

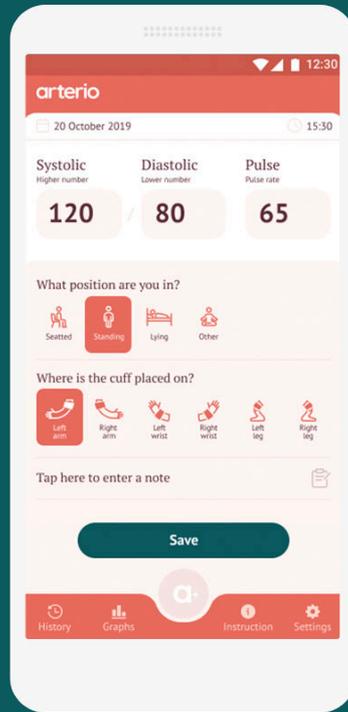


Healthcare Projects

exposit

www.exposit.com

*Projects' links are not provided due to NDA restrictions



arterio

A mobile application designed for blood pressure monitoring.

arterio is a custom mobile solution for heart patients made by Exposit. This application allows users to monitor blood pressure and view key measurement statistics in one place. It helps patients observe health dynamics and share the latest measurement data with their doctors. This way patients can timely seek treatment at medical centers and get the most appropriate medication.

Task

More than half of all strokes and heart attacks are caused by high blood pressure. It is also a risk factor for heart diseases, kidney diseases and vascular dementia. Only about 24% of U.S. adults have their hypertension under control while measuring blood pressure on a regular basis is an essential step in preventing high blood pressure. Hypertension treatment and control rates in Europe are even lower. Access to regular blood pressure readings can help heart patients avoid risks by making more informed decisions on medicine prescription required for hypertension management. However, according to the field studies, around 75% of clinics use manual paper logs for their patients that contain reporting bias affecting up to 50% of all BP self-measurements. Exposit team carefully studied the problem of blood pressure monitoring and decided to develop a mobile software solution that would provide heart patients with a convenient way of making timely log measurements to reduce the risks of heart attacks.

Solution

Our Team developed a Healthcare solution designed to meet the specific needs of heart patients and make their lives easier and safer. Our app allows recording, monitoring, managing and sharing blood pressure measurements data using easy navigation.

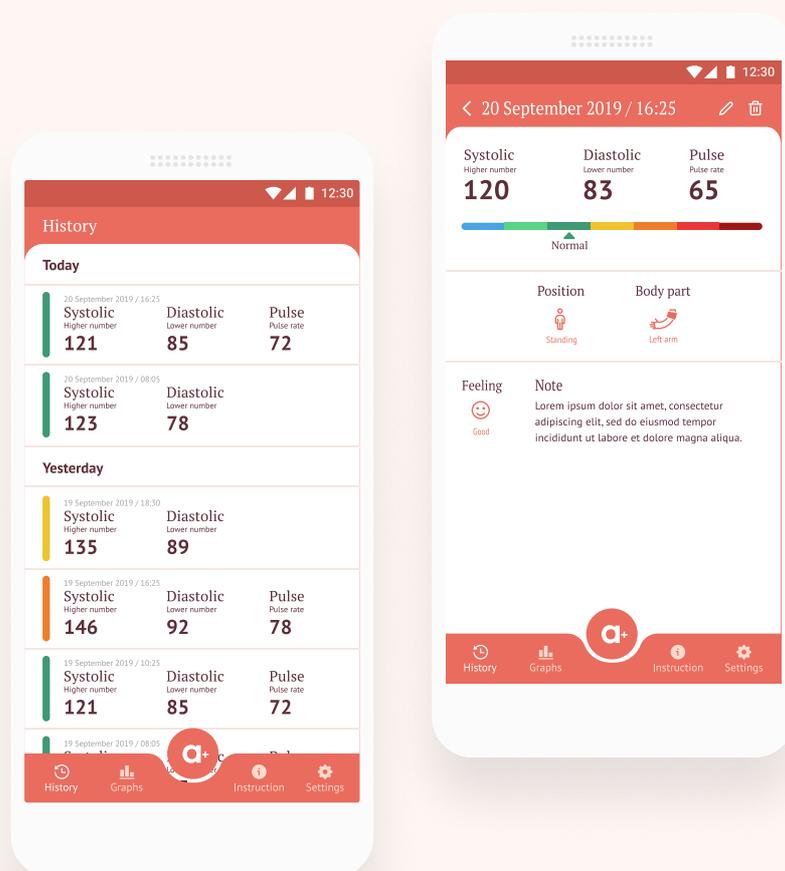
We started this project with identifying our target audience and interviewing cardiologists to outline specifications and primary needs of both patients and doctors. Then we created 4 different personas and 4 empathy maps. After detailed analysis we identified the main challenges of our target audience: lack of experience in using software products and measuring errors. We started designing prototypes considering the app onboarding process and specific needs of our personas (such as font readability) included into the customer journey map. Thanks to the human-centered approach, the interface of our app is suitable for all groups of users including aged people. We implemented the ability to connect to an electronic blood pressure monitor to automate the recording of measurements and reduce human errors during data entry.

The application uses Bluetooth protocol for wearable device connection and data transfer ensuring security of personal sensitive data. Users can also add pressure measurements manually, if needed.

Visual representation of blood pressure trends helps to enhance data understanding and quickly see the user's health status and dynamics. Users can easily access previous measurement data at any time and share it with their doctors to get the required treatment timely. Doctors can also use key data to make more informed decisions on medication prescriptions to improve care quality.

Features:

- Recording blood pressure measurement data both manually and via a connected device;
- Saving blood pressure measurement data to the archive;
- Measurement data editing function;
- Graphs creation.



Technologies used

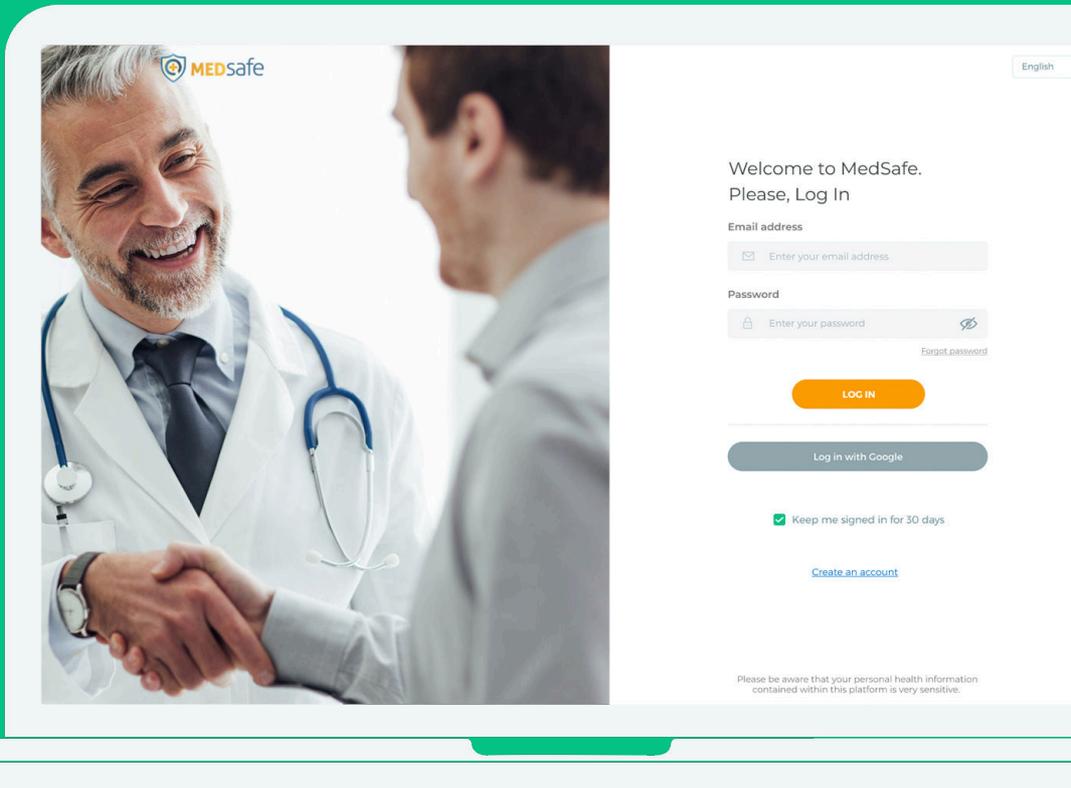
Bluetooth
Kotlin
MVVM

Material 2.0
DataBinding

Room
LiveData

MEDsafe

Personal health-record system for MedVision B.V.



Description

A custom web-based health record system for MedVision B.V. designed for doctors and their patients. The system provides a convenient way of keeping full health-related information (medical treatments, contacts, social history, health problems, scheduled healthcare activities, self-measurements etc.) in one place and retrieves patients' data from mobile and clinical devices, wearables and connected applications.

Task

The information gap remains one of the biggest challenges for healthcare providers and their patients. According to the survey, 32% of individuals who visited a doctor at least once in the past 12 months experienced problems in information exchange. Lack of interoperability causes about 1 out of 20 patients to reschedule appointments with doctors because of unavailability of prior data. The information gap combined with inaccurate reporting of health records decrease the quality of healthcare and patient centricity. Our Dutch partner decided to provide a solution that will meet the needs of healthcare providers and their patients to improve the way clinics store and exchange medical data.

Solution

Our healthcare specialists developed a health-record web app from scratch that helps to store, manage and share medical measurements within a single platform. This platform is easy to use for both doctors and their patients providing communication on treatments and care plans between two parties.

This Health-record system provides authorization via Google and Dutch DIGID for easy and secure access to sensitive data. Doctors and their patients can create, store and manage medical measurements, care plans and other health-related data but there is also the admin role for system management. If users want to discuss care plans together with their families and doctors, they can invite them to their network.

Thanks to compliance with HL7 standard users can easily share and retrieve medical data from other healthcare organizations (hospitals, pharmacies, etc.) and services like Google Fit or Apple healthkit.

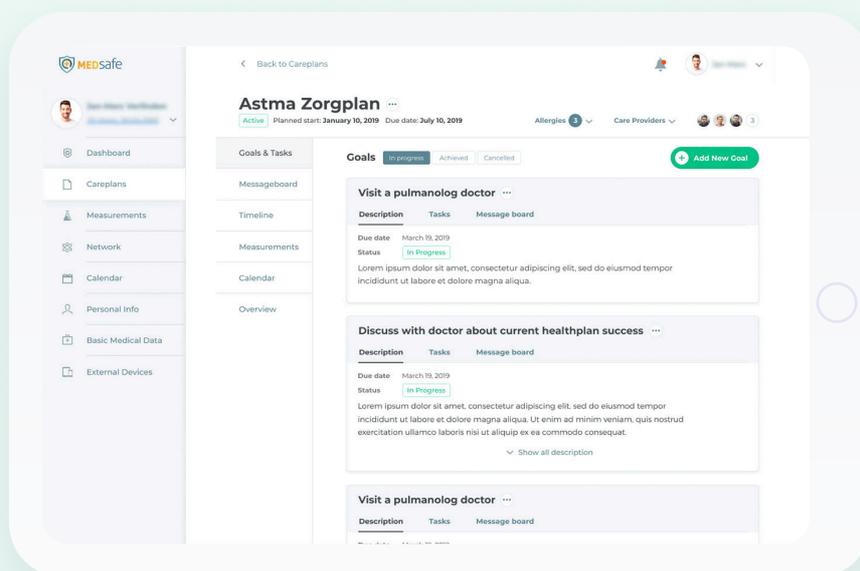
It helps to improve the interoperability between different care providers and healthcare information systems. MEDsafe is safe and secure EHR and EMR application thanks to FHIR based storage and limited access to users data. The project is Information security management certified (ISO 27001), Dutch information security management standard certified (NEN 7510), MedMij certified and also certified for Medical Devices (ISO 13485).

We used Continuous Integration and Deployment in the software development process to optimize efficiency and achieve excellent quality.

MEDsafe is a safe and secure EHR and EMR application thanks to FHIR based storage and limited access to users' data. The project is Information security management certified (ISO 27001), Dutch information security management standard certified (NEN 7510), MedMij certified and also certified for Medical Devices (ISO 13485).

Features:

- Authorization (including auth via Google and Dutch DIGID);
- Network management from patients' side;
- Creation and management of care plans;
- Creation and management of healthcare goals and tasks;
- Booking appointments with a doctor;
- Creation, storing, fetching from hospitals medical measurements;
- Push notifications;
- Measurements management.



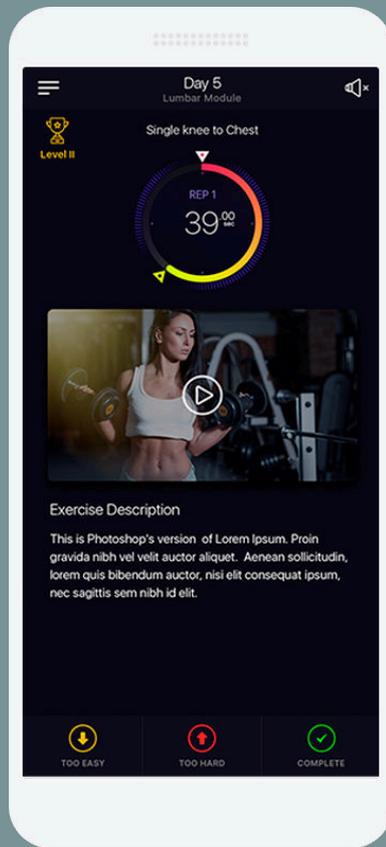
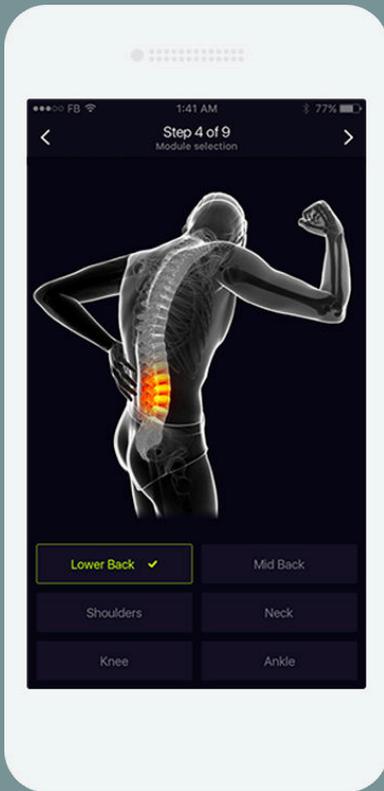
Technologies used

Frontend:

Angular 7
TypeScript
Redux
Sass

Backend:

Java11
SpringBoot 2.1
Spring Framework
Docker
PostgreSQL
HAPI HL7 FHIR
Kubernetes
Zuul



Physiapp

Mobile app designed to help physical therapy patients recover faster.

A mobile app designed to help physical therapy patients achieve faster recovery results through a combination of specific features. Physiapp tracks users' everyday activity and provides them with custom treatment plans including access to video exercises, progress visualization tools and feedback indicators.

Task

Lack of supportive talent assistants available to train physiotherapists is one of the biggest challenges in the physical therapy branch. As physical therapy covers many fields including sport, pediatrics, orthopedics, neurology and etc., it is difficult for physicians to stay aware of new techniques across all areas and find a skilled mentor. It causes lack of good quality care required for physical therapy patients in certain areas. Digitalization of physical therapy via apps and online platforms can help to distribute professional physical therapy treatment. That's why our customer decided to develop a hybrid mobile application with a set of specific features for a wide range of physical therapy patients.

Solution

We developed a hybrid mobile application using React Native technology to make this platform more accessible and optimize software development resources.

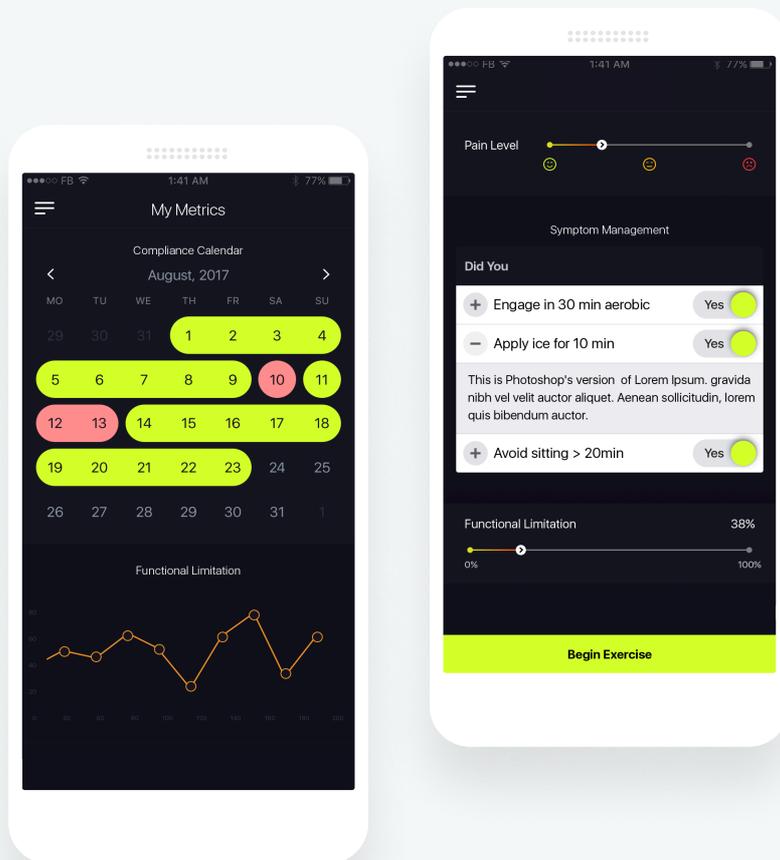
The user journey starts with registration or authorization. The creation of the user's profile provides secure data storage of the patient's history, recovery progress and treatment plans. Patients can update their everyday status by responding to a simple questionnaire and identifying their pain level. Patients' progress is displayed via nice user-friendly graphs for quick and easy data understanding.

Authorized users have access to video and audio presentations of their exercises from their custom care plan based on a patented MD-certified algorithm. The application tracks patients' progress and displays a positive feedback indicator after moving to the next level. It helps patients to stay motivated and not to give up.

Our QA Team performed manual testing of the developed functionality and regression testing to meet all requirements in the specification.

Features:

- New user registration/ existing user authorization;
- Patient's status update;
- Exercise screen with video and audio presentation;
- Patient's progress tracking;
- Custom exercise plans based on a proprietary algorithm;
- Positive feedback indicator;
- Graphs with metrics of the recorded activity.



Technologies used

Mobile:

React Native

JavaScript

Android SDK

Facebook SDK

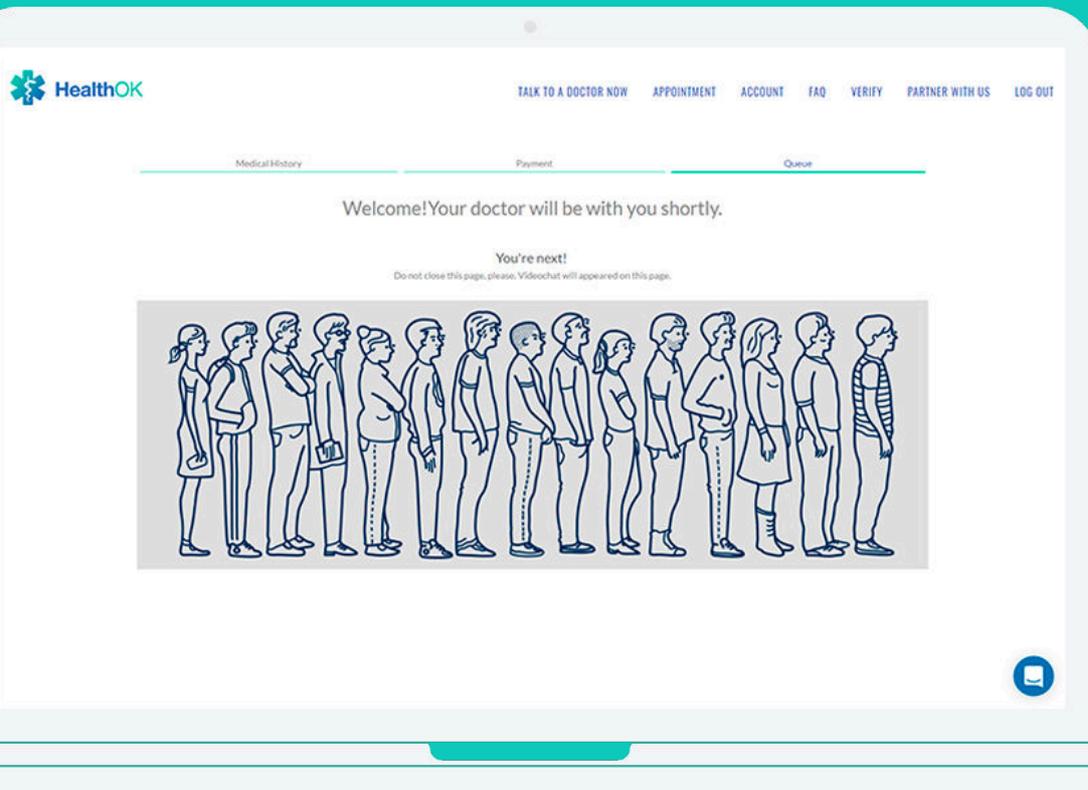
JSON

Backend:

MySQL

PHP 7

Laravel 5



HealthOK

Application providing remote medical video consultation services.

Description

A web-based telemedicine app for American clinics providing remote video consultations for their patients. Users can get good quality care remotely and request approval for medicinal plants cultivation license for medical purposes.

Task

Around 53% of patients said they experienced leaving a scheduled medical appointment because of waiting time. Waiting for too long makes patients who require primary care or medical certificates for specific purposes feel angry and dissatisfied with healthcare services. Moreover, around 85% of patients would prefer accessing remote care services for a minor ailment rather than visiting an emergency room. By the way, during COVID-19 pandemic telemedicine has become one of the safest ways to get medical consultation and has helped to reduce the burden on hospitals. Safety, convenience and efficiency of telemedicine solutions attracted one of our American customers and they decided to implement them for their network of clinics.

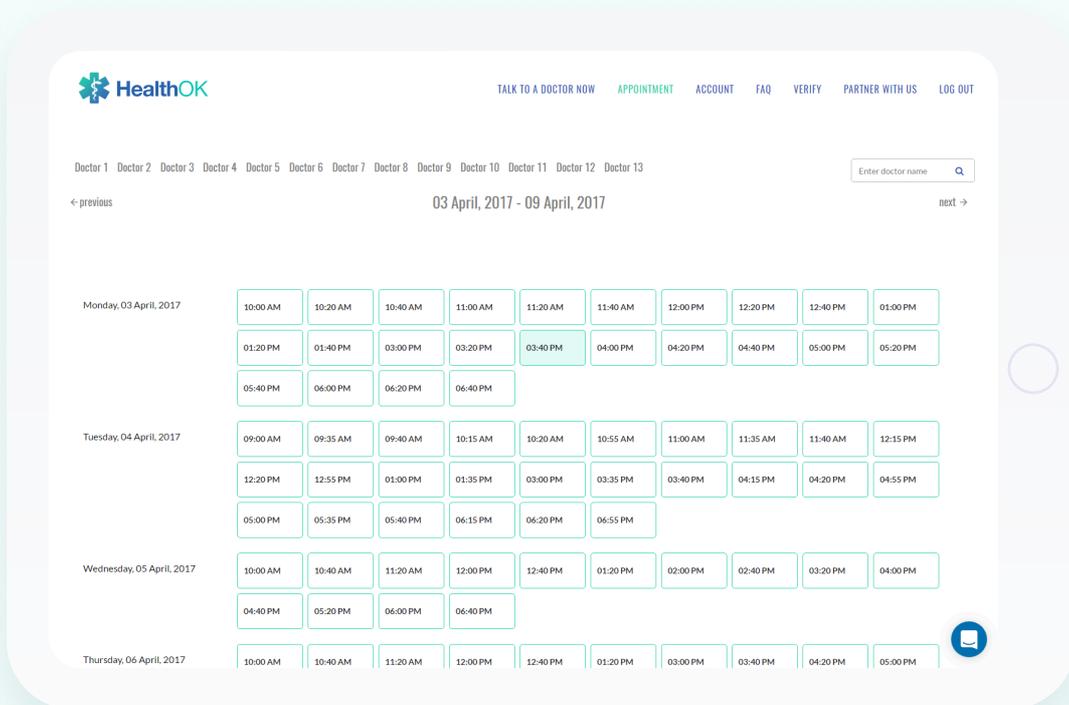
Solution

Our Team took part in the development of a web telemedicine application providing video consultations for patients. This platform provides easy access to quality remote care and licensing - patients can get online consultation by booking an e-appointment or on a first-come-first-served basis.

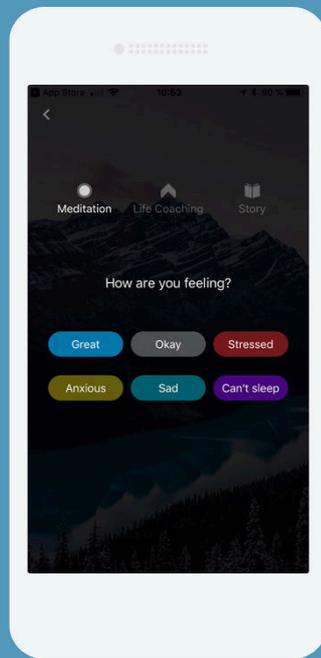
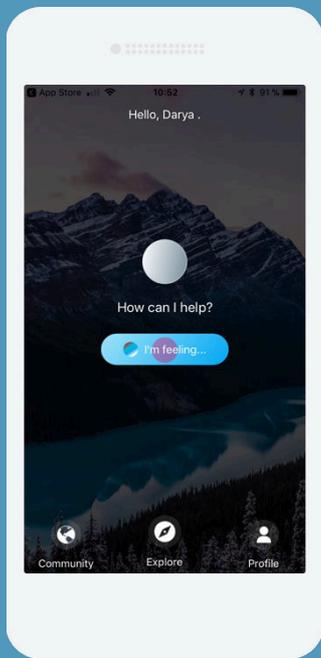
Users can choose a doctor and the convenient date of admission. We implemented a calendar for medical staff to simplify scheduling and administration processes. The combination of high-quality video conferencing and easy interface allows medical staff to hold online consultations without interruptions and stay fully focused on their patients.

Features:

- Online registration;
- Scheduling;
- Video conferencing.



Technologies used Angular 1.5 JS6
HTML CoffeeScript
CSS



Aura

AI-driven mobile app to control stress and anxiety

Aura is a mindfulness meditation app to control stress and anxiety, driven by artificial intelligence and machine learning approaches. The mobile app provides users with personalized guided meditations depending on their mood and emotional state. There is also an opportunity to enjoy unguided meditations with nature sounds.

Task

In 2018 around 74% of people felt so stressed that they were unable to cope with their anxiety. Experiencing stress on a regular basis undermines mental health by causing depressions, bad habits and adverse behavioral effects. Symptoms of stress can include irritability and anger (45%), lack of motivation (38%) and anxiety (36%) as well as lead to high blood pressure and heart diseases. Mindfulness meditation is one of the most effective ways to overcome high stress levels showing reduced symptoms of post-traumatic stress disorder 73% of the time. These factors led our customer to the creation of an AI-powered mobile meditation app on the basis of iOS platform.

Solution

Our Team developed a mobile app designed to track users' mood and any improvements that happen over time to keep their mind and body healthy.

App users can easily access different kinds of meditations via Google+, Facebook or e-mail. Every user can subscribe to favorite meditation channels available in the app to make the mindfulness experience more focused. Aura has an auto-renewable subscription option that makes the user experience smooth disabling ads and unlocking all extra features. Thanks to interactive dashboard users can see their progress in meditations and emotional state improvement.

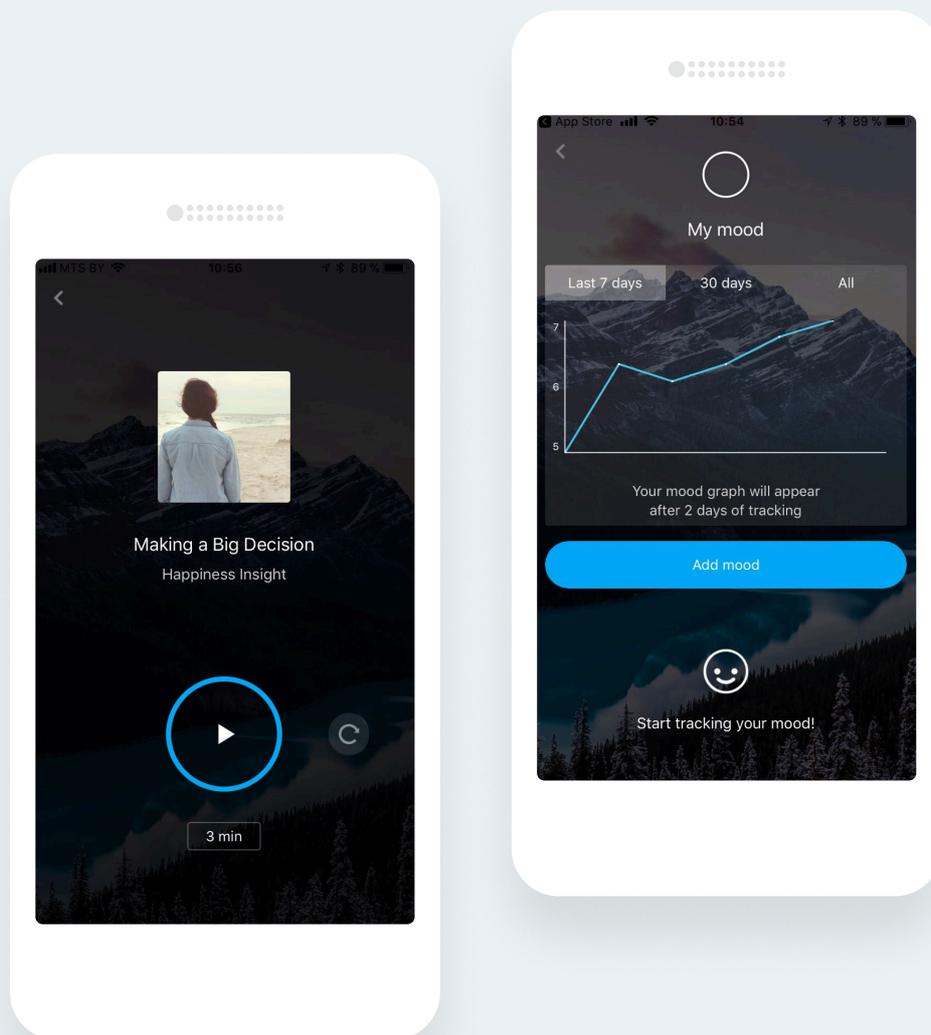
We implemented Machine Learning technology that helps Aura to algorithmically choose the most effective meditation program according to individual parameters set. It makes user experience personalized and helps to serve the emotional state more efficiently. Users only need to choose three-to-ten minute meditation and answer a few questions about their experience.

Users can also make a convenient meditation schedule specifying the time for weekends. We also implemented smart push notifications to help Aura remind users about the time when their body and mind need to recharge. Notifications include reminders for mindful breathers to stay focused.

UWhen the development was completed, Exposit engineers experienced mindfulness meditations using Aura and noted that their stress level significantly decreased.

Features:

- Sign-up via Google+, Facebook or email;
- Meditation channels subscribe;
- Auto-renewable subscription;
- Interactive visualization dashboard;
- Gratitude journal;
- Push notification;
- Scheduling meditations;
- AdMob Banner Ads and Pop-up Ads;
- Integration with Apple Health.



Technologies used Objective-C
Swift