



USER MANUAL

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1. Introduction

The User Manual serves as a comprehensive guide to all the possibilities and functionalities provided by the FromHearty application.

We will provide you with an overview of key aspects of the application, emphasizing how to make the most of all its features.

Thank you for being a part of our community; we wish you a successful and pleasant experience using the FromHearty application!

2. Technical description

In the technical realm of our project, we envision a robust implementation aimed at utilizing Microsoft's cutting-edge technologies to bolster our AI-driven healthcare solution. Our application's backbone will be formed by a combination of Angular for the frontend and .NET for the backend, ensuring a seamless, dynamic, secure and smooth user experience, to both patients and healthcare providers.

For the implementation of artificial intelligence (AI) in our diagnostic processes, we've chosen to leverage the ML.NET NuGet package.

This package will serve as the cornerstone of our AI capabilities, empowering our application to analyze patient data comprehensively and provide precise and quick diagnoses of cardiovascular diseases. By integrating ML.NET into our system, we're embracing advanced learning algorithms to enhance our diagnostic accuracy, surpassing traditional assessments performed by healthcare professionals. While we adhere to ML.NET, exploring alternatives like TensorFlow could expand our machine learning options.

In essence, our utilization of ML.NET aligns with responsible AI practices by fostering transparency, adaptability, and stringent data security, ensuring that our AI-driven healthcare solution meets ethical standards throughout its deployment.

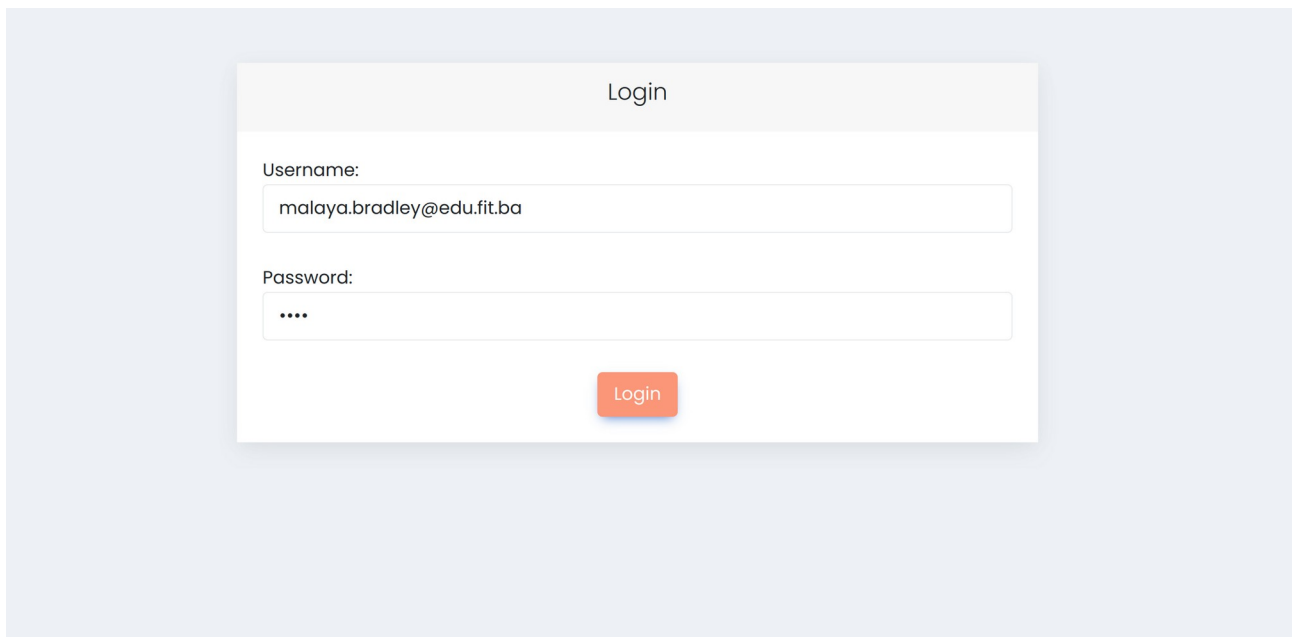
Furthermore, to ensure the scalability, efficiency, and accessibility of our application, we've opted to host it on Microsoft's Azure cloud platform. Azure will not only provide a robust infrastructure but also enable seamless integration with a myriad of Azure services, fostering real-time communication and data processing.

3. Login

The application provides a secure login system. There are two types of users in the system: House Doctors and Cardiologists.

To log in to the application, the user enters their username (email) and password. The email address serves as the unique username in the system.

Upon successful login, the user will be directed to the interface corresponding to their predefined user role.



Login

Access credentials for the "House Doctors" role:

URL: <https://muhamedkarajic.github.io/from-hearty/#/>

User: malaya.bradley@edu.fit.ba

Pass: IC2024

Access credentials for the "Cardiologists" role:

URL: <https://muhamedkarajic.github.io/from-hearty/#/>

User: koa.giles@edu.fit.ba

Pass: IC2024

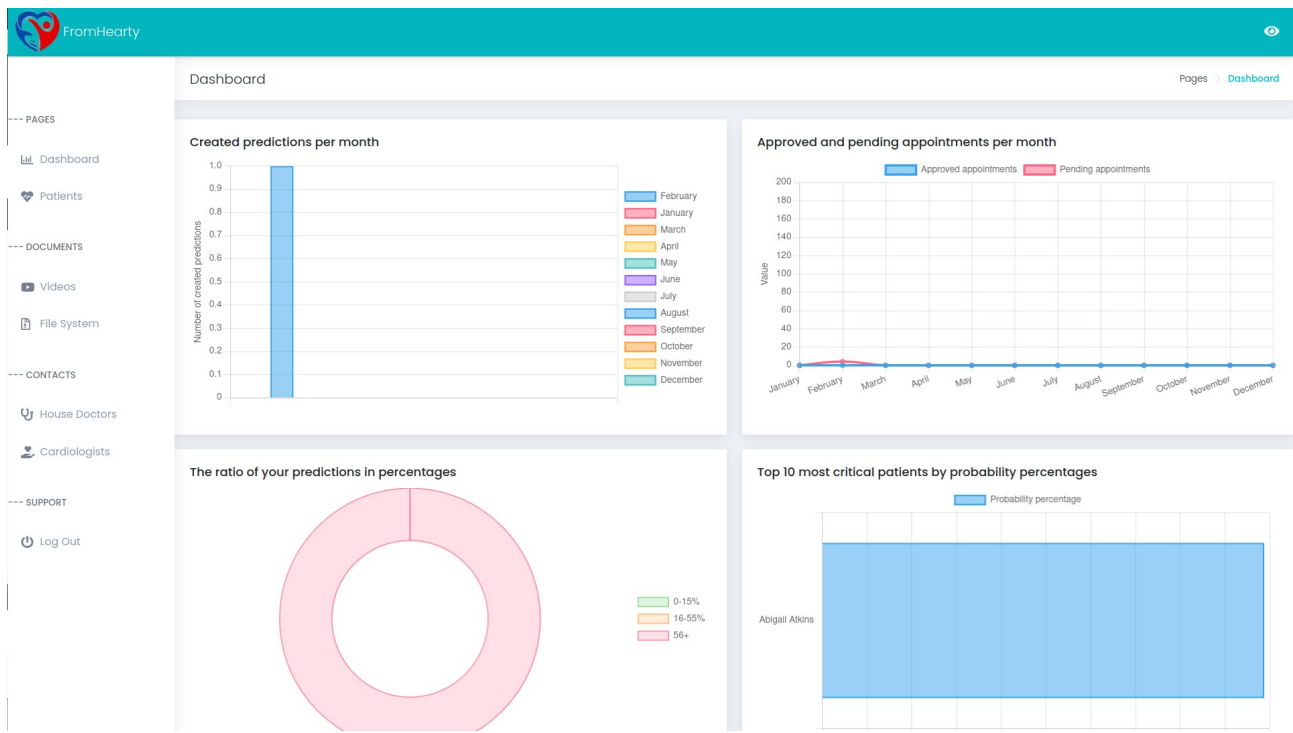
4. House Doctors

4.1. Dashboard

On the "Dashboard," users are provided with a visual representation of information through graphical elements. Various categories are presented, offering an intuitive and aesthetically pleasing experience to users.

Users have the ability to view:

- Created predictions per month
- Approved and pending appointments per month
- The ratio of your predictions in percentages
- Top 10 most critical patients by probability percentages



Dashboard

4.2. Patients

The House Doctors has the ability to access the list of their patients, as well as insights into their archives, including the AI prediction option.

The Patients page displays a table of patient information with the following columns: First Name, Last Name, Birth Date, Date Registered, Gender, AI Prediction, and Archives. The table lists five patients: Abigail Atkins, Madisyn Solis, Lyanna Jacobs, Kamiyah House, and Maliyah Poole. All patients were registered on Monday, Jan 1, 1. The page also includes a sidebar with navigation options and a footer with page size and navigation controls.

First Name	Last Name	Birth Date	Date Registered	Gender	AI Prediction	Archives
Abigail	Atkins	Monday, Jan 1, 1	Monday, Jan 1, 1	♀	📄	📁
Madisyn	Solis	Monday, Jan 1, 1	Monday, Jan 1, 1	♀	📄	📁
Lyanna	Jacobs	Monday, Jan 1, 1	Monday, Jan 1, 1	♀	📄	📁
Kamiyah	House	Monday, Jan 1, 1	Monday, Jan 1, 1	♀	📄	📁
Maliyah	Poole	Monday, Jan 1, 1	Monday, Jan 1, 1	♀	📄	📁

Patients

4.3. AI Prediction

AI Prediction is the process of analyzing the risk of cardiovascular diseases in a specific patient using artificial intelligence.

AI Prediction

Pages > AI Prediction > Abigail Atkins [Clear prediction form](#)

*Chest Pain Type (Cp) typical angina

*Fasting Blood Sugar (Fbs) (normal: 3 - 6 mmol / L) Value: 3

*Number of Major Vessels Colored by Fluoroscopy (Ca) (normal: 0) Value: 0

*ST Depression Induced by Exercise Relative to Rest (Old Peak) Value: 1

*Resting Blood Pressure (High/Low) (normal: 120/80 mmHg) Value: 3

*Serum Cholesterol (Chol) (normal: < 5 mmol / L) Value: 3

*Maximum Heart Rate Achieved (Thalach) (normal: 60-100 bpm) Value: 75

*Slope of the Peak Exercise ST Segment (Slope) Value: 1

*Resting Electrocardiographic Results (Rest ECG) No

*Thalassemia (Thal) (normal: No) No

Exercise Induced Angina (Exang) ☐ Exang

*All fields are required

Predict

AI Prediction

Upon obtaining results, the House Doctors assess the need for potential additional examinations by a specialist doctor. If specialist services are required, they schedule an appointment using the calendar (Book an Appointment).

Parameters included in the analysis of the risk of cardiovascular diseases:

- 1 Chest Pain Type (Cp);
- 2 Fasting Blood Sugar (Fbs);
- 3 Exercise Induced Angina (Exang);
- 4 Number of Major Vessels Colored by Fluoroscopy (Ca);
- 5 Resting Blood Pressure (High/Low);
- 6 Resting Electrocardiographic Results (Rest ECG);
- 7 ST Depression Induced by Exercise Relative to Rest (Old Peak);
- 8 Thalassemia (Thal);
- 9 Serum Cholesterol (Chol);
- 10 Maximum Heart Rate Achieved (Thalach);
- 11 Slope of the Peak Exercise ST Segment (Slope);

Description of the key options:

- Predict – risk analysis based on entered data;
- Book an Appointment – calendar for scheduling appointments;
- Get a detailed explanation - Prediction Results;
- Clear prediction form – Erase entered data;

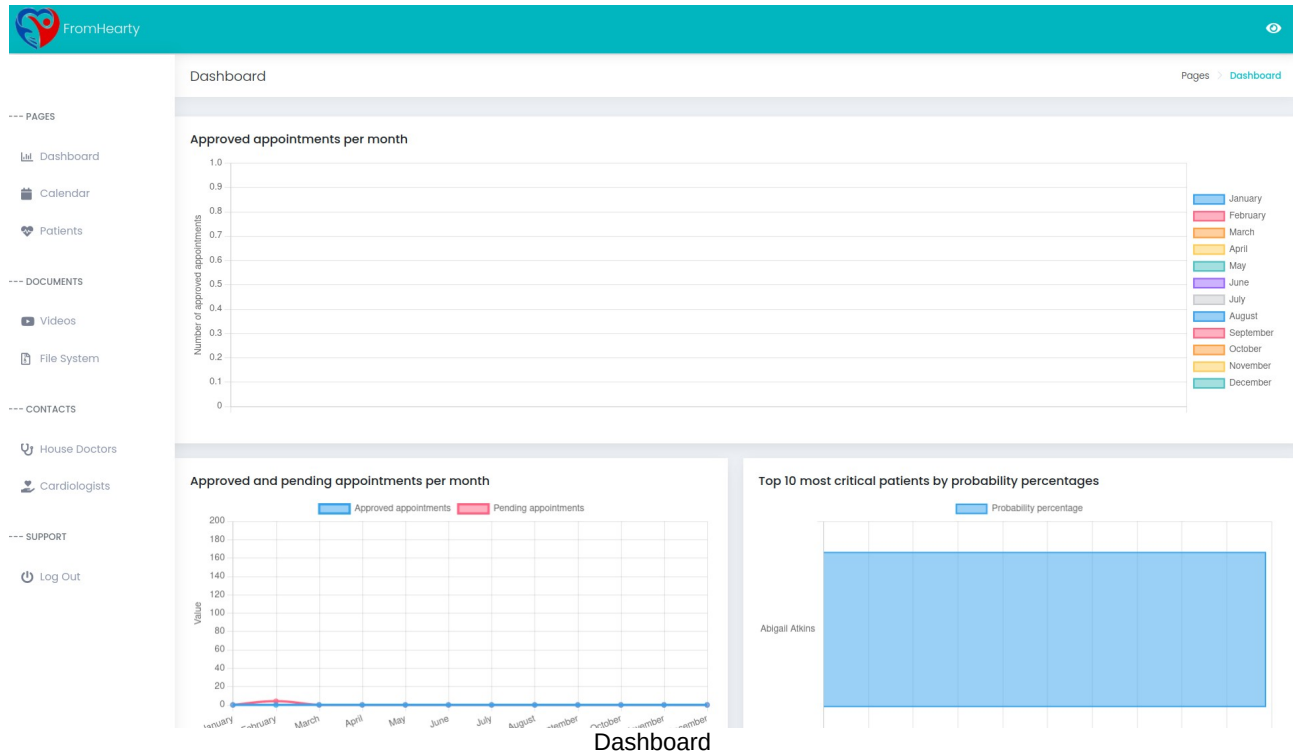
5. Cardiologists

5.1. Dashboard

On the "Dashboard," users are provided with a visual representation of information through graphical elements. Various categories are presented, offering an intuitive and aesthetically pleasing experience to users.

Users have the ability to view:

- Approved appointments per month
- Approved and pending appointments per month
- Top 10 most critical patients by probability percentages

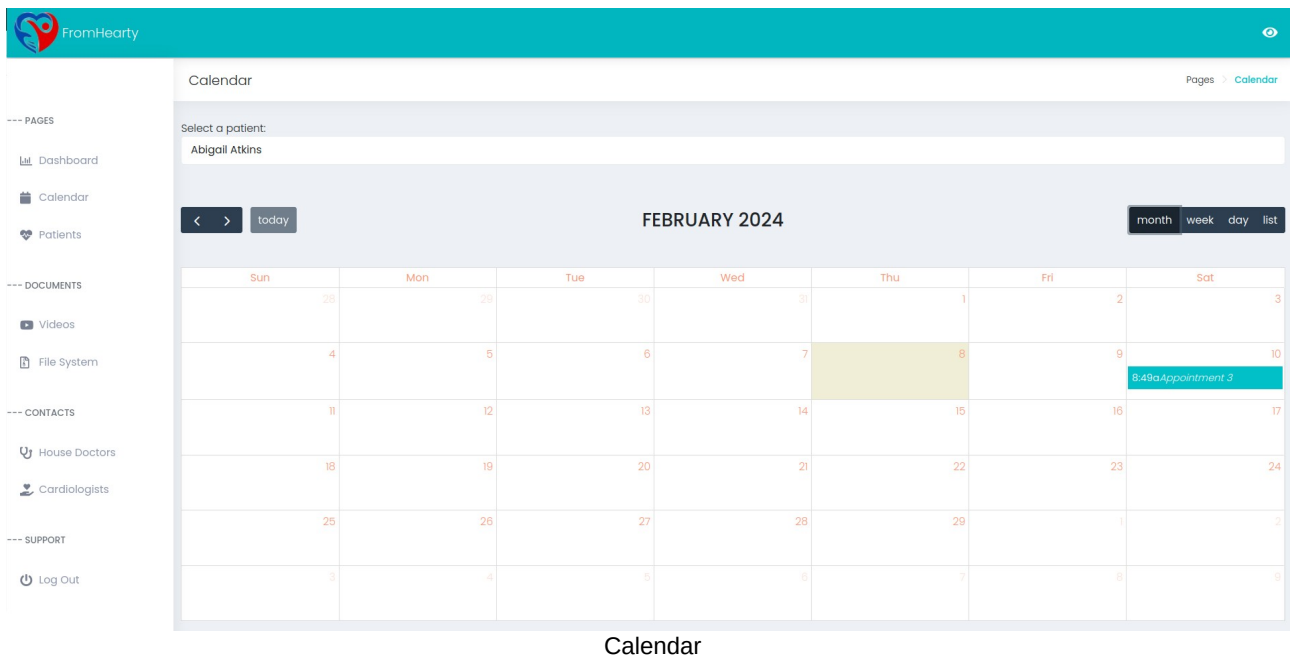


5.2. Calendar

The "Calendar" option allows for an easy overview of scheduled appointments with patients. This intuitive tool provides a comprehensive view of appointments, facilitating the organization and time optimization for the Cardiologists.

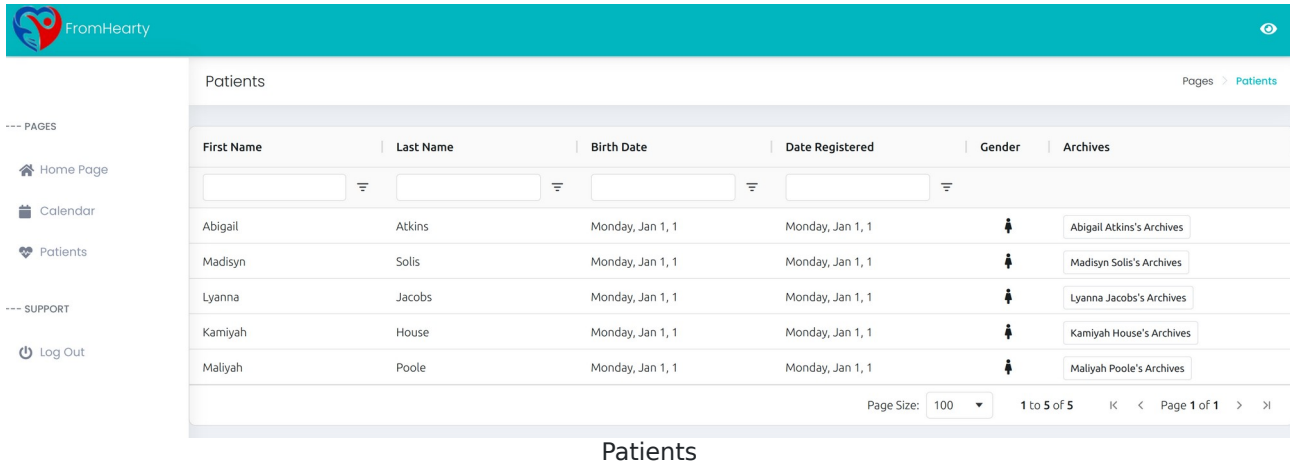
The user has the following options:

- Review of scheduled appointments by patient;
- Display of the calendar by: month, week, day, and list;
- By clicking on a specific date/appointment in the calendar, the user has the following options: edit, reject, and accept the scheduled appointment.



5.3. Patients

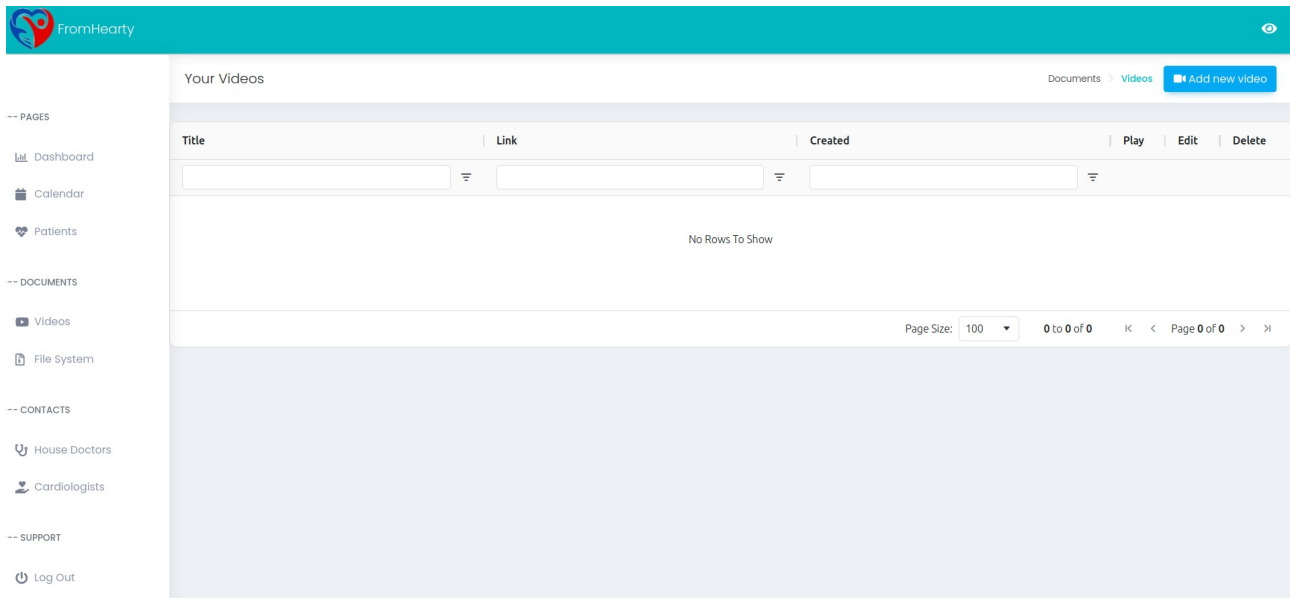
The cardiologist has the right to access the complete list of patients. For each patient, the doctor has access to the archive of all previously conducted examinations. Based on specialist examinations, the doctor decides whether to accept or reject the results obtained from "AI Prediction".



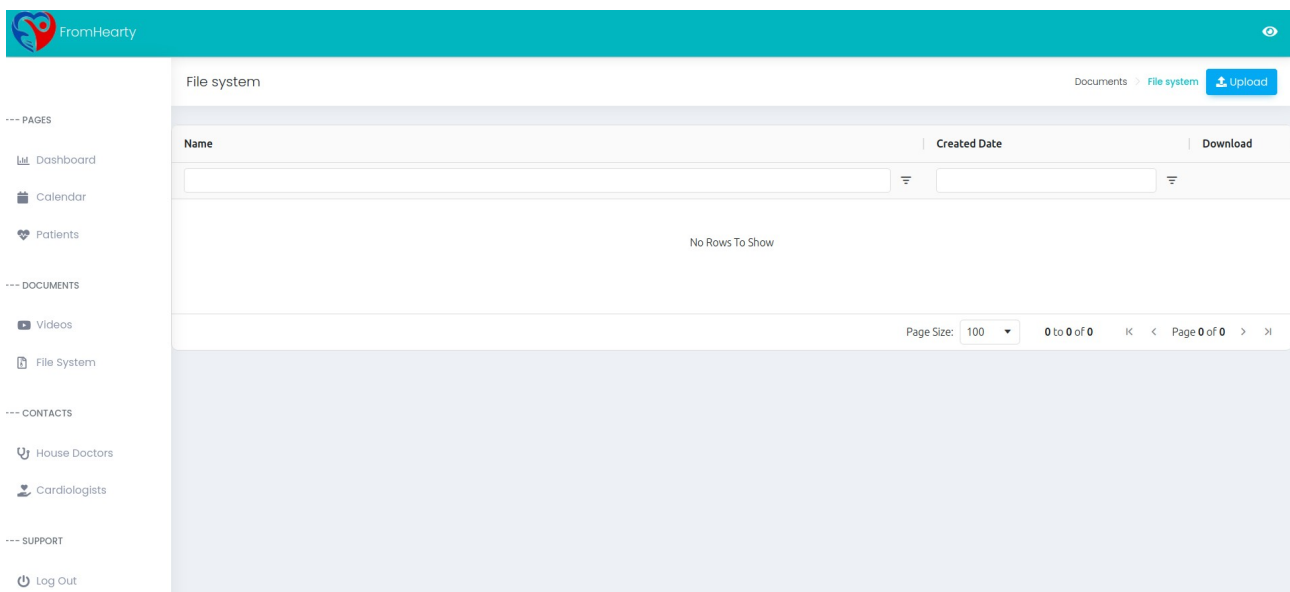
6. Documents

The application provides the capability to add documents and multimedia content. Whether it's textual documents, images, audio, or video recordings, our platform allows you to quickly and efficiently input desired information.

Through a user-friendly interface, users can easily add documents from their devices or other sources. The application supports various file formats, ensuring compatibility with different types of content.



Your Videos





File System


7. Contacts

Contact information for home doctors and cardiologists within the application provides users with easy access to information about healthcare professionals. Users can search and review the contact details of all doctors.


The text color becomes deeper and sharper, facilitating better differentiation between text and background. This contributes to improved visibility and legibility.


Visibility Mode can be activated or deactivated according to user preferences, offering a tailored experience that facilitates the use of the application for individuals with visual impairments. The option is located in the upper right corner. 


FromHearty




--- PAGES


Dashboard

Calendar


Patients


--- DOCUMENTS

Videos


File System

--- CONTACTS

House Doctors

Cardiologists

--- SUPPORT

Log Out

House Doctors

ContactsHouse Doctors

First Name	Last Name	Email
<input type="text"/>	<input type="text"/>	<input type="text"/>
Samira	Peters	samira.peters@edu.fit.ba
Wilder	Lynn	wilder.lynn@edu.fit.ba
Charley	Rosales	charley.rosales@edu.fit.ba
Patrick	Willis	patrick.willis@edu.fit.ba
Malaya	Bradley	malaya.bradley@edu.fit.ba

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Visibility mod