BYTE CRAB

CASE STUDY

VITAL SIGNS TRACKING APP

Industry
Healthcare

Client location
Germany

Service
Mobile App & PWA

Period of collaboration
2023-2024

Technologies
Flutter

Timeline
12 months

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SHORT DESCRIPTION

Rheo makes it easy to track vital signs in real time with a lightweight wearable device. Doctors and nurses get instant updates, patients feel safer, and care doesn't stop when you leave the hospital. It helps everyone stay informed and improves outcomes, whether at home or in a clinic.

PROBLEM

- Manual tracking of vital signs is risky — important changes in a patient's condition can be missed, leading to delayed response.
- Current healthcare systems also lack continuous, real-time monitoring that works seamlessly both in hospitals and at home.

BUSINESS NEED

01 REAL-TIME MONITORING

Provide continuous, accurate vital sign tracking to improve care efficiency and reduce human error

02 PREDICTIVE INSIGHTS

Offer advanced analytics to identify health risks early and support proactive medical decisions.

03 REMOTE ACCESSIBILITY

Enable healthcare professionals to monitor patients both in hospitals and at home, extending care beyond medical facilities.

04 EASE OF USE

Ensure the platform is simple and intuitive for patients and healthcare providers, encouraging widespread adoption.

REQUIREMENTS

01 Wearable device with wireless connectivity for capturing multiple vital signs.

02 Integration with a mobile app for real-time data analytics, alerts, and remote monitoring.

WHAT DOES THE PROCESS LOOK LIKE?

01 Medical personnel are provided with registered accounts linked to the specific clinic where they work in.

02 An administrator creates patient accounts, and a physical device from the clinic can then be assigned to a patient and synced to their account. The devices, like patient accounts, are visible to clinicians who have access to them.

03 Clinicians can instantly access all necessary health information about patients through the app, thanks to real-time updates with no delays

04 Alerts notify both patients and clinicians about critical health data, such as high or low readings. Thresholds for these alerts can be customized individually for each user.

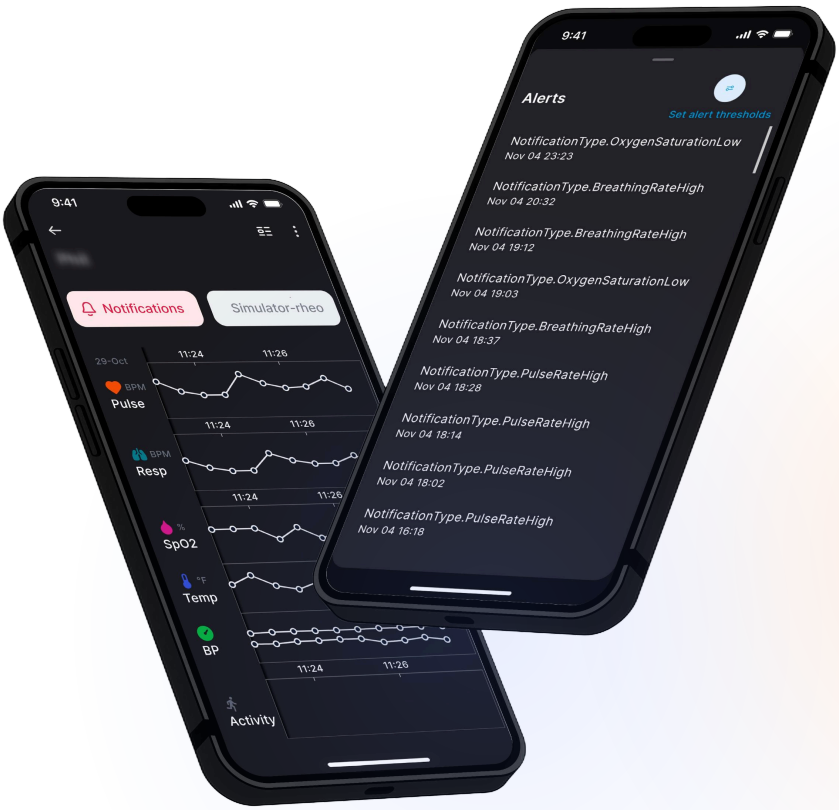
KEY FEATURES

WIDE VARIETY OF METRICS

The app lets doctors and patients manage how results are delivered and keep the device updated through simple settings. It shows a full set of health metrics, including:

- Pulse
- Respiratory rate
- Oxygen saturation
- Temperature
- Blood pressure

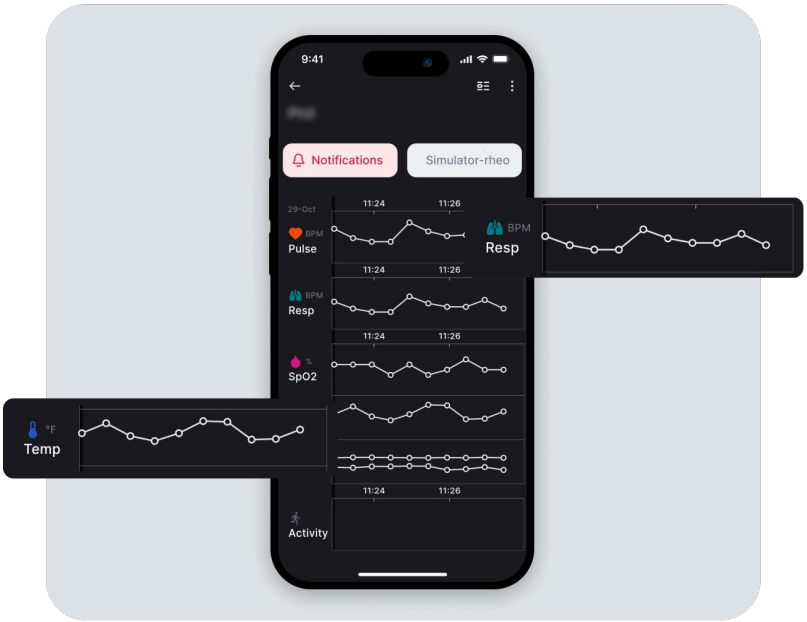
If a device runs low on battery or has technical issues, clinicians can easily replace it and connect the new one to the app without interrupting patient monitoring.

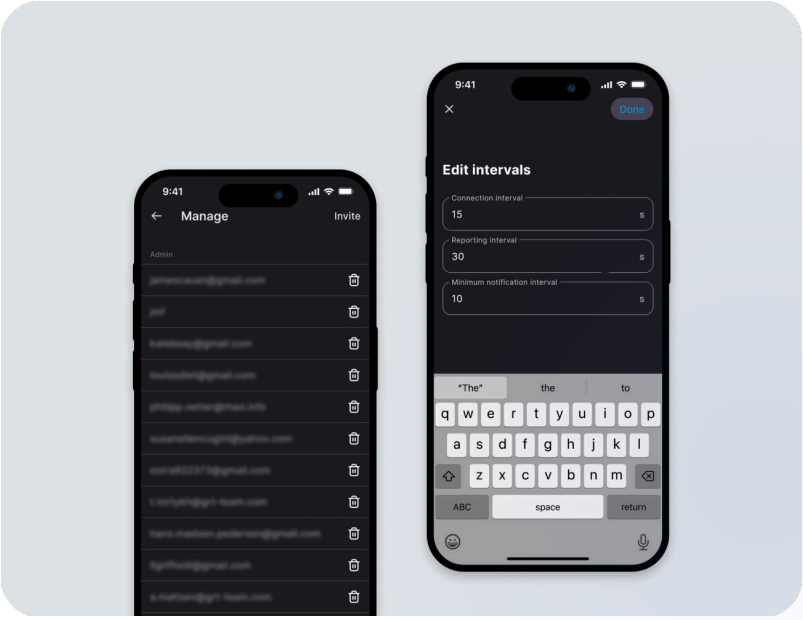


KEY FEATURES

REAL-TIME DATA TRANSMISSION

The wearable device connects via LTE, transmitting data to a mobile app in real-time for both healthcare professionals and patients, enabling immediate decision-making.





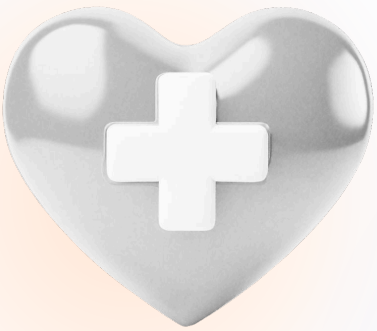
PREDICTIVE ANALYTICS

With built-in predictive algorithms, the app analyzes trends in vital signs and alerts users to potential health risks, facilitating early interventions.

AUTOMATED TESTS

1. OVERVIEW OF AUTOMATED TESTING

Automated testing is a process that uses scripts and tools to execute tests on software, ensuring its functionality, performance, and reliability. Unlike manual testing, automation is faster, more consistent, and capable of handling repetitive tasks without errors. It's especially valuable for testing across multiple platforms, like iOS, Android, and web, ensuring seamless operation for all users.



2. WHY AUTOMATED TESTING MATTERS IN MEDICAL APPLICATIONS

In healthcare, software reliability is critical—it directly impacts patient safety and the efficiency of medical professionals. Automated testing ensures:

- Accuracy: Eliminates human errors in testing critical functionalities.
- Compliance: Meets rigorous healthcare regulations and standards.
- Scalability: Validates performance as the app and connected devices handle growing user bases.
- Security: Protects sensitive patient data by identifying vulnerabilities early.

AUTOMATED TESTS

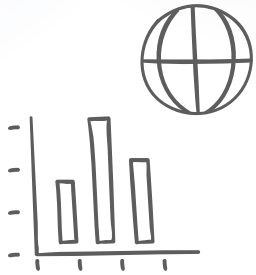
3. HOW WE IMPLEMENTED AUTOMATED TESTING IN A PATIENT MONITORING APP

Since Rheo is working primarily on mobile, we focused on iOS and Android auto tests. Our approach included:

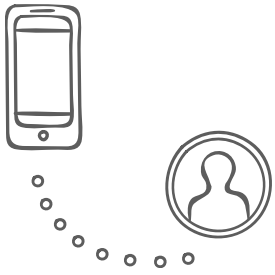
- Cross-Platform Consistency: We made sure the app feels and works the same on iOS and Android, so part of our testing focused on cross-platform behavior.
- Test Case Coverage: Created scripts to simulate real-world scenarios, including data syncing and device connectivity.
- Performance Validation: Tested for reliability under high user loads to ensure scalability.

The Results: Automated testing reduced debugging time, enhanced app stability, and ensured compliance with healthcare standards, providing a secure and reliable tool for clinics to monitor patient health effectively.

PROJECT SUCCESS



Provides full control over data and privacy settings, ensuring security and confidence in using the platform.



The app lets users easily adjust settings to fit their needs.

LIKE WHAT YOU SEE AND WANT TO BUILD SOMETHING SIMILAR?

Contact us today—we'd love to hear about your project and explore how we can bring your ideas to life.

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