

Al-Najah National University



Faculty of Engineering & Information Technology
Computer Engineering Department

Graduation Project 1

Don't Wait!

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Presented in partial fulfilment of the requirements for
Bachelor degree in Computer Engineering.

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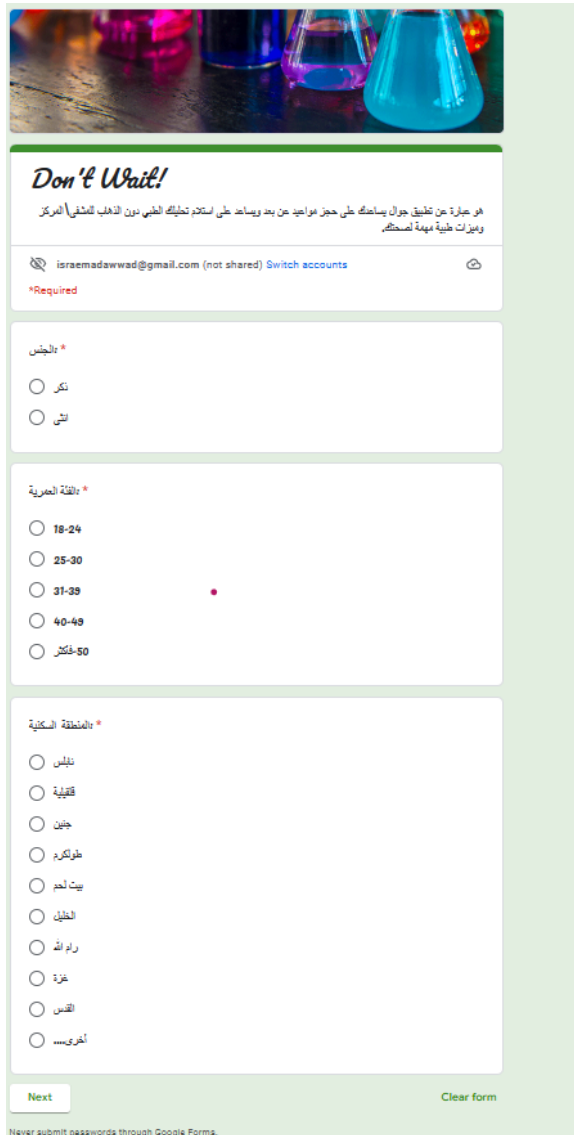
Abstract:

Give me health and take my fortune.

First, the choice of the project was due to the inestimable importance of human health, People suffer from the inability to visit the hospital all the time, waiting for long hours to get the results of their tests, which take hours, days, and perhaps weeks, and not finding a doctor suitable for their health condition. We will cover in our App all the mentioned problems , The application allows you to book an appointment at the medical center remotely for the patient, according to the chosen area, available dates, and all the necessary information will be attached to each analysis , Before, during and after it. Notification to the patient's phone of the need to attend the center if there are indications of danger. Saving time, effort and money for the patient, as going to the hospital to take a report only is a big obstacle, and as for the centers, it will reduce overcrowding, which will increase the effectiveness of work and the arrival of patients' reports in a safe and fast way, and it will be a way to keep a medical record for them that is safe and permanent and cannot be lost. Agile methodology, first we will collect data from people and health centers beside hospitals, nurses...etc, according to the collected data we will start putting the highlights for our design, we will start coding and putting our mentioned features, we will test it. Yes, there are similar applications that are Egyptian in origin, but on the Palestinian level we did not find applications that achieve the goals of our application.

Chapter 1: Introduction

We initially created the following form:



Don't Wait!

هو عبارة عن تطبيق جوال يساعدك على حجز مواعيد عن بعد ويساعد على استلام تحليلك الطبي دون الذهاب للتشخيص المركزي
ويميزت طبية مهنة أخصائكم.

israemadawwad@gmail.com (not shared) [Switch accounts](#)

***Required**

*** الجنس:**

ذكر

أنثى

*** اللغة العربية:**

18-24

25-30

31-39

40-49

50 فأكثر

*** المنطقة السكنية:**

نابلس

قلقيلية

جنين

طولكرم

بيت لحم

الخليل

رام الله

غزة

القدس

أخرى...

[Next](#) [Clear form](#)

Never submit passwords through Google Forms.

* هل تعاني من أعراض صحية؟

- نعم
 لا

* هل قمت بإجراء تحليل طبي من قبل؟

- نعم
 لا

* كيف تصل الي مكان إجراء التحليل؟

- بيلك الخاصة
 المواصلات العامة
 سيراً على الأقدام

* هل تعاني من مشاكل للحصول على موعد مناسب؟

- نعم
 لا
 ربما

* هل تعاني من الوقت الطويل للحصول على نتائج تحليلك الطبي؟

- ربما
 لا
 نعم

هل تزيد استخدام تطبيق جوال للحصول على نتائج تحليلك عن بعد؟

- نعم
 لا

أي مشاكل اخرى تساعدك عليها؟

Your answer _____

Back

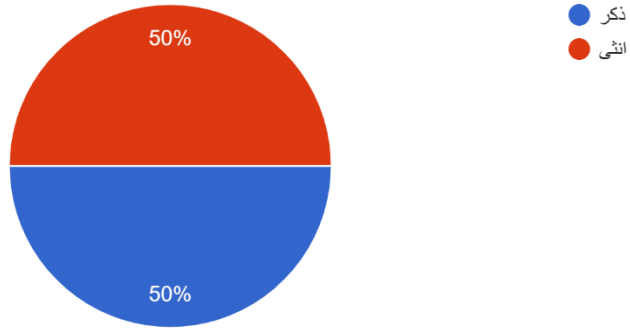
Submit

Clear form

The following results were obtained:

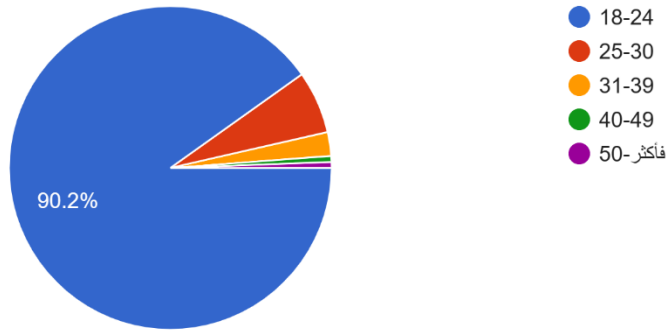
الجنس:

336 responses



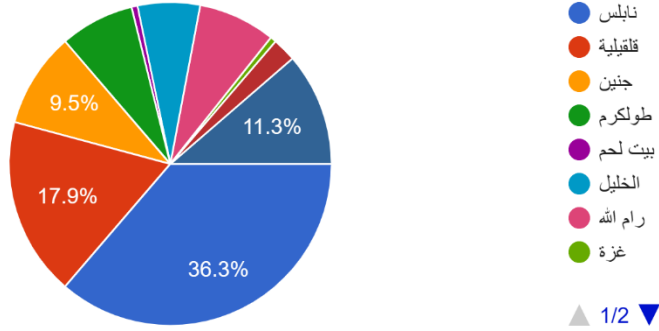
الفئة العمرية:

336 responses



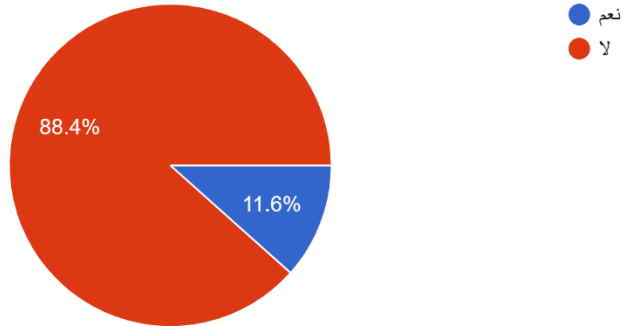
المنطقة السكنية:

336 responses



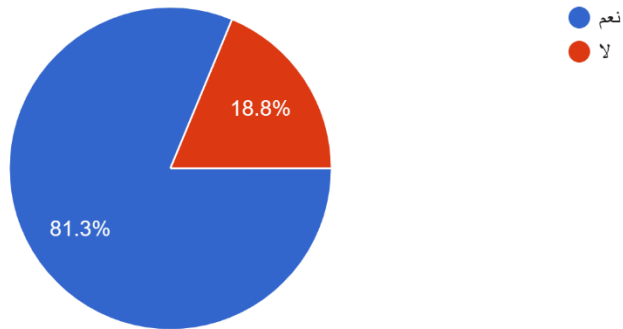
هل تعاني من أمراض صحية؟

336 responses



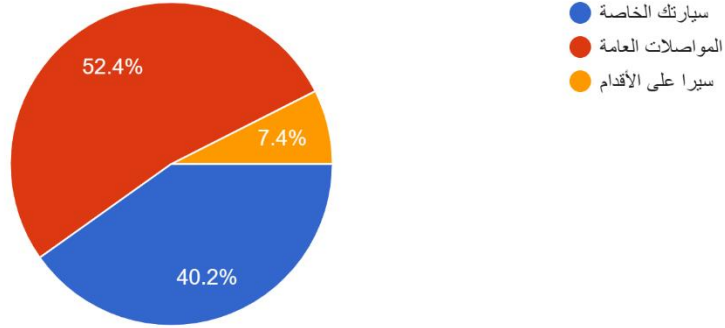
هل قمت بإجراء تحليل طبي من قبل؟

336 responses



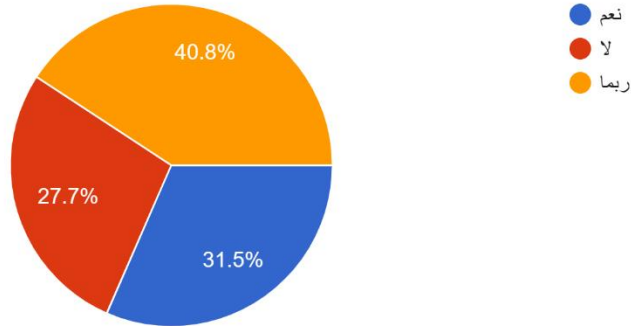
كيف تصل الى مكان اجراء التحليل؟

336 responses



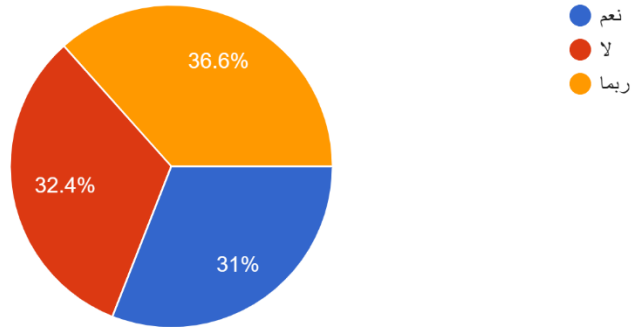
هل تعاني من مشاكل للحصول على موعد مناسب؟

336 responses



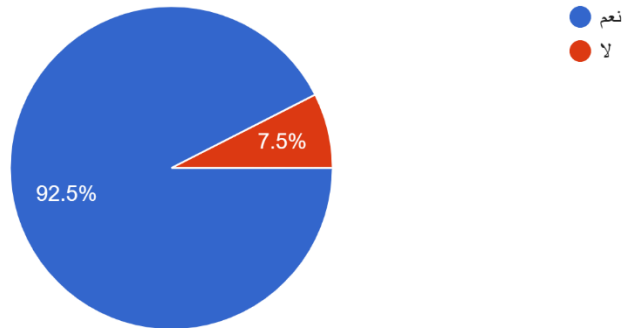
هل تعاني من الوقت الطويل للحصول على نتائج تحليتك الطبي؟

336 responses



هل تؤيد استخدام تطبيق جوال للحصول على نتائج تحليلك عن بعد؟

334 responses



After presenting the questionnaire to many different age groups, there was a large percentage encouraging the creation of an application related to medical reservations and obtaining examination results through it. Therefore, we created an application, Don't wait!

Also, some problems were found, which will be presented below:

1.1 Statement of the problem:

The project focused on many important problems:

- ❖ In most cases, People suffer from the inability to visit the hospital all the time, waiting for long time to get the results of their tests.
- ❖ In most cases, need to book an appointment before arriving at the medical center in order to save time and organize it.
- ❖ In some cases, the elderly suffer from the inability to visit the medical center and take the necessary medical analysis.

1.2 Project Objective:

This project aims to help people who suffer from waiting for the results of their medical analyzes for a long time inside the medical center or to return to take the medical analysis more than once, and also to help patients to make advance reservations, And works to send an emergency notice if needed. The application also contains important health information.

1.3 Project Scope:

The project helps both patients and medical centers. The application provides patients with saving time and great effort in solving medical examination problems in several ways. As for medical centers, they can share their knowledge and reach patients more easily through the application and organize the booking and appointment process in a professional manner.

1.4 Project importance:

The same idea has been integrated into many applications, but there is no application that includes most medical centers and all cities in the West Bank. There are applications specialized in one health center, and if there is a similar application, it does not include all that we have added.

1.5 Organization:

This report has organized as follows, Chapter1: an introduction and overview about the importance and the scope of this project. Chapter2: shows the problems and constraints that have occurred in this project. Chapter3: Literature Review. Chapter4: Methodology, Chapter5: Conclusion.

Chapter 2: Constraints and Earlier coursework

2.1 Constraints:

2.1.1 Programming language Constraint:

Choosing a programming language was a rather difficult choice, because we were using it for the first time, and also creating the application was for the first time.

2.1.2 Limited Resources:

It was really challenging to access several resources. Associated with the programming languages utilized, which demands two times as much work to get knowledge from several sources

2.2 Earlier coursework, topics:

We gained experience from most of the department materials we studied, the main ones being java and the web course, and I took a complete online flutter course

Chapter 3: Literature Review

The importance of smart phone applications as one of the most important and latest technological programs that have been able, with their capabilities and effects, to affect all areas of modern life because they are based on solving many issues, the most important of which is the issue of medical examinations and the long waiting times for them. There are many applications in Palestine that address these problems, but not in the appropriate way for all problems. For example, there is an application for the Medicare Center for the center itself, but our application includes all the cities of Palestine and includes all the centers in Palestine, and also our application supports And works to send an emergency notice if needed, which is lacking in many Applications for that, and also there is a chat between the medical center and the patient.

Chapter 4: Methodology

4.1 Tools, Methods and Programming Languages:

4.1.1 programming language:

Our application was built using three different languages:

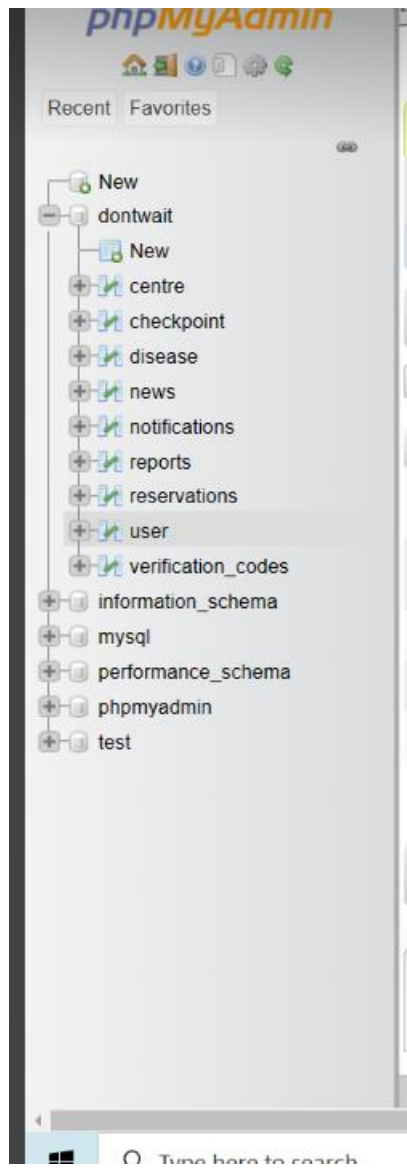
- Flutter and Dart for the frontend.
- Express Node js for the backend.

4.1.2 Tools:

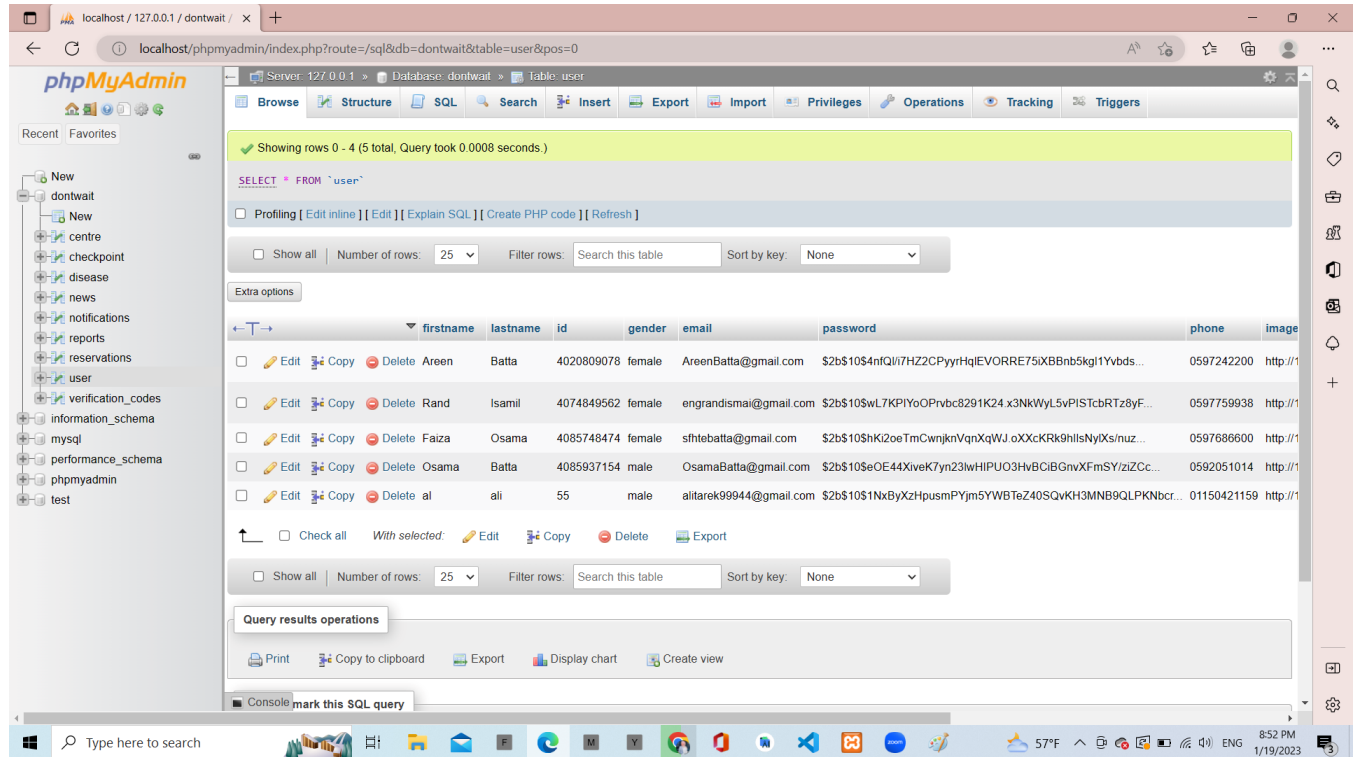
- Visual Studio Code
- Android Studio
- Xampp.

4.1.3 Database:

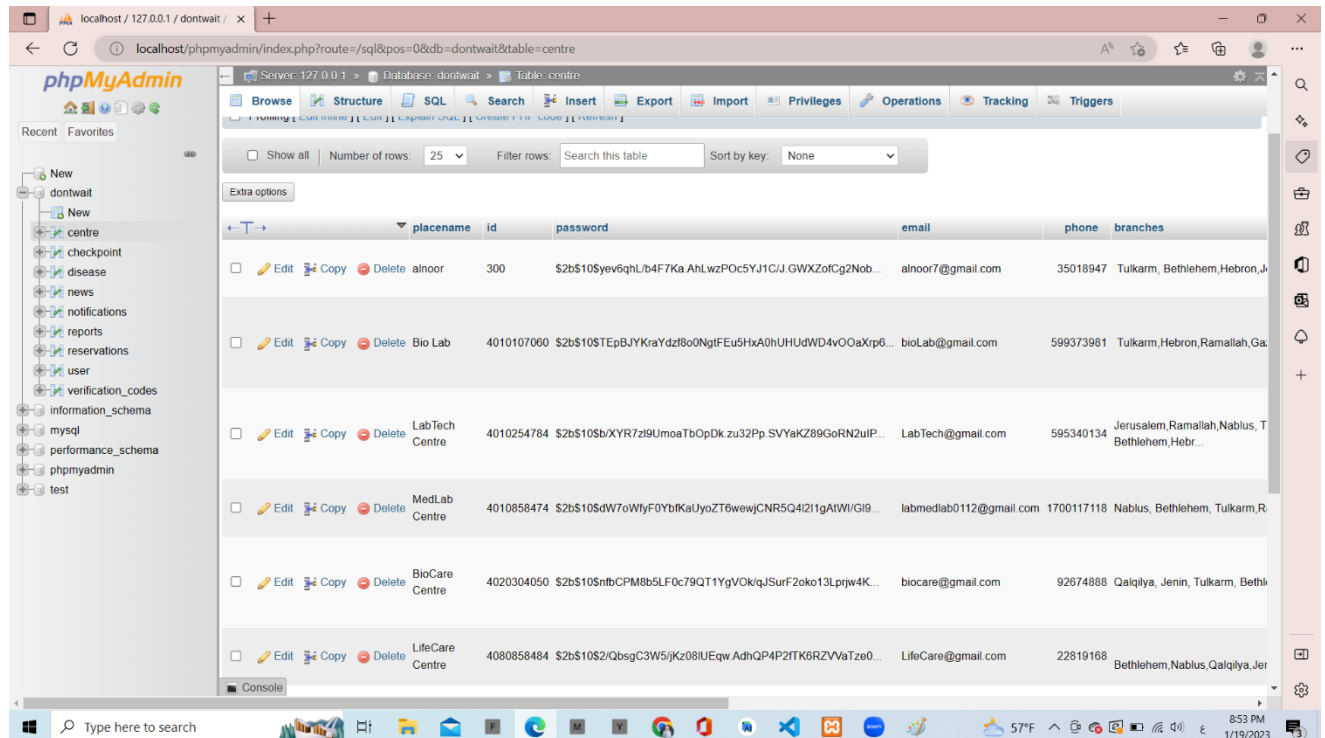
We used MySQL database and the needed table are as follows:



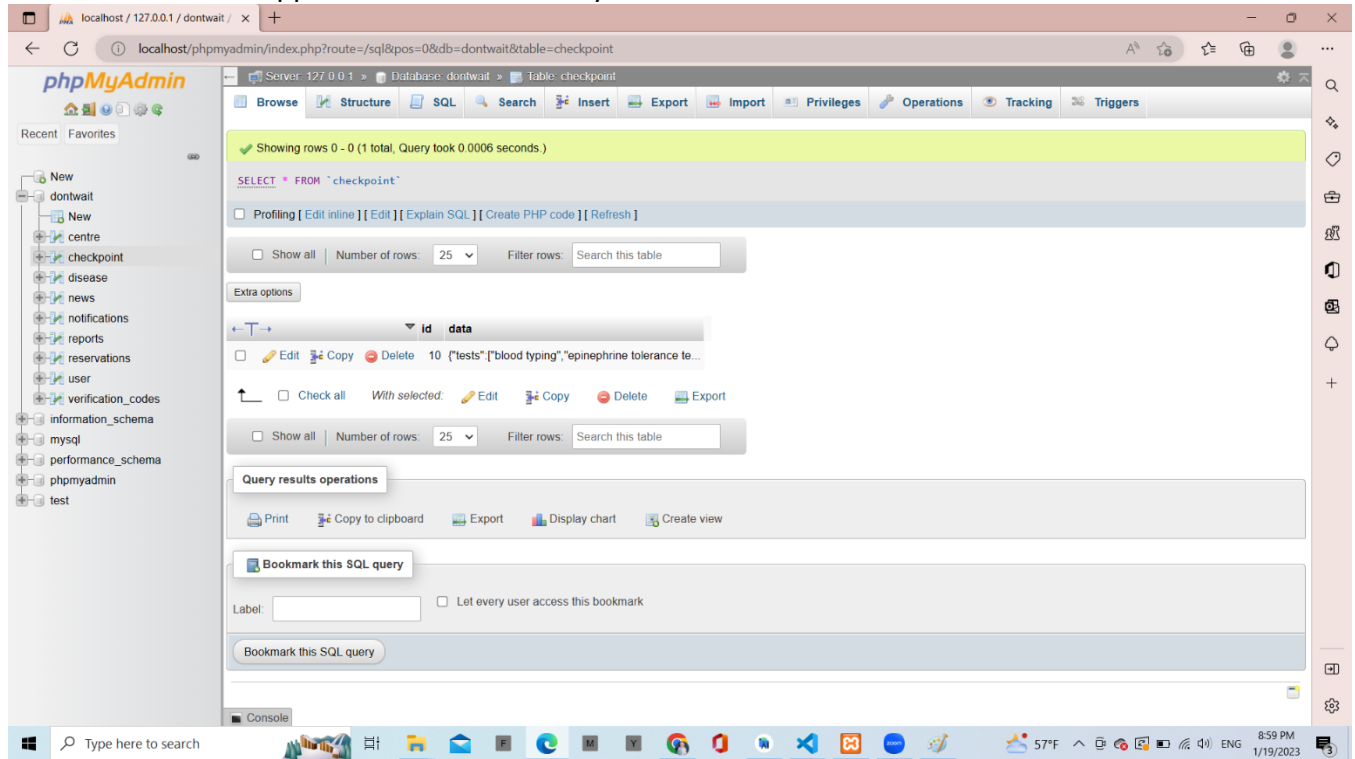
Through the SignUp button on the user's login page, information is entered and stored in the data base.



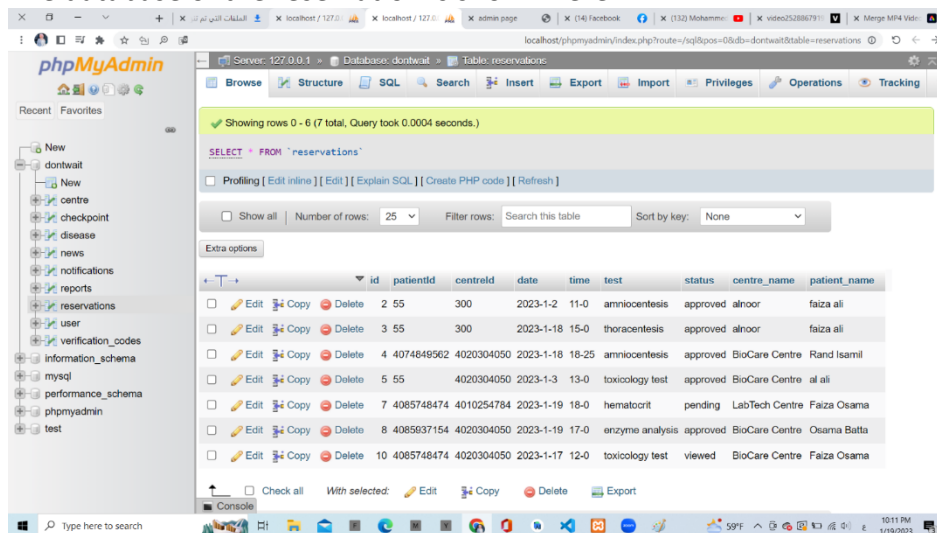
Through the Sign Up button on the medical centers login page, information is entered and stored in Data Base:



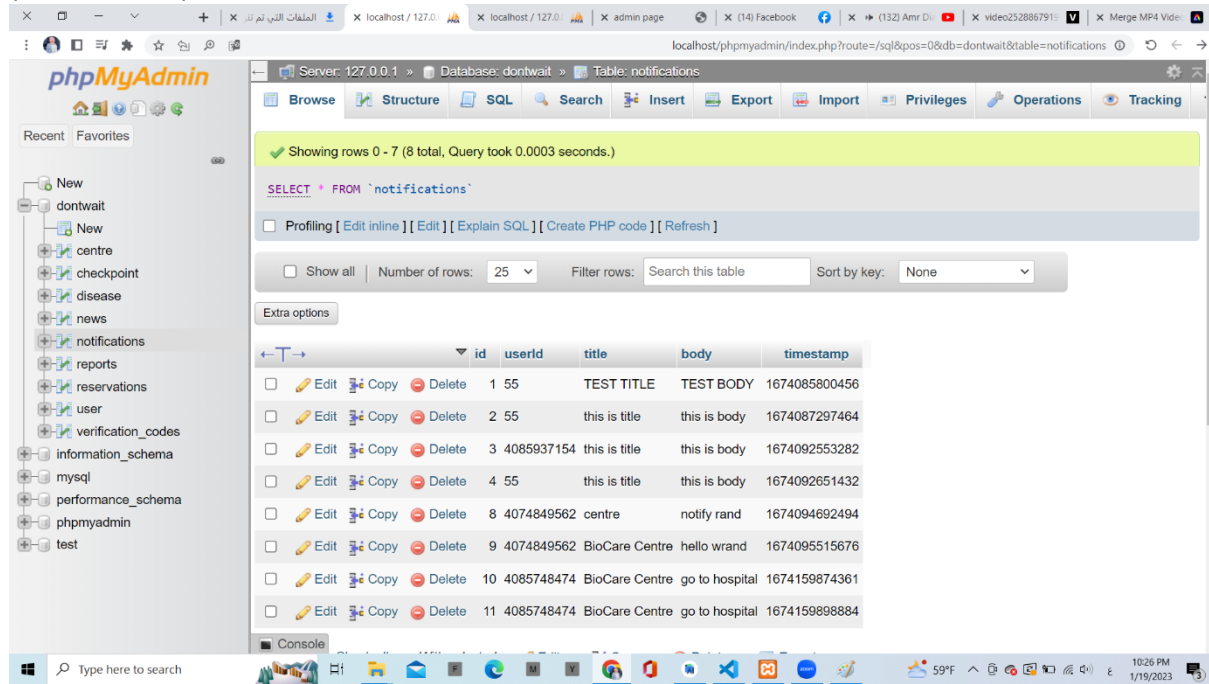
As for the medical center, its registration is accepted only through the admin on the web. A table has been created in the name of checkpoint, and therefore the admin approves or rejects it. The admin is the owner of the application or the Ministry of Health:



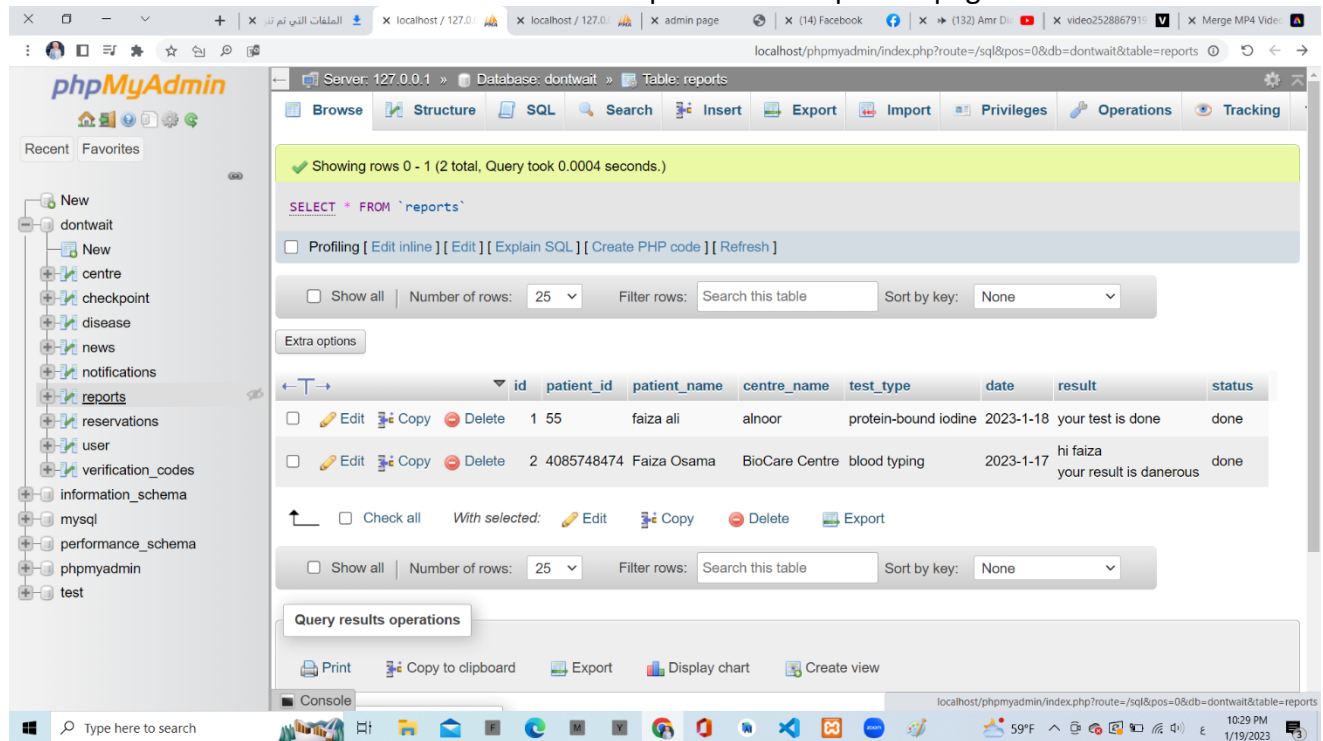
The database of the reservation is shown here:



All notifications sent will be saved in a special table to display them to the patient inside the bell icon (notifications):



The result button will allow the center to write the test result to be sent to the patient. It will also be saved in a table to be shown to the patient on his private page:



Database for news tab:

Server: 127.0.0.1 > Database: dontwait > Table: news

SELECT * FROM `news`

Number of rows: 25

image	name	date	newsContant	url	author
https://ichef.bbci.co.uk/news/800/cpsprodpb/57A7/p...	Revolutionary therapy clears girl's incurable canc...	13-12-2022	All other treatments for Alyssa's leukaemia had fa...	https://www.bbc.com/news/health-63859184	James Gallagher
https://ichef.bbci.co.uk/news/800/cpsprodpb/28F7/p...	China deactivates national Covid tracking app	11-12-2022	The national app, which has been operational for t...	https://ichef.bbci.co.uk/news/800/cpsprodpb/28F7/p...	
https://healthtechmagazine.net/sites/healthtechmag...	4 Technologies to Improve Staff Experiences in Pos...	9-12-2022	Clinicians, caregivers and other staff are often p...	https://healthtechmagazine.net/article/2022/12/4-L...	Jordan Scott

Database for diseases tab:

Server: 127.0.0.1 > Database: dontwait > Table: disease

SELECT * FROM `disease`

Number of rows: 25

image	name	date	newsContant	url	author
https://th-thumbnailer.cdn-si-edu.com/NQ7qqgAEQr7...	SARS-CoV	4-1-2023	SARS is Severe acute respiratory syndrome, caused b...	https://www.sinobiological.com/research/virus/sars...	Sino Moineux
https://domf5oio6qrcr.cloudfront.net/medialibrary/...	What causes kidney stones	6-12-2022	Stone disease has plagued humanity since ancient t...	https://www.health.harvard.edu/blog/what-causes-ki...	Kevin R. Loughlin
https://www.mayoclinic.org/-/media/kcms/gbs/patien...	What do your blood pressure numbers mean?	1-1-2023	The only way to know if you have high blood pressu...	https://www.heart.org/en/health-topics/high-blood-...	American Heart Association
https://audubonbio.com/wp-content/uploads/2021/09/...	Blood Cancers	3-1-2023	Blood cancers are a large group of pathologies aff...	https://audubonbio.com/blog/blood-cancers-overview...	Audubon

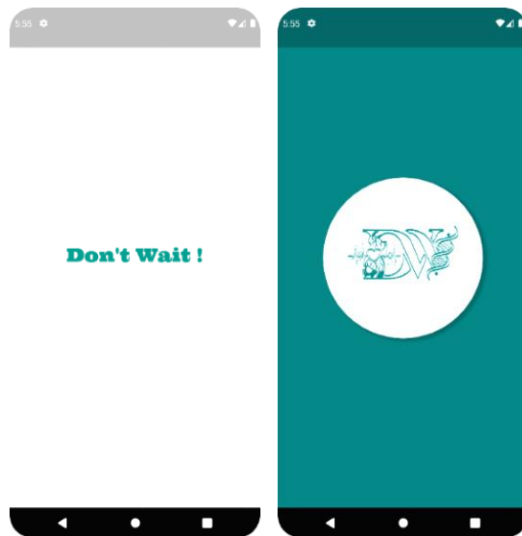
Mobile application:

4.1.4 Splash Screen:

The splash screen was displayed for 5 seconds, our logo is designed, where each letter represents the first letter of each word in the name of our application:

An application email has been created:

DONTWAITFIR@GMAIL.COM



4.1.5 Login Page:

This page is used to log in users via ID and password, and they move to the main page according to the type of user.



Dont Wait!

User Id

Password

[Forgot your password?](#)

LOG IN

Don't have an account? [Create](#)

Are you medical center and don't have an account? [Sign up](#)



As for the forgotten password, when you click on it, this page will appear:



Verification

Enter the verification code we just sent you on your email address.

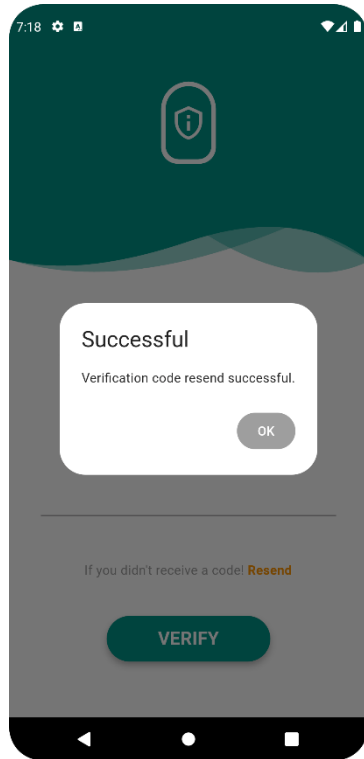
If you didn't receive a code! [Resend](#)

VERIFY

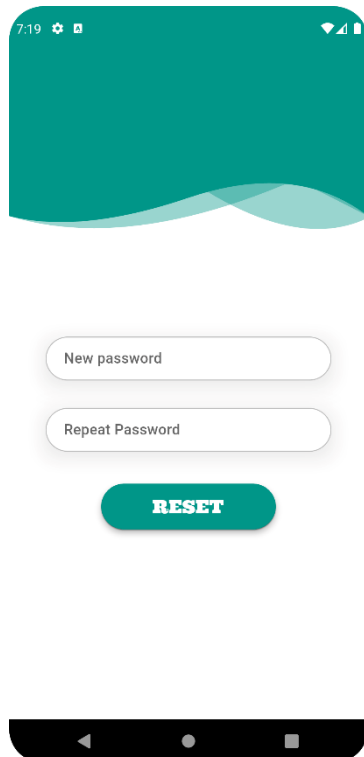


A confirmation code will be sent to the email, this message is displayed to the user, In the event

that the code does not arrive, press on resend:

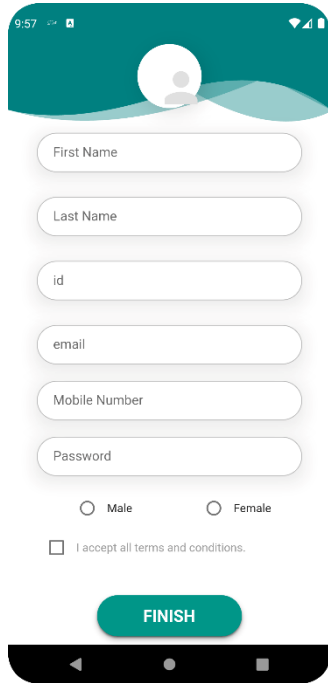


And it is changed through this page:



4.1.6 User Sign Up:

On the Sign page, after entering his information, it is confirmed that he is a real person by sending an e-mail a confirmation code, and then he is asked to enter a picture of himself

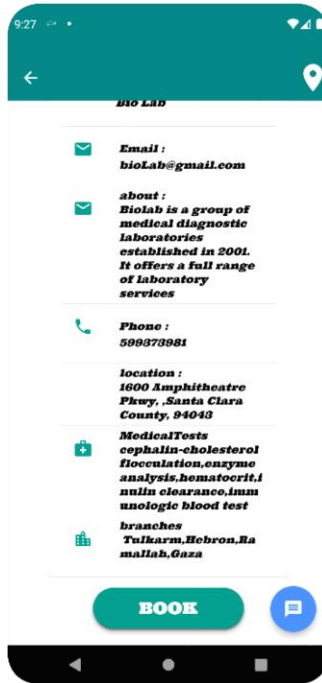
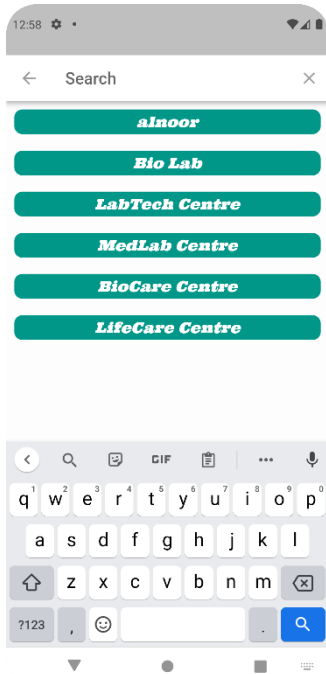
A screenshot of a mobile application's sign-up page. The page has a teal header with a white circular profile icon placeholder. Below the header are seven white input fields with rounded corners, labeled 'First Name', 'Last Name', 'id', 'email', 'Mobile Number', and 'Password'. Under the 'Password' field are two radio buttons for 'Male' and 'Female'. Below the radio buttons is a checkbox labeled 'I accept all terms and conditions.'. At the bottom of the form is a teal button with the word 'FINISH' in white capital letters. The entire form is set against a white background with a subtle teal wave graphic at the top.

4.1.7 User Home Page:

On this page there are 4 tabs, chats, notifications and lists, the first tab contains health news that takes its data from the API, the second tab contains diseases and information about them, the third tab contains reservations that have been booked that can be canceled or modified, and the last tab contains examinations that are sent through the center.

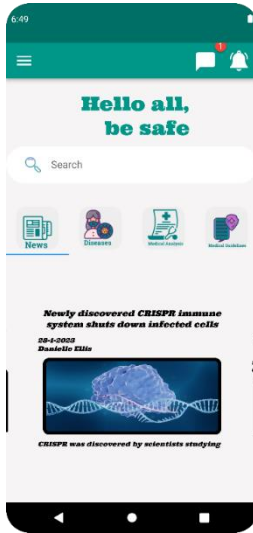
Search:

It allows searching for the name of the center, or shows the centers according to the name of the city in which it is located, or according to the examination that it is looking for, the center page will be displayed:

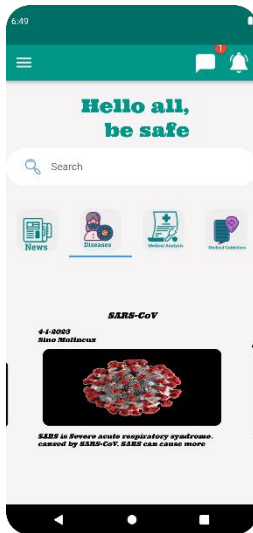


1-News Tab

The show more button opens us to a browser so we can continue reading.



2-Diseases Tab:

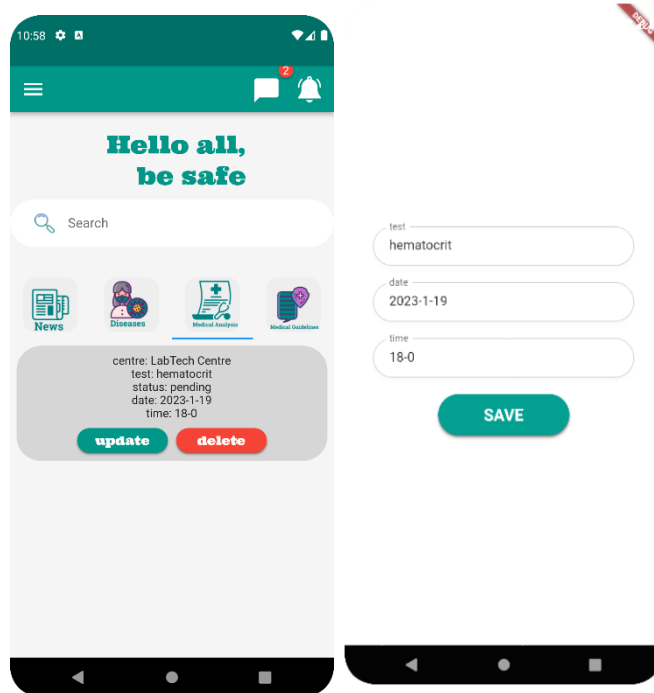


3-Medical Analysis:

This is the list of reserved analyzes, after the result is delivered to it, it disappears from the list and disappears from the center's list

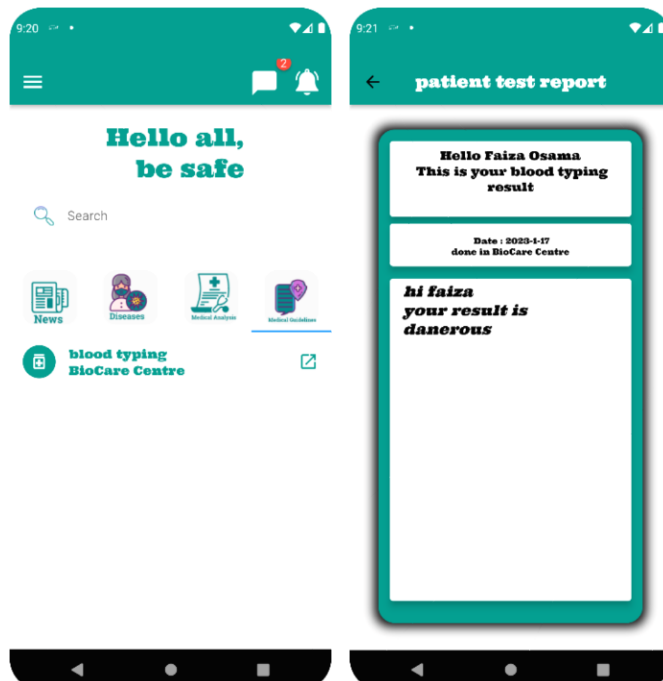
And we put the status of the reservation done, which is the last status when the result is reached and completed in full.

Delete button: It allows us to cancel the reservation so that another person can reserve his place
Update button: A page opens for us to allow us to modify the appointment, either the time, date, or appointment type only



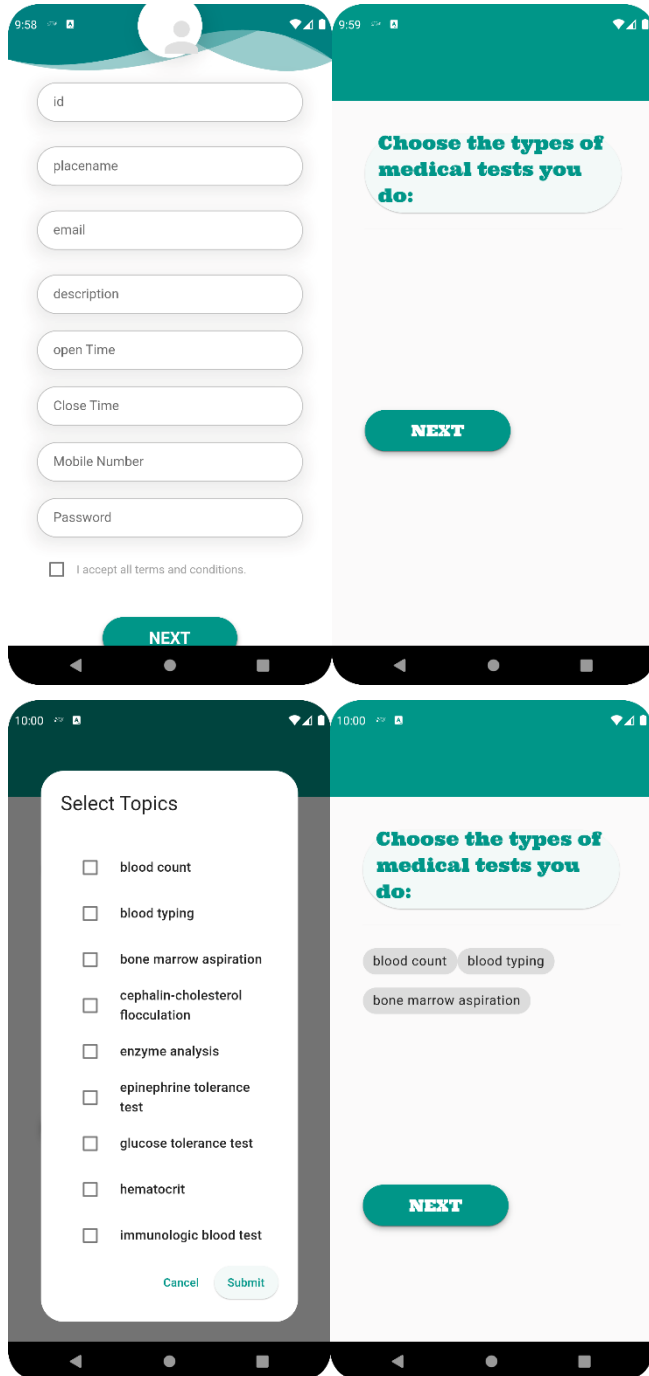
4-Medical Guidelines:

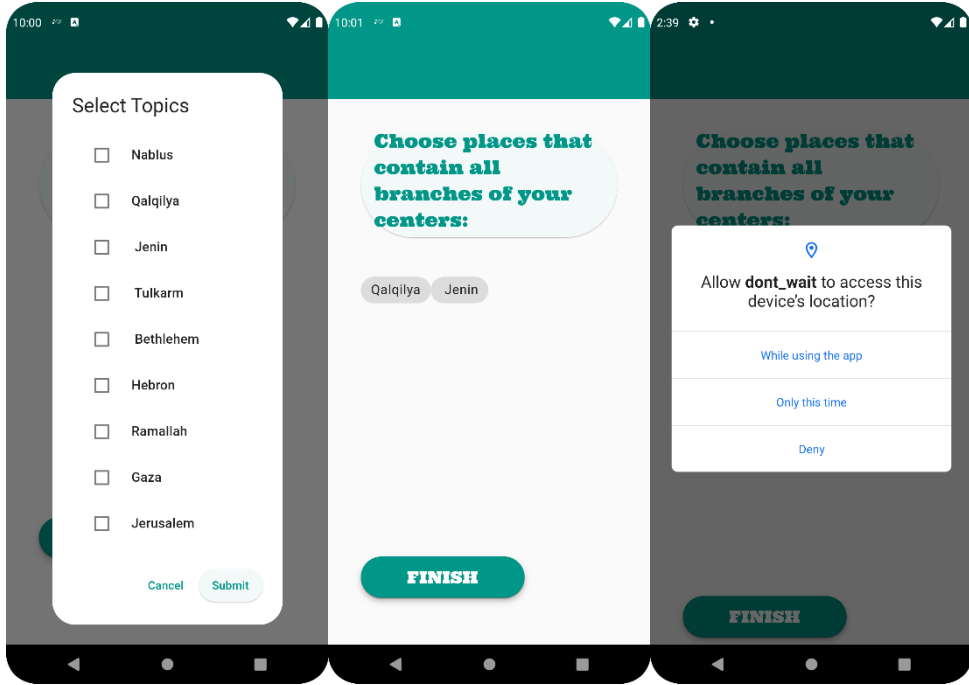
Shows the results of the analysis.



4.1.8 Medical Center Sign Up:

On the login page, after entering his information, it is confirmed that he is a real person by sending an e-mail a confirmation code, and then he is asked to enter a picture of himself, and since the user is a medical center, he enters his full information from working hours, available medical examinations and official branches.



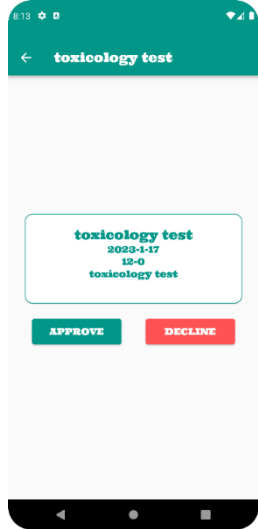


4.1.9 Medical Center Home Page:

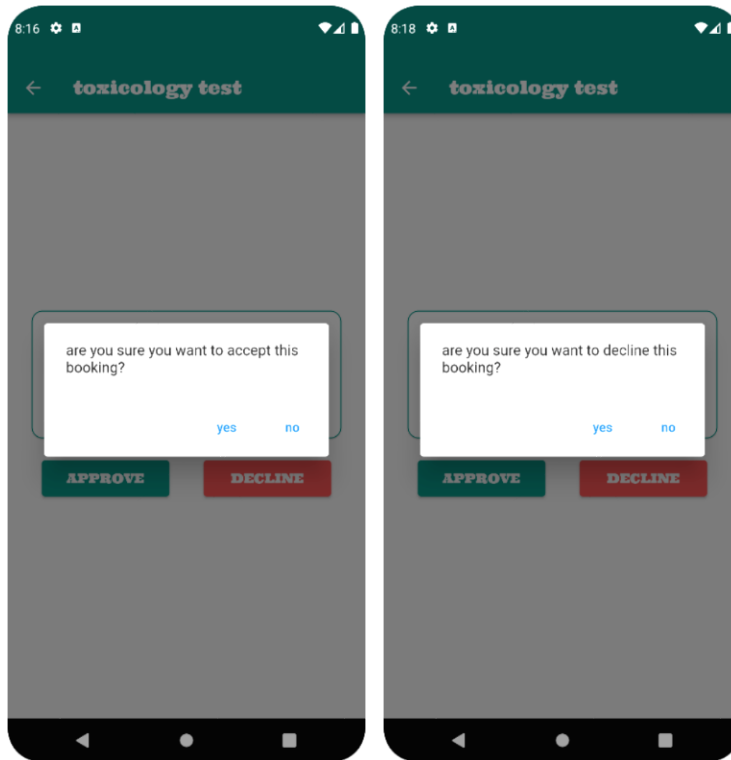
The reservations that the user has booked are displayed on this page, and the private chat is also displayed. As for the examinations, he clicks on the analysis details page and approves the analysis and then sends it to the user, and thus the user is notified of the arrival of the medical analysis result.



In the beginning, the reservation status will be pending, and the color of the writing will be in black. If the center enters it, it will turn into viewed, then it will appear to us as a grove:

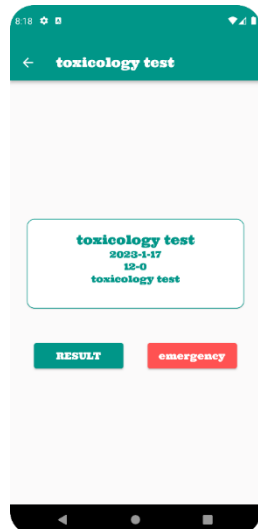


Click to approve: The status of the analysis will be converted to Approved, and the other button rejects it, for many cases, such as the lack of necessary tools or an emergency event and others. Then show this message:



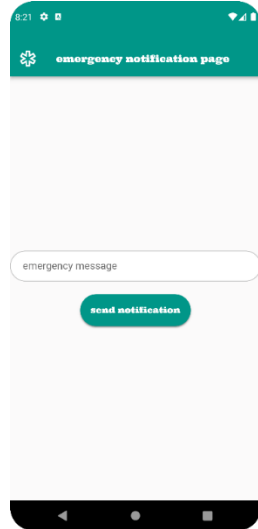
If approved:

The buttons disappear, and in their place appears the emergency button and the result button

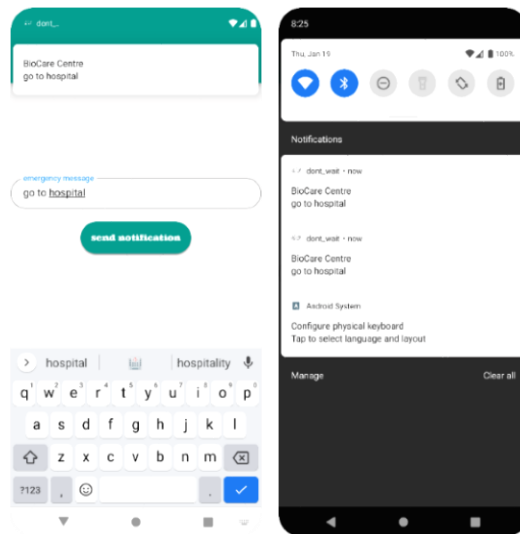


The result button will allow the center to write the test result to be sent to the patient.

For the emergency button:



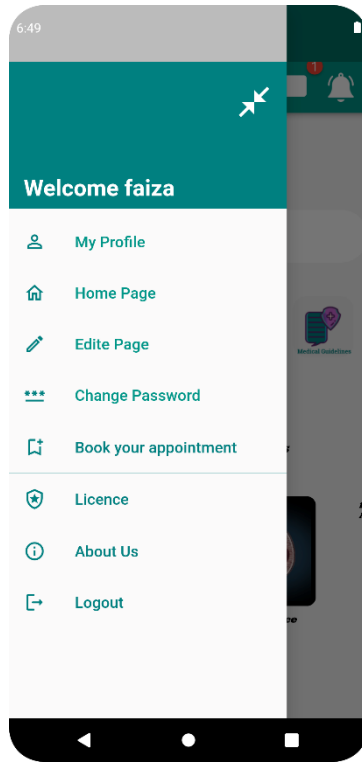
The center will, after seeing the analysis, if it finds that the patient must be notified immediately of any information such as going to the hospital and others, he will write it here and when pressing the button shown, a notification will arrive on the patient's device and it can be returned according to the situation:



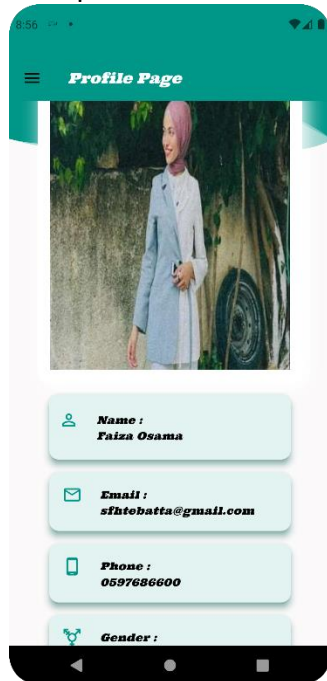
All notifications sent will be saved in a special table to display them to the patient inside the bell icon (notifications).

4.1.10 List:

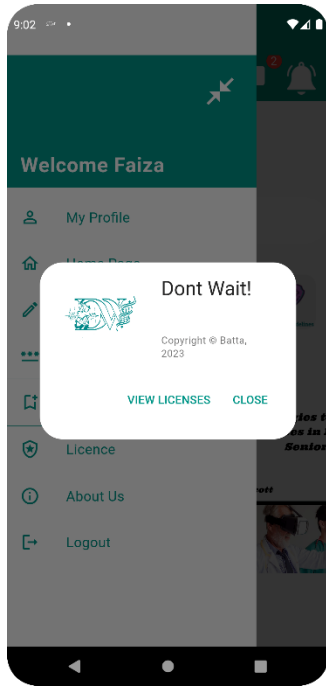
We welcome the user here according to the first name:



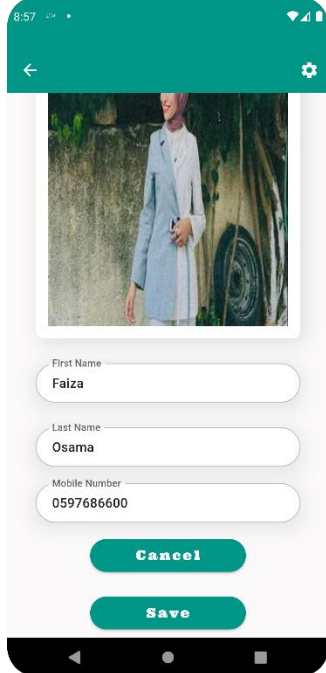
Containing:
User profile:



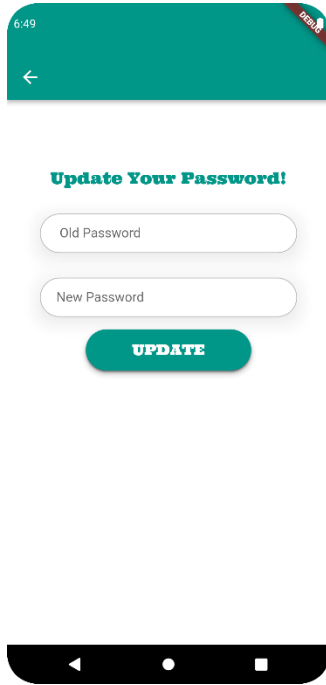
License



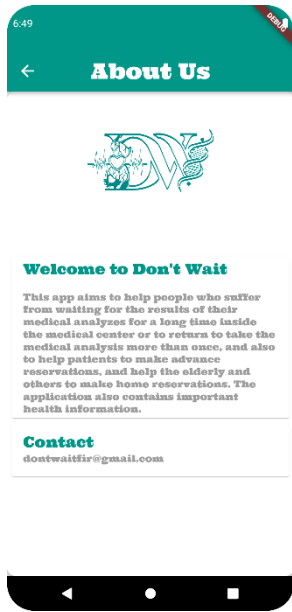
Modify the user profile:



Change the Password



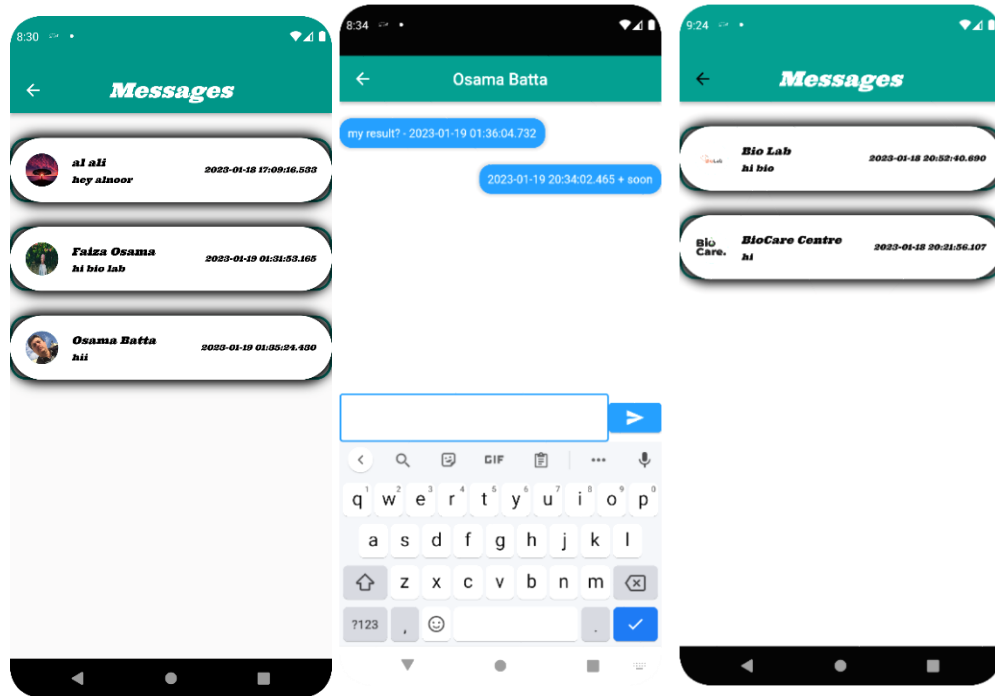
4.1.11 About US:



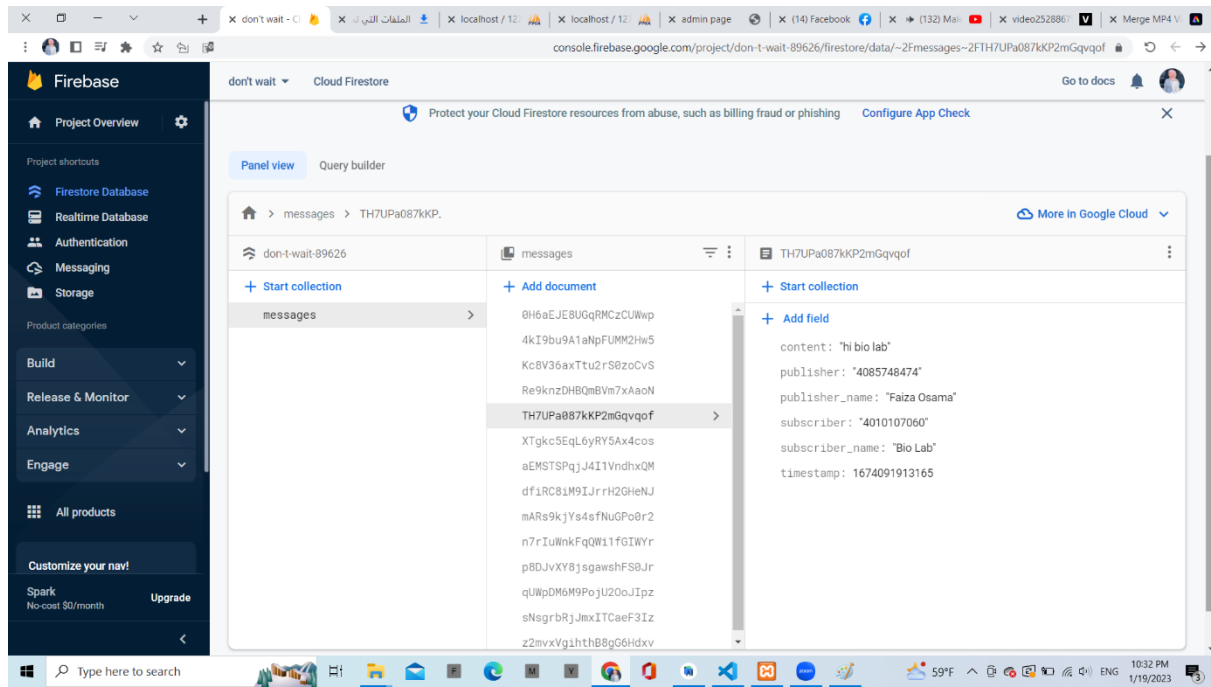
System Features Implementation:

4.1.12 Chat:

As for the chat, communication takes place between the patient and the health center directly:

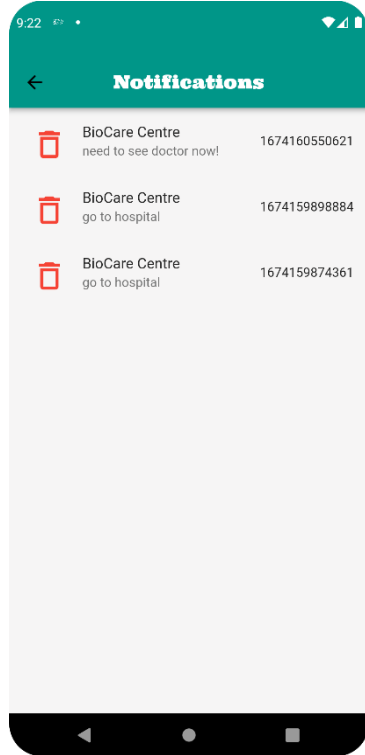


We have used a database called Firebase:



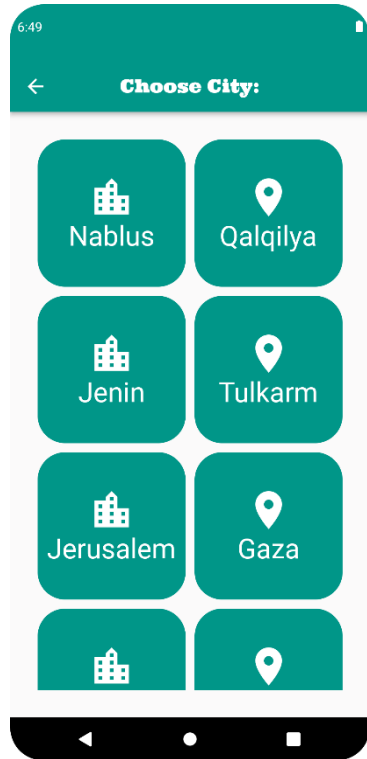
4.1.13 Notification:

The bell button displays full notifications, it can be deleted.



4.1.14 Book Appointment:

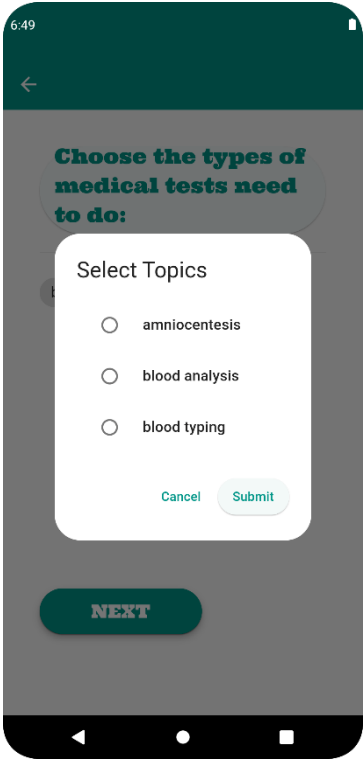
When making a reservation, the city is selected first:



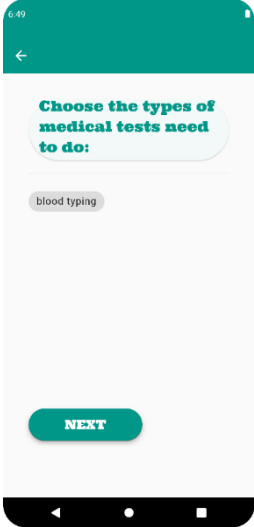
Then select medical center name:



Then choose the type of test:



It is only allowed to choose one check per reservation.



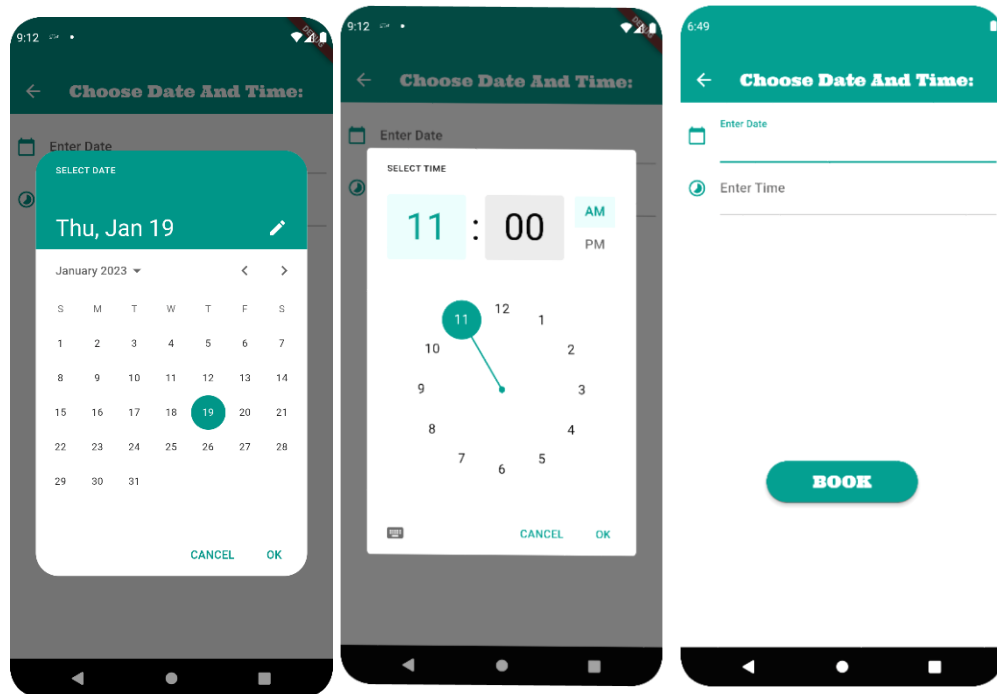
And then choose the appropriate date, upon arrival at the time and date reservation, there are 4 cases here:

1-message: "test time is out of center workHours Range"

2-message: "try another date, center is full"

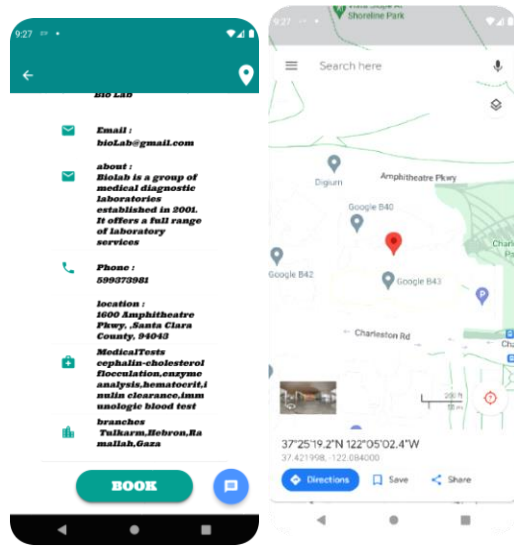
3-message: "check the type of your booking data"

4-message: "new booking has been added successfully"



4.1.15 Map:

The map above opens the map and locates the center for the user, set a red mark, The location of the center is determined and stored in Database automatically when it is registered with the application:



The Website:

The web was made on the server itself on ejs template.

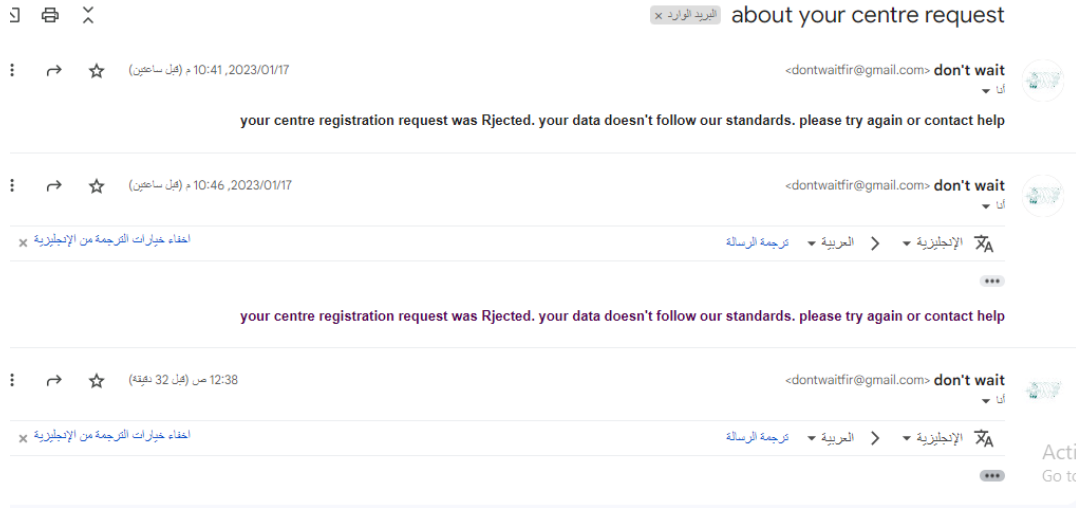
4.1.16 Home Page

The pointcheck table that was previously displayed in Database inside the web is displayed in this way, to be rejected or accepted:

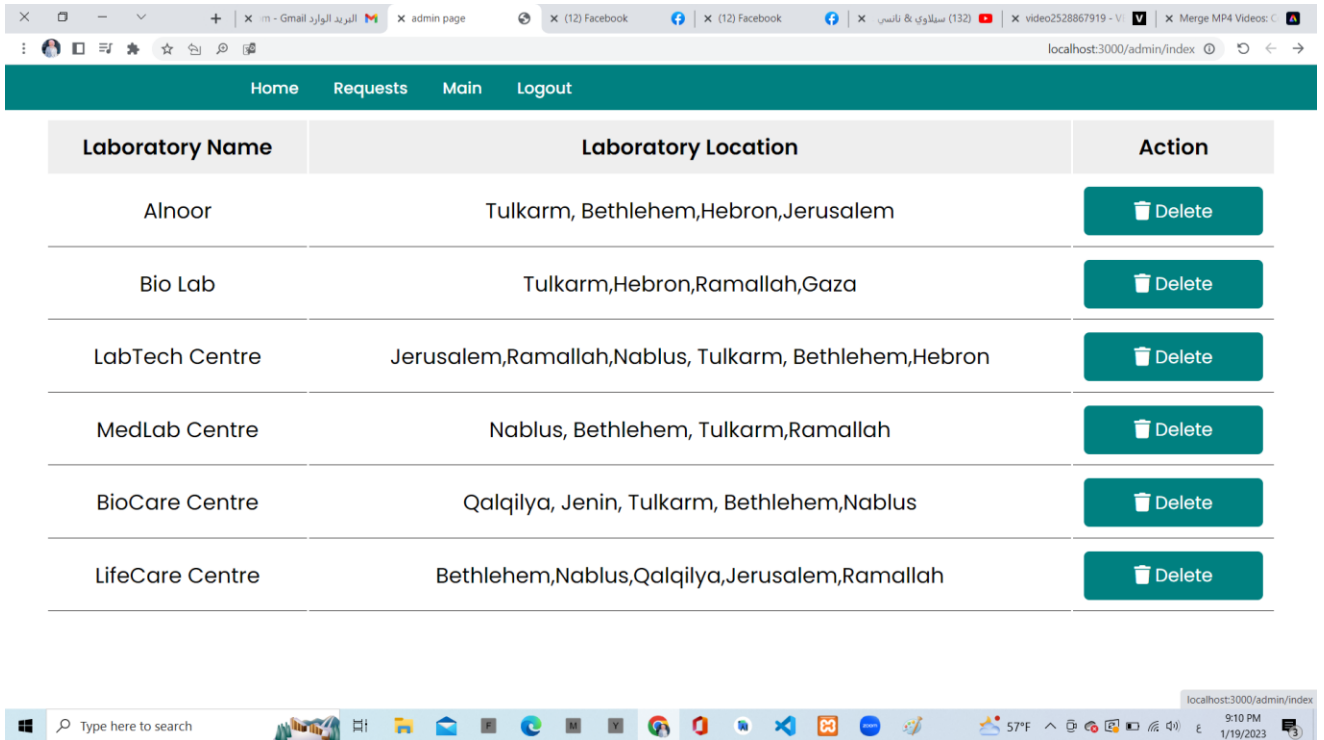
Checkpoint Id	Laboratory Data	Action
10	<p>Name: Qalqilya Centre Description: Since 1998. Email Centre@Gmail.Com Tests: Blood Typing,Epinephrine Tolerance Test,Enzyme Analysis Branches: Qalqilya Open Time: 11-0 Close Time: 18-0 Location: {"Latitude":37.4219983,"Longitude":-122.084,"Place": "1600 Amphitheatre Pkwy, ,Santa Clara County, 94043"}</p>	<p>Accept</p> <p>Reject</p>



The medical center will be notified of the approval or rejection of the login request via e-mail:



This page works to delete any center at any time if it violates health laws or becomes rejected in the future:



4.1.17 Sign In :

The screenshot shows a web browser window with the address bar displaying `localhost:3000/admin/login`. The main content area features a white login form with the heading **DON'T WAIT!**. The form contains two input fields: the first contains the email address `alitarek99944@gmail.com`, and the second contains masked characters `.....`. A green button labeled **Login Now** is positioned below the password field. Below the browser window, a Windows taskbar is visible with a search bar and various application icons. At the bottom of the browser window, a dark green navigation bar contains the following menu items: **Dashboard**, **Centres**, **Users**, **Requests**, **Main**, and **Logout**.

Welcome Admin..

This screenshot shows a portion of a Windows taskbar. On the left, there is a search bar with the text `Type here to search`. To its right are several application icons. On the far right, the system tray displays the temperature `66°F`, the date and time `4:31 PM 1/20/2023`, and the network status. A small tooltip above the system tray shows `localhost:3000`.


localhost:3000

Dashboard Centres Users Requests Main Logout

Welcome Admin..


localhost:3000/admin/users

Dashboard Centres Users Requests Main Logout



Faiza - Osama

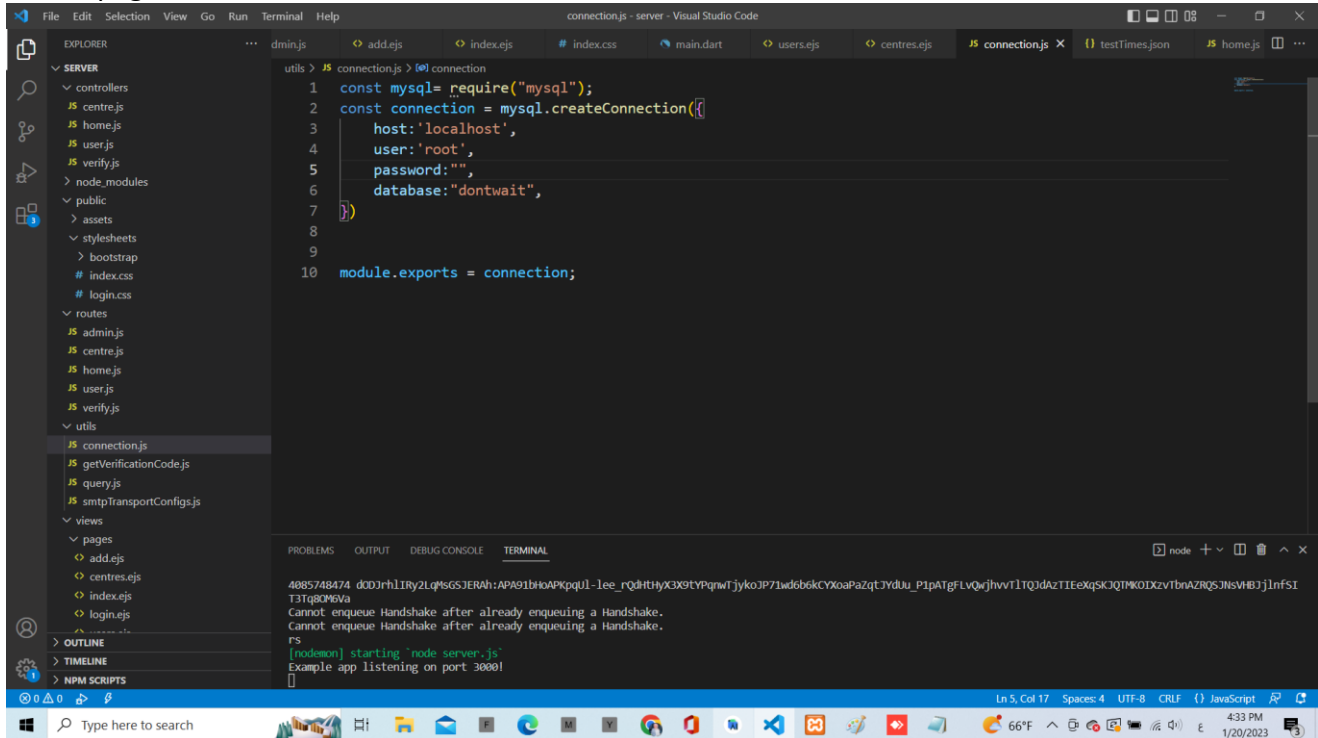
Delete



Osama - Batta

Delete

Server page:



```
1 const mysql = require("mysql");
2 const connection = mysql.createConnection({
3   host: 'localhost',
4   user: 'root',
5   password: "",
6   database: "dontwait",
7 });
8
9
10 module.exports = connection;
```

```
4085748474 d0dJrhLIry2Lq%6SJERAH:APA91bHoAPkqql1_lee_rQdHtHyX3X9tYPqwtJykoJp71wd6b6kCYoaPaZqTjYduu_P1pATgFLVQwJhwVTITQJdAzTIEexqSKQITW0DXzvTbnAZRQ5JNSvHBJjInFSI
T3Tq80M6Va
Cannot enqueue Handshake after already enqueueing a Handshake.
Cannot enqueue Handshake after already enqueueing a Handshake.
rs
[nodemon] starting 'node server.js'
Example app listening on port 3000!
```

Chapter 5: CONCLUSION & FUTURE WORK

5.1 CONCLUSION:

Both patients and medical centers will benefit from our application. Through this app, patients will get all the support they need to get the best services. In addition, the application will make it easier for medical centers to be more effective in Palestine.

The first and last goal was to make it easier for all patients and medical centers, and to have a comprehensive application for all the cities of Palestine. Chat was added between the two parties and everything that the user needs, whether he is a patient or an admin of a medical center.

4.3 FUTURE WORK:

In the future, some additions can be added to the application to keep pace with the development we are going through, for example a new feature can be added, which is the addition of the home reservation feature, and reservations can also be made with the doctor to treat the condition if necessary, and an evaluation of all centers and patients' opinions can be added by adding a comment, A group chat can also take place between users.

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