

T.R.

GEBZE TECHNICAL UNIVERSITY

FACULTY OF ENGINEERING

DEPARTMENT OF COMPUTER ENGINEERING

**MOBILE APPLICATION FOR DIGITAL LAW
PLATFORM**

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**SUPERVISOR
PROF. DR. HASARI CELEBI**

**GEBZE
2022**

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**2022
GEBZE**



**GRADUATION PROJECT
JURY APPROVAL FORM**

This study has been accepted as an Undergraduate Graduation Project in the Department of Computer Engineering on 20/01/2022 by the following jury.

JURY

Member

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Member : Dr. Burcu YILMAZ

ABSTRACT

Nowadays, technology is improving rapidly and the usage areas of mobile devices are increasing rapidly. Mobile devices, which were used only for communication in the beginning, are now used for many purposes such as shopping, video communication, making appointments from anywhere, along with the rapidly developing and spreading internet. This project is a mobile application project developed to ensure lawyers and clients to communicate quickly and efficiently. In the mobile application, the activities between lawyers and clients were brought together. The application is compatible for both IOS and Android platforms.

Keywords: law, lawyer, client, case, appointment.

ÖZET

Günümüzde teknoloji hızla ilerlemekte ve mobil cihazların kullanım alanları da hızla artmaktadır. Başlangıçta sadece iletişim kurmak için kullanılan mobil cihazlar, artık hızla gelişen ve yayılan internet ile beraber, alışveriş yapma, görüntülü haberleşme, herhangi bir yerden randevu alma işlemleri gibi birçok amaç için de kullanılmaktadır. Bu proje de avukat ve müvekkillerin hızlı ve verimli bir şekilde iletişim kurmalarını sağlamak amacıyla geliştirilen bir mobil uygulama projesidir. Uygulamada avukat ve müvekkiller arasında gerçekleşen faaliyetler bir araya getirilmiştir. Uygulama hem IOS hem de Android platformlar için uyumludur.

Anahtar Kelimeler: hukuk, avukat, müvekkil, dava, randevu.

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1. INTRODUCTION

Nowadays, with the rapidly growing technology, mobile devices have also developed rapidly. At the same time, along with the rapidly spreading internet, mobile applications have taken their place in many parts of our lives. Mobile applications, which are used in many areas from health to entertainment, from education to shopping, cover a large part of our lives. It has become inevitable that mobile applications, which make life so much easier and are a part of our lives, are also needed in the field of law. In this scope, in order to meet the mobile application needs of a law office that has a website, a mobile application was developed that allows the activities between lawyers and clients to be gathered under a single roof.

For this purpose, first of all, it was decided which activities could be performed by lawyers and their clients.

Activities that clients can perform with the application

- sign up and login,
- to ask questions (send a message) to the chosen lawyer in the selected category,
- share files with a lawyer,
- view sent messages and incoming messages,
- request an appointment at the office or online,
- attend online meeting,
- request a lawyer and view pending/approved/rejected requests,
- to pay,
- to follow the case filed

can be listed.

Activities that lawyers can perform with the application:

- sign up and login,
- view messages from clients, reply to messages and view sent messages,
- view pending/approved/rejected client requests,

- attend online meeting,
- view files submitted by clients,
- to follow the case filed,
- close the case

can be listed.

In order to develop this mobile application, which will be developed for lawyers and clients, in the most right way, similar projects and projects that can help were researched and analyzed. The website of the law office, whose mobile application will be made, was also analyzed, and the design plan was prepared and the project requirements were decided.

2. LITERATURE RESEARCH

Before the design plan of the project, literature research was made and sample projects were researched. It was investigated how the activities in the project such as asking/answering questions, online meetings, making payments and following the cases could be developed. Studies on these activities analyzed.

Video chat applications were examined for the video appointment system to be realized between lawyers and clients. The software kits and APIs used to implement these applications were examined. Jitsi platform, Agora SDK, Sinch Software Development Kit (SDK), Opentok API (tokbox) are some of the programming interfaces and software development kits used to realize video chat applications. It has been observed that video conversation applications are realized with Firebase Database and video conversation software development kit integrations.

As a result of the researches and the projects examined, it has been observed that the Firebase platform is frequently used as a database, and literature researches about Firebase have been made in this direction.

Firebase is a cloud-based platform developed by Google for mobile and web applications that stores data on a server in real time. It provides many services, mainly real-time database, user login authorization, storage. Firebase Cloud Firestore, Firebase Authentication and Cloud Storage are used in this project. [1]

Firebase Cloud Firestore is a NoSQL database developed to store large and complex data and make fast queries. In this project, lawyer, client, message and appointment information were kept in Cloud Firestore. Shared files are kept in Firebase Cloud Storage. [1]

Firebase Authentication provides backend services, easy-to-use SDKs, and ready-made UI libraries to authenticate users in apps. It supports authentication using passwords, phone numbers, popular federated identity providers such as Google, Facebook and Twitter, and more. Firebase Authentication is used for the registration and login processes of the users. [1]

Since the application will work on both mobile devices with IOS operating system and Android operating system, which languages are used for these operating systems

were researched. It has been observed that the Swift programming language is used for the IOS operating system, and Kotlin and Java programming languages are used for the Android operating system. In addition, the Flutter programming language, which has been used recently and is compatible for both IOS and Android operating systems, was also investigated.

Flutter is an open source mobile application development SDK developed by Google. It is used to develop applications for Android and iOS and to develop applications for the Google Fuchsia operating system. [2]

- Flutter is a flexible SDK and can be run comfortably in Windows, Linux or Mac environments. [2]
- Flutter is a rich SDK with Mobile-first 2D rendering engine, react-style framework, widget support for Android and iOS platform. [2]
- Flutter allows to develop effective applications for both platforms with the help of Material Design and Cupertino (IOS style) widgets and themes in its structure. [2]
- Flutter has a real-time editing feature called Hot reload which is not available in many development environments. With Hot Reload, developers can instantly see the reflections of their changes on the application, in real time, while preparing or editing their applications. [2]

Dart is an open source programming language first developed by Google and later standardized by Ecma. Thanks to the Flutter SDK supported by Google, it can now develop both IOS and Android applications using the Dart language. It can develop applications for mobile, web, server and IoT devices with Dart programming language. [3] [4]

Dart programming language is object-oriented, similar to the code sequence of the C programming language. It can be translated into JavaScript or the native language on the system it works on. It supports Interfaces, Abstracts, generic type and optional types. [3] [4]

As a result of the researches, it was decided to use Flutter programming language which is compatible with both IOS and Android, Firebase as database, Android Studio as development environment, UYAP system for case process, E-Tahsilat for payment system, Jitsi platform for online meetings.

3. DESIGN PLAN

Before the application was developed, a design plan was created in line with the literature research.

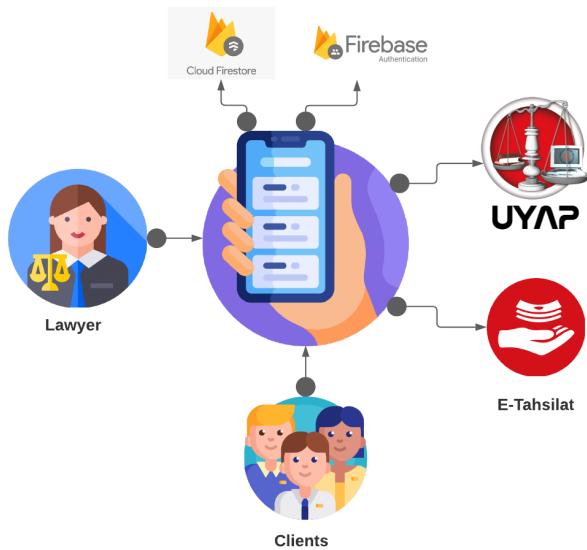


Figure 3.1: Project diagram.

Looking at the design plan in detail:

- Firebase Authentication is used for clients and lawyers to register and login to the application.
- Firebase Cloud Firestore is used to keep clients' and lawyers' data, messages, appointments.
- Firebase Cloud Storage is used to keep shared documents.
- UYAP system is used for case operations. It is ensured that it is directed to the UYAP system from application for case operations.
- E-Tahsilat system is used for payment operations. For payment operations, it is directed to the E-Tahsilat system from the application.
- Jitsi platform is used for online meetings.

4. PROJECT REQUIREMENTS

Project requirements is specified to develop the project in line with the design plan. Project requirements are listed below.

- Android Studio as IDE.
- Flutter SDK.
- Dart programming language.
- UYAP system integration for case operations.
- E-Tahsilat system integration for payment operations.
- Firebase Authentication integration for register and login activities.
- Firebase Cloud Firestore for keeping clients' and lawyers' data, messages, appointments.
- Firebase Cloud Storage for keeping shared documents.
- Jitsi integration for online meetings.

5. METHOD

After the design plan and project requirements were specified, the project started to be developed in this direction.

The development stages of the project will be examined under 3 headings: Home, Client and Lawyer.

5.1. Home

First, the project's home screen was developed. This screen contains information about the working areas of the law office where the mobile application is made. Each category is explained separately. ListView widget is used for this purpose.



Figure 5.1: Home screen of application.

When the icon button in the upper left corner of the screen is pressed, a window opens. There are 4 options available here: Online Consultation, Client Registration, Lawyer Registration, and Login. AppBar widget is used for this purpose.

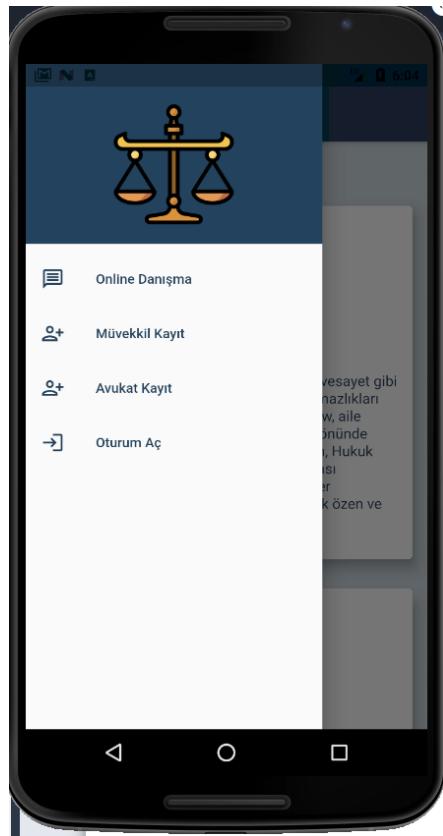


Figure 5.2: AppBar options.

5.1.1. Online Consultation

This part of the app allows asking lawyers questions without registering on the app. The asked category is selected from the category section and the lawyers belonging to this category are listed in the lawyers section. DropdownButton is used for this purpose. The user can also attach any file s/he wants to her/his message.



Figure 5.3: Online Consultation screen - 1.



Figure 5.4: Online Consultation screen - 2.

5.1.2. Client Registration

Name, surname, e-mail address, and password information are required for the client to register with the application.

Müvekkiller	Müvekkiller	nMddCIVQcBbgnm6NsUvPNrAwdjP2
+ Start collection	+ Add document	+ Start collection
Müvekkiller	JmjkNcCJZ5M1sDKC33pOWo1K4Bv2	+ Add field
	nMddCIVQcBbgnm6NsUvPNrAwdjP2 >	adi: "elif"
		email: "elif@gmail.com"
		muvekkil_adi: "elif akgün"
		soyadi: "akgün"

Figure 5.5: Client information in DB.

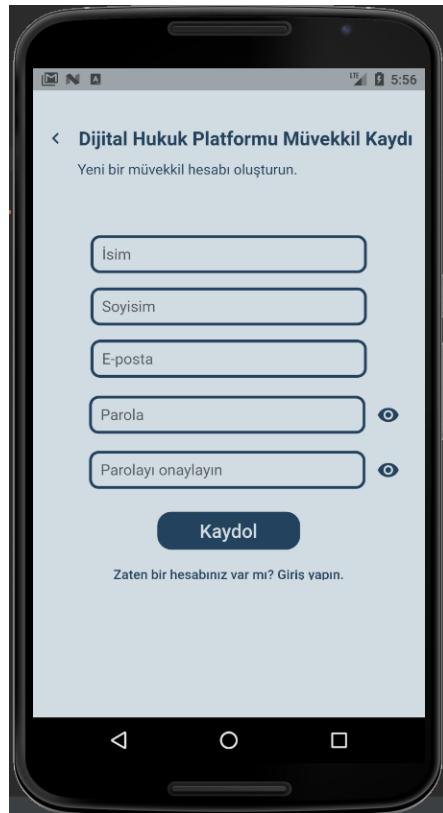


Figure 5.6: Client Registration screen.

5.1.3. Lawyer Registration

Name, surname, TBB Registry Number, IBAN, category, e-mail address, and password information are required for the lawyer to register with the application. TBB Registry Number is required for investigation and IBAN for payment operations. The lawyer can choose many categories. To provide this, Dropdown Button with checkbox is used.

When the lawyer clicks the register button, s/he is added to the lawyers in the categories s/he chooses in the database. A list is created for the lawyer with the categories s/he chooses and is kept in the database.

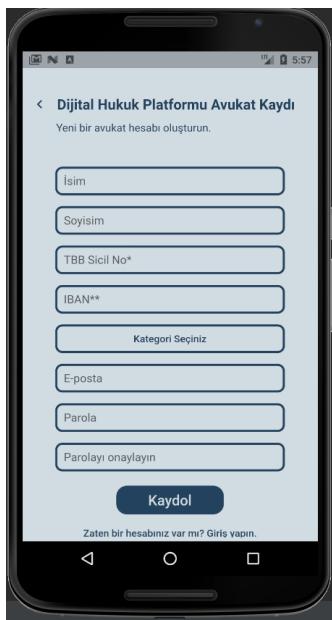


Figure 5.7: Lawyer Registration screen - 1.

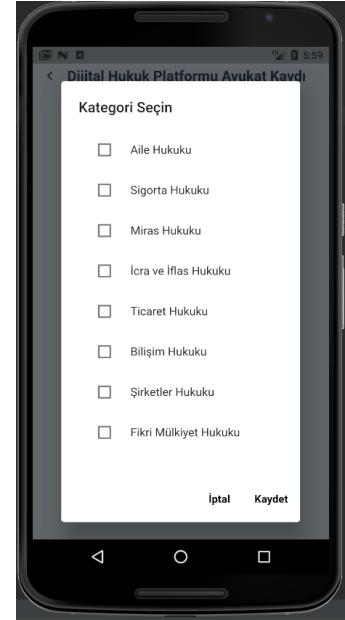


Figure 5.8: Lawyer Registration screen - 2.

Figure 5.9: Lawyer information in DB.

Figure 5.10: Categories in DB.

5.1.4. Login

The login screen is the same for both the client and the lawyer. Email address and password information are required to log in. According to the entered e-mail address, the application decides whether the user is a client or a lawyer, and directs the user to the client page if it is a client, and to the lawyer page if it is a lawyer.



Figure 5.11: Login screen.

Search by email address, phone number, or user UID					Add user	⋮
Identifier	Providers	Created ↓	Signed In	User UID		
gafar@gmail.com	✉	Jan 12, 2022	Jan 13, 2022	wCwedISK7pU27MLxq4BVNZ4K7...		
abdurrahman@gmail.com	✉	Jan 12, 2022	Jan 12, 2022	Vu5Qh80EFGeDi6KHRRt0G8JCG3		
mahmut@gmail.com	✉	Jan 12, 2022	Jan 13, 2022	?Ecvi4650ua5fSrhlngUXXgl3cz2		
azize@gmail.com	✉	Jan 12, 2022	Jan 12, 2022	zXG9N0XRzwhdltkUuyFHQoxZ8Nr1		
aysima@gmail.com	✉	Jan 12, 2022	Jan 12, 2022	IJ3rOIYHc4aHhKv60abYws3mtL02	⋮	
elif@gmail.com	✉	Dec 19, 2021	Jan 13, 2022	nMddCIVoCBBgnm6NsUvPNrAwdj...		

Figure 5.12: Lawyer and Client in authentication.

5.2. Client

If the user logging into the application is a client, the client is directed to the client home page. There are 6 options here: Messages, Appointment Activities, Lawyer Activities, Citizien UYAP, E-Tahsilat, and Profile. Each option is explained separately below.



Figure 5.13: Client home screen - 1.



Figure 5.14: Client home screen - 2.

5.2.1. Messages

On this screen, there are 3 options: New Message, Inbox, and Sent. Each option is explained separately below.

5.2.1.1. New Message

From this screen, the client can send a message to a lawyer in the category s/he chooses. The asked category is selected from the category section and the lawyers belonging to this category are listed in the lawyers section. DropdownButton is used for this purpose. Category, lawyer, subject and content fields are required to send a message. The file field is optional. The client can also attach a file to their message if

s/he want.

When the client sends a message, this message is added both to the selected lawyer's inbox and to the client's sent messages section.



Figure 5.15: Client - Messages screen.



Figure 5.16: New Message screen.

A screenshot of a MongoDB database interface showing a collection named "Gonderilenler". It contains one document with the ID "C7pn0Bv7w3iTDLl14Qup". The document details are listed on the right: avukat: "GAFAR ÇELEBI", avukatID: "wCwedISK7pU27MLxq4BVNZ4K7aC2", dosyaAdi: "a.pdf", icerik: "deneme2", indirilecekDosya: "2022-01-13 18:15:40.472559_a.pdf", kategori: "Miras Hukuku", konu: "deneme2", muvekkilAdi: "elif akgün", muvekkilID: "nMdDCIVqcBbgnm6NsUvPNrAwdfP2", and tarih: "January 13, 2022 at 9:15:40 PM UTC+3".

Figure 5.17: Client Sent Messages in DB.

5.2.1.2. Inbox

Messages to the client, that is, the replies written by the lawyers to the client, are displayed on this screen. Message date, sender, the subject, and the content are showed as much as they fit. If the message contains a file, there is also a file icon on the right. Messages are sorted by the date they were received. When it clicked a message, it taken to the screen where that message can be seen in more detail.

On the screen where the message showed in more detail, if the file has been shared, there is also the name of the file. The selected message can be deleted with the icon in the upper right corner. With the Reply and Forward buttons at the bottom of the screen, the message can be replied to and forwarded. A file can also be added to the reply with the file icon under the Reply TextField.

When it clicked the Reply button, a TextField type Reply entry will appear below the message, the Send button will be visible, and the Reply and Forward buttons will be invisible.

The sent reply is added both to the inbox of the sending lawyer and to the client's sent messages section.

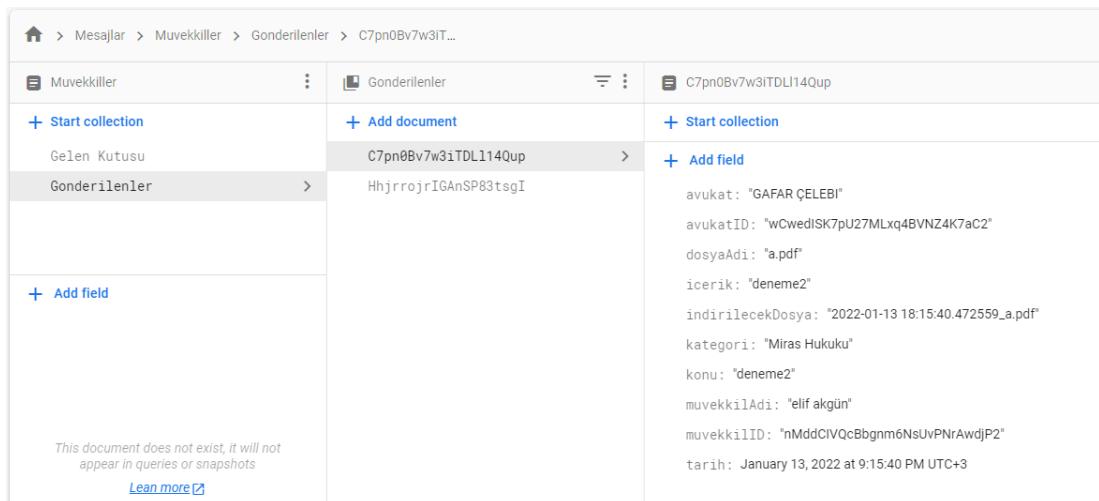


Figure 5.18: Client Inbox Messages in DB.

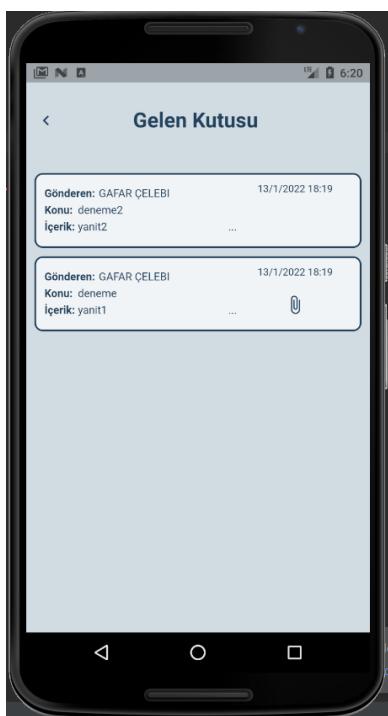


Figure 5.19: Client - Inbox screen.

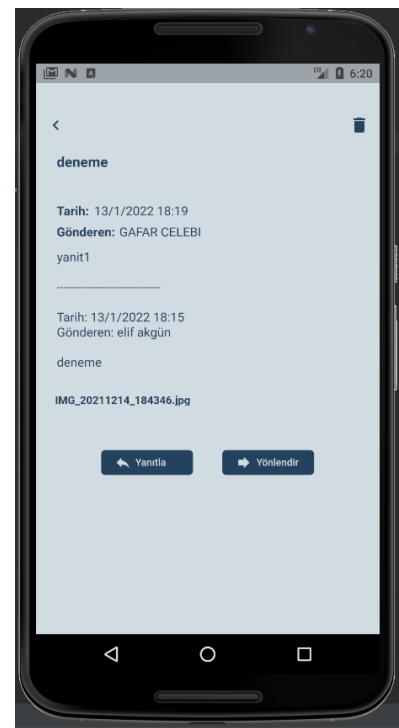


Figure 5.20: Selected message in more detail.



Figure 5.21: When clicked delete icon.



Figure 5.22: When clicked Reply button.

5.2.1.3. Sent

Messages sent by the client showed on this screen. Message date, the receiver, the subject, and the content are as showed as they fit. If the message contains a file, there is also a file icon on the right. Messages are sorted by the date they were sent. When it clicked a message, it taken to the screen where that message can be seen in more detail.

On the screen where the message appears in more detail, if the file has been shared, there is also the name of the file. The selected message can be deleted with the icon in the upper right corner. With the Reply and Forward buttons at the bottom of the screen, the message can be replied to and forwarded.



Figure 5.23: Client - Sent screen.

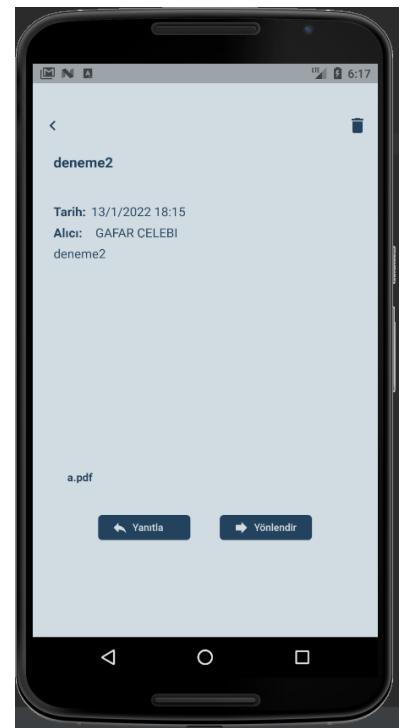


Figure 5.24: Selected message in more detail.

5.2.2. Appointment Activities

On this screen, there are 3 options: Make Appointment, Appointments, Pending Appointments. Each option is explained separately below.

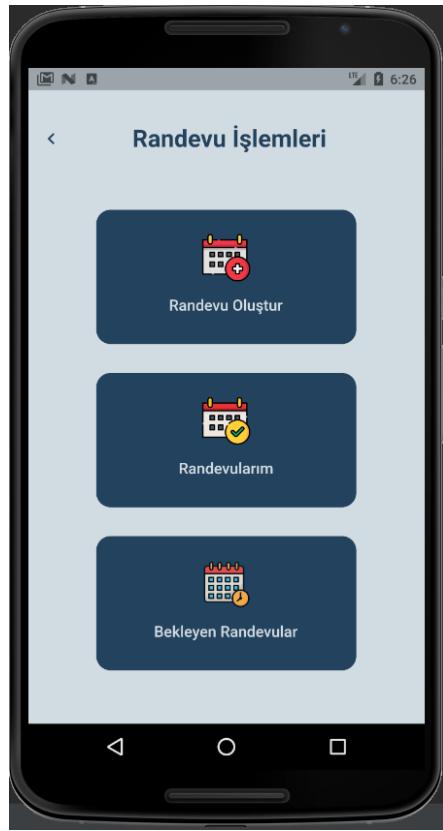


Figure 5.25: Appointment screen.

5.2.2.1. Make Appointment

From this screen, the client can make an appointment to a lawyer in the category s/he chooses. There are category, lawyer, appointment type, date, and hour fields in this page. The asked category is selected from the category section and the lawyers belonging to this category are listed in the lawyers section. DropdownButton is used for this purpose. Appointment type can be Online or At the Office. The hours that the lawyer is available on that date are listed according to the lawyer chosen by the client and the date. The appointments of the selected lawyer on the selected date are checked from the database and the hours with the lawyer's appointment are removed from the hour list. The calendar structure was created using the flutter_form_builder package to select the date.

When the client creates an appointment request, this request is added in the pending appointments section of both the client and the selected lawyer. After the appointment made, the user is directed to the page containing the details of the created appointment.

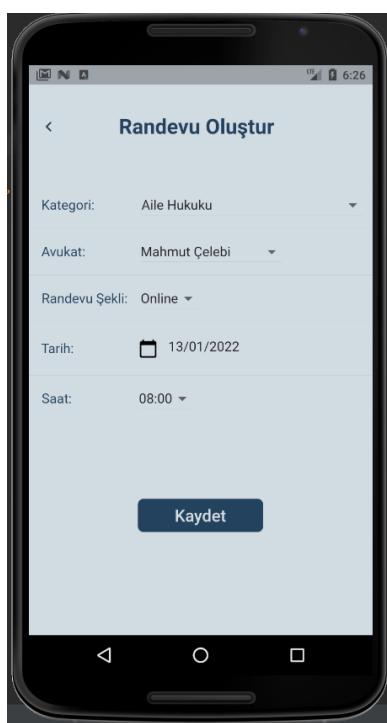


Figure 5.26: Make Appointment screen.

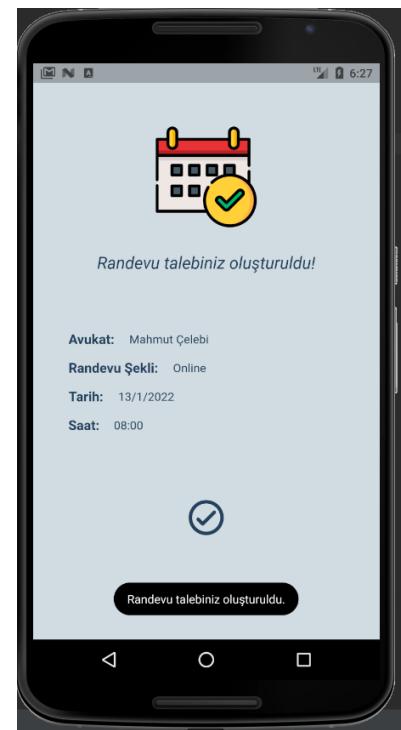


Figure 5.27: Appointment details screen.

Muvekkiller	Randevular	GRPfxoTaj0FVRzTWLymM
+ Start collection	+ Add document	+ Start collection
Randevular	GRPfxoTaj0FVRzTWLymM	+ Add field
	ezziEhohr2pp5EaIijX7	avukat: "GAFAR ÇELEBI"
		avukatDocId: "E2vib038Y1GRJog274hl"
		avukatID: "wCwedlSK7pU27MLxq4BVNZ4K7aC2"
		kategori: "Ticaret Hukuku"
		muvekkilAdi: "elif akgün"
		muvekkilDocId: "GRPfxoTaj0FVRzTWLymM"
		muvekkilID: "nMddClVQcBbgnm6NsUvPNrAwdjP2"
		randevuSekli: "Ofiste"
		saat: "8:00"
		tarih: "26/1/2022"
		tarihSaatli: January 26, 2022 at 11:00:00 AM UTC+3
		tarihSaatSiz: January 26, 2022 at 3:00:00 AM UTC+3

This document does not exist, it will not appear in queries or snapshots
[Learn more](#)

Figure 5.28: Appointment information in DB.

5.2.2.2. Appointments

Appointments accepted by the lawyer show on this screen. Lawyer name, appointment type, date, and hour information showed for all accepted appointments. When it clicked an appointment, it taken to the screen where that appointment can be seen in more detail.

On the screen where the accepted appointment appears in more detail, there are lawyer name, appointment type, date, and hour information showed for clicked appointment. The selected appointment can be deleted with the icon in the upper right corner. When the accepted appointment is deleted from client's accepted appointments, then same accepted appointment will be deleted from the lawyer's accepted appointments.

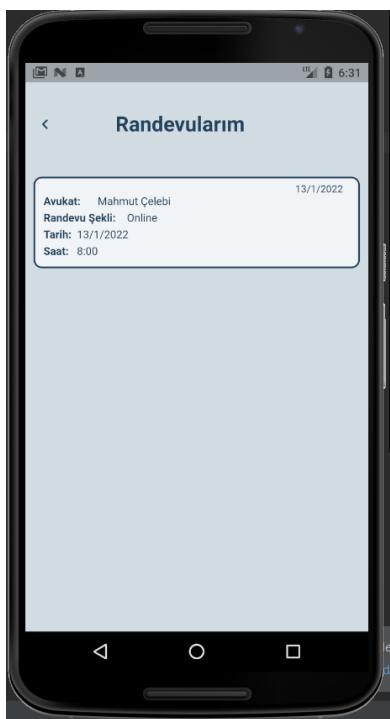


Figure 5.29: Appointments screen.

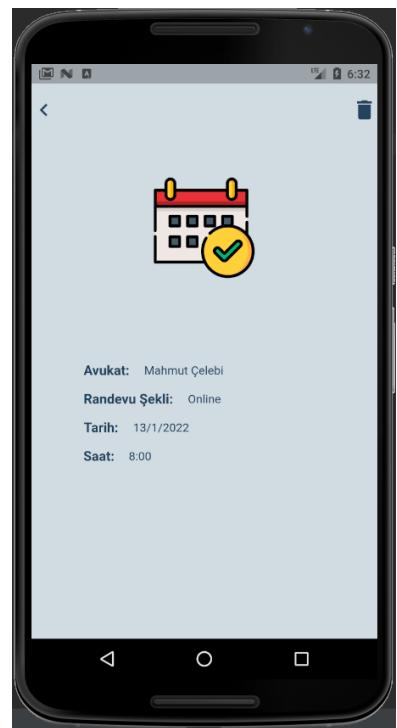


Figure 5.30: Accepted appointment details screen.

5.2.2.3. Pending Appointments

Appointments requested by the client and not yet accepted by the lawyer show on this screen. Lawyer name, appointment type, date, and hour information showed for all pending appointments. When it clicked an appointment, it taken to the screen where

that appointment can be seen in more detail.

On the screen where the pending appointment appears in more detail, there are lawyer name, appointment type, date, and hour information showed for clicked appointment. The selected appointment can be deleted with the icon in the upper right corner. When the pending appointment is deleted from client's pending appointments, then same pending appointment will be deleted from the lawyer's pending appointment requests.

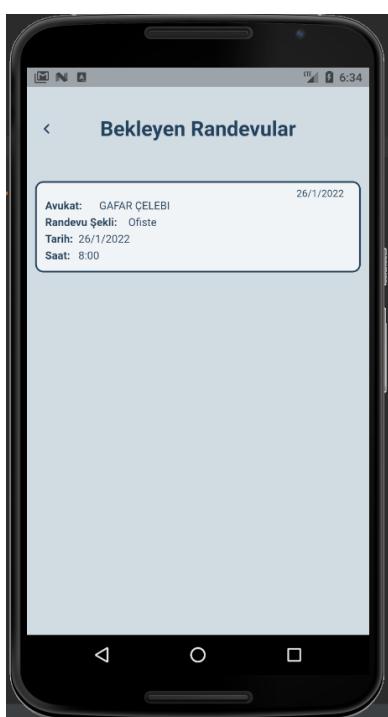


Figure 5.31: Pending Appointments screen.

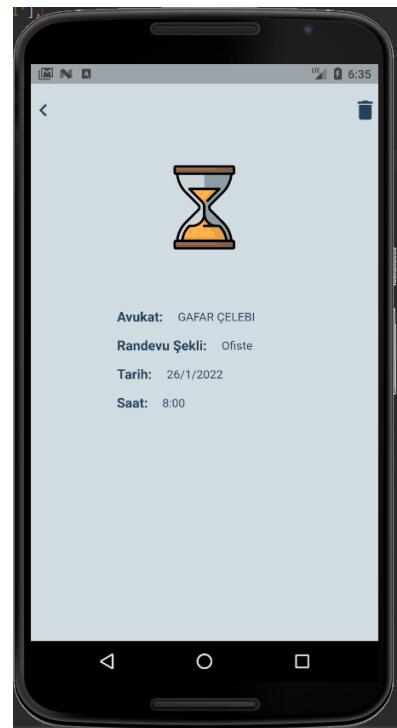


Figure 5.32: Pending appointment details screen.

5.2.3. Lawyer Activities

On this screen, there are 3 options: Request a Lawyer, Lawyers, Pending Requests. Each option is explained separately below.

5.2.3.1. Request a Lawyer

From this screen, the client can request a lawyer in the category he/she chooses. There are category, and lawyer fields. The asked category is selected from the category

section and the lawyers belonging to this category are listed in the lawyers section. DropdownButton is used for this purpose.

When the client requests a lawyer, this request is added in the pending requests section of both the client and the selected lawyer.

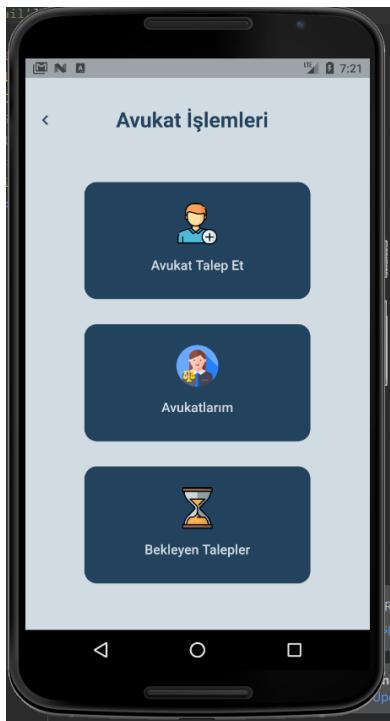


Figure 5.33: Lawyer Activites screen.



Figure 5.34: Request a Lawyer screen.

A screenshot of the Firebase Realtime Database interface. The path shown is "Avukat Talepleri > Muvekkiller > Gonderilen Talepler > uUkWRt2ilV3YkYuI10R1". The database structure includes collections for "Muvekkiller" and "Gonderilen Talepler", and a specific document for the ID "uUkWRt2ilV3YkYuI10R1" with fields like "avukat", "avukatDocID", "avukatID", "avukat_email", "kategori", "muvekkilAdi", "muvekkilDocID", "muvekkilEmail", and "muvekkilID". A note at the bottom left says "This document does not exist, it will not appear in queries or snapshots".

Figure 5.35: Lawyer Request information in DB.

5.2.3.2. Lawyers

The requests accepted by the lawyer show on this screen. Lawyer's name, and lawyer's email address information are showed for all accepted appointments.

5.2.3.3. Pending Requests

Lawyer requests made by the client show on this screen. Lawyer's name, and lawyer's email address information are showed for all pending appointments.

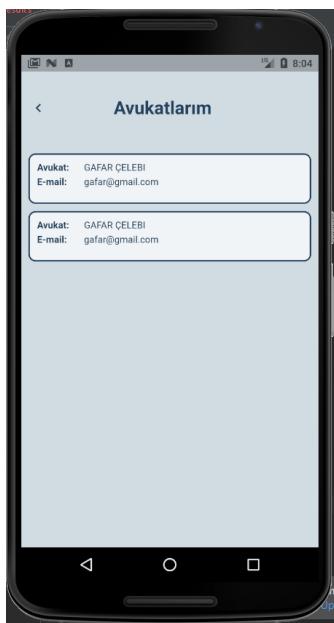


Figure 5.36: Client - Lawyers screen.

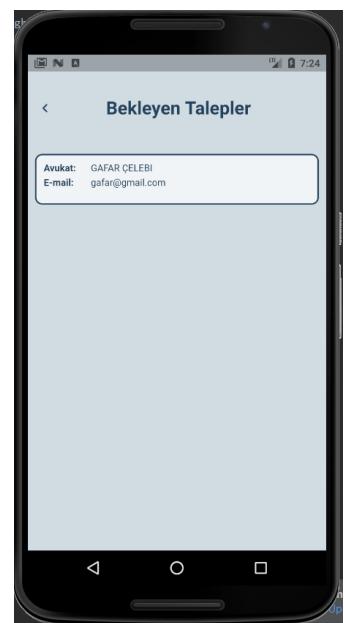


Figure 5.37: Pending Requests screen.

5.2.4. Citizien UYAP

When the client clicks this button, s/he is directed to the Citizen UYAP web page for case operations.

5.2.5. E-Tahsilat

When the client clicks this button, s/he is directed to the E-Tahsilat web page for payment operations.



Figure 5.38: Citizen UYAP screen.



Figure 5.39: E-Tahsilat screen.

5.2.6. Profile

On this screen, there are name, surname and e-mail information. The user can update this information and change her/his password with the Change password TextButton. When the Change password TextButton is clicked, a reset link is sent to the e-mail address entered by the user to renew the password.



Figure 5.40: Profile screen.

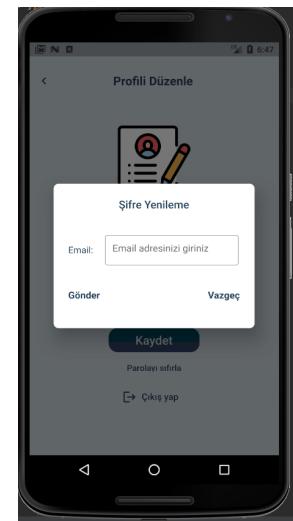


Figure 5.41: Reset Password pop-up.

5.3. Lawyer

If the user logging into the application is a lawyer, the lawyer is directed to the lawyer home page. There are 6 options here: Messages, Appointment Activities, Client Activities, Lawyer UYAP, E-Tahsilat, and Profile. Each option is explained separately below.



Figure 5.42: Lawyer home screen - 1.



Figure 5.43: Lawyer home screen - 2.

5.3.1. Messages

On this screen, there are 2 options: Inbox, and Sent. Each option is explained separately below.



Figure 5.44: Messages screen.

5.3.1.1. Inbox

Messages to the lawyer, that is, the replies written by the clients to the lawyer, are displayed on this screen. message date, sender, the subject, and the content are showed as much as they fit. If the message contains a file, there is also a file icon on the right. Messages are sorted by the date they were received. When clicked a message, it taken to the screen where that message can be seen in more detail.

On the screen where the message showed in more detail, if the file has been shared, there is also the name of the file. The selected message can be deleted with the icon in the upper right corner. With the Reply and Forward buttons at the bottom of the screen, the message can be replied to and forwarded. A file can also be added to the reply with the file icon under the Reply TextField. When it clicked the Reply button, a TextField type Reply entry will appear below the message, the Send button will be visible, and the Reply and Forward buttons will be invisible. The sent reply is added both to the inbox of the sending client and to the lawyer's sent messages section.

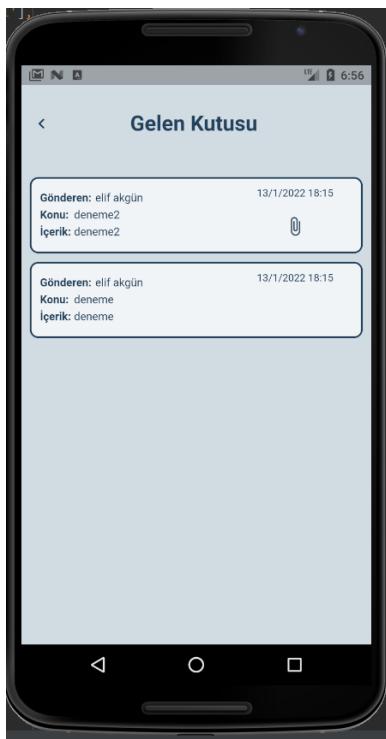


Figure 5.45: Lawyer - Inbox screen.



Figure 5.46: Selected message in more detail.



Figure 5.47: When clicked delete icon.



Figure 5.48: When clicked Reply button.

5.3.1.2. Sent

Messages sent by the lawyer showed on this screen. Message date, the receiver, the subject, and the content are as showed as they fit. If the message contains a file, there is also a file icon on the right. Messages are sorted by the date they were sent. When clicked a message, it taken to the screen where that message can be seen in more detail.

On the screen where the message appears in more detail, if the file has been shared, there is also the name of the file. The selected message can be deleted with the icon in the upper right corner. With the Reply and Forward buttons at the bottom of the screen, the message can be replied to and forwarded.



Figure 5.49: Lawyer - Sent screen.

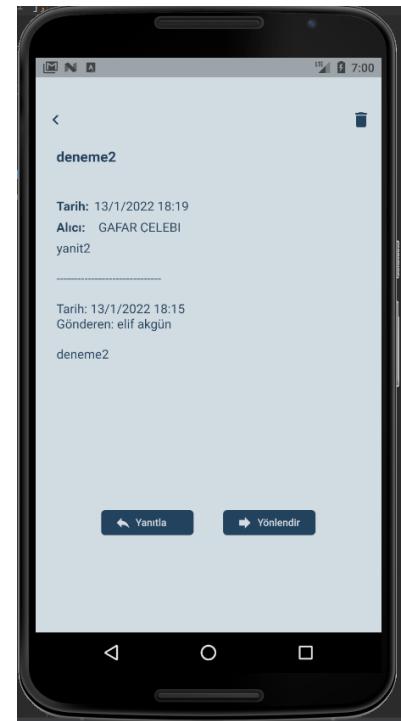


Figure 5.50: Selected message in more detail.

5.3.2. Appointment Activities

On this screen, there are 2 options: Appointments, Pending Appointments. Each option is explained separately below.

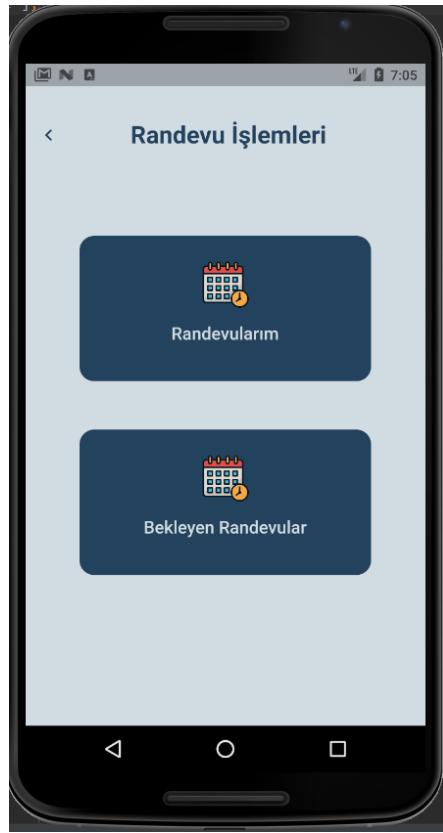


Figure 5.51: Appointment screen.

5.3.2.1. Appointments

Appointments accepted by the lawyer show on this screen. Client name, appointment type, date, and hour information showed for all accepted appointments. When clicked an appointment, it taken to the screen where that appointment can be seen in more detail.

On the screen where the accepted appointment appears in more detail, there are client name, appointment type, date, and hour information showed for clicked appointment. The selected appointment can be deleted with the icon in the upper right corner. When the accepted appointment is deleted from lawyer's accepted appointments, then same accepted appointment will be deleted from the client's accepted appointments.



Figure 5.52: Appointments screen.

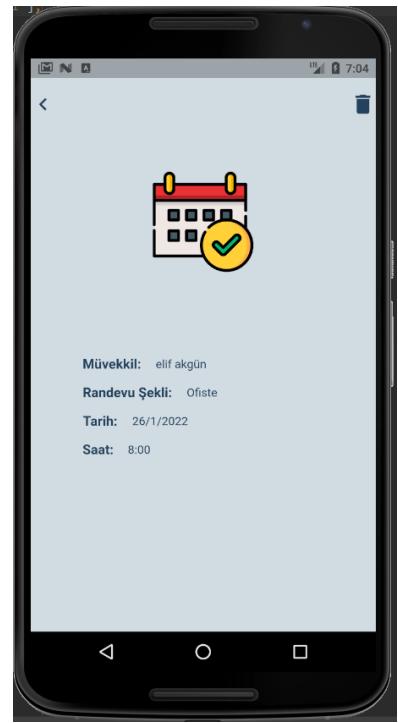


Figure 5.53: Accepted appointment details screen.

5.3.2.2. Pending Appointments

Appointments requested by the client and not yet accepted by the lawyer show on this screen. Client name, appointment type, date, and hour information showed for all pending appointments. When clicked an appointment, it taken to the screen where that appointment can be seen in more detail.

On the screen where the appointment appears in more detail, there are client name, appointment type, date, and hour information showed for clicked appointment. There are also Confirm and Refuse buttons. If the lawyer click the Confirm button, then this appointment is added in the appointments section of both the client and the lawyer. Otherwise, if the lawyer click the Refuse button, then this appointment is deleted from both client's pending appointments and lawyer's pending appointments.

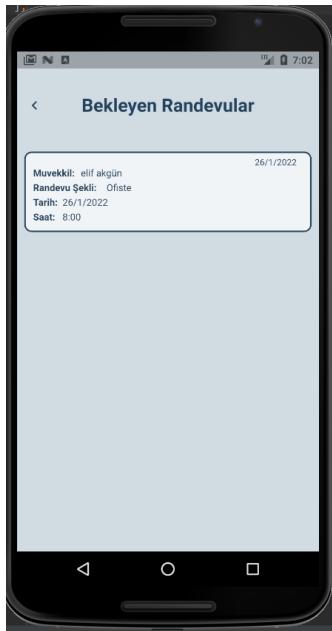


Figure 5.54: Pending Appointments screen.

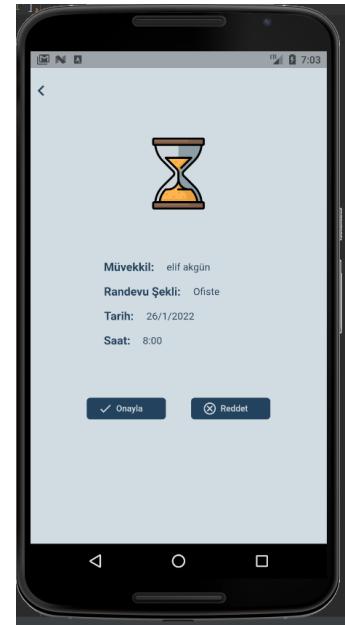


Figure 5.55: Pending appointment details screen.

5.3.3. Client Activities

On this screen, there are 2 options: Clients, Pending Requests. Each option is explained separately below.

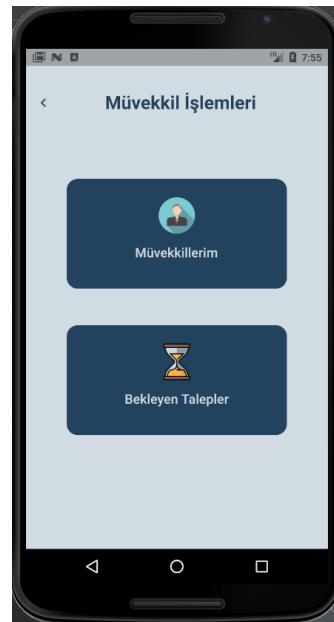


Figure 5.56: Client Activities screen.

5.3.3.1. Clients

Lawyer requests accepted by the lawyer show on this screen. Client's name, and client's e-mail information showed for all accepted requests.

5.3.3.2. Pending Requests

Requests requested by the client and not yet accepted by the lawyer show on this screen. Client's name, and client's e-mail information showed for all pending requests. There are also Confirm and Refuse buttons. If the lawyer click the Confirm button, then this request is added in the Clients section of the lawyer and Lawyers section of the client. Otherwise, if the lawyer click the Refuse button, then this request is deleted from both client's pending requests and lawyer's pending requests.

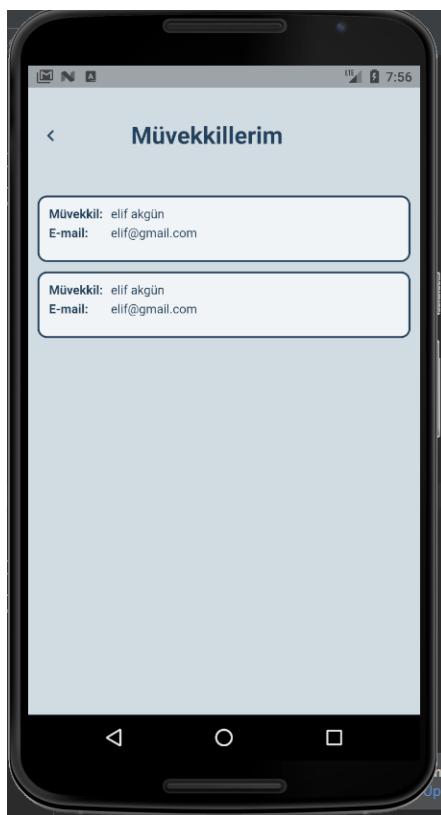


Figure 5.57: Lawyer - Clients screen.



Figure 5.58: Pending Requests screen.

5.3.4. Lawyer UYAP

When the lawyer clicks this button, s/he is directed to the Lawyer UYAP web page for case operations.

5.3.5. E-Tahsilat

When the lawyer clicks this button, s/he is directed to the E-Tahsilat web page for payment operations.



Figure 5.59: Lawyer - UYAP screen.



Figure 5.60: Lawyer - E-Tahsilat screen.

5.3.6. Profile

On this screen, there are name, surname and e-mail information. The lawyer can update this information and change her/his password with the Change password TextButton. When the Change password TextButton is clicked, a reset link is sent to the e-mail address entered by the user to renew the password.

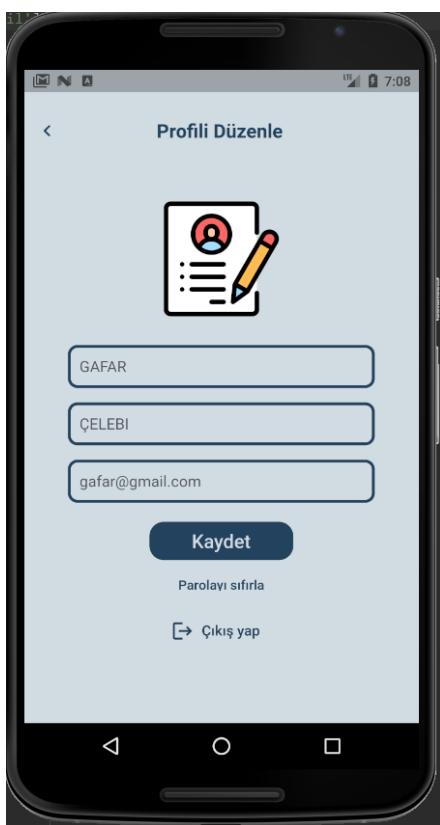


Figure 5.61: Lawyer - Profile screen.

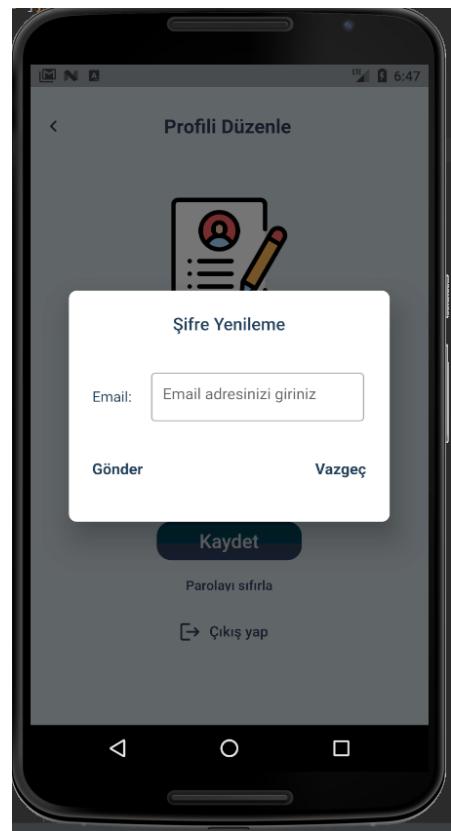


Figure 5.62: Reset Password pop-up.

6. EXPERIMENTS AND FINDINGS

While developing the application, Nexus 6 API 30 emulator and Flutter SDK were used in Android Studio.

As the application was developed, it was tested whether there was a problem with the interface on different sized mobile phones. As a result of the tests, it was determined that some components on the screen were incorrectly positioned on some devices and the project was developed as this. It was aimed to make the interface look device-independent scale.

All activities were tested separately for the homepage, client, and lawyer parts of the application.

Without logging in on the home page of the application, sending a message with/without a file to the selected lawyer in the asked category is provided. The client and the lawyer were successfully registered and logged in to the application.

On the client side of the application, sending messages to the lawyer, seeing sent and incoming messages; make an appointment with a lawyer online or at the address, see confirmed and pending appointments; request a lawyer, see pending and accepted requests; redirecting to Citizen UYAP page with Citizen UYAP button for case issues; redirecting to the E-Tahsilat page for payment operations and editing the client's profile were tested and resulted successfully.

On the lawyer side of the application seeing sent and incoming messages; view confirmed and pending appointments; see pending requests and accepted requests; redirecting to Lawyer UYAP page with Lawyer UYAP button for case issues; redirecting to the E-Tahsilat page for payment operations and editing the lawyer's profile were tested and resulted successfully.

Phones used in the tests:

- General Mobile 8, Android Version: 9,
- Xiaomi MIUI Global 12.0.1, Android Version: 9,
- Xiaomi Redmi Note 7, Android Version: 10

7. RESULT

In this project, Android OS and IOS compatible mobile application was developed to ensure effective and fast communication between clients and lawyers.

Within the scope of this application, the client and her/his lawyer can message and share files over the message; the client can request an appointment from any lawyer and the lawyer can refuse any appointment requests; the client can request a lawyer and the lawyer can reject any request; both the lawyer and the client can follow the cases through the UYAP platform and complete the payment operations via E-Tahsilat.

- The client can make an appointment and the appointment can be seen in the appointment list with a rate of 95% per second,
- The questions asked by the clients can be seen with a rate of 95% per second.
- Lawyer's answers can be seen with a rate of 95% per second.

As a result, success criteria were met.

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