

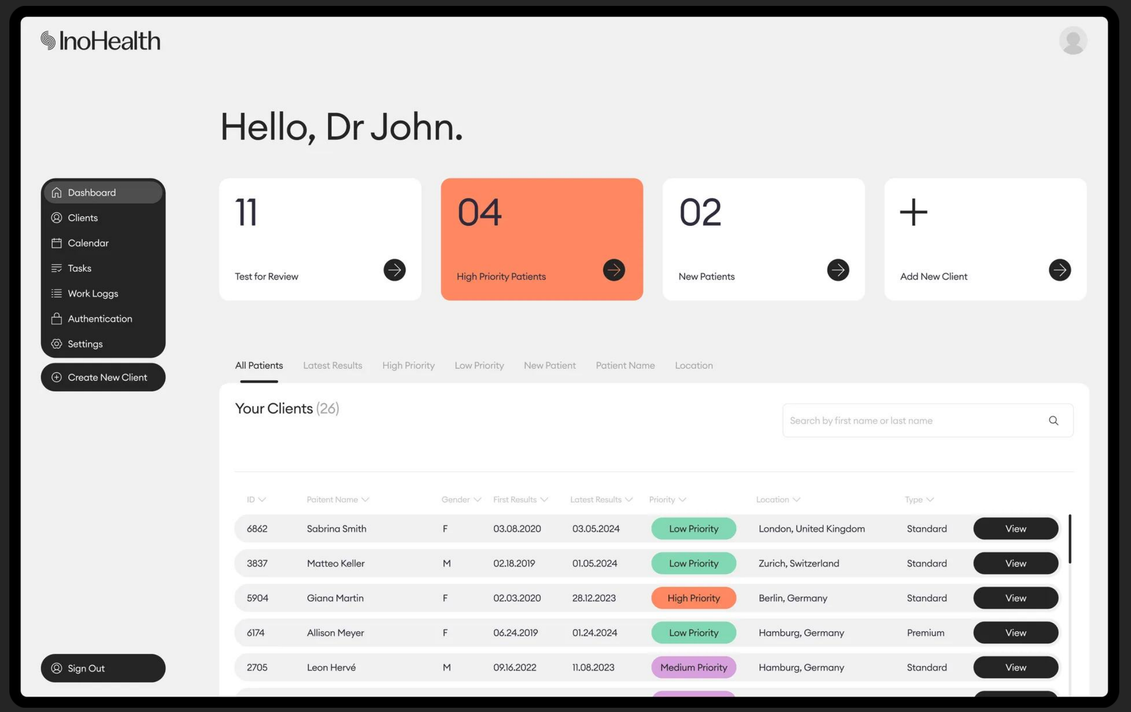
Take-Home Assignment

InoHealth

Intro / Pitch

Design an experience that supports both patients and HCPs in:

- Effortlessly entering and reviewing mandatory demographic information (e.g., age, gender, ethnicity).
- Input 30+ blood biomarkers (e.g., Glucose: 90 mg/dL) and a few physiological metrics (e.g., systolic Blood Pressure: 115 mm Hg).
- Answer a short health questionnaire (e.g., acute or chronic conditions, medications).



Process

Exploratory Research

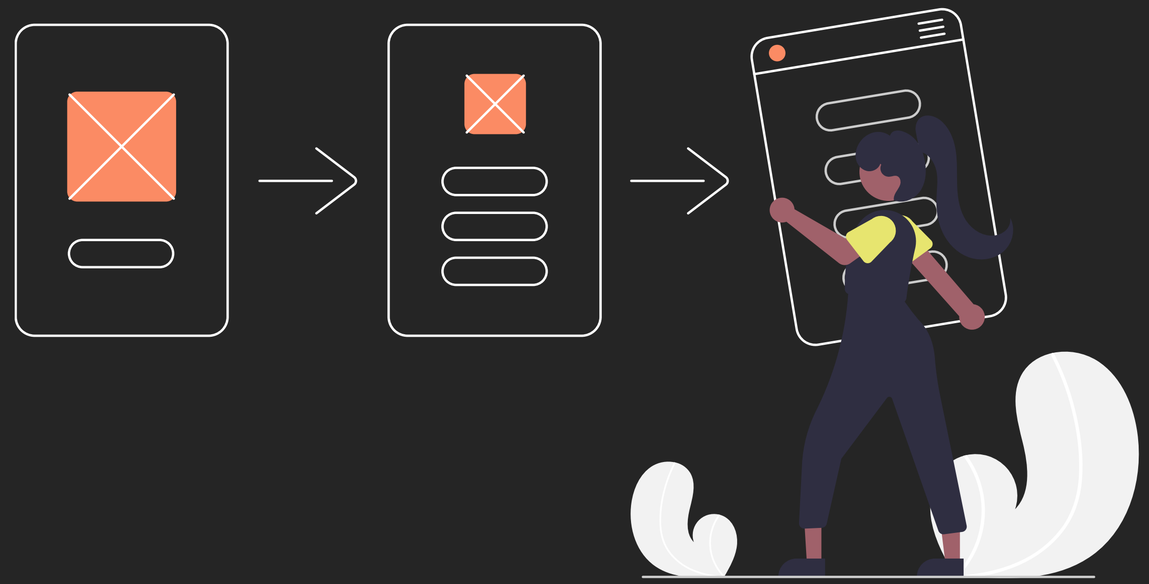
Validate the Problem Space

A more generic set of question to understand the problem space without biasing the users on a specific solution (and unveil more opportunities)

Evaluative Research

Validate the Solution

An ad-hoc / Draft solution to understand if our current ideas are solving for real the problems of the users



(Assumed) Problems

Data Fragmentation and Integration

Health data is often scattered across multiple systems (e.g., EHRs, wearable devices, lab results) and formats, making it difficult to consolidate and analyze.

Data Privacy and Security

Collecting and storing sensitive data like demographics, biomarkers, and physiological information raises significant privacy and security concerns.

Data Accuracy and Standardization

Biomarker and physiological data (e.g., blood glucose, heart rate) can vary in accuracy depending on the device or method used for collection.

Bias and Representation in Data

Many healthcare datasets lack diversity in terms of demographics, gender, and ethnicity, leading to biased algorithms and insights.

User Engagement and Adoption

Patients and healthcare providers may be reluctant to adopt new technologies or share their data due to lack of trust, usability issues, or perceived complexity.

Patient

Profile

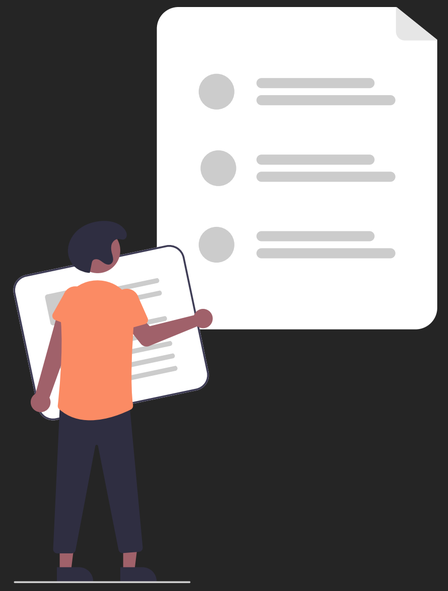
- **Background:** busy professional balancing a demanding career with family responsibilities
- **Primary Concern:** Managing stress and maintaining a healthy lifestyle despite a busy schedule.
- **Motivation:** health-conscious but struggles to find time for regular exercise and meal planning

Pains

- Difficulty finding time for self-care and medical appointments.
- Anxiety about their health.
- Frustration with conflicting health information found online.

Needs

- Being a positive role model by maintaining a healthy lifestyle.
- Wanting to feel more in control of their health and well-being.
- Seeking reassurance and actionable advice from healthcare professionals.



What to ask

MORE IN GENERAL ON THE TOPIC

Current experience:

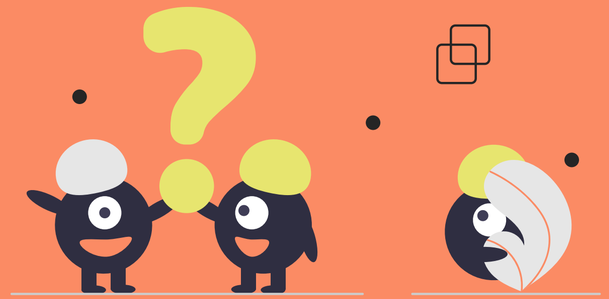
- How has been your experience on sharing demographic information (e.g., age, gender, ethnicity) and biomarker data with Health Care Professionals?
- What challenges have you faced on it?

Health Questionnaire:

- How comfortable are you with answering health-related questions (e.g., about chronic conditions or medications) as part of a health assessment?
- What format (e.g., multiple-choice, voice input, conversational chatbot) would make completing a health questionnaire more convenient for you?

Privacy and Trust:

- How comfortable are you with sharing sensitive health information (e.g., biomarkers, medical history) through a digital platform?
- What assurances would make you feel more secure about providing this information?



HCP

Profile

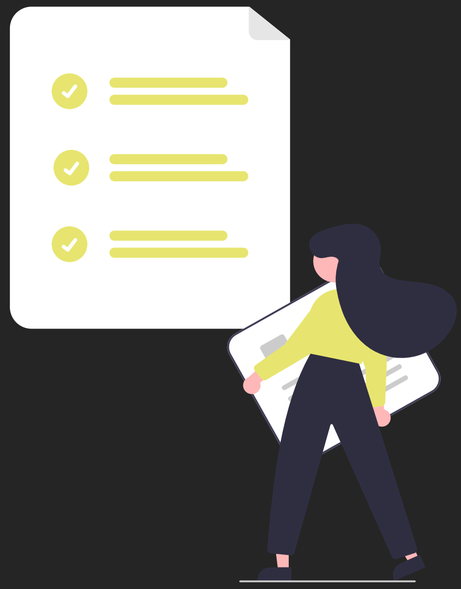
- **Background:** practicing physician with many years of experience.
- **Motivation:** Deeply committed to patient care and continuously seeks to improve their medical knowledge through ongoing education
- **Embraces:** electronic health records (EHRs), telemedicine platforms, and health monitoring apps to enhance patient care

Pains

- Limited time with each patient due to high caseloads.
- Frustration with patients not adhering to treatment plans or following through with lifestyle changes.
- Balancing administrative duties with patient care, which can lead to burnout.

Needs

- Leveraging technology to streamline care and improve patient engagement.
- To emphasizes the importance of preventive care and encourages patients to make sustainable lifestyle changes



What to ask

MORE IN GENERAL ON THE TOPIC

Efficency

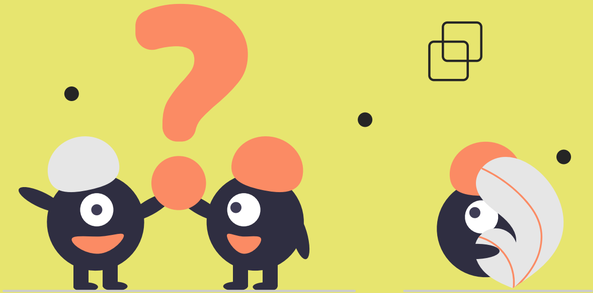
- How much time do you currently spend collecting demographic information, biomarker data, and physiological metrics from patients?
- What challenges do you face in getting patients to engage with data entry tools or questionnaires?

Health Questionnaire

- How useful do you find patient-completed health questionnaires (e.g., about conditions or medications) in your practice?
- What format (e.g., digital forms, voice input, AI-assisted chatbots) would make these questionnaires more effective for you and your patients?

Accuracy

- How confident are you in the accuracy of patient-entered data (e.g., biomarkers, physiological metrics)?
- What safeguards or validation tools would you want in place to ensure data reliability?



What to Validate

MORE FOCUSED ON A POTENTIAL SOLUTION

Description

A draft for the process of collecting data from patients and analyzing it for diagnostics can be streamlined, accurate, and efficient, ultimately improving patient outcomes and reducing the workload for HCPs.

- **Patients:** Collecting Data
- **HCP:** Analysis and Diagnostics



User Flow

HCP Patient

Pre-Appointment Preparation

Send patients a digital form or app to input demographic information (e.g., age, gender, ethnicity) before their appointment.

Provide clear instructions and examples for entering blood biomarker data (e.g., glucose levels) and physiological metrics (e.g., blood pressure).

Health Questionnaire

Ask patients to complete a short health questionnaire (e.g., acute/chronic conditions, medications, lifestyle habits) via a user-friendly interface (e.g., mobile app, web portal).

Use AI-powered chatbots or voice assistants to guide patients through the questionnaire and extract data from existing documents

Integration with Wearables and Devices

Allow patients to sync data from wearable devices (e.g., fitness trackers, smartwatches) or home health devices (e.g., blood pressure monitors) directly into the platform.

Provide clear instructions for manual entry of data if devices are not compatible.

*optional

Data Validation

Use AI to validate patient-entered data for accuracy (e.g., flagging unrealistic biomarker values like a glucose level of 500 mg/dL).

Prompt patients to review and confirm their entries before submission.

Secure Submission

Ensure data is transmitted securely to the healthcare provider's system using encryption and compliance with privacy regulations (e.g., HIPAA, GDPR).

User Flow

HCP

Data Aggregation

Automatically aggregate patient data (e.g., demographics, biomarkers, questionnaire responses) into a unified dashboard within the EHR or diagnostic tool.

Highlight key metrics (e.g., abnormal biomarker values, high-risk conditions) for quick review.

AI-Powered Insights

Use AI algorithms to analyze patient data and identify patterns, trends, or anomalies (e.g., elevated cholesterol levels, risk of diabetes).

Provide preliminary insights or differential diagnoses based on the data.

Risk Stratification

Prioritize patients based on risk levels (e.g., high, medium, low) using predictive analytics and clinical guidelines.

Flag high-risk patients for immediate attention or follow-up.

HCP Patient

Diagnostic Support

Review AI-generated insights and patient data during the consultation.

Discuss findings with the patient, explain the diagnosis, and collaboratively develop a treatment plan.

Offer evidence-based recommendations for further tests, treatments, or lifestyle changes based on the patient's data.

Suggest relevant clinical guidelines or research to support decision-making.

Documentation and Follow-Up

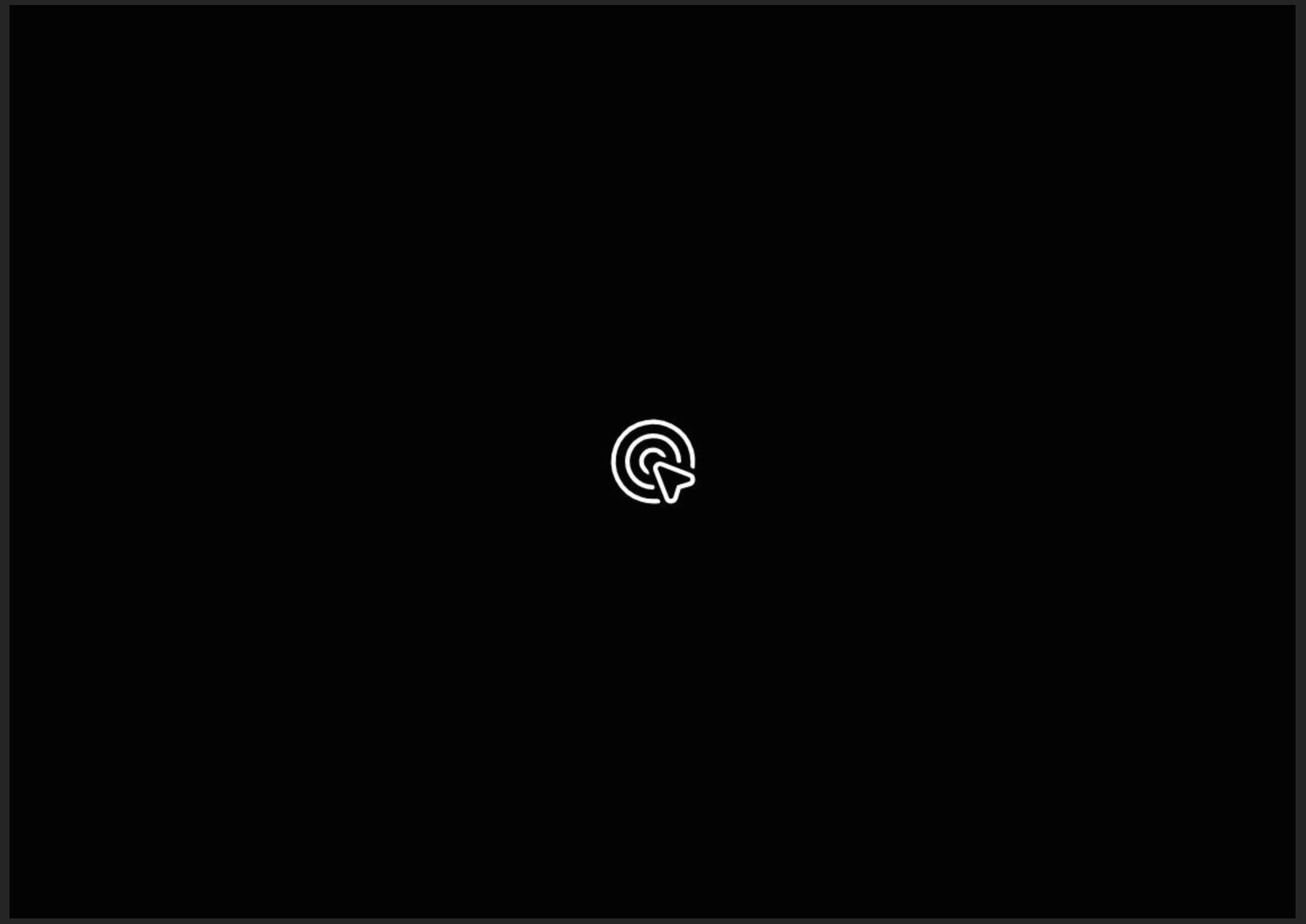
Update the patient's EHR with the diagnosis, treatment plan, and any additional notes

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Schedule follow-up appointments or tests as needed and set reminders for both the HCP and patient.

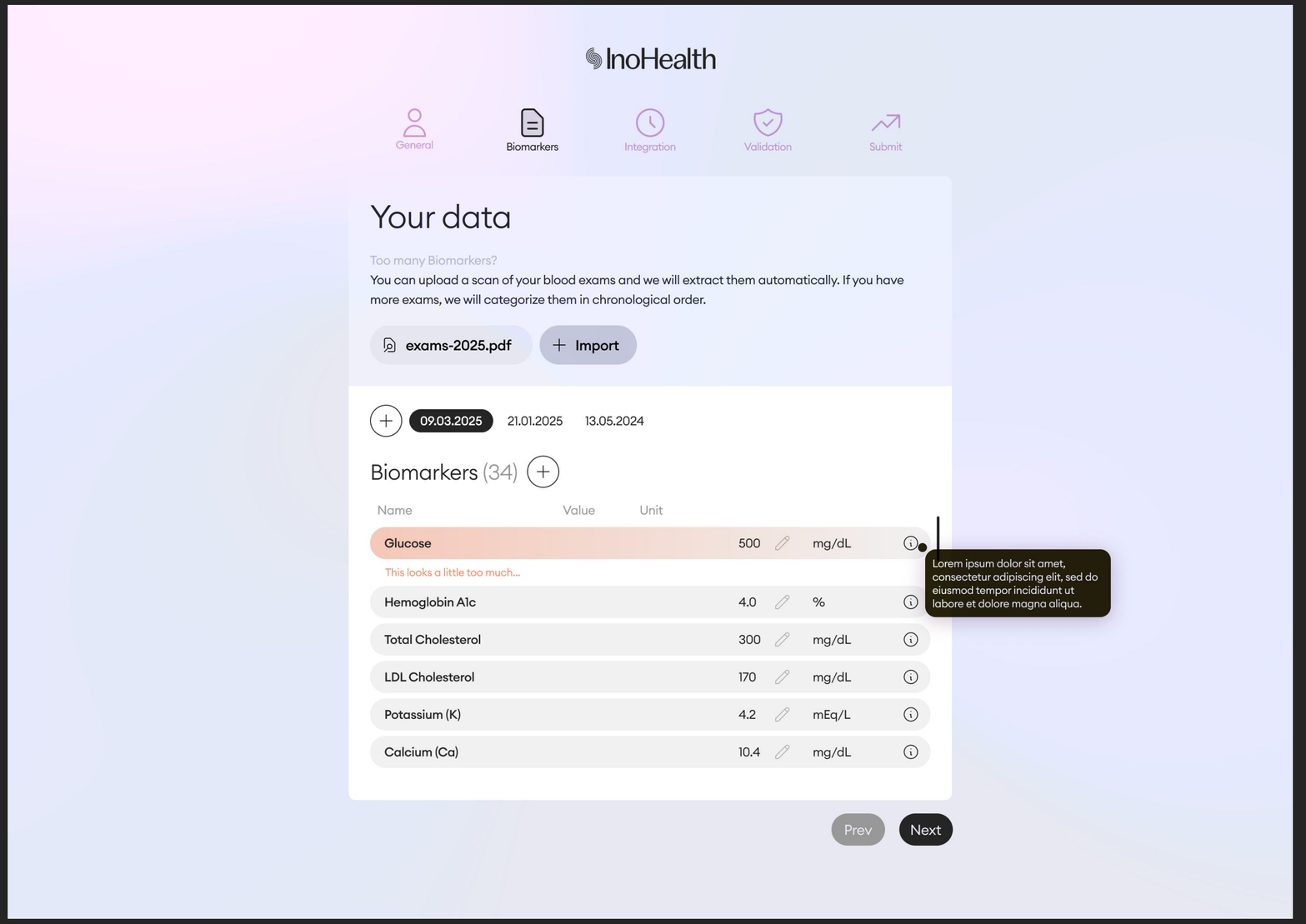
Use AI to monitor patient progress over time (e.g., tracking biomarker trends, adherence to treatment).

Wireframes



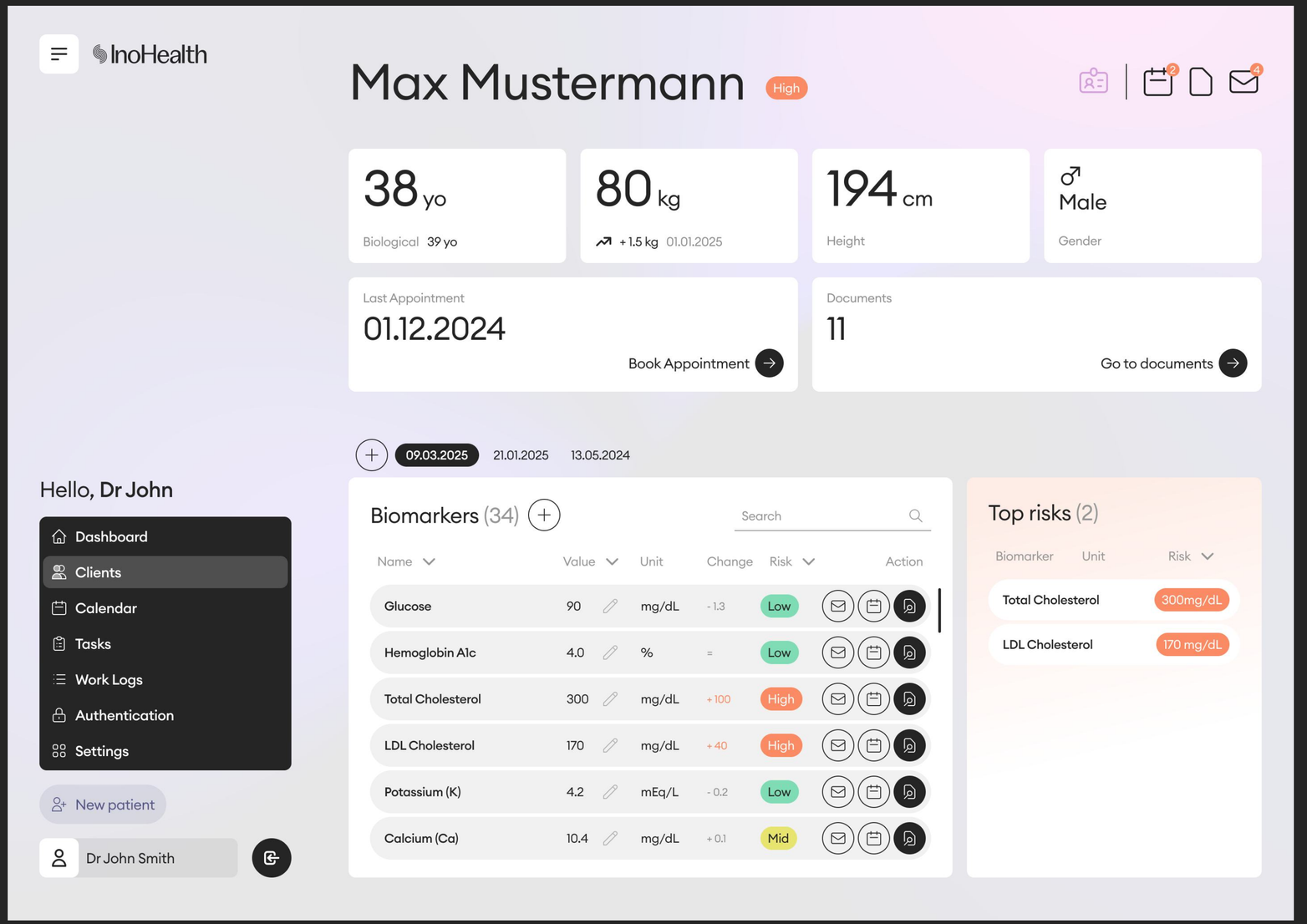
Mockup

Patient



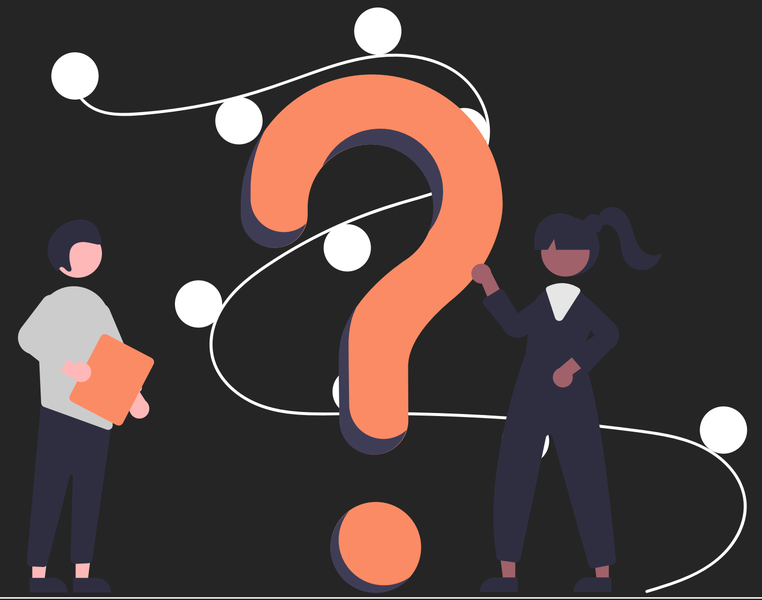
Mockup

HCP


InoHealth
Max Mustermann
High
38 yo
Biological 39 yo
80 kg
+ 1.5 kg 01.01.2025
194 cm
Height
Male
Gender
Last Appointment
01.12.2024
Book Appointment
Documents
11
Go to documents
09.03.2025
21.01.2025
13.05.2024
Hello, Dr John
Dashboard
Clients
Calendar
Tasks
Work Logs
Authentication
Settings
New patient
Dr John Smith
Biomarkers (34)
Search
Name
Value
Unit
Change
Risk
Action
Glucose 90 mg/dL - 1.3 Low
Hemoglobin A1c 4.0 % = Low
Total Cholesterol 300 mg/dL + 100 High
LDL Cholesterol 170 mg/dL + 40 High
Potassium (K) 4.2 mEq/L - 0.2 Low
Calcium (Ca) 10.4 mg/dL + 0.1 Mid
Top risks (2)
Biomarker
Unit
Risk
Total Cholesterol 300mg/dL
LDL Cholesterol 170 mg/dL

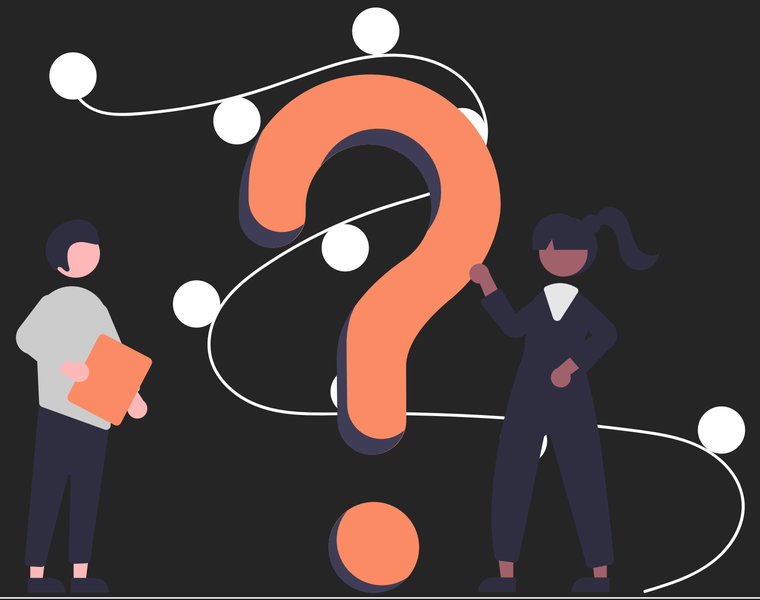
Key Assumptions

- **Automation:** Automating the scanning and extraction of data from medical documents (e.g., lab reports, imaging results) will significantly reduce manual effort, improve accuracy, and enable faster, more comprehensive analysis.
- **Sharing Data:** Patients are willing to share data from wearable devices (e.g., fitness trackers, smartwatches) and other third-party health tools to provide a more complete picture of their health.
- **Trust AI and Automation for Initial Analysis:** HCPs are open to using AI and automation for initial data analysis (e.g., flagging abnormal results, identifying trends) but will still rely on their clinical judgment for final decisions.
- **Time Is the Main Pain Point for Users:** The primary pain point for both patients and HCPs is the time required to enter, review, and analyze health data. Reducing this time will significantly improve user satisfaction and adoption.



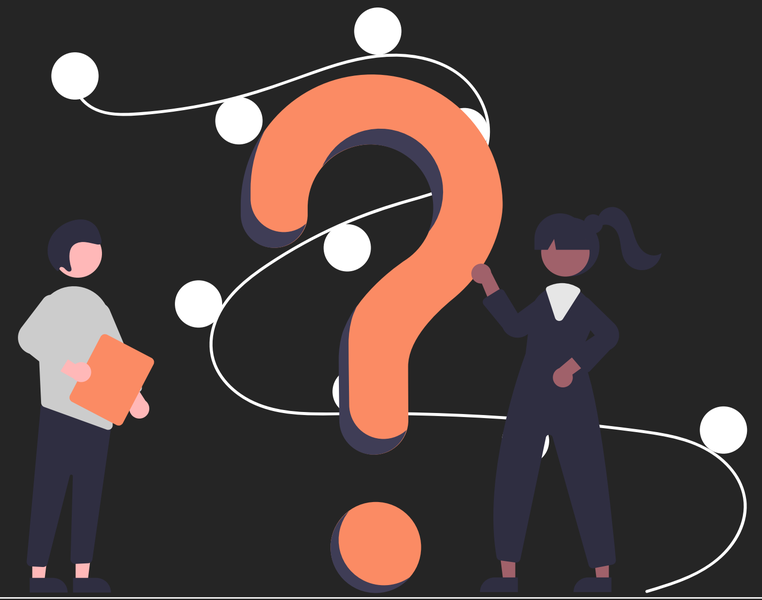
Balancing Usability, Business Impact, and Industry Constraints

- **Usability:** The design prioritizes simplicity and accessibility, with clear instructions, intuitive interfaces, and AI-guided assistance to ensure both patients and HCPs can easily adopt and use the solution.
- **Business Impact:** By streamlining data entry, analysis, and diagnostics, the solution reduces administrative burden, improves patient outcomes, and enhances HCP efficiency, driving cost savings and revenue growth.
- **Industry Constraints:** The design adheres to regulatory requirements (e.g., HIPAA, GDPR) and integrates with existing systems (e.g., EHRs, wearable devices) to ensure compliance and interoperability.



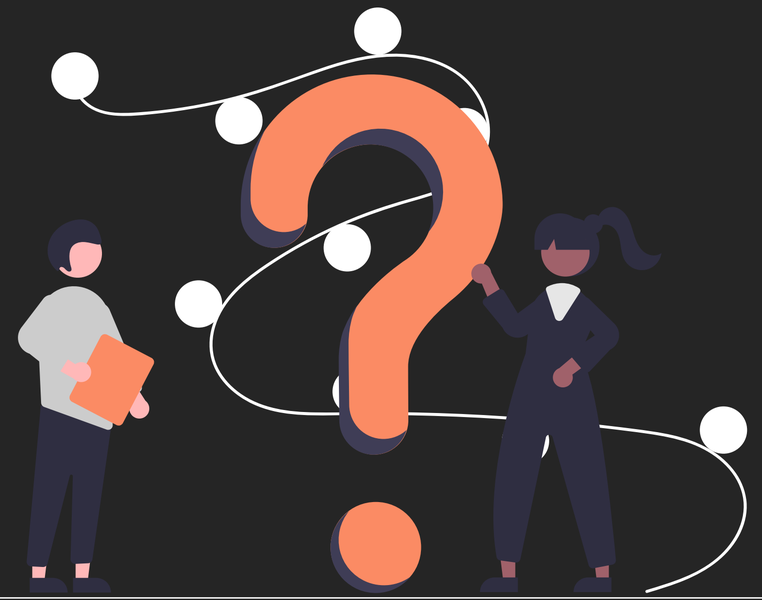
Prioritization of Features and Solutions to User Pain Points

- **For Patients:** Simplified data entry (e.g., pre-filled forms, wearable integration) and AI-powered guidance address pain points like complexity and time consumption.
- **For HCPs:** Automated data aggregation, AI-driven insights, and risk stratification tools reduce manual effort and improve diagnostic accuracy.
- **Shared Features:** Real-time alerts, secure data sharing, and feedback mechanisms ensure both patients and HCPs stay engaged and informed.



Alignment with Business Objectives

- **User Engagement:** Gamification (e.g., progress tracking, rewards) and personalized insights encourage patients to actively use the solution, while HCPs benefit from time-saving tools and actionable insights.
- **Scalability:** Cloud-based infrastructure, modular design, iterative development, and interoperability with third-party systems ensure the solution can scale to meet growing demand and adapt to evolving healthcare needs.



What to do next

SO FAR THE VALUE OF THE SOLUTION HAS BEEN VALIDATED

1. Adjust concept based on validation round and new insights from users + Synthetise research (for share-out report to business)
2. Set a plan for achieving the solution in an iterative way (or MVP) -> break-down tasks, prioritize and organize work (e.g. outcome based roadmap)
3. Set a plan for next thing to validate with users based on roadmap
4. Iterate :)



How to measure success



Patient

Ideation

User Feedback

- Average rating and qualitative feedback from users about the feature.

Launch / Iterating

Task Success Rate

- Measures how effectively patients can complete tasks such as entering demographic information, inputting biomarker data, and answering health questionnaires without errors or assistance.

Task Completion Time

- Tracks the time it takes for patients to complete tasks like filling out forms, entering biomarker data, or syncing wearable device data. Shorter completion times indicate a seamless and efficient user experience.

Adoption Rate

- Indicates the percentage of patients who actively use the solution for data entry, health tracking, or completing questionnaires. High adoption rates suggest the solution is accessible, engaging, and meets patient needs

How to measure success



HCP

Ideation

User Feedback

- Average rating and qualitative feedback from users about the feature.

Launch / Iterating

Task Success Rate

- Evaluates how accurately and efficiently HCPs can review patient data, interpret AI-generated insights, and make diagnostic or treatment decisions using the solution.

Task Completion Time

- Measures the time HCPs spend reviewing patient data, analyzing AI-generated insights, and documenting diagnoses or treatment plans. Reduced completion times suggest the solution improves workflow efficiency.

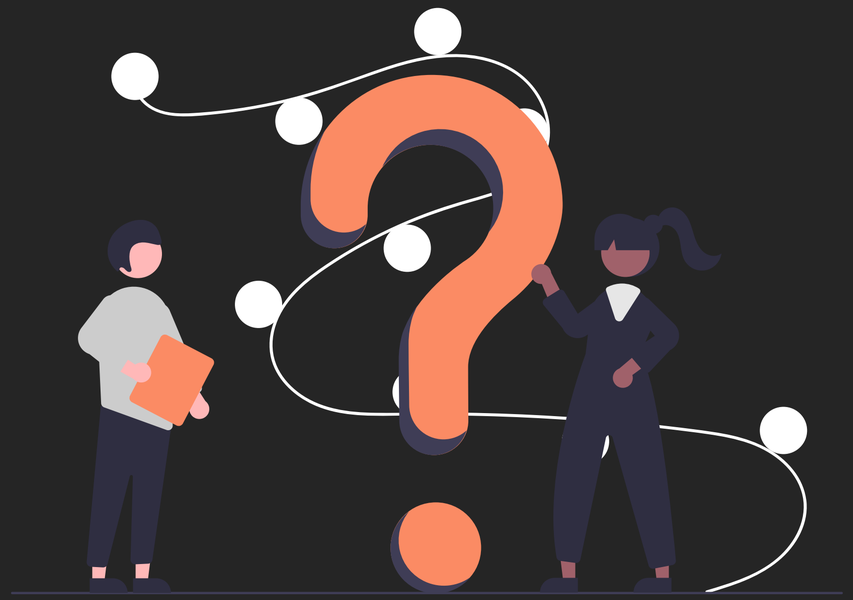
Adoption Rate

- Reflects the percentage of healthcare professionals who integrate the solution into their daily practice. High adoption rates demonstrate the tool's value in improving clinical outcomes and reducing workload.

How to set the priorities

Break down and organize work

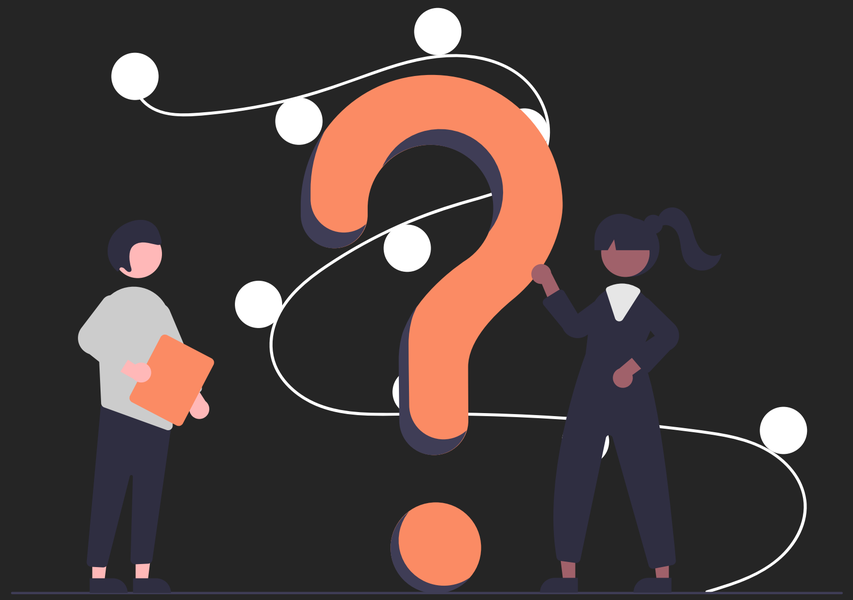
Divide the (reviewed) solution on small features, potentially based on user needs, then prioritised on user feedback and feasibility evaluation (2x2 matrix with value and effort)



How to collaborate

Define work and collaborate with the PMs and developers

- Co-creation sessions for the solution opened to all the roles
- Participation of PMs and Developers to interview sessions (actively or passively)
- Evaluation of features with developers
- Stakeholders interviews to capture business objectives and get a buy-in on solution



Thanks!

