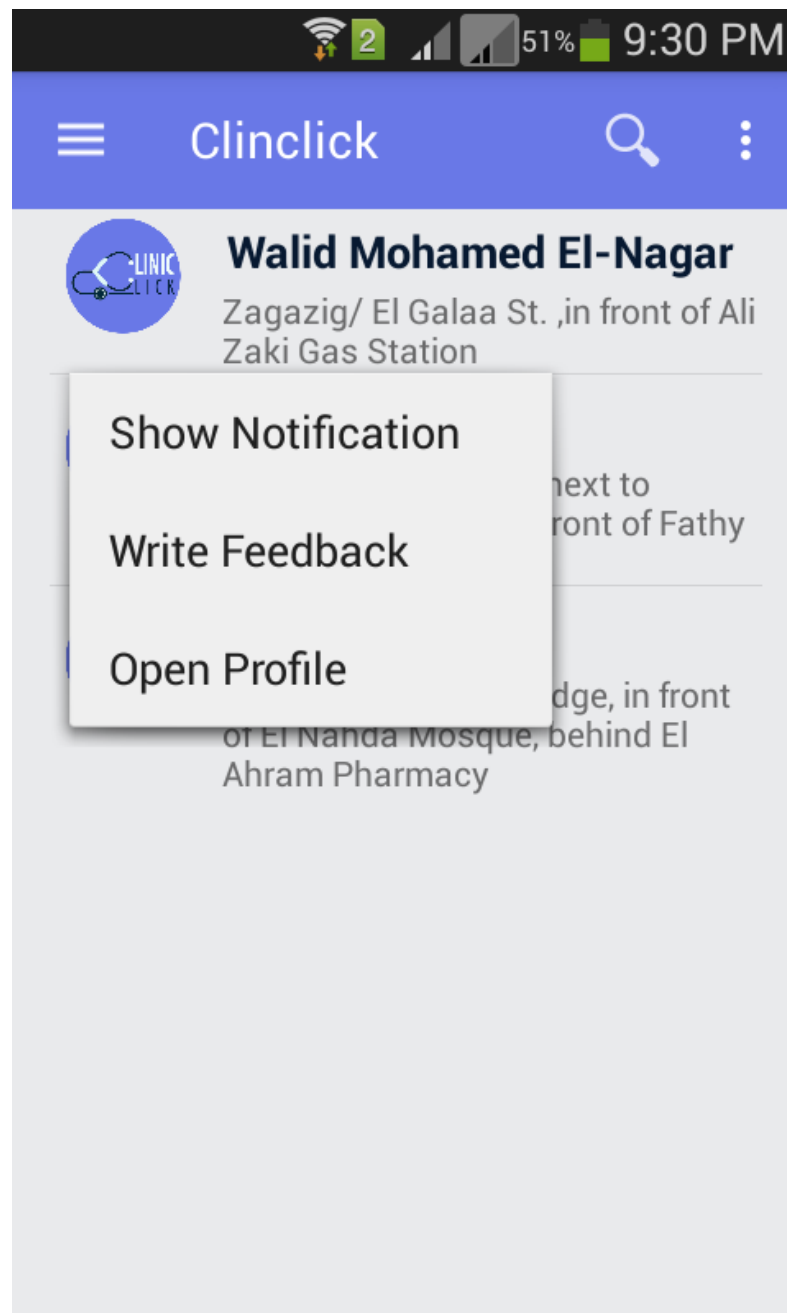


Home screen

- User can see the current doctors he/she visited.

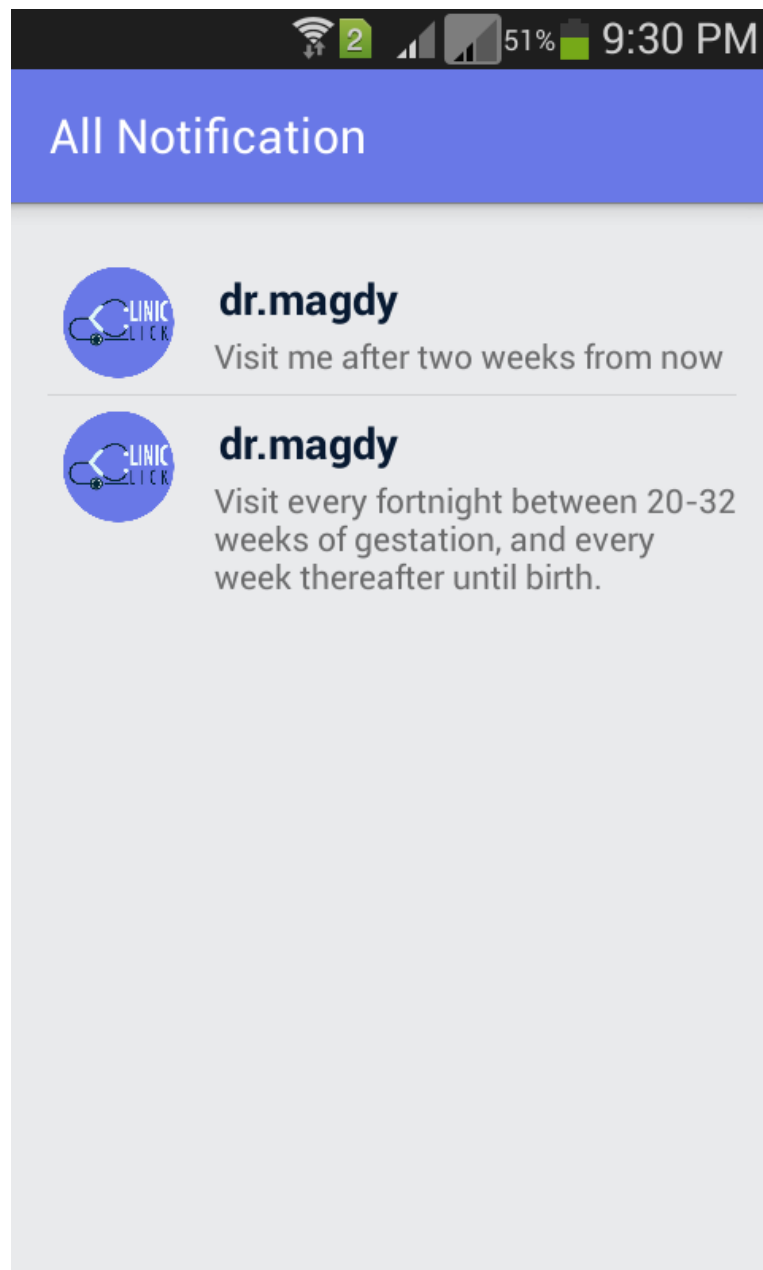


**Current doctors list**



#### Current Doctors list

- From the home screen the user can view his doctors list.
- Show notifications, write feedback, or open doctor profile.



#### Notification list

- In this screen there is a list of notifications from different doctors.



#### Notification content


- By clicking on any notification, it will open the notification content.

The image shows a mobile application interface with a dark blue header bar. The header contains a menu icon, the text 'Clinclick', a search icon, and a three-dot menu icon. Below the header, a profile card for 'Walid Mohamed El-Nagar' is partially visible. A white modal box titled 'Feedback' in red text is centered on the screen. Inside the modal, there is a text input field with the placeholder text 'Disease' and a larger text area with the placeholder text 'Write Feedback'. At the bottom of the modal, there are two blue buttons labeled 'Cancel' and 'Send'.

**Write feedback**

- The patient write feedback to the doctor here.

Doctor Information



doctor name : Walid Mohamed El-Nagar

Speciality : Women and obstetrics

doctor Grade : professor

Address : Zagazig/ El Galaa St. ,in front of Ali Zaki Gas Station

doctor Dates : Tuesday - 8 pm

Doctor info


Doctor Information

Speciality : Women and obstetrics

doctor Grade : professor

Address : Zagazig/ El Galaa St. ,in front of Ali Zaki Gas Station

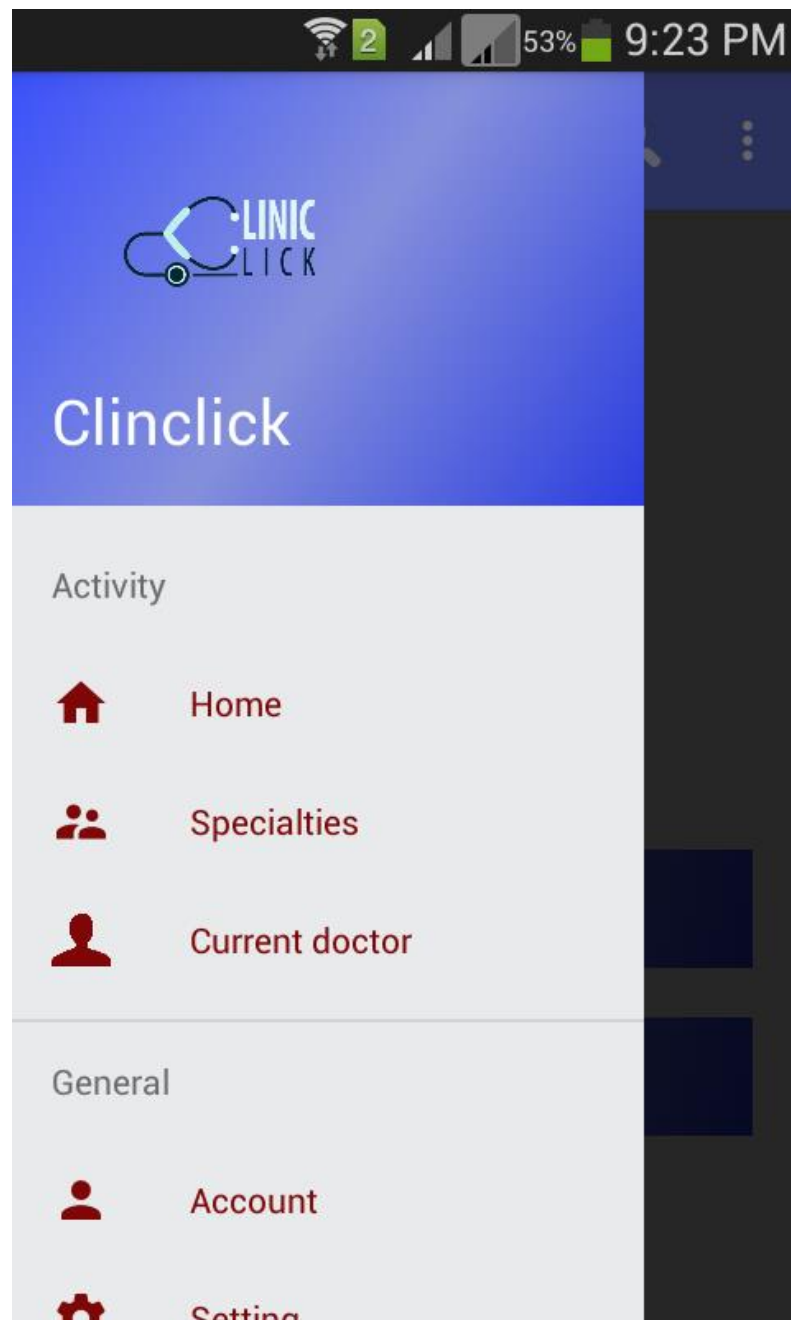
doctor Dates : Tuesday - 8 pm

Phone : 01225602250 

Get Direction

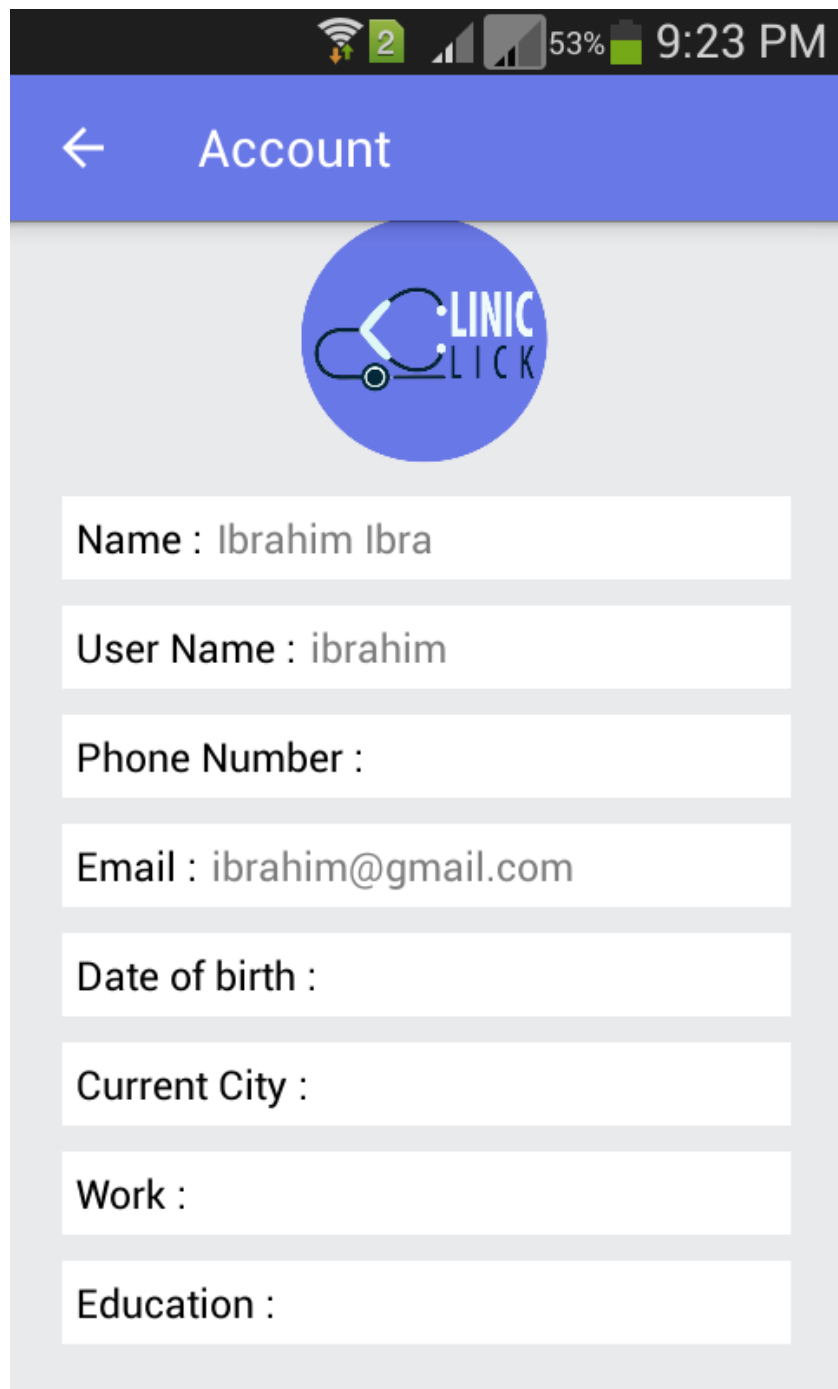
- Patient can decide to visit the doctor and get his/her direction.





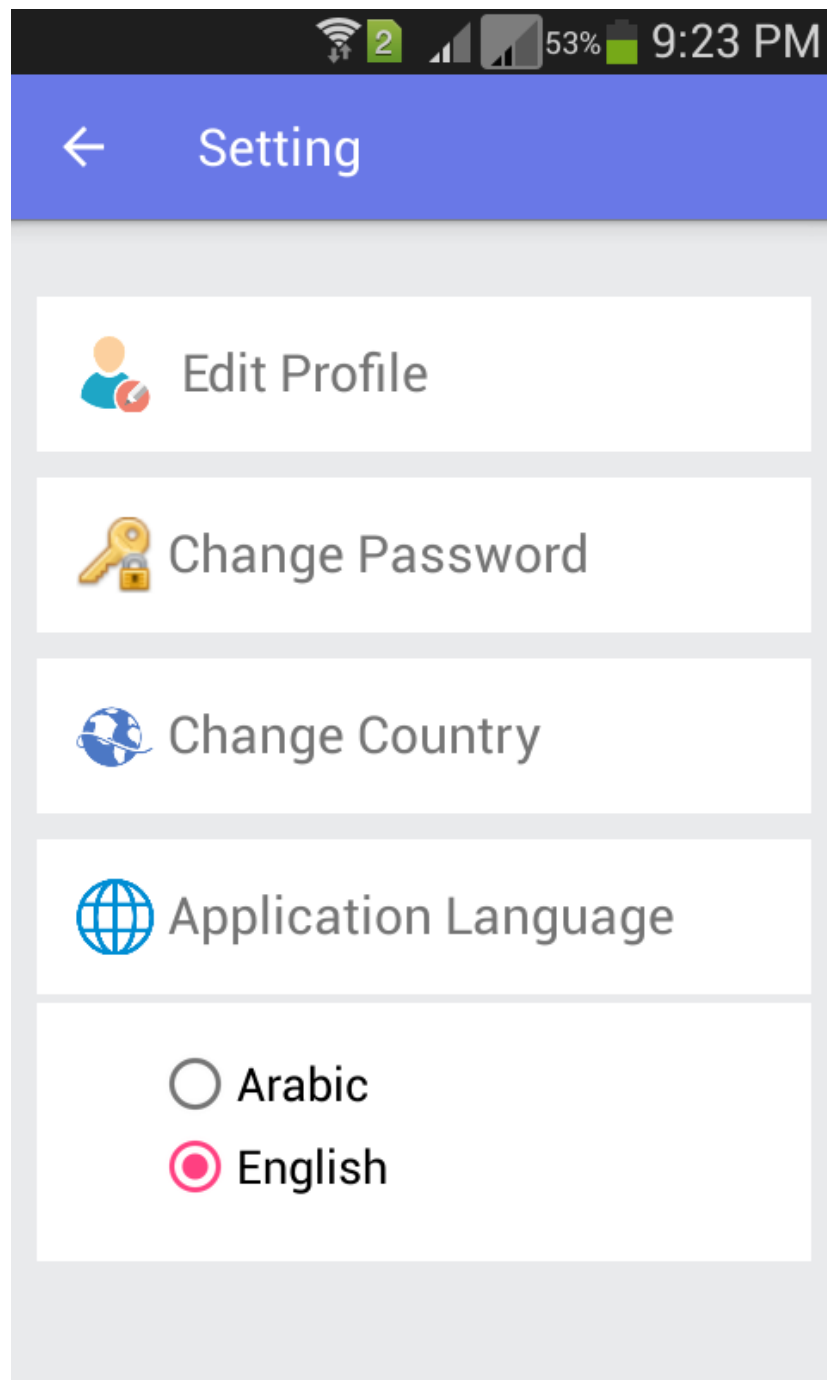
#### Navigation list

- In navigation list user can find quick access on pages.
- Home button return to home screen, current doctor goes to current doctors list.
- The next page will show screen from specialties.



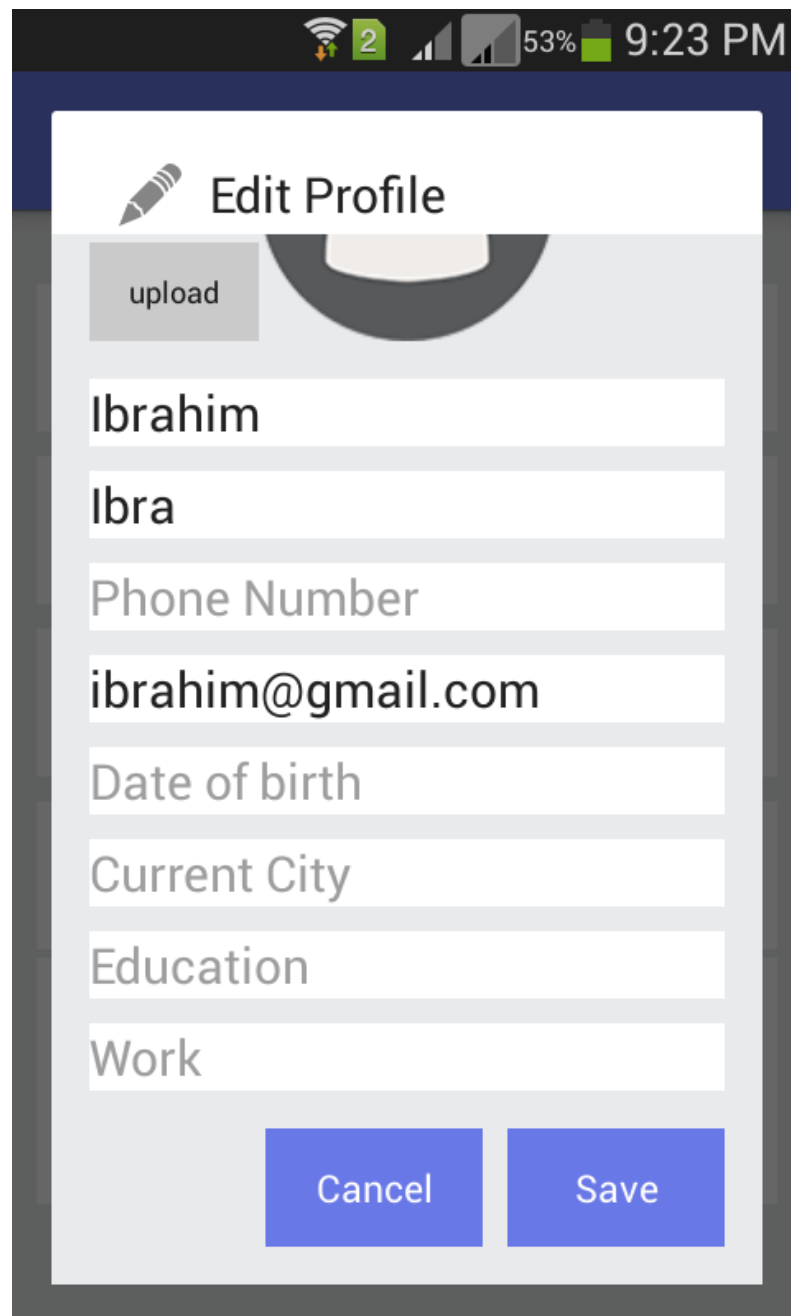
**Account screen**

- From navigation list, user can view him/her account.
- See profile info and edit from settings button shown in the next page.



**Setting screen**

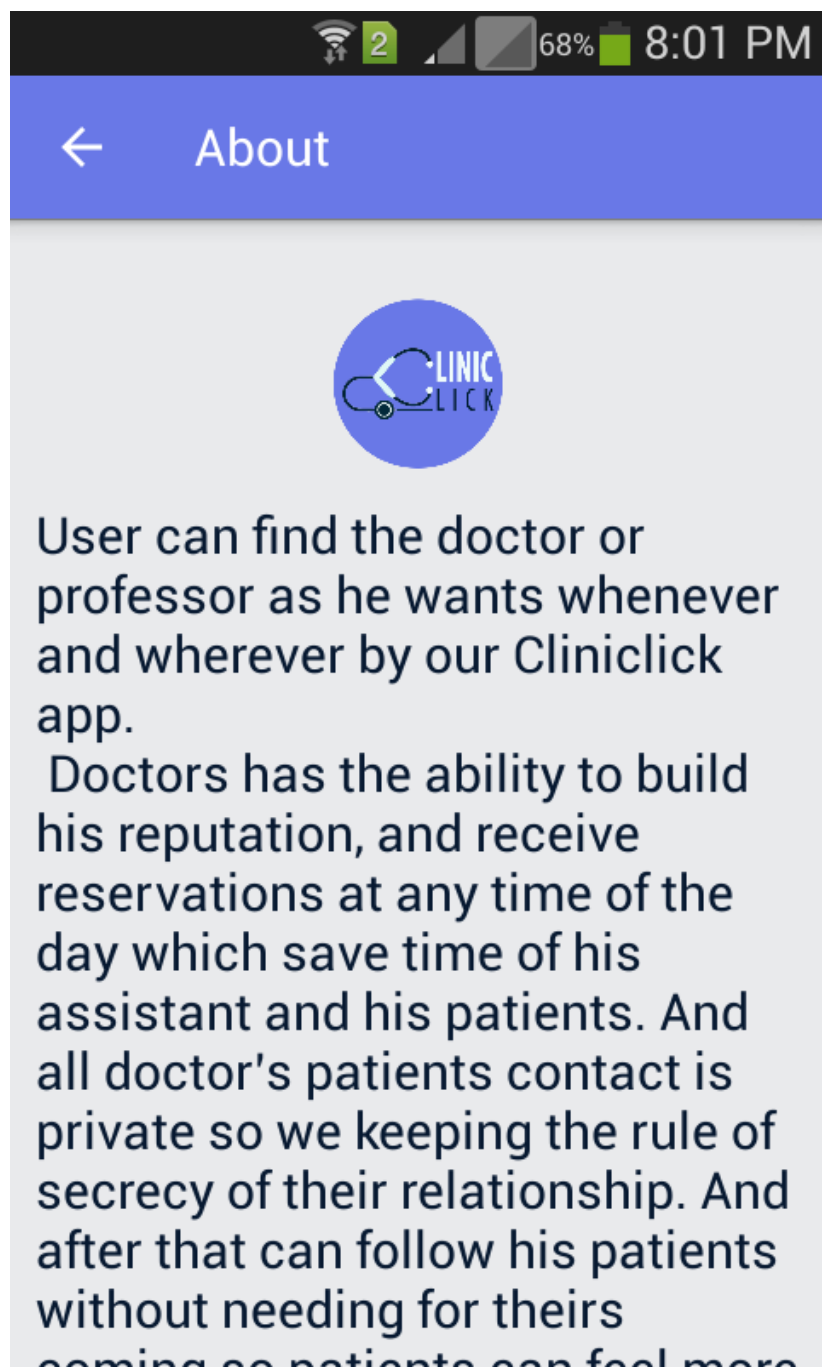
- In this screen the settings of the application
- Change app. Language, account password, country and edit profile



The image shows a mobile application screen titled "Edit Profile". At the top, there is a status bar with icons for Wi-Fi, cellular signal, battery level at 53%, and the time 9:23 PM. Below the title, there is a profile picture placeholder with an "upload" button. The form contains several text input fields: "Ibrahim", "Ibra", "Phone Number", "ibrahim@gmail.com", "Date of birth", "Current City", "Education", and "Work". At the bottom, there are two blue buttons labeled "Cancel" and "Save".

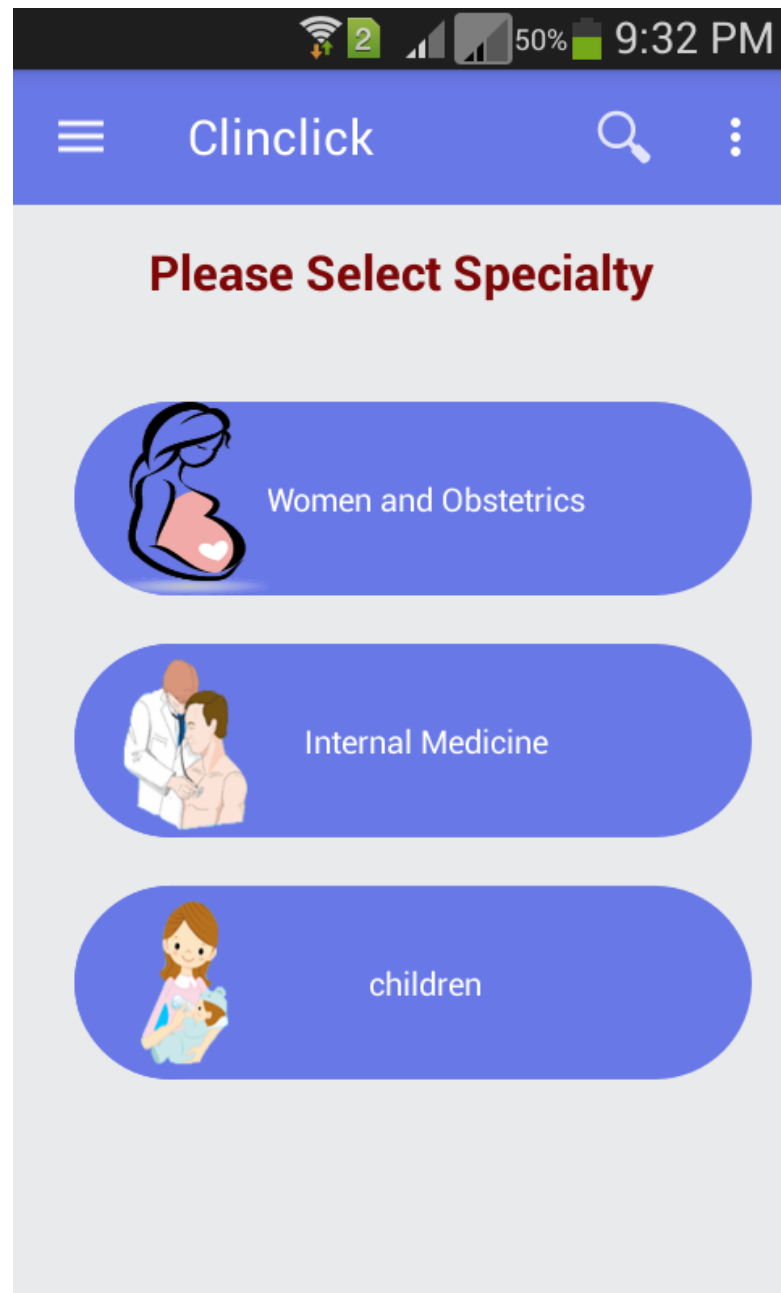
**Edit profile screen**

- Here user can edit his profile info then click save button.



**About screen**

- From navigation list there is about button turn the user to about screen where he/ she can find information about the application.



### Specialties

- This screen shows different specialties of doctors.
- Patient can select a specialty to find the doctor he/she wants.

2 50% 9:32 PM

≡ Clinclick 🔍 ⋮

**Select suitable doctor**

Doctor Grade : ☐ doctor ☒ professor

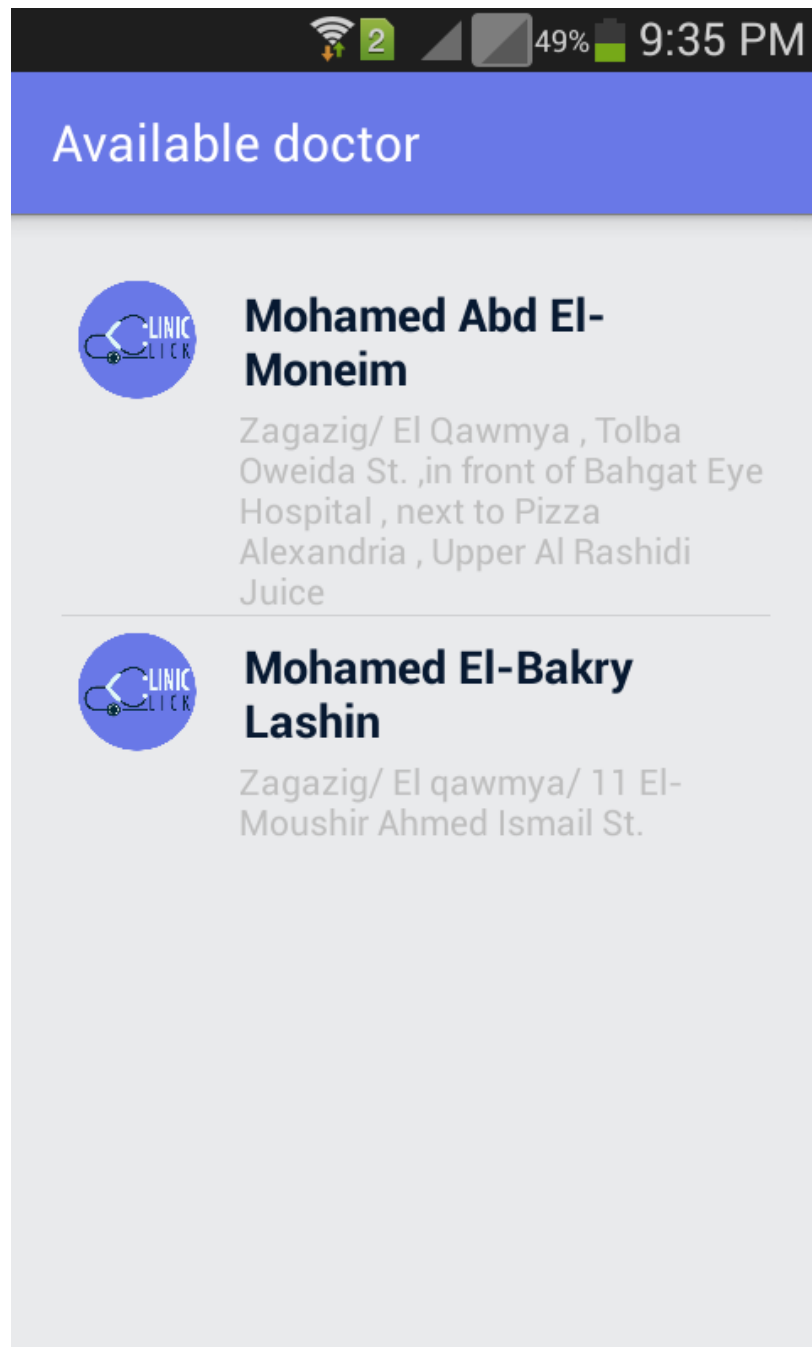
select Day : Saturday ▼

select Time : 2 ▼ ☐ am ☒ pm

Find doctor

#### Suitable doctor

- After selecting the Specialty, then select the suitable doctor throw doctor grade, the day of work, and the time that the doctor is available on.
- Then click on find doctor, as the app will search about doctors with selected specifications.



**Available doctors list**

- This screen shows the available doctors list result from user search.



## Chapter 5

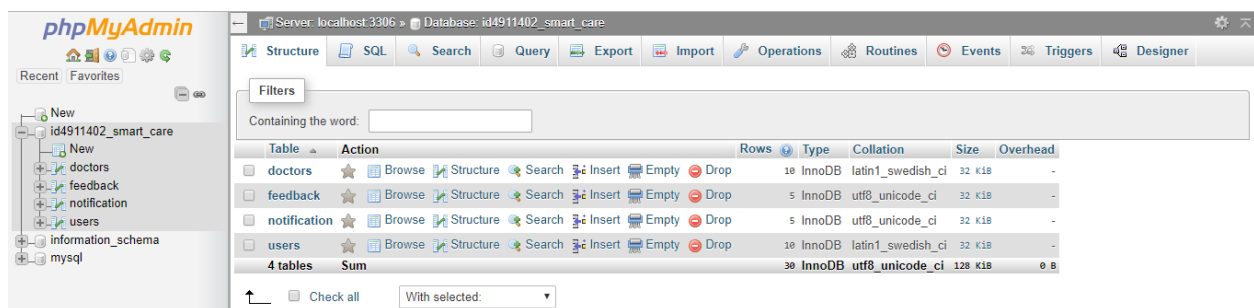
# Implementation

## Background

In this chapter we produce our project implementation based on our work on the previous phases. We starting here with data and its creation and then designing our interfaces for android. In the end of this chapter we mention some important samples of code which we used in our application programming.

### 5.1 | Data Implementation

In project design phase we created ER diagram to represent our project's data here in this part we implement our design and created our database by using Cloud and MySQL relational database management system by php.



Database and Tables

doctor_id	doctor_name	doctor_user_name	doctor_email	doctor_password	doctor_gender	doctor_grade	doc_address
5	Magdy Ragab	dr.magdy	magdyragab@gmail.com	123456	male	professor	Zagazig/ The new bridge, in front of El Nahdia Mosq...
6	Walid Mohamed El-Nagar	dr.walid	walidmhamed@gmail.com	123456	male	professor	Zagazig/ El Galaa St. ,in front of Ali Zaki Gas St...
7	Afaf Shahin	dr.afaf	afafshahin@gmail.com	123456	female	doctor	Zagazig/ Farouk St. ,next to Kashry El Rashidi, in...
8	Abd El-Karim Mamdouh	dr.abdelkarim	abdelkarimmamdouh@gmail.com	123456	male	doctor	Zagazig/ Farouk St.
9	Walid Atman	dr.3tman	walidatman@gmail.com	123456	male	doctor	Zagazig/ El Zohour District, Next to Ibn Katheer L...
10	Mohamed Abd El-Moneim	dr.abdelmoneim	mohamedabdelmoneim@gmail.com	123456	male	doctor	Zagazig/ El Qawmya . Tolba Oweida St. ,in front of...
11	Mohamed Mostafa Zaitoun	dr.zaitoun	mohamedzaitoun@gmail.com	123456	male	doctor	Zagazig/ 5 Al-Galaa Street , the first floor

Doctor Table

doctor_unique_code	doc_phone	doc_birth	doc_city	doc_education	doc_work	latitude	longitude	day	time	timing	speciality
5	0552322780	NULL	NULL	PhD in Obstetrics and Gynecology and infertility	Professor of Obstetrics and Gynecology and Inferti...	30.5804	31.519	Wednesday	9	pm	Women and obstetrics
6	01225602250	NULL	NULL	PhD in obstetrics, gynecology and infertility	Lecturer at Zagazig Faculty of Medicine	30.5804	31.519	Tuesday	8	pm	Women and obstetrics
7	01222885983	NULL	NULL	PhD in obstetrics, gynecology and infertility	Consultant of Obstetrics & Gynecology Zagazig Univ...	30.5809	31.5079	Thursday	8	pm	Women and obstetrics
8	0115 414 2164	NULL	NULL	Master of Gynecology and Obstetrics	Obstetrics and Gynecology Specialist	30.5796	31.5108	Monday	5		Women and obstetrics
9	01204030169			Master of Gynecology and Obstetrics	Lecturer and Consultant of Obstetrics and Gynecolo...	30.5844	31.4908	Sunday	2	pm	Women and obstetrics
10	01022595448	NULL	NULL	PhD in obstetrics, gynecology and infertility	Consultant Obstetrics & Gynecology & Infertility F...	30.589	31.4942	Saturday	12	pm	Women and obstetrics
11	0552353566	NULL	NULL	Master of Obstetrics and Gynecology	Doctor of Obstetrics and Gynecology specializing i	30.5864	31.5065	Wednesday	2	pm	Women and obstetrics

Doctor Table

doc_token	active	image
eO4LqfFWXno:APA91bHYNdFu3at5fZapQnLNOoTH8ypQZonSng...	yes	
eO4LqfFWXno:APA91bHYNdFu3at5fZapQnLNOoTH8ypQZonSng...	no	
eO4LqfFWXno:APA91bHYNdFu3at5fZapQnLNOoTH8ypQZonSng...	no	
0	no	
d6iVmX5kYPQ:APA91bEvKz0mkQZAh9be6o8NQ5DSIK11Hcmcf...	yes	https://smartcareapp.000webhostapp.com/ImageUpload...
0	no	
0	no	

Doctor Table

user_id	user_fname	user_lname	user_name	user_password	user_email	user_gender	doctor_unique_code	user_phone	user_birth
1	mohamed	mo	mohamed	123456789	mohamed@gmail.com	Male	5	NULL	NULL
5	ahmed	ah	ahmed	123456789	ah@gmail.com	Male	5	NULL	NULL
9	ibrahim	ibra	ibrahim	123456789	ibrahim@gmail.com	Male	6		
11	heba	khater	heba	123456789	heba@khater.com	Female	5		
17	heba	khater	heba	123456789	heba@khater.com	Female	6		
18	ahmed	mohammed	ahmed	123456789	ahmedbaz@gmail.com	Male	7	NULL	NULL
29	ibrahim	ibra	ibrahim	123456789	ibrahim@gmail.com	Male	7		
30	mohamed	mm	mohamed	123456789	mohamed@gmail.com	Male	6		
32	heba	khater	heba	123456789	heba@khater.com	Female	7		
41	ibrahim	ibra	ibrahim	123456789	ibrahim@gmail.com	Male	5		

User Table

user_city	user_education	user_work	user_token	active	image
NULL	NULL	NULL	eO4LqfFWXno:APA91bHYNdFu3at5fZapQnLNOoTH8ypQZonSng...	no	
NULL	NULL	NULL	0	0	
			eO4LqfFWXno:APA91bHYNdFu3at5fZapQnLNOoTH8ypQZonSng...	no	
			f-bmstzhCso:APA91bHZ_TA95nKoaE3fZQNhV-YdWxpqdttdR1F...	no	
			f-bmstzhCso:APA91bHZ_TA95nKoaE3fZQNhV-YdWxpqdttdR1F...	no	
NULL	NULL	NULL	f-bmstzhCso:APA91bHZ_TA95nKoaE3fZQNhV-YdWxpqdttdR1F...	no	
			eO4LqfFWXno:APA91bHYNdFu3at5fZapQnLNOoTH8ypQZonSng...	no	
			eO4LqfFWXno:APA91bHYNdFu3at5fZapQnLNOoTH8ypQZonSng...	no	
			f-bmstzhCso:APA91bHZ_TA95nKoaE3fZQNhV-YdWxpqdttdR1F...	no	
			eO4LqfFWXno:APA91bHYNdFu3at5fZapQnLNOoTH8ypQZonSng...	no	

**User Table**

id	title	diseas	feedback_msg	doc_name	active
47	ibrahim	Preeclampsia	servers headache Pain at the top of abdomen Na...	Magdy Ragab	yes
48	ibrahim	Ectopic Pregnancy	Pain in one of the lower parts of the abdomen Wea...	Magdy Ragab	yes
50	ibrahim	Rubella	Low body temperature Puffiness in the glands	Afaf Shahin	yes
51	mohamed	Preeclampsia	Severe headache Pain at the top of the abdomen ...	Walid Mohamed El-Nagar	yes
52	mohamed	Ectopic pregnancy	Pain in one of the lower parts of the abdomen Wea...	Walid Mohamed El-Nagar	yes

**Feedback Table**

id	title	message	rays	analysis	user_name	medicine	timing	foods	prohibited	active
4	dr.magdy	Visit every fortnight between 20-32 weeks of gesta...	Sonar	Complete Blood Count (CBC)	ibrahim	corticosteroids	2		movement	yes
5	dr.walid	Visit every fortnight between 20-32 weeks of gesta...	Sonar	Complete Blood Count (CBC)	mohamed	corticosteroids	2		movement	yes
6	dr.magdy	Visit me after two weeks from now	Ultrasound Rays	Complete Blood Count (CBC)	ibrahim	Methotrexate	1		movement	yes
7	dr.walid	Visit me after two weeks from now	Ultrasound Rays	Complete Blood Count (CBC)	mohamed	Methotrexate	1		movement	yes
30	dr.afaf	Visit me after 3 days and bring with you the rays ...	Sonar	Complete Blood Count (CBC)	ibrahim	IG – Immunoglobulin	1		Mixing with others	yes

**Notification Table**

## 5.2 | Interface Implementation

In prototyping phase, we created initial visualization for our interface design, now we are going to make it a real design ready to code after that.

### Android interface

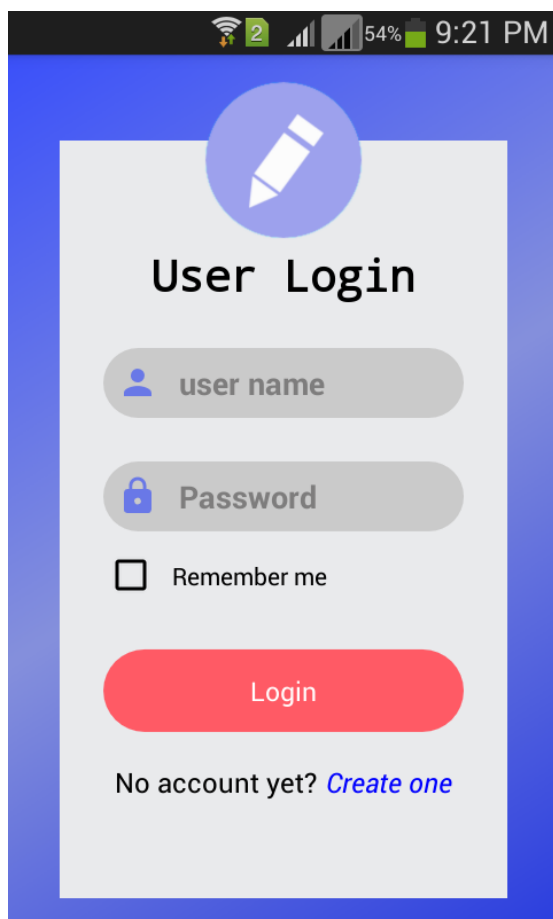
Android introducing built in default designs views which we use some of them and customize others for our project

### Theming

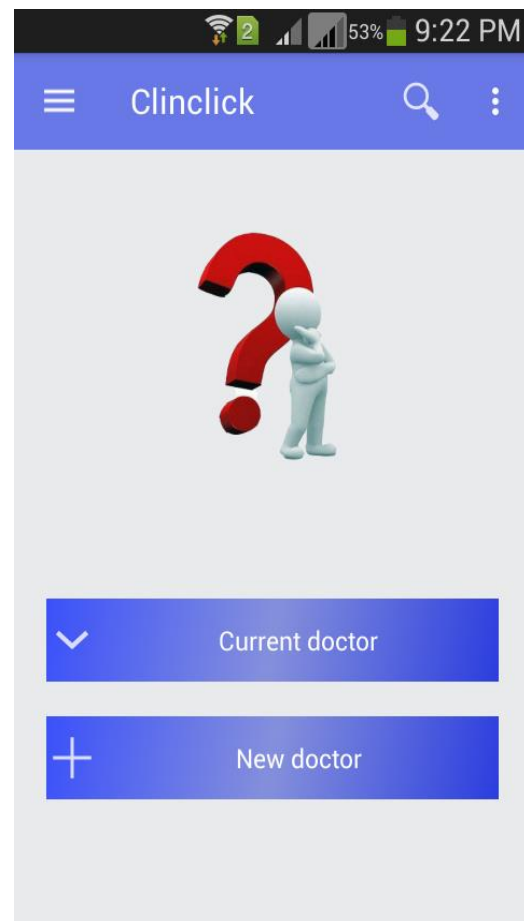
Using Android Action Bar Style Generator from Android Assets Studio we creating our project theme

### Designing layouts

Using the Theme which we created for our app we starting to designs the layout of our project.



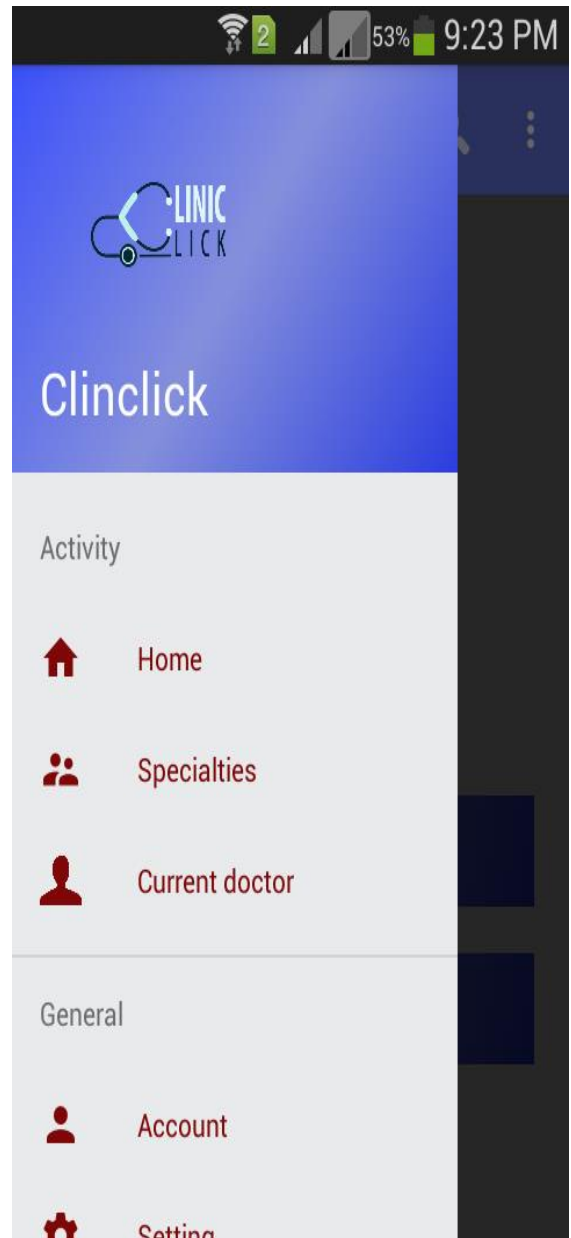
Login screen



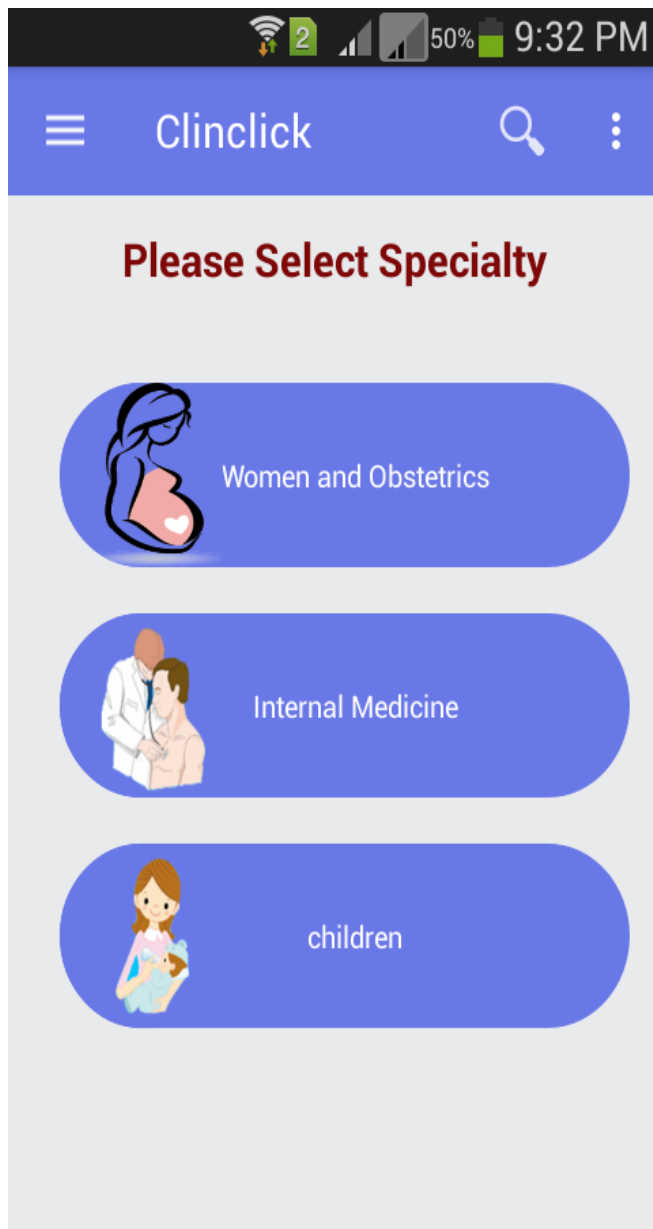
User home page



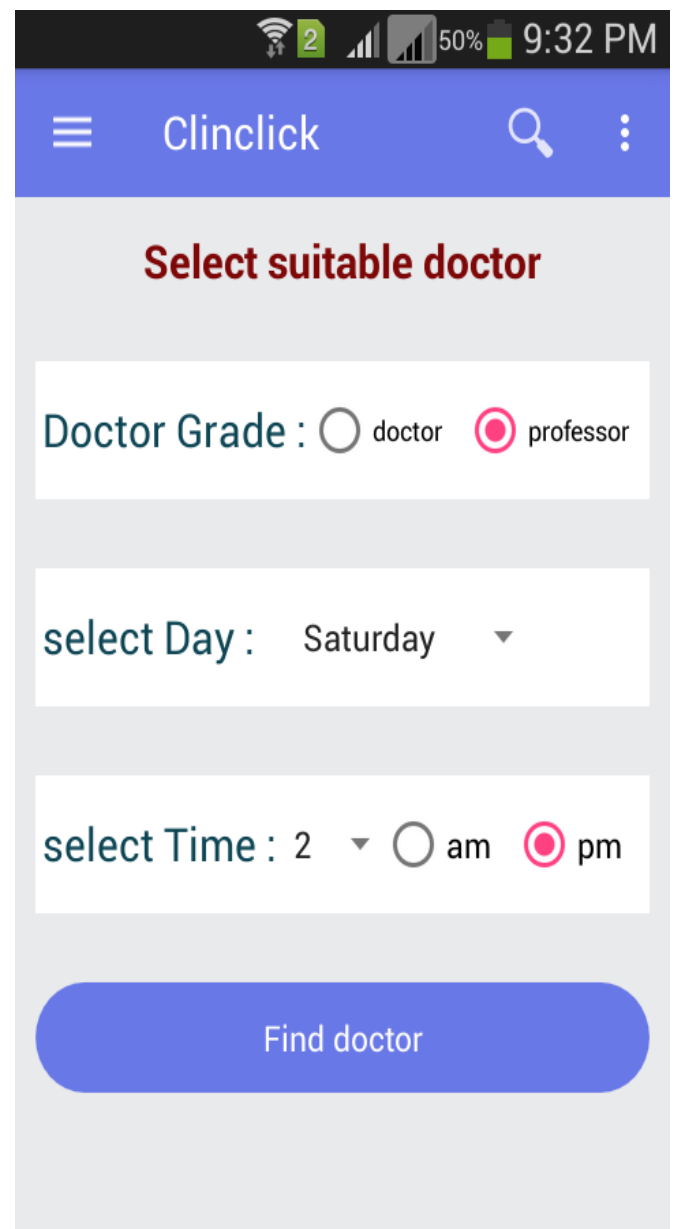
**Current doctors**



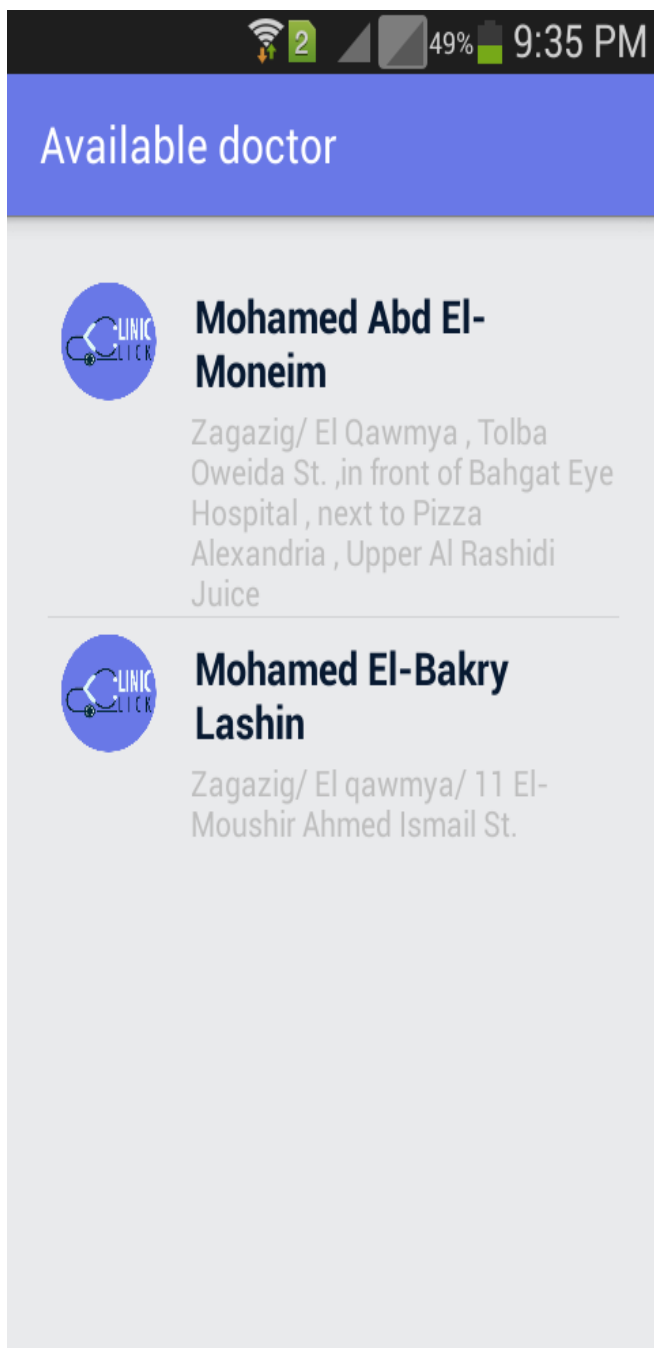
**Navigation list**



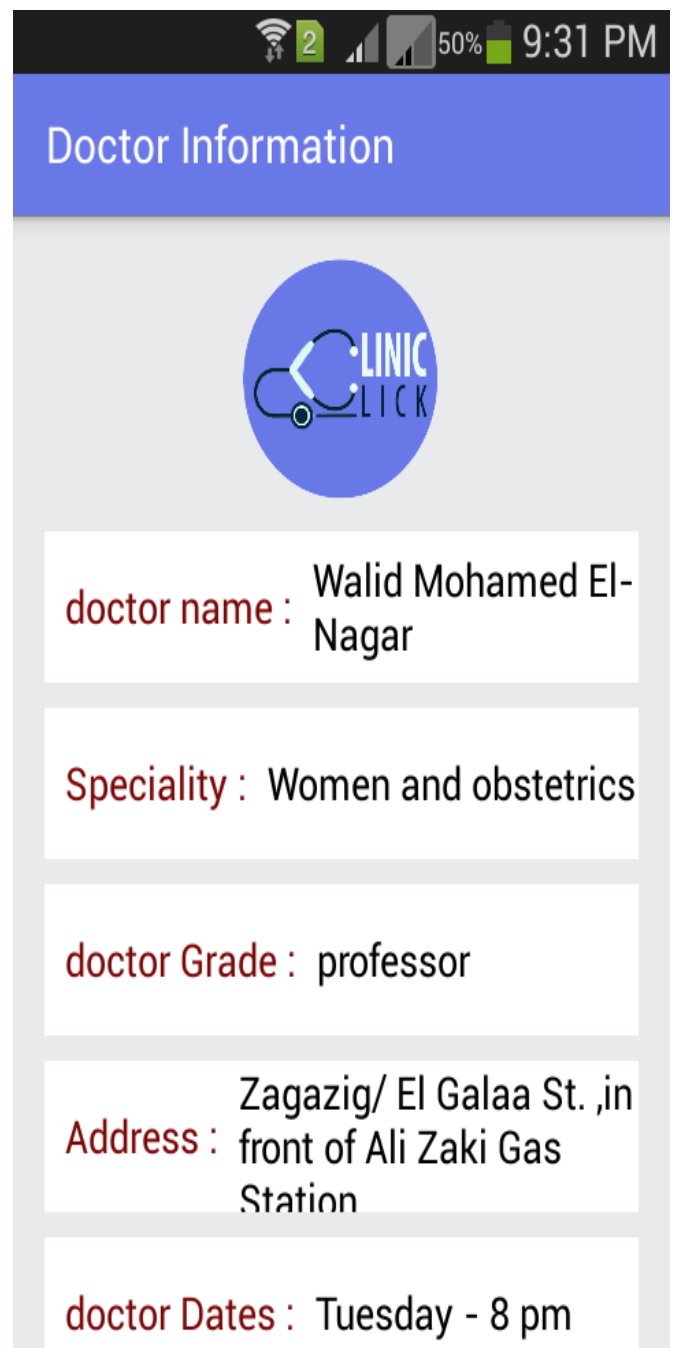
**Specialties**



**Select suitable doctor**



**Available doctor**



**Doctor Profile**

Doctor Information

Nagar

Speciality : Women and obstetrics

doctor Grade : professor

Address : Zagazig/ El Galaa St. ,in front of Ali Zaki Gas Station

doctor Dates : Tuesday - 8 pm

Phone : 01225602250

Get Direction

Get Doctor's Direction

Your location

Al Masged Al Kabir St

1 hr 5 min

1 hr 21 min

1 hr 17 min

1 hr 5 min (39 km)

Fastest route

STEPS & MORE

START

Doctor location



## 5.3 | Code Implementation

After all the previous phases now, we are ready for coding process which talks in java programming language.

We storing data of our project on Cloud Server which application must connect to it to get data.

### How this happened

For example, on clicking on specific place or specialty in android home screen the application invoking a method which connects with application on server and then it passing place or specialty name so the application after that invokes the method which make search on data in the database and getting the target data and at last the application send data across JSON to android.

### Important Code samples

#### *//get data from database for user and doctor*

```
1 <?php
2
3 $uName= $_POST["userName"];
4 $uPassword=$_POST["userPass"];
5 $token=$_POST["token"];
6 $active="yes";
7 require "in.php";
8 //echo $doctor_user;
9 //echo $pass;
10 $query="select * from users where user_name like '". $uName.'" and user_password like '". $uPassword.'"';
11 $result=mysqli_query($con,$query);
12 if(mysqli_num_rows($result)>0)
13 {
14     $query = "update users set user_token='". $token.'" , active='". $active.'" where user_name like '". $uName.'" ";
15
16     $result2=mysqli_query($con,$query);
17
18     if($result2>0)
19     {
20
21         $query1="select user_unique_code from users where user_name like '". $uName.'" and user_password like '". $uPassword.'"';
22         //$unique=mysqli_query($con,$query1);
23         //$row1=mysqli_fetch_array($unique);
24
25         $response=array();
26         $code="login success";
```

#### User login Select Query (php)

```

27 $row=mysqli_fetch_array($result);
28 $f_name=$row[1];
29 $l_name=$row[2];
30 $u_name=$row[3];
31 $password=$row[4];
32 $email=$row[5];
33 $user_phone=$row[8];
34 $user_birth=$row[9];
35 $user_city=$row[10];
36 $user_education=$row[11];
37 $user_work=$row[12];
38 $message="Login success..welcome ";
39 //array_push($response,array("code"=>$code,"message"=>$message));
40 array_push($response,array("code"=>$code,"message"=>$message,"firstName"=>$f_name,"lastName"=>$l_name,"user_name"=>$u_name ,
41                             "user_pass"=>$password , "user_email"=>$email , "phone"=>$user_phone , "birth"=>$user_birth , "city"=>$user_city ,
42                             "education"=>$user_education , "work"=>$user_work));
43
44 echo json_encode(array("server_response"=>$response));
45 -}
46 -}
47 else
48 {
49 $response=array();
50 $code="Login failed..Try again ";
51 $message="Login failed";
52 array_push($response,array("code"=>$code,"message"=>$message));
53
54 echo json_encode(array("server_response"=>$response));
55 -}
56 mysqli_close($con);
57 -?>

```

## User login (Select Query)

```

1 <?php
2
3 require "in.php";
4
5 $uFName= $_POST["first_name"];
6 $uLName=$_POST["last_name"];
7 $uName= $_POST["userName"];
8 $uEmail= $_POST["userEmail"];
9 $uPassword= $_POST["userPassword"];
10 $user_spinner= $_POST["gender_spinner"];
11 // $uToken=$_POST["token"];
12
13
14 $query = "insert into users (user_fname, user_lname, user_name , user_email , user_password , user_gender)
15 values ('".$uFName."', '".$uLName."', '".$uName."', '".$uEmail."', '".$uPassword."', '".$user_spinner."');";
16 $result=mysqli_query($con,$query);
17
18 if($result>0)
19 {
20 $response=array();
21 $code="login true";
22 // $row=mysqli_fetch_array($result);
23 $message="Login success..welcome ";
24
25 array_push($response,array("code"=>$code,"message"=>$message));
26 echo json_encode(array("server_response"=>$response));
27
28 -}
29

```

## User sign up (insert query)

```

3  require "in.php";
4  $uName= $_POST["username"];
5  $unique_code= $_POST["unique_code"];
6  $code="0";
7
8  $sql = "select * from users where user_name like '". $uName. "'";
9  $result1=mysqli_query($con,$sql);
10 if(mysqli_num_rows($result1)>1)
11 {
12     $query1 = "delete from users where user_name like '". $uName. "' and doctor_unique_code like '". $unique_code. "'";
13     $result2=mysqli_query($con,$query1);
14     if(($result2))
15     {
16         $response=array();
17         $code="success";
18         $message="deleted success";
19         //array_push($response,array("code"=>$code,"message"=>$message));
20         array_push($response,array("code"=>$code,"message"=>$message));
21
22         echo json_encode(array("server_response"=>$response));
23     }
24
25     else
26     {
27         $response=array();
28         $code="failed";
29         $message="delete failed";
30         //array_push($response,array("code"=>$code,"message"=>$message));
31         array_push($response,array("code"=>$code,"message"=>$message));
32
33         echo json_encode(array("server_response"=>$response));
34     }
35 }
36
37 else if(mysqli_num_rows($result1) == 1)
38 {
39     $query2 = "update users set  doctor_unique_code='". $code. "' where user_name = '". $uName. "'
40     and doctor_unique_code = '". $unique_code. "'";
41     $result3=mysqli_query($con,$query2);
42
43     if(($result3))
44     {
45         $response=array();
46         $code="success";
47         $message="updated success";
48         //array_push($response,array("code"=>$code,"message"=>$message));
49         array_push($response,array("code"=>$code,"message"=>$message));
50         echo json_encode(array("server_response"=>$response));
51     }
52
53     else
54     {
55         $response=array();
56         $code="failed";
57         $message="update failed";
58         //array_push($response,array("code"=>$code,"message"=>$message));
59         array_push($response,array("code"=>$code,"message"=>$message));
60
61         echo json_encode(array("server_response"=>$response));
62     }
63 }

```

## Delete Patient (delete query)

```

1 <?php
2
3 require "in.php";
4
5 $uName= $_POST["username"];
6 $user_pass= $_POST["password"];
7
8 $query = "update users set user_password = '". $user_pass. "' where user_name = '". $uName. "'";
9
10 $result=mysqli_query($con,$query);
11 if(($result)>0)
12 {
13     $response=array();
14     $code="success";
15     $message="user name is available in database";
16     array_push($response,array("code"=>$code,"message"=>$message));
17     echo json_encode(array("server_response"=>$response));
18 }
19 else
20 {
21     $response=array();
22     $code="failed";
23     $message="user name is not available in database";
24     array_push($response,array("code"=>$code,"message"=>$message));
25
26     echo json_encode(array("server_response"=>$response));
27 }
28 mysqli_close($con);
29 ?>

```

## Change password (update query)

```

1 <?php
2
3
4 class Firebase {
5
6     public function send($registration_ids, $message) {
7         //require_once "in.php";
8         $fields = array(
9             'registration_ids' => $registration_ids,
10            'data' => $message,
11        );
12        return $this->sendPushNotification($fields);
13    }
14    public function getTokenByUsername($username){
15        require "in.php";
16        $query="select user_token from users where user_fname like '". $username. "'";
17        $stmt=mysqli_query($con,$query);
18
19        $row=mysqli_fetch_array($stmt);
20        return array($row['user_token']);
21    }
22    /*
23     * This function will make the actual curl request to firebase server
24     * and then the message is sent
25     */
26    private function sendPushNotification($fields) {
27
28
29        //firebase server url to send the curl request
30        $url = 'https://fcm.googleapis.com/fcm/send';
31

```

## Firestore in Php

```

31
32 //building headers for the request
33 $headers = array(
34     'Authorization: key=' . FIREBASE_API_KEY,
35     'Content-Type: application/json'
36 );
37 //Initializing curl to open a connection
38 $ch = curl_init();
39
40 //Setting the curl url
41 curl_setopt($ch, CURLOPT_URL, $url);
42
43 //setting the method as post
44 curl_setopt($ch, CURLOPT_POST, true);
45
46 //adding headers
47 curl_setopt($ch, CURLOPT_HTTPHEADER, $headers);
48 curl_setopt($ch, CURLOPT_RETURNTRANSFER, true);
49
50 //disabling ssl support
51 curl_setopt($ch, CURLOPT_SSL_VERIFYPEER, false);
52
53 //adding the fields in json format
54 curl_setopt($ch, CURLOPT_POSTFIELDS, json_encode($fields));
55
56 //finally executing the curl request
57 $result = curl_exec($ch);
58 if ($result === FALSE) {
59     die('Curl failed: ' . curl_error($ch));
60 }
61
62 //Now close the connection
63 curl_close($ch);

```

## Firestore in Php

```

public class MyFirestoreInstanceIdService extends FirestoreInstanceIdService {

    private static final String TAG = "MyFirestoreIIDService";

    @Override
    public void onTokenRefresh() {
        String refreshedToken = FirestoreInstanceId.getInstance().getToken();

        sendRegistrationToServer(refreshedToken);
    }

    private void sendRegistrationToServer(String token) {
        // TODO: Send any registration to your app's servers.
        SharedPreferences.Editor editor = getSharedPreferences( name: "notificationsfile", MODE_PRIVATE).edit();
        editor.putString( $: "token", token);
        editor.commit();
    }
}

```

## Firestore (get token)

```

@Override
public void onMapReady(GoogleMap googleMap) {
    mMap = googleMap;

    //Initialize Google Play Services
    if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.M) {
        if (ContextCompat.checkSelfPermission(this,
            Manifest.permission.ACCESS_FINE_LOCATION)
            == PackageManager.PERMISSION_GRANTED) {
            buildGoogleApiClient();
            mMap.setMyLocationEnabled(true);
        }
    }
    else {
        buildGoogleApiClient();
        mMap.setMyLocationEnabled(true);
    }

    // Setting onclick event listener for the map
    mMap.setOnMapClickListener((point) -> {

        Intent intent = new Intent(Intent.ACTION_VIEW,
            Uri.parse("http://maps.google.com/maps?saddr="+latlng.latitude+", "+latlng.longitude+"&daddr="+30.5901942+", "+31.5028131));
        intent.addFlags(Intent.FLAG_ACTIVITY_NEW_TASK);
        intent.addCategory(Intent.CATEGORY_LAUNCHER);
        intent.setClassName("com.google.android.apps.maps", "com.google.android.maps.MapActivity");
        startActivity(intent);
    });
}

```

## Map

```

public class MyNotificationManager {

    public static final int ID_BIG_NOTIFICATION = 234;
    public static final int ID_SMALL_NOTIFICATION = 235;

    private Context mContext;

    public MyNotificationManager(Context mContext) { this.mContext = mContext; }

    public void showSmallNotification(String title, String message, Intent intent) {

        PendingIntent resultPendingIntent =
            PendingIntent.getActivity(
                mContext,
                ID_SMALL_NOTIFICATION,
                intent,
                PendingIntent.FLAG_UPDATE_CURRENT
            );

        //Log.d("MyFirebaseMsgService",title+message);
        NotificationCompat.Builder mBuilder = new NotificationCompat.Builder(mContext);
        Notification notification;
        notification = mBuilder.setSmallIcon(R.drawable.second_logo).setTicker(title).setWhen(0)
            .setAutoCancel(true)
            .setContentIntent(resultPendingIntent)
            .setContentTitle(title)
            .setSmallIcon(R.drawable.second_logo)
            .setLargeIcon(BitmapFactory.decodeResource(mContext.getResources(), R.drawable.second_logo))
            .setContentText(message)
            .build();
    }
}

```

## Notification

```

public class UserLogin extends Activity implements View.OnClickListener {

    Button btnLogin;

    EditText et_userName, et_password;
    TextView errorMsg, tv_SignUp;
    ProgressDialog user_progdialog;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_userlogin);

        et_userName = (EditText) findViewById(R.id.et_user);
        et_password = (EditText) findViewById(R.id.et_password);

        errorMsg = (TextView) findViewById(R.id.error_tv);

        btnLogin = (Button) findViewById(R.id.btn_Login);
        tv_SignUp = (TextView) findViewById(R.id.tv_SignUp);

        btnLogin.setOnClickListener(this);
        tv_SignUp.setOnClickListener(this);

        user_progdialog = new ProgressDialog( context: this);
    }

    @Override
    public void onClick(View v) {
        if (v == btnLogin) {
            RequestParams param = new RequestParams();

            if (isEmpty(et_userName)) {
                et_userName.setError("Write user Name");
            } else if (isEmpty(et_password)) {
                et_password.setError("Write password");
            } else {
                param.put("userName", et_userName.getText().toString());
                param.put("userPass", et_password.getText().toString());

                SharedPreferences prefs = getSharedPreferences( name: "notificationsfile", MODE_PRIVATE);
                String restoredText = prefs.getString( s: "token", s1: null);

                param.put("token", restoredText);

                user_progdialog.setMessage("Please wait...");
                user_progdialog.show();
                AsyncHttpClient client = new AsyncHttpClient();
                client.setTimeout(6000000);
                client.post( url: IPaddress.ipadd + "/user_login.php", param, new AsyncHttpResponseHandler() {

                    @Override
                    public void onSuccess(String response) {
                        try {
                            user_progdialog.dismiss();
                            JSONObject jsonObject = new JSONObject(response);
                            JSONArray jsonArray = jsonObject.getJSONArray( name: "server_response");
                            JSONObject JO = jsonArray.getJSONObject( index: 0);
                            final String code = JO.getString( name: "code");
                            // When the JSON response has status boolean value assigned with true

                            if (code.equals("login success")) {

                                Toast.makeText(getApplicationContext(), "Successfully Logged", Toast.LENGTH_LONG).show();

                                String firstName = JO.getString( name: "firstName");
                                String lastName = JO.getString( name: "lastName");
                                String user_name = JO.getString( name: "user_name");
                                String user_pass = JO.getString( name: "user_pass");
                                String user_email = JO.getString( name: "user_email");
                                String user_phone = JO.getString( name: "phone");
                                String user_birth = JO.getString( name: "birth");
                                String user_city = JO.getString( name: "city");
                                String user_education = JO.getString( name: "education");
                                String user_work = JO.getString( name: "work");
                            }
                        } catch (JSONException e) {
                            e.printStackTrace();
                        }
                    }
                });
            }
        }
    }
}

```

```

SharedPreferences.Editor editor = getSharedPreferences( name: "user_data", MODE_PRIVATE).edit();

editor.putString( s: "fName", firstName);
editor.putString( s: "lName", lastName);
editor.putString( s: "uName", user_name);

editor.putString( s: "password", user_pass);
editor.putString( s: "email", user_email);
editor.putString( s: "phone", user_phone);
editor.putString( s: "birth", user_birth);
editor.putString( s: "city", user_city);
editor.putString( s: "education", user_education);
editor.putString( s: "work", user_work);
editor.putString( s: "user_login", s1: "user login");
editor.commit();

final Intent intent = new Intent( packageContext: UserLogin.this, User_NavDrawer.class);
startActivity(intent);

```

## User login in java

```

PopupMenu popupMenu = new PopupMenu(getActivity(), view);
popupMenu.inflate(R.menu.notification_doc_popup_menu);

popupMenu.setOnMenuItemClickListener((menuItem) -> {

    switch (menuItem.getItemId()) {
        case R.id.sh_Feedback:
            SharedPreferences prefs = getApplicationContext().getSharedPreferences( s: "doc_data", Context.MODE_PRIVATE);
            String restoredText_name = prefs.getString( s: "docName", s1: null);

            Intent intent = new Intent(getActivity(), Sh_All_Feedback.class);
            intent.putExtra( name: "doc_name", restoredText_name);
            intent.putExtra( name: "user_name", SlectedUsername);
            startActivity(intent);
            return true;

        case R.id.wr_Notification:

            LayoutInflater inflater = LayoutInflater.from(getActivity());
            final View dialogview = inflater.inflate(R.layout.activity_notification_temp, root: null);

            btn_send = (Button) dialogview.findViewById(R.id.btn_send);
            btn_cancel = (Button) dialogview.findViewById(R.id.btn_cancel);

            final AlertDialog dialog = new AlertDialog.Builder(getActivity()).create();

            dialog.setView(dialogview);
            dialog.show();

            final LinearLayout linearLayoutForm = (LinearLayout) dialogview.findViewById(R.id.LinearLayoutForm);
            final ImageButton btnAdd = (ImageButton) dialogview.findViewById(R.id.btnAdd);

```

## Popup menu



```

public class User_NavDrawer extends AppCompatActivity
    implements NavigationView.OnNavigationItemSelectedListener {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_user__nav_drawer);
        Toolbar toolbar = (Toolbar) findViewById(R.id.toolbar);
        setSupportActionBar(toolbar);

        DrawerLayout drawer = (DrawerLayout) findViewById(R.id.drawer_layout);
        ActionBarDrawerToggle toggle = new ActionBarDrawerToggle(
            activity: this, drawer, toolbar, "Open navigation drawer", "Close navigation drawer");
        drawer.addDrawerListener(toggle);
        toggle.syncState();

        NavigationView navigationView = (NavigationView) findViewById(R.id.nav_view);
        navigationView.setNavigationItemSelectedListener(this);
    }
}

```

```

    @Override
    public void onBackPressed() {
        DrawerLayout drawer = (DrawerLayout) findViewById(R.id.drawer_layout);
        if (drawer.isDrawerOpen(GravityCompat.START)) {
            drawer.closeDrawer(GravityCompat.START);
        } else {
            super.onBackPressed();
        }
    }

    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
        getMenuInflater().inflate(R.menu.user__nav_drawer, menu);

        return true;
    }
}

```

## Navigation Drawer

```

public class Feedback_CustomListAdapter extends ArrayAdapter<Feedback> {
    LayoutInflater mInflater;
    public Feedback_CustomListAdapter(Context context) {
        super(context, resource: 0);
        mInflater = (LayoutInflater) context.getSystemService(Context.LAYOUT_INFLATER_SERVICE);
    }

    public View getView(int position, View convertView, ViewGroup parent) {
        View view;

        view = mInflater.inflate(R.layout.mylist, root: null);

        TextView feedbackTitle = (TextView) view.findViewById(R.id.item);
        TextView disease = (TextView) view.findViewById(R.id.textView1);

        Feedback item = getItem(position);

        feedbackTitle.setText(item.getTitle());
        disease.setText(item.getDisease());

        return view;
    }
}

```

## List view (array adapter)

```

147 <string name="new_doc_btn">New doctor</string>
148
149 <string name="select_specialty_tv">Please Select Specialty</string>
150 <string name="women_mgbtn">Women and Obstetrics</string>
151 <string name="internal_medicine_mgbtn">Internal Medicine</string>
152 <string name="children_mgbtn">children</string>
153
154 <string name="doc_grade_tv">Doctor Grade :</string>
155 <string name="day_tv">select Day :</string>
156 <string name="Time_tv">select Time :</string>
157 <string name="radio_am">am</string>
158 <string name="radio_pm">pm</string>
159 <string name="find_doc_btn">Find doctor</string>
160
161 <string name="edit_prof">Edit Profile</string>
162 <string name="chg_pass">Change Password</string>
163 <string name="chg_country">Change Country</string>
164 <string name="app_language">Application Language</string>
165 <string name="radio_arabic">Arabic</string>
166 <string name="radio_english">English</string>
167
168 <string name="help">Help</string>
169 <string name="about">About</string>
170 <string name="account">Account</string>
171 <string name="setting">Setting</string>
172 <string name="refresh">Refresh</string>
173 <string name="search">Search</string>
174
175 <string name="home">Home</string>
176 <string name="logout">Logout</string>
177 <string name="specialty">Specialties</string>

```

## Strings of app

# Conclusion

## Background

In this chapter we reach to the end of our document. We talk about testing process for our project. In the end we talk about our future work after all that.

### 6.1 | Our Final Work

Now everything is done and ready for production but we testing it at first so we are using many use cases to check our project and its implementation of our objectives which we planned. And check in using guide message covered well which we handle to helping our users on using our project and make it simple we using toast in android to do that. We choose sample of people from different backgrounds and asking them for using our program and giving us their impression. Based on the testing work and user's impression we changed our project more and more to do that very well for achieving better experience.

### 6.2 | Conclusion and Future Work

At this point you reach the end, we hope our documentation give you what you expect to find and give you all the views of the manufacturing lines.

But in the end we must talk about how we see our project in the future and how we planned for developing it and if we stopped by any way you must follow our way to keep it.

In the future we seek to develop our program to be able to keep pace with the changes in different places and make it includes many other places and cover a larger area so as not to be limited to the city of

Zagazig only and work to make it includes the whole Arab Republic of Egypt and many other countries so that we can help the largest number of patients.

Train doctors on how to deal with the application and work to help users of the application to solve all the problems that will be faced so that we can say that the application is 100% complete and free of problems.

In a last word, we believing in we are here not only to change the world also evil can change the world but we hoping to make it a better change and our earth is a modern technology-based place and we introduce this project as our first trying.

Thanks

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