



Capstone Summer 2025

# Project Proposal

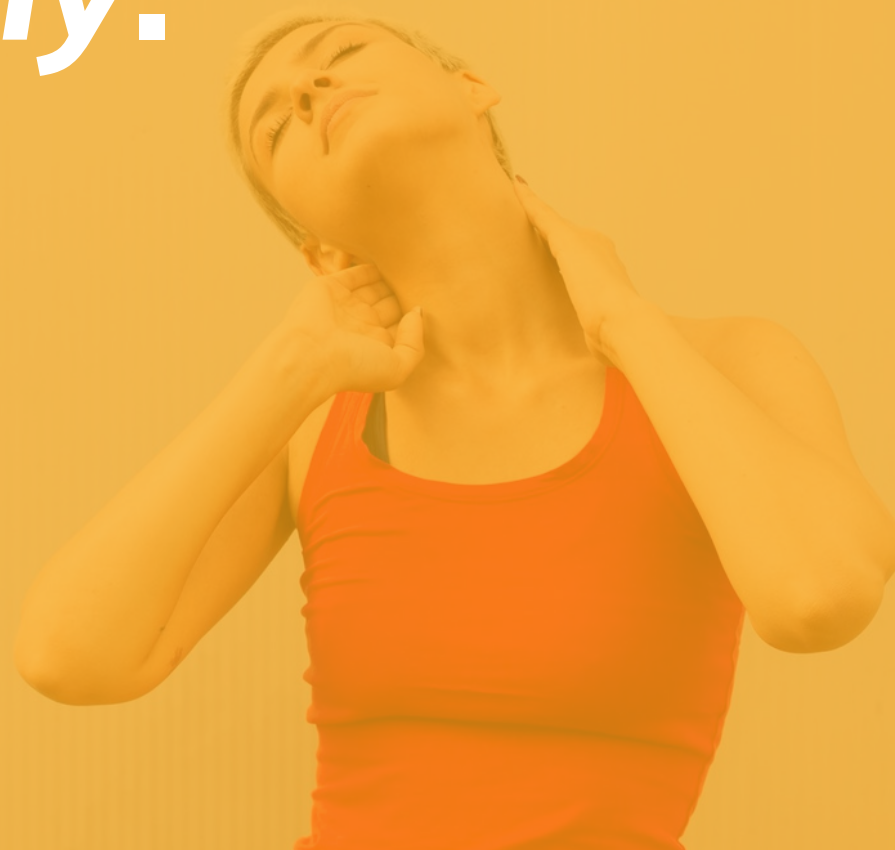






“

Recover *Smarter.*  
Move *Freely.*



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# 03

## Design Process

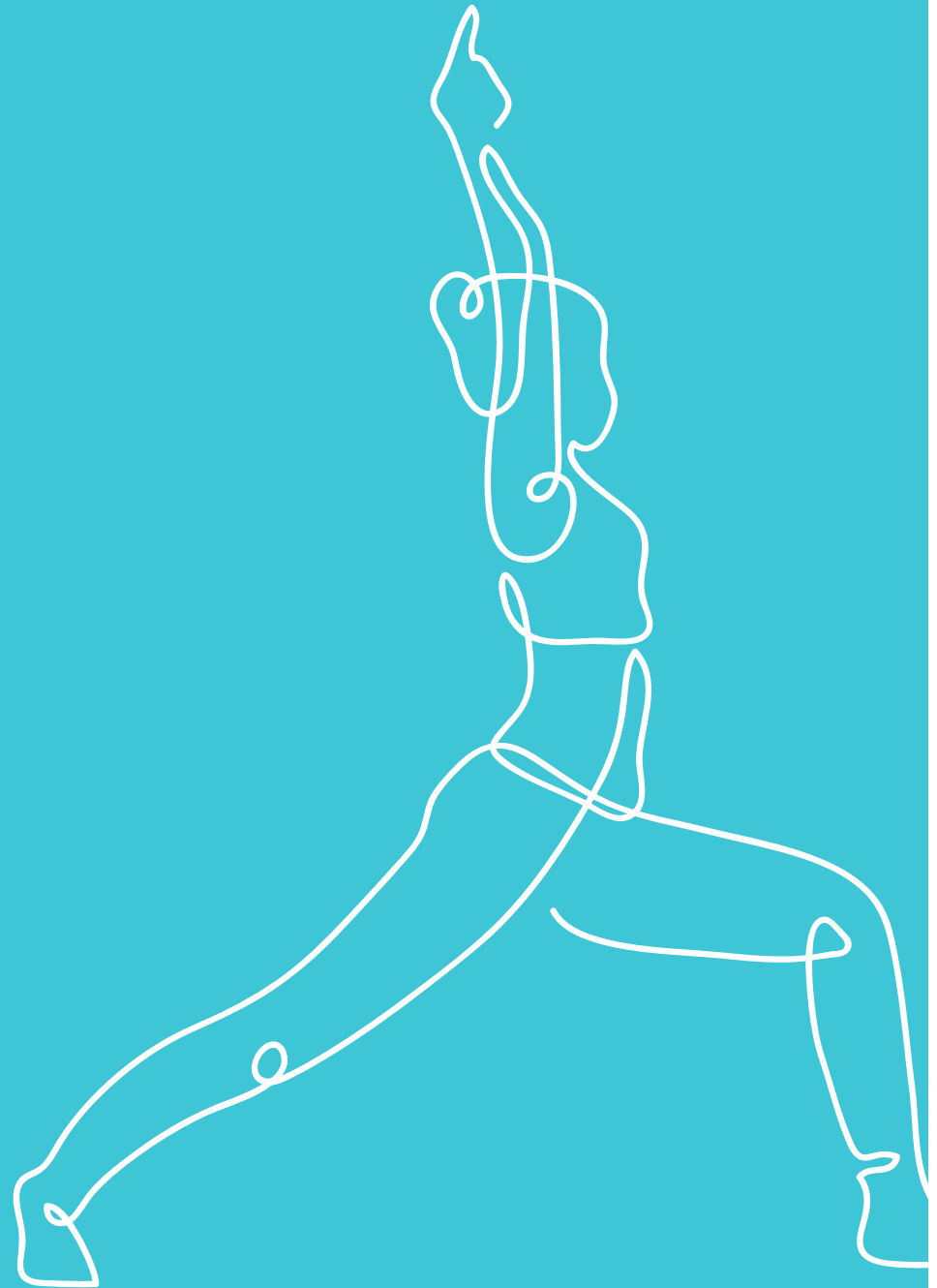
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Project Proposal- Kyntra



# 01. Project Overview





# Problem

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Many people experience recurring conditioning injuries like: Shoulder stiffness, Neck pain, Lower back strain etc. These issues often arise from poor posture, muscle imbalances, or improper form during workouts or daily activity. To recover and prevent flare-ups, they're told to do regular rehab or mobility exercises.

- Many can't afford regular therapy sessions
- At-home exercises are often done incorrectly
- No real-time feedback or correction
- Self-recovery without guidance is risky
- Minor issues can turn into long-term problems







# Solution

*Kyntra* is a mobile app designed for non-emergency injuries, providing individuals with real-time exercise feedback.

- Using the phone's camera to track movements
- Detects incorrect posture or form in real-time
- Provides instant feedback visually on screen or through voice.

## **More Than Just Rehab:**

Provides a guided video library, AI analysis, and suggestions for nearby therapists to support safe and effective home recovery. Kyntra ensures users recover correctly, confidently, and consistently even without frequent clinic visits.



# Features



## Conditioning program assist

Uses your phone's camera to guide rehab with real-time corrections for safe, effective healing.



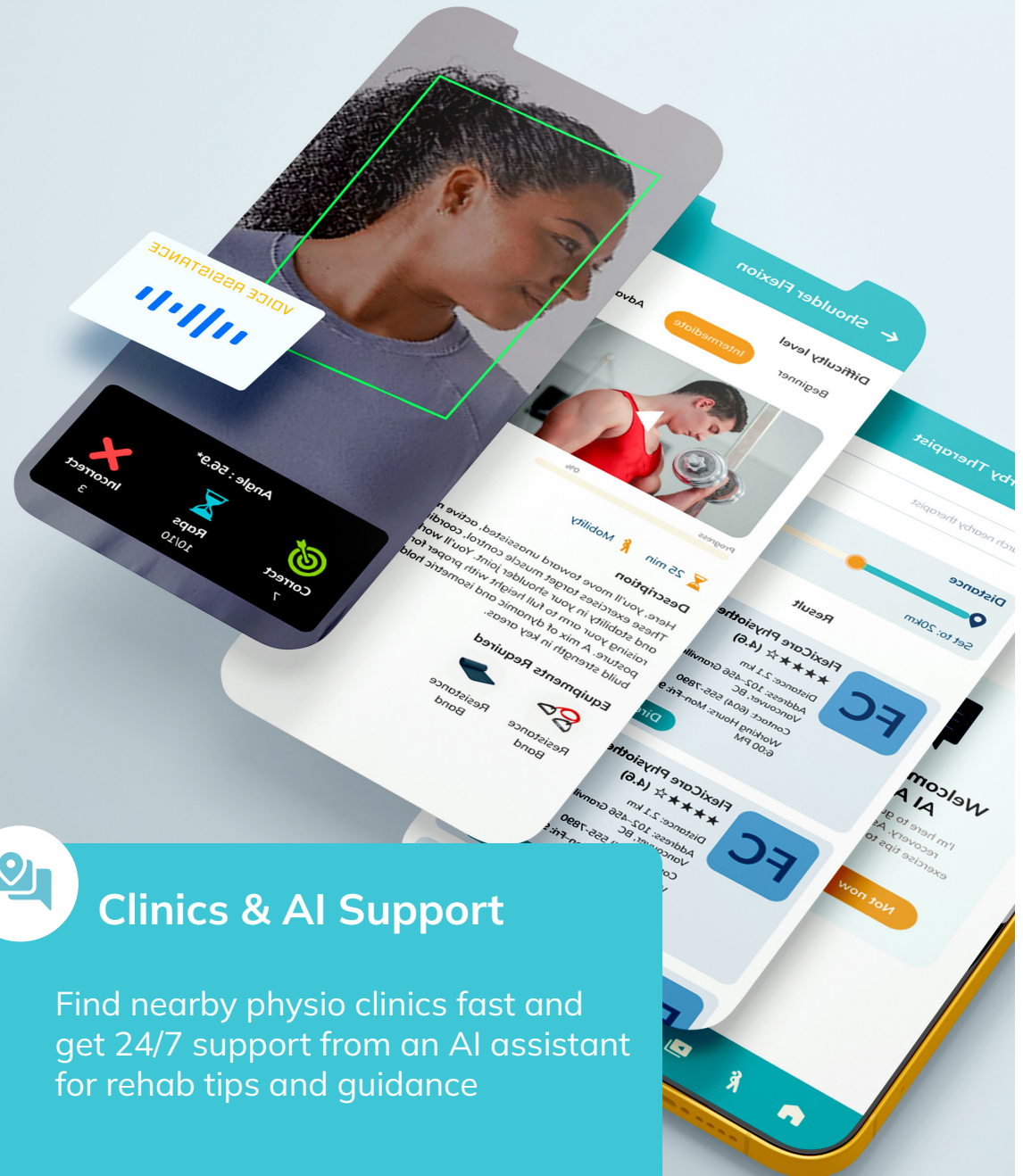
## Guided Exercise Videos

A simple video library for all fitness levels to stay active, flexible, and stress-free



## Clinics & AI Support

Find nearby physio clinics fast and get 24/7 support from an AI assistant for rehab tips and guidance



# Competitor Analysis

Features	 Kyntra	 PhylApp	 Reflex	 BackEasy
Real-time camera tracking	✓	✗	✓ posture only	✗
Live feedback during exercise	✓	✗	✗	✗
Guided video library	✓	✓	✓	✓
AI chat support	✓	✗	✗	✗
Clinic locator	✓	✗	✗	✗



### PhyApp

URL: (No public website listed) |  
App Store: iOS

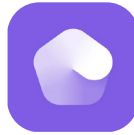
#### What They Do Well:

Provides physiotherapist-prescribed exercise programs

Includes video instructions and progress tracking

#### What We Do Better:

Unlike PhyApp, Kyntra doesn't require a therapist to prescribe exercises. It offers real-time camera tracking and instant feedback, making it more accessible and effective for users recovering independently at home.



### Reflex

URL: <https://reflexhealth.co> |  
App Store: iOS

#### What They Do Well:

Strong focus on posture tracking for shoulder injuries

Camera-based posture analysis and history tracking

Large video library and additional features like sleep and pain tracking

#### What We Do Better:

While Reflex analyzes posture, it doesn't actively guide users during exercise. Kyntra provides real-time form correction with voice and visual cues, covering full rehab guidance rather than just posture tracking.



### BackEasy

URL: (No public website listed) |  
App Store: iOS

#### What They Do Well:

Offers educational content and exercise videos for back pain relief

Simple, informative approach for pain management

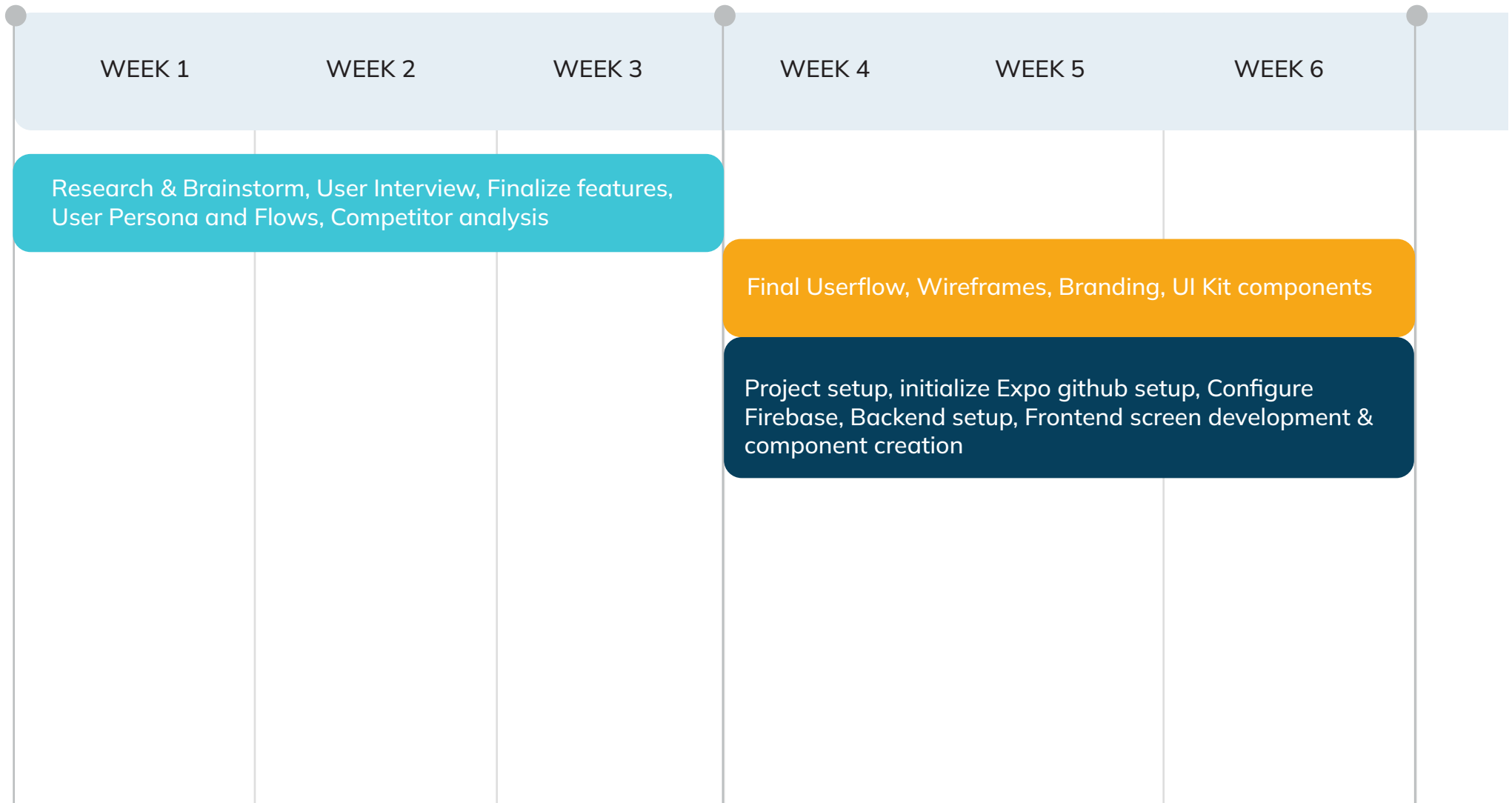
#### What We Do Better:

BackEasy is static and educational, while Kyntra is interactive — tracking motion, providing real-time feedback like a virtual therapist, and expanding into general fitness with AI chat support for a broader recovery experience.





# Project Timeline







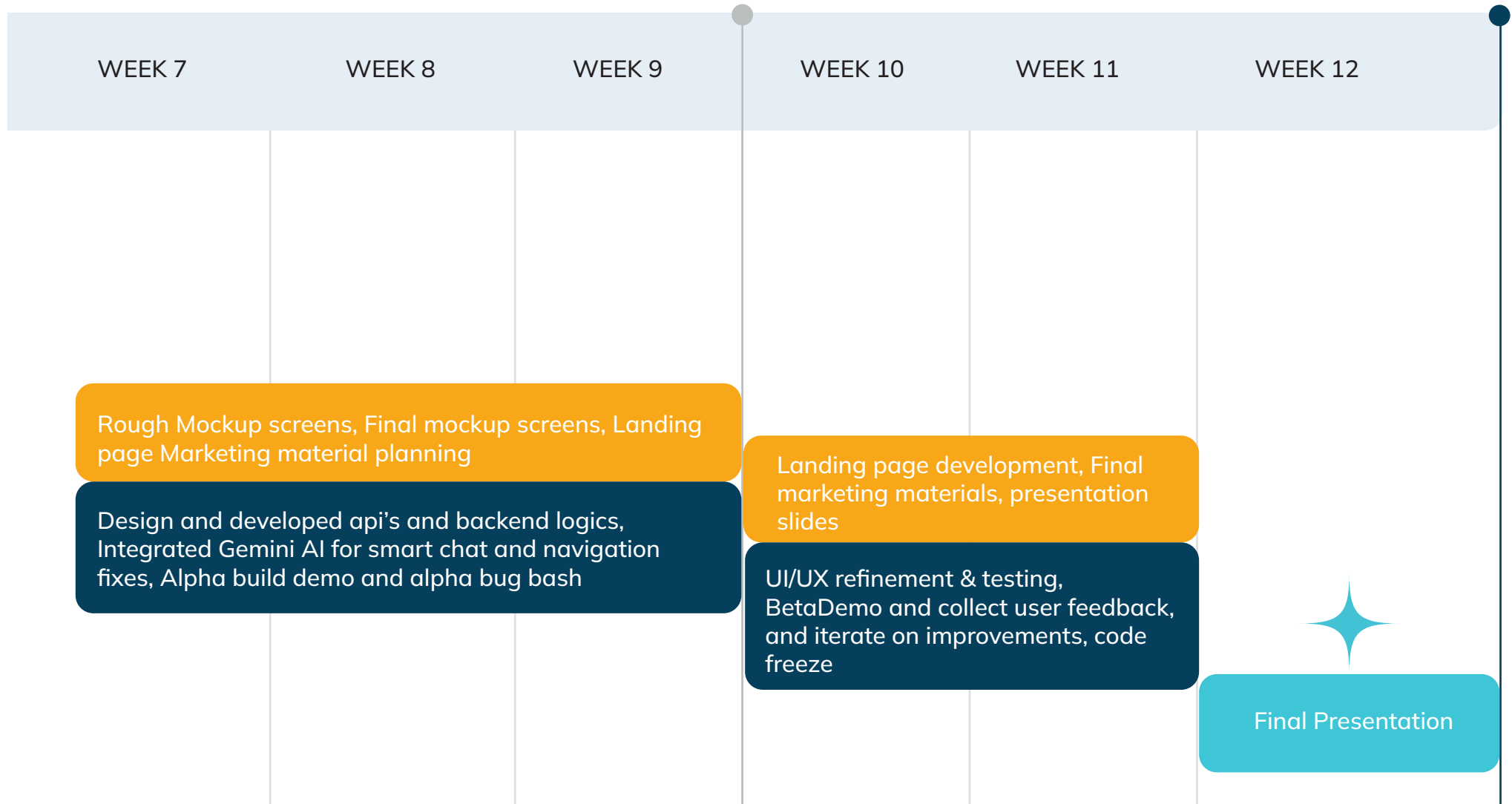
Team



Designers



Developers





# 02 Technical Overview





## Frontend

### React Native with Expo & Dev Client

Enables fast, cross-platform mobile development.

Expo simplifies setup and testing, while the Dev Client supports advanced native modules like react-native-vision-camera for real-time ML-based pose detection.

### TypeScript

Adds static typing for improved error detection, maintainability, and tooling support.

### ML Libraries

Integrated lightweight, on-device models for real-time posture detection and intelligent feedback.

## Backend

### Node.js & Express.js

Provides a fast, scalable, and lightweight environment for building RESTful APIs.

Implements MVC architecture for clear separation of concerns and maintainability.

### AWS (EC2)

Hosts the backend with high scalability, availability, and security.

### Apache

Configured as a reverse proxy to route client requests to the backend server efficiently and securely.



## Media Storage

### Cloudinary

Hosts pre-recorded physiotherapy exercise videos.

Provides fast, optimized, and secure video delivery via CDN-powered URLs.

## Database

### Firebase Firestore

A real-time NoSQL database that syncs data instantly across devices.

Integrates seamlessly with Firebase Auth and supports secure client read/write

## Third-Party APIs

**Google Maps** – For locating nearby physiotherapists.

**PowerDB API** – For retrieving exercise data.

**Gemini AI (Google)** – For smart chat features and intelligent recommendations.

## Authentication

### Firebase Authentication

Provides secure login, JWT token generation, and simplified user management.

## Authentication & Security

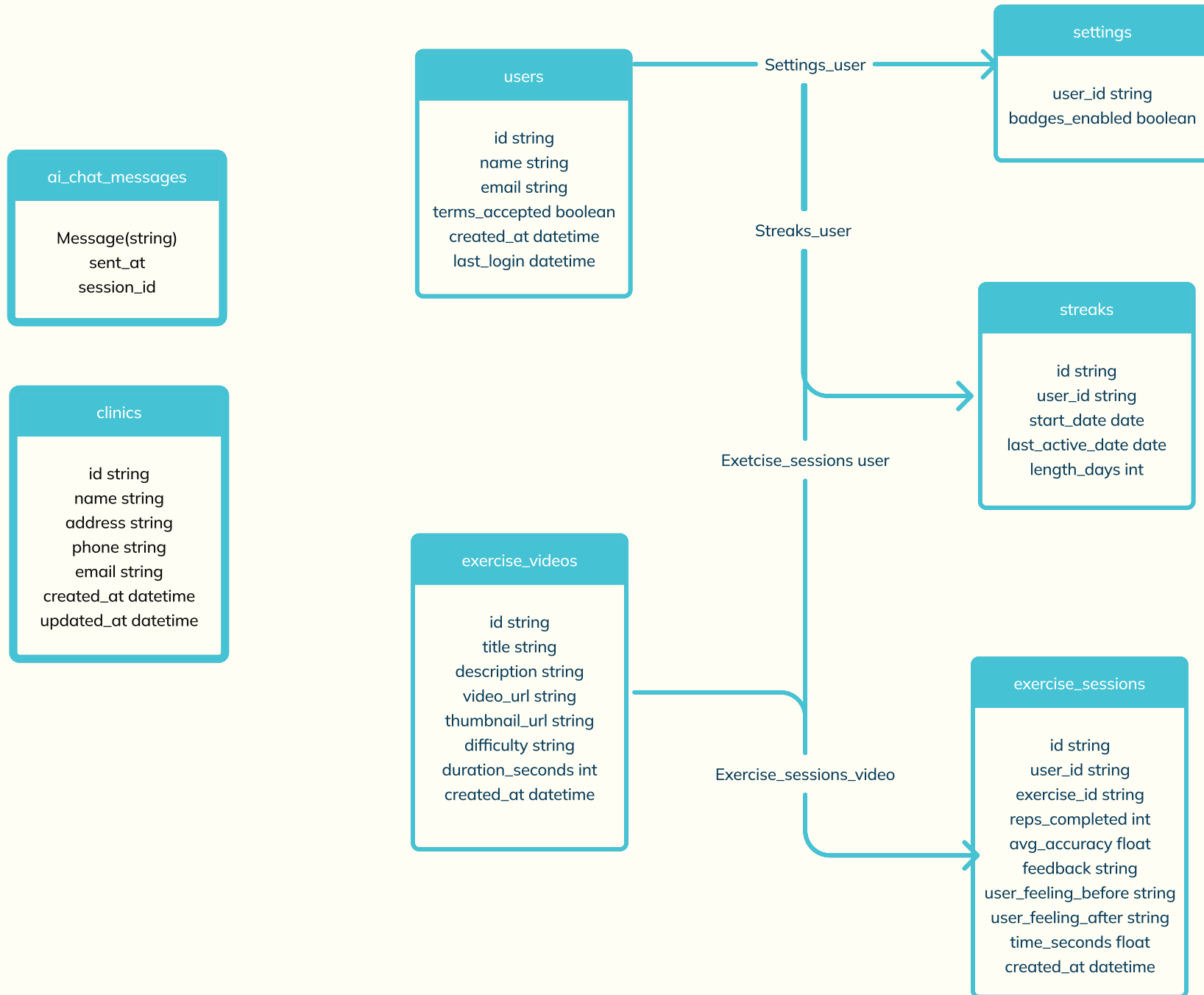
### JWT (JSON Web Token)

Ensures secure transmission of user data between frontend and backend.

Restricts access to protected resources for authenticated users only.



# Data Model



# Tech Stack



Third Party API



Authentication



Database

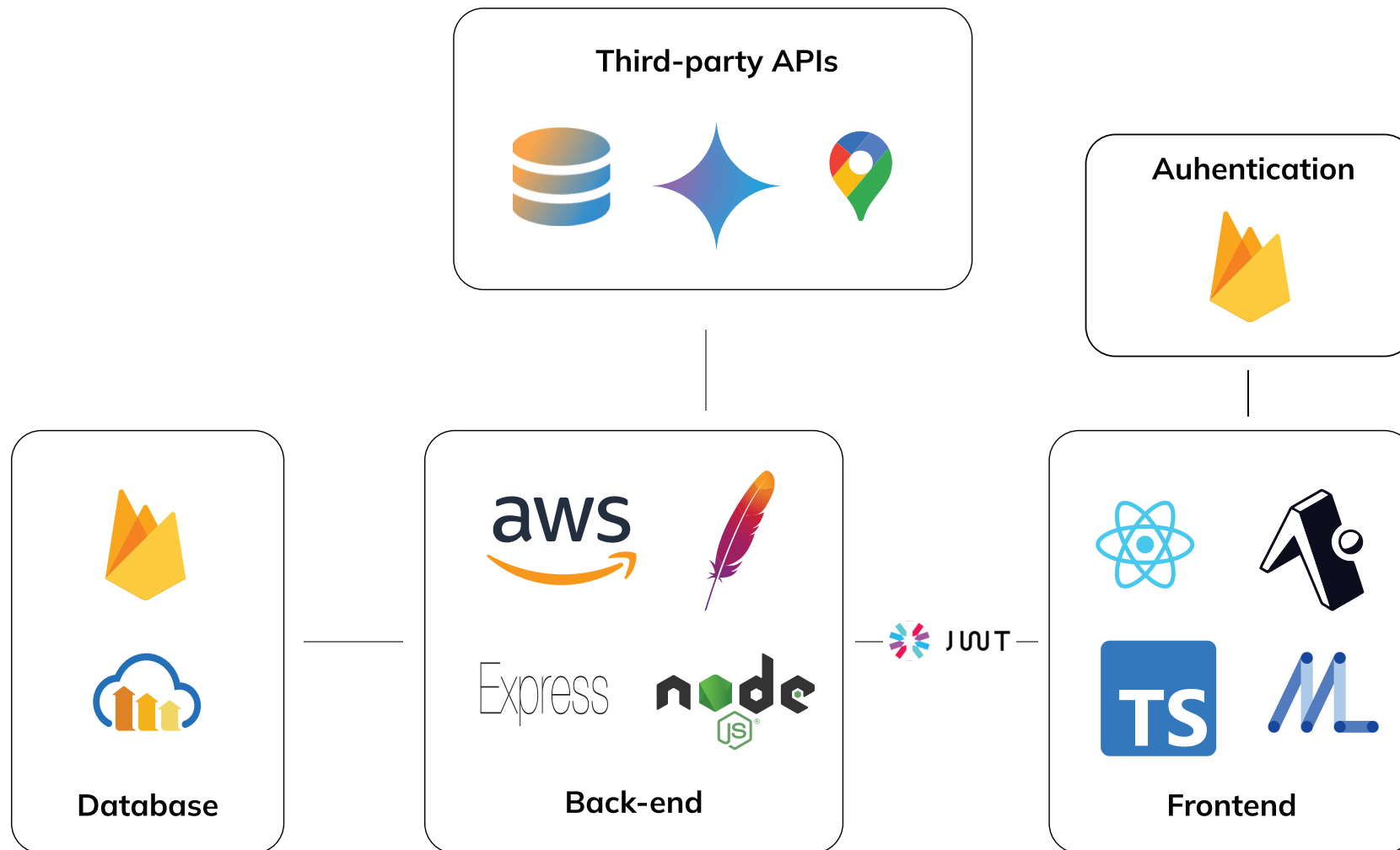


Front end



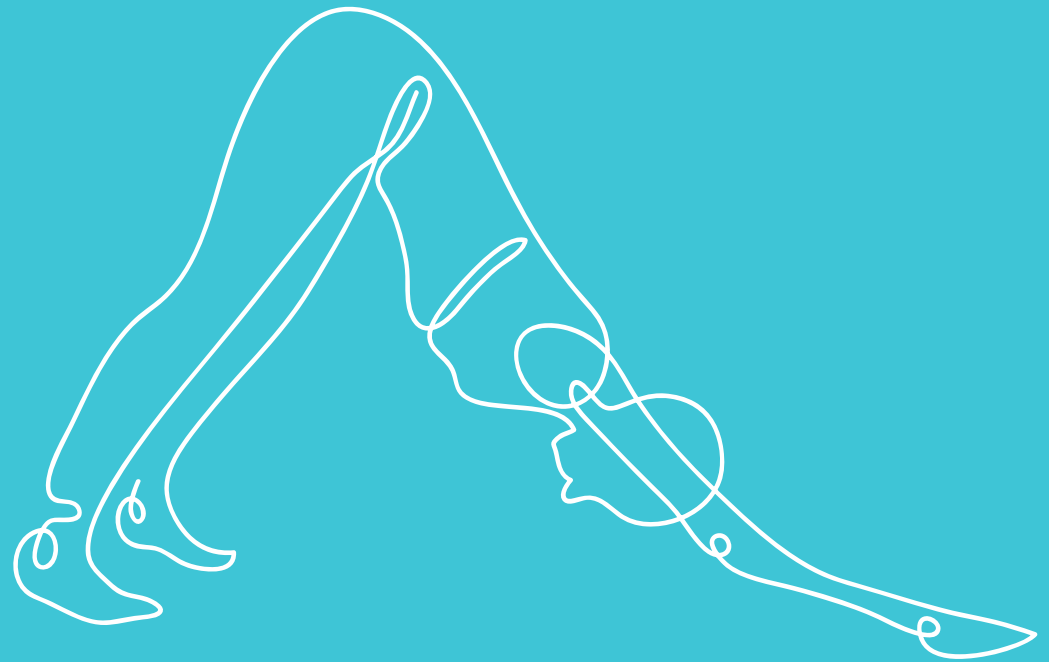
Back end

# System Architecture Diagram





# 03 Design Process

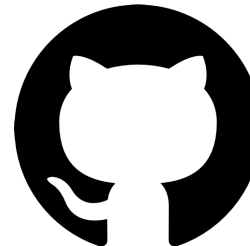




# Design Tools



## Project Management



We use Figma for collaborative UI/UX design, including user flows, wireframes, and high-fidelity mockups. Adobe Illustrator is used for creating vector-based logos, icons, and illustrations, while Photoshop handles image editing. InDesign is used for project proposals, and for motion and video tasks, we use After Effects for animations and Premiere Pro for video editing

# Persona 1



**I've recovered, but I don't want this pain coming back again**

**Name:** Pavan Pothamshetty

**Age:** 36

**Occupation:** Graphic designer

**Hobbies:** Playing Cricket

**Lifestyle:** Active, work long hours

**Tech Familiarity:** Moderate to high

**Source:** In person Interview

## Background

Pavan is a 36 year-old graphic designer and a passionate cricket player. A few months ago, he experienced a shoulder impingement from poor posture and overuse. After completing a round of physiotherapy, he regained mobility but his therapist warned that without proper maintenance, the issue could return.

## Pain point

- Generic fitness apps don't account for on specific recovery areas
- Afraid of doing exercises that might trigger the pain again
- Doesn't always know if he's doing it right
- Finds it hard to build a long-term routine

## Goal

- Prevent re-injury through regular conditioning
- Maintain shoulder mobility and posture
- Get reminders and feedback to stay consistent

# Persona 2



**“Wants to ease stiffness safely”**

**Name:** Alexa Marques

**Age:** 50

**Occupation:** Homemaker

**Hobbies:** Cooking, Gardening

**Lifestyle:** Calm, home-based, short walks

**Tech Familiarity:** Low-moderate

**Source:** Virtual Interview

## Background

Alexa experiences age-related neck and shoulder stiffness. She wants to stay active but is hesitant to do exercises alone for fear of doing them wrong and worsening her condition. Traveling to clinics is tiring and costly. She prefers doing light stretches at home, but needs assurance she’s doing them correctly.

## Pain point

- Worried about doing the wrong move and hurting herself
- No physiotherapist nearby
- Gets overwhelmed by long YouTube tutorials
- Needs simple instructions

## Goal

- Stay mobile and independent
- Follow gentle routines safely
- Get spoken, step-by-step guidance
- Track her daily progress with simple visuals

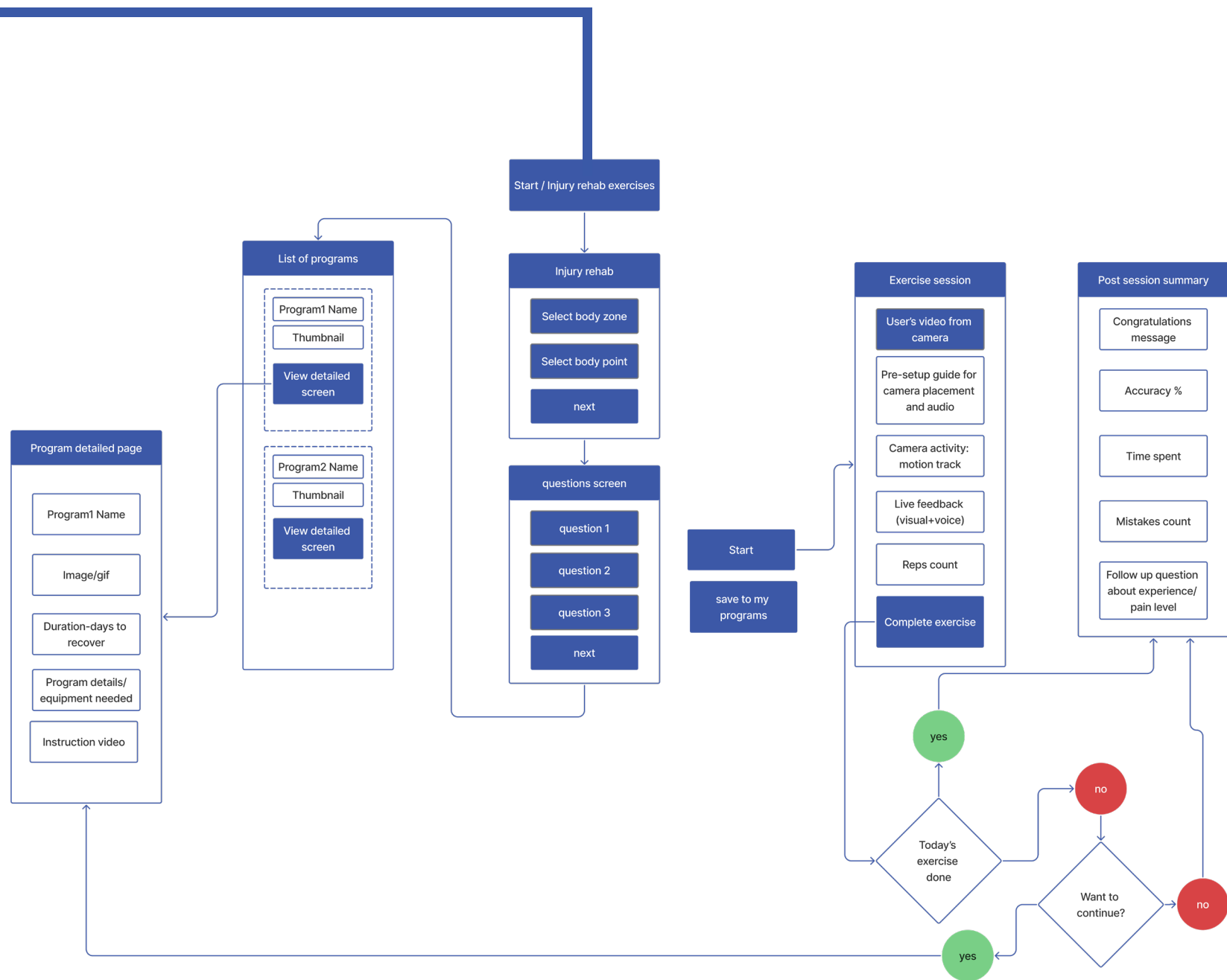
Chat / profile

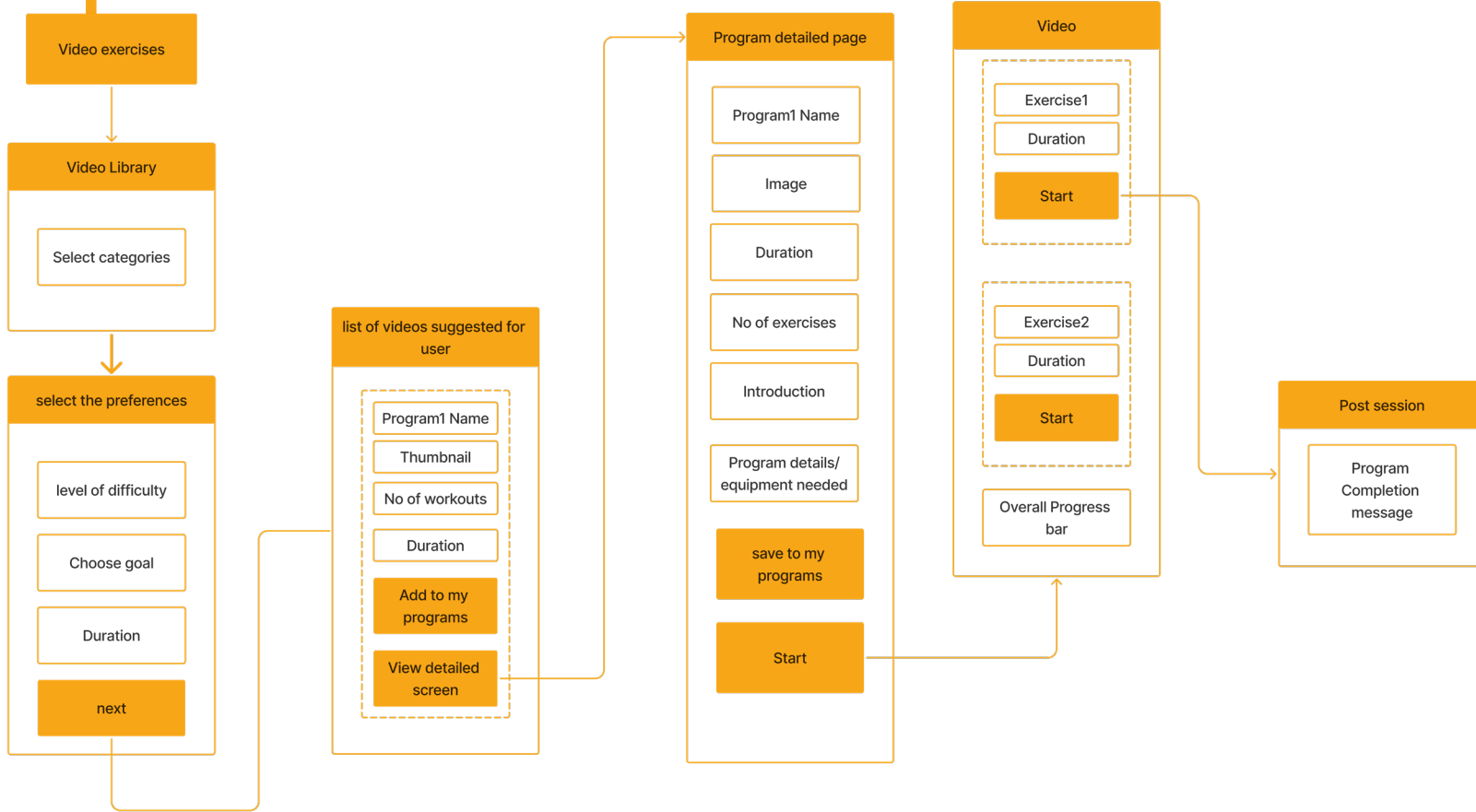
Video exercises

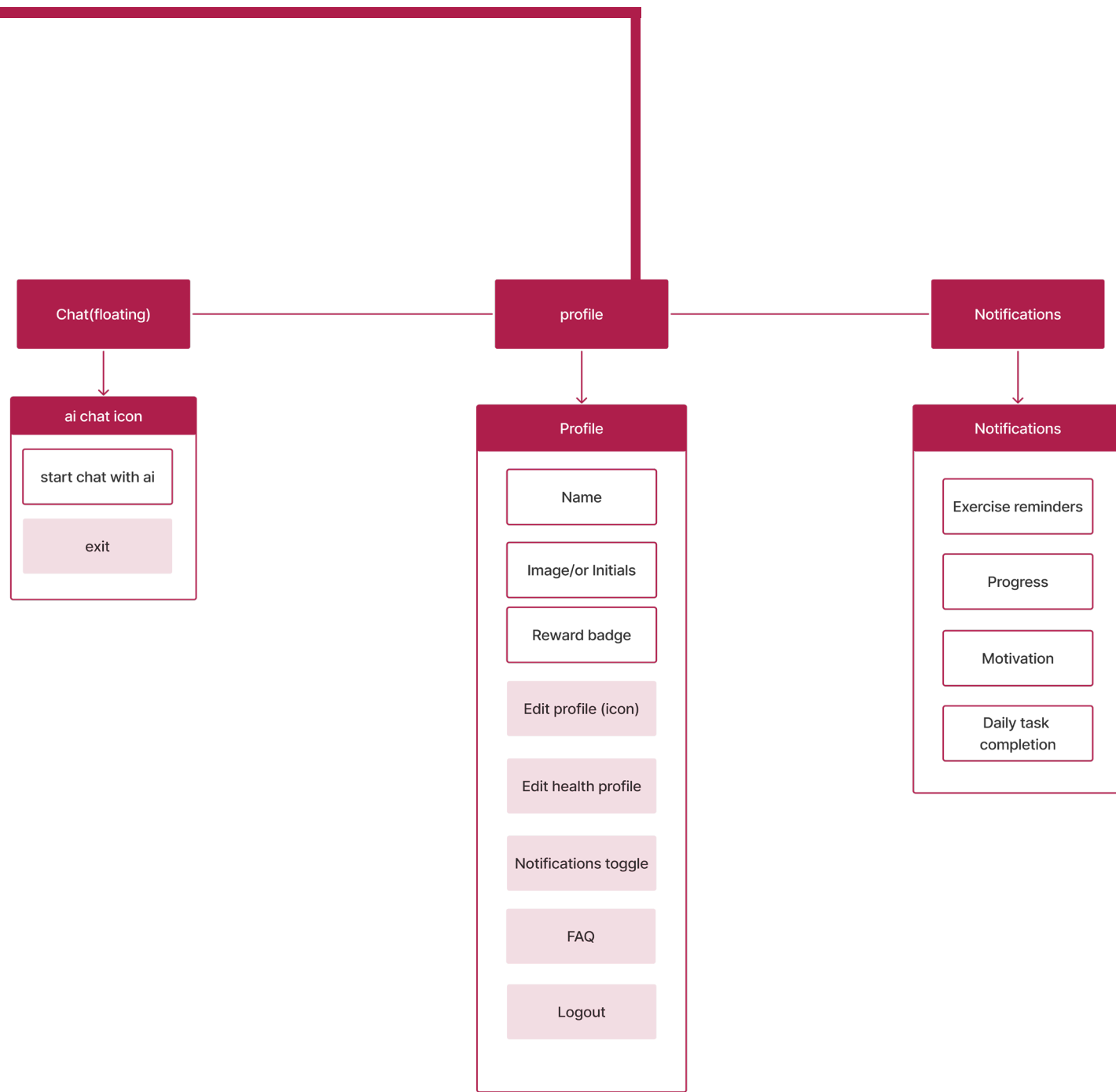
Injury rehab

Dash Board











# Branding

The Kyntra logo is designed to reflect movement, healing, and connection—core ideas behind what the platform stands for. The most distinctive part of the logo is the “K,” which is shaped like a person in a stretching or side-lunge pose. This design choice wasn’t just for style; it visually communicates that Kyntra is about physical recovery, movement therapy, and wellness. It gives the logo a human touch and creates an immediate association with exercise and body movement.

The letter “K” represent  
“Kyntra”

+



The exercise represent the  
Kyntra’s vision

=



Kyntra Logo



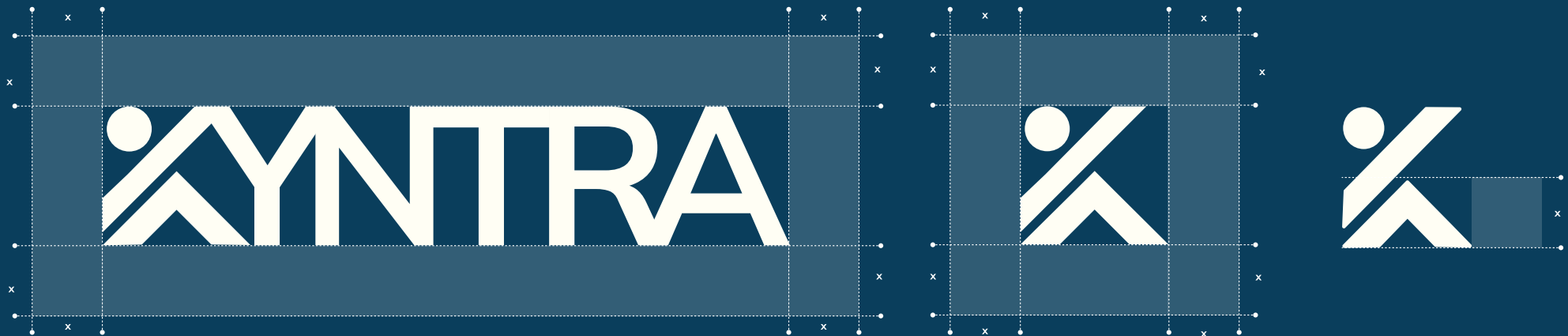




# Logo Usage

## Exclusion zone

The Logo and the icon's exclusion zone is equal to half the height of the icon (marked as x in the diagram)



## Minimum size

To ensure the logo remains clear, readable, and recognizable across all platforms, a minimum size is defined.



Kyntra logo should never be smaller than 100px in mobile and 25mm in print



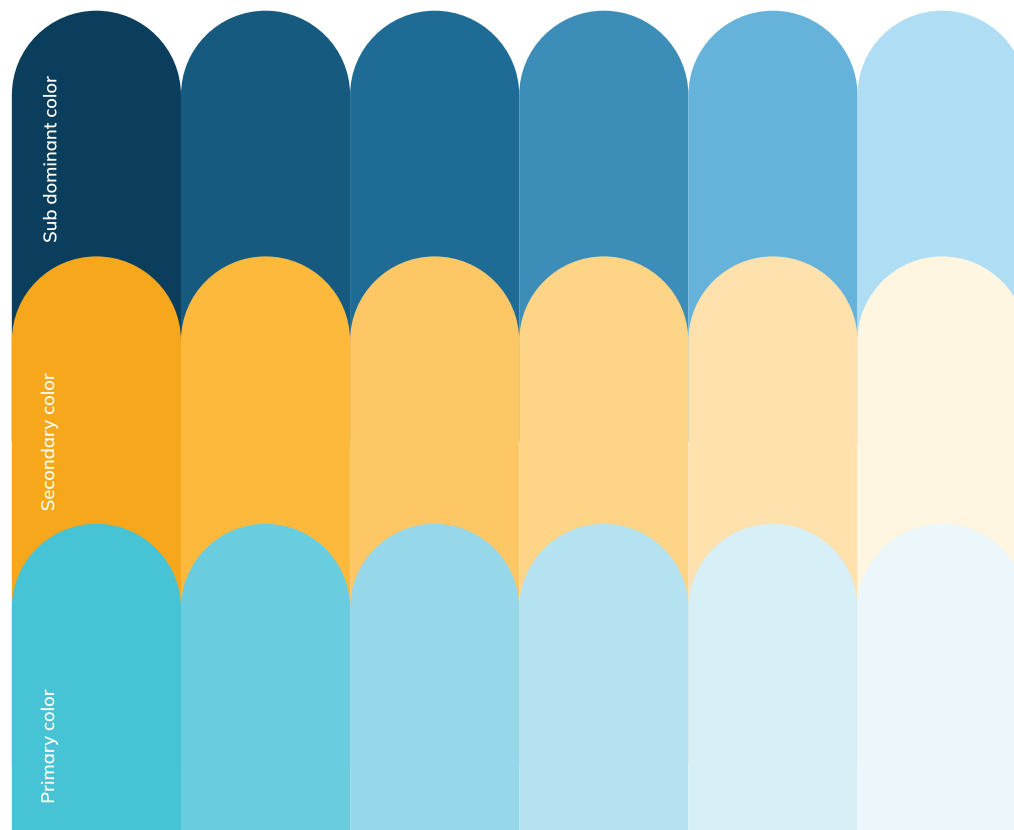
Kyntra Icon should never be smaller than 24px in mobile



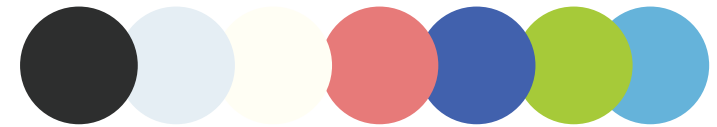


# Color Palette

## Brand colors



## Accent Colors



**Turquoise Blue** - It represents calm, clarity, and hope feelings that are important when someone is recovering from an injury

**Amber** - Brings energy and positivity to the mix. It adds warmth and motivation, much like a supportive coach.

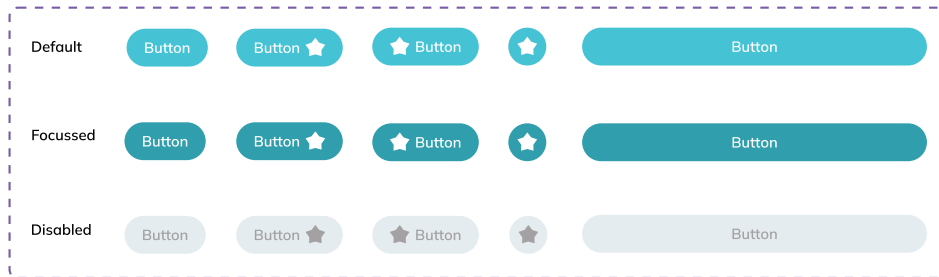
**Midnight Blue** - Gives the brand a sense of seriousness and confidence, which is important in any health-related service.



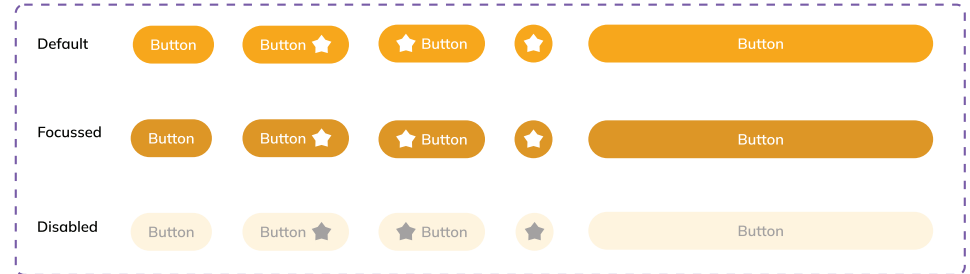


# UI Kit

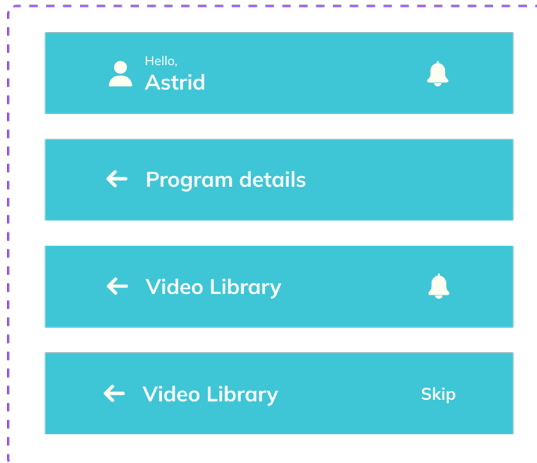
## Primary- buttons



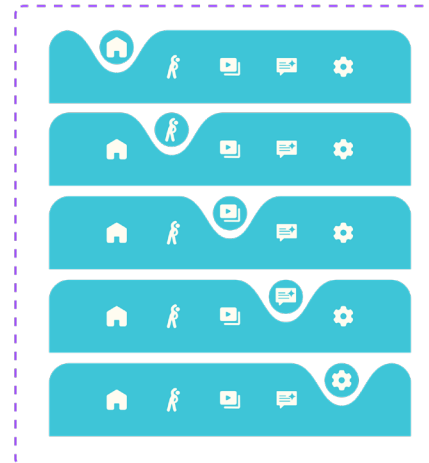
## Secondary - buttons



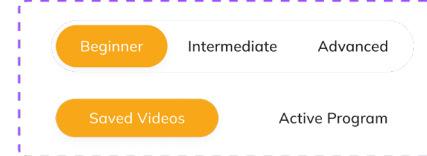
## Header



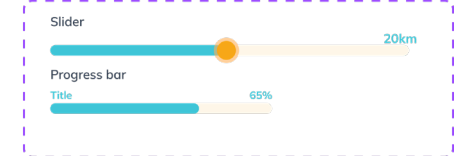
## Navigation



## Tabs



## Sliders



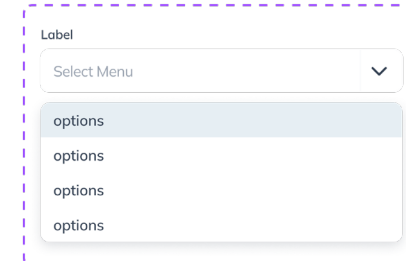
## Check box-1



## Radio Buttons



## Drop down

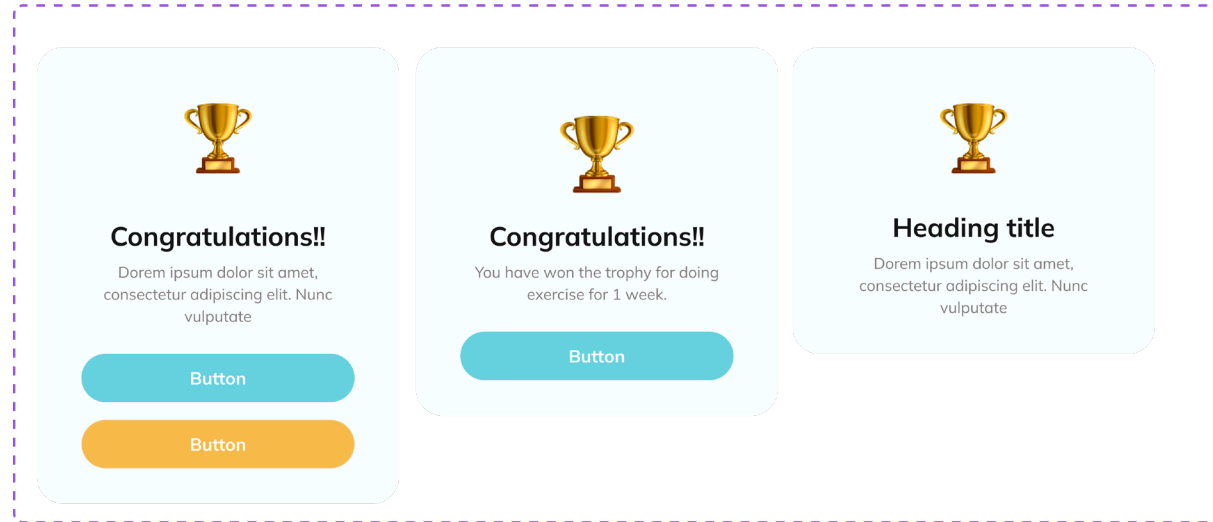


## Toggle

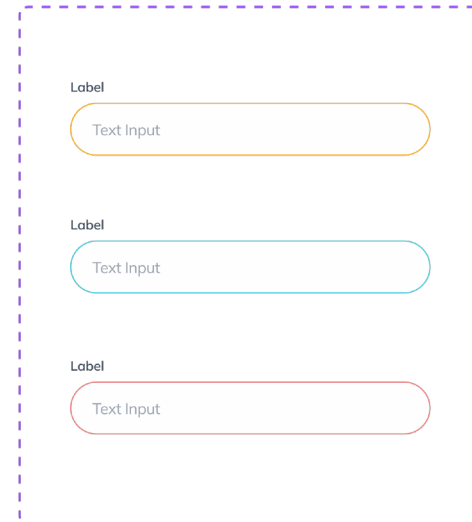




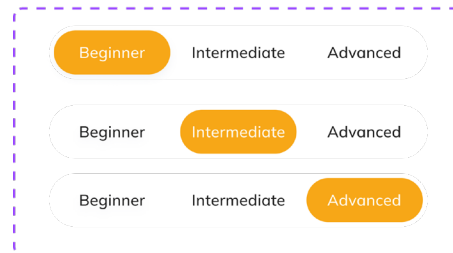
### Popups



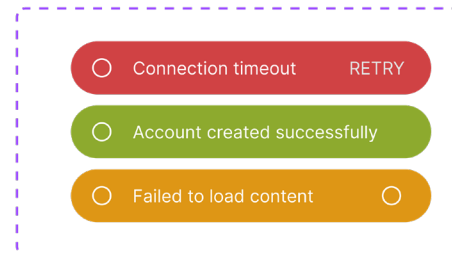
### Form



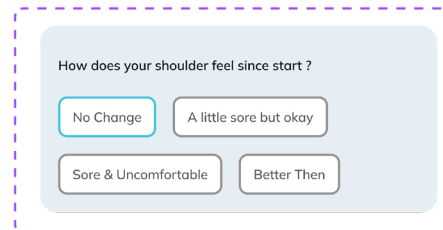
### Tabs



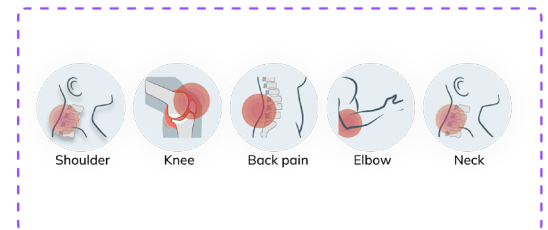
### Snackbar/ Toast



### Checkbox style- 2



### Radio Button style- 2

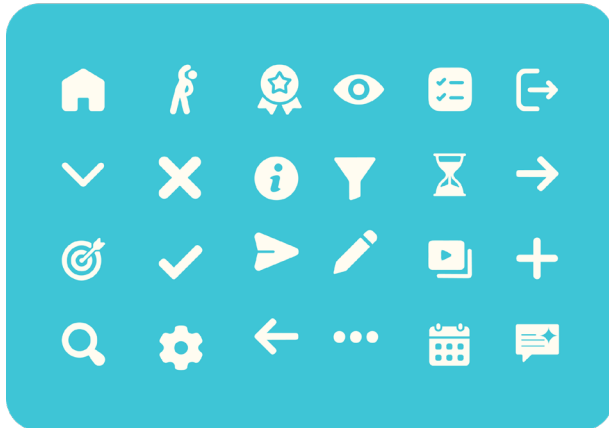
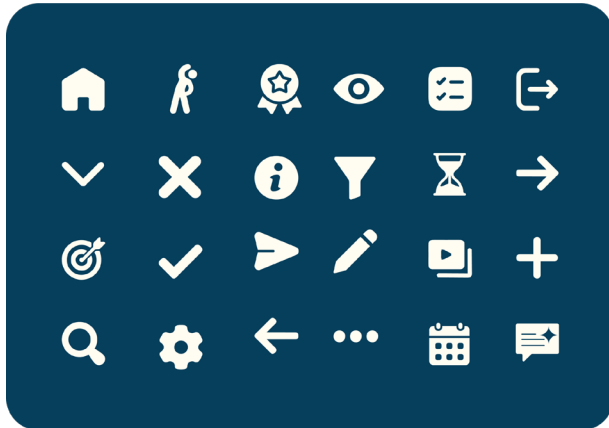


## UI Kit Graphics

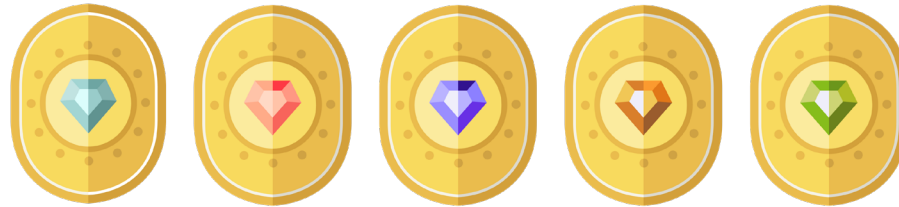
Graphics in the UI kit were developed to maintain a consistent and cohesive visual identity throughout the application.



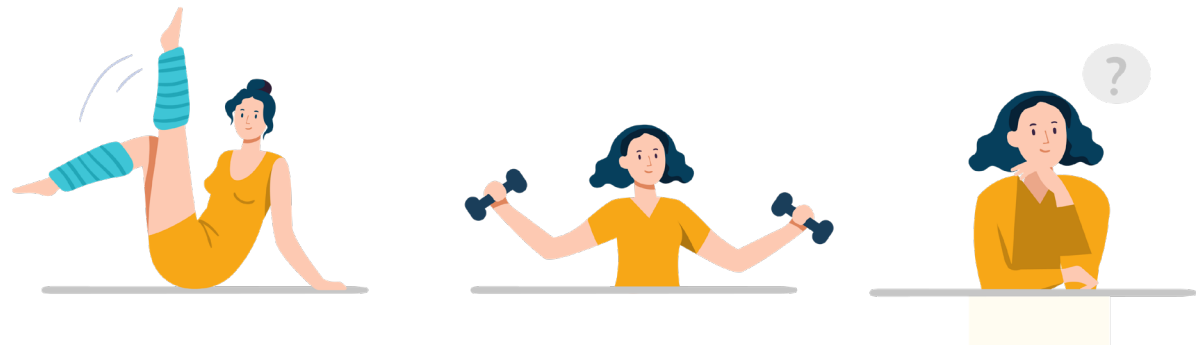
### Icons



### Illustrations - Badges



### Illustrations - onboarding



## Badges & Onboarding Illustrations

The badges were designed to encourage user engagement by celebrating progress, while the onboarding illustrations create a welcoming and approachable first-time experience.



# Typography

Aa

Mulish

Characters

A B C D E F G H I J K L M N O  
P Q R S T U V W X Y Z a b c  
d e f g h i j k l m n o p q r s t u  
v w x y z  
0 1 2 3 4 5 6 7 8 9 0 ! @ # \$  
% ^ & \* ( ) \_ + = - / ? < > | \  
~ ` { } [ ]

Mulish ▶

Regular  
Medium  
Semibold  
Bold





# Mulish

San serif

## Heading Style

### Heading 1

Heading 1, Mulish, Bold, 36px

### Heading 2

Heading 2, Mulish, Bold, 24px

### Heading 3

Heading 3, Mulish, Bold, 20px

### Heading 4

Heading 4, Mulish, Bold, 18px

### Titles

Title, Mulish, Bold, 16px

## Body Style

### Body Text 1

Body text 1, Mulish, Regular, 14px, line height 20

### Body Text 2

Body Text 2, Mulish, Semibold, 14px, line height 20

## Button Style

### Button 1

Button text 1, Mulish, Regular, 16px

### Button 2

Button Text 2, Mulish, Semibold, 14px

### Tabs

Tabs Text , Mulish, Semibold, 14px

## Caption Style

### Caption 1

Caption text 1, Mulish, Medium, 12px

### Caption 1.1

Caption text 1.1, Mulish, Bold, 12px

### Caption 2

Caption Text 2, Mulish, Medium, 10px

### Caption2.2

Caption Text 2.2, Mulish, Bold, 10px

### Warning, Message

Warning Message, Mulish, Medium, 12px

## Labels Style

### Label

Label text 1, Mulish, Semibold, 12px, line height 18

### Placeholder

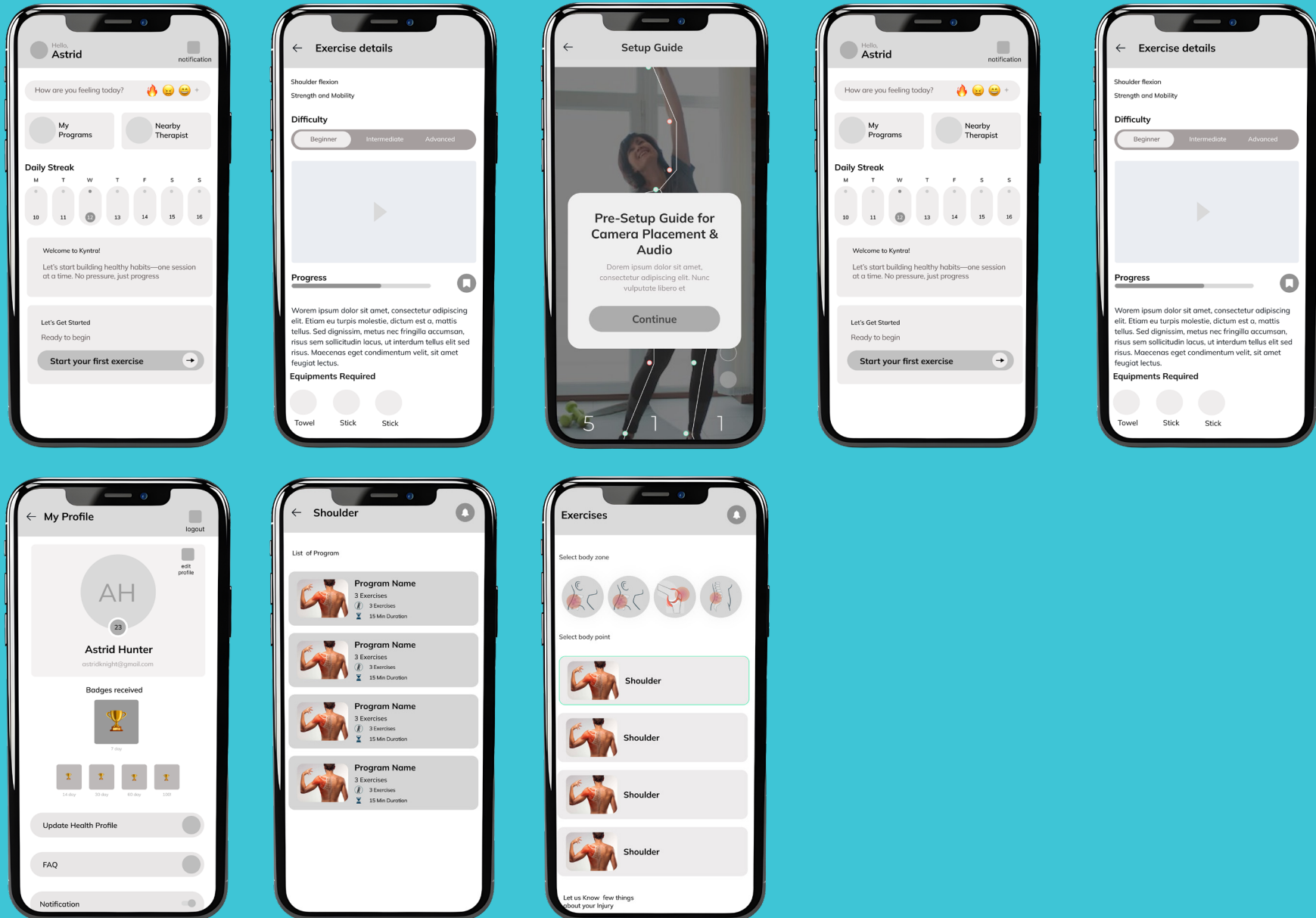
Placeholder text 1, Mulish, Regular, 14px, line height 17

### Text Input

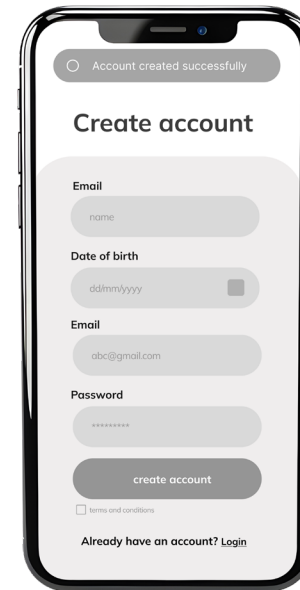
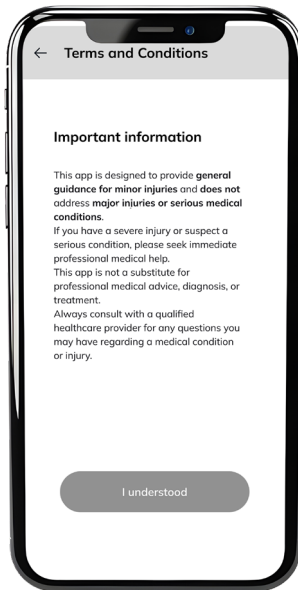
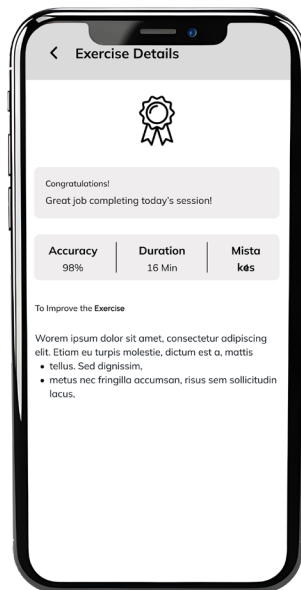
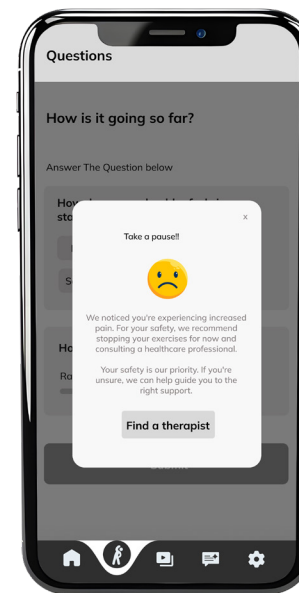
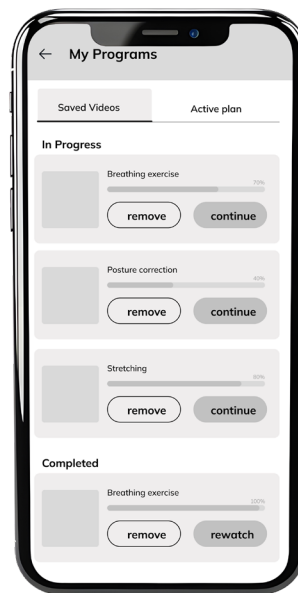
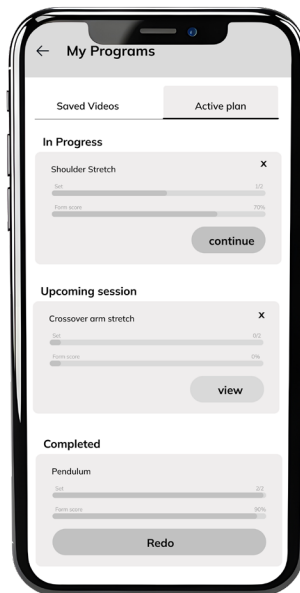
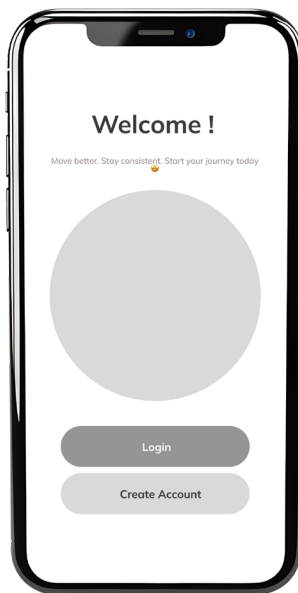
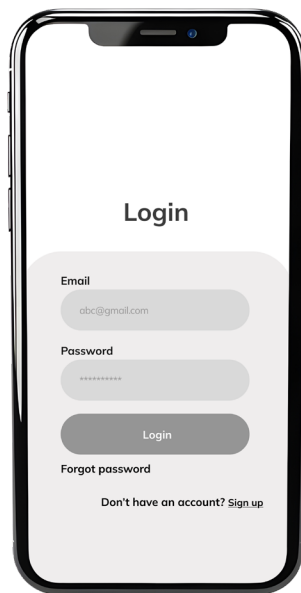
Text Input, Mulish, Medium, 14px, line height 17



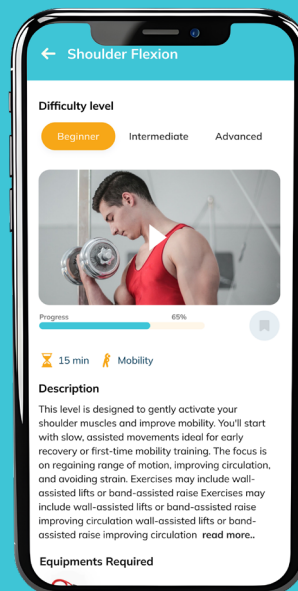
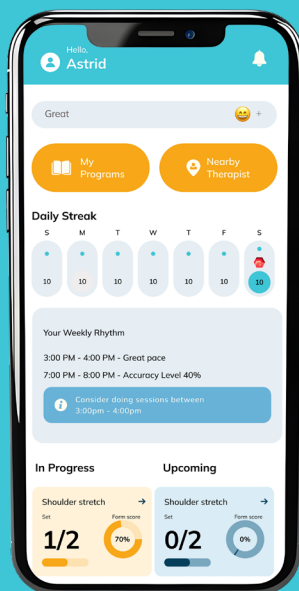
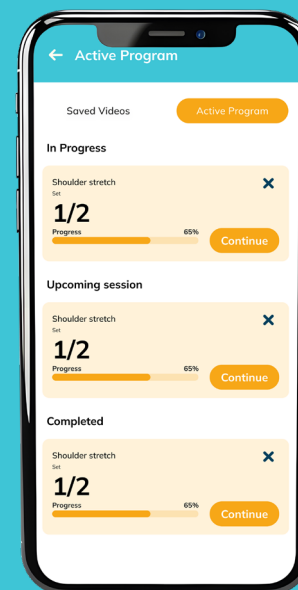
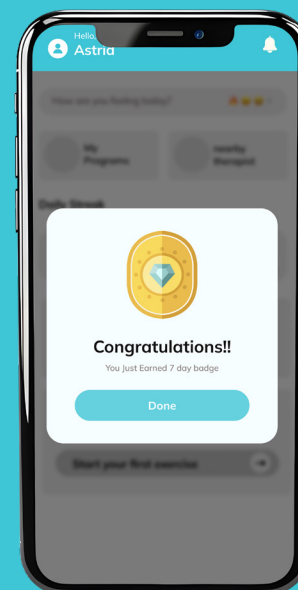
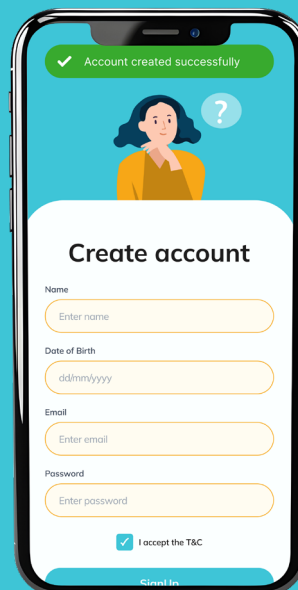
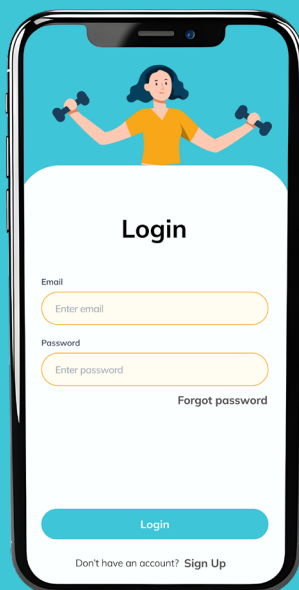
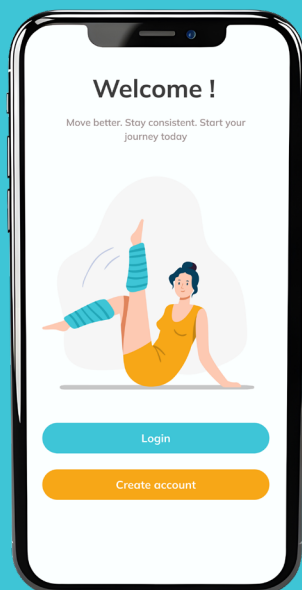
# Wireframes

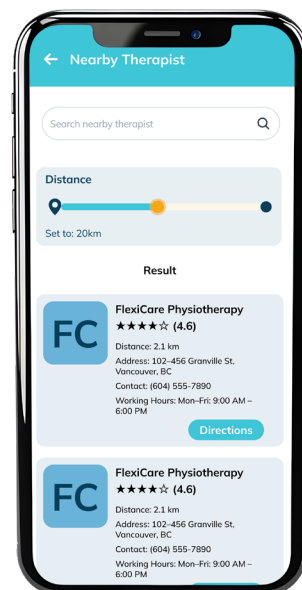
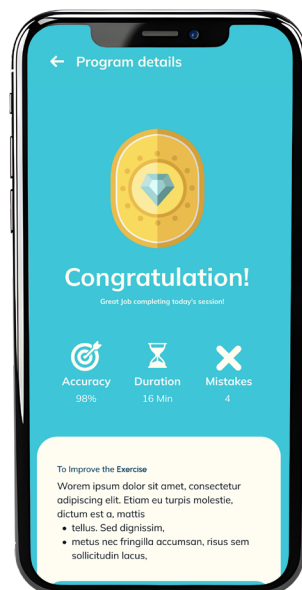
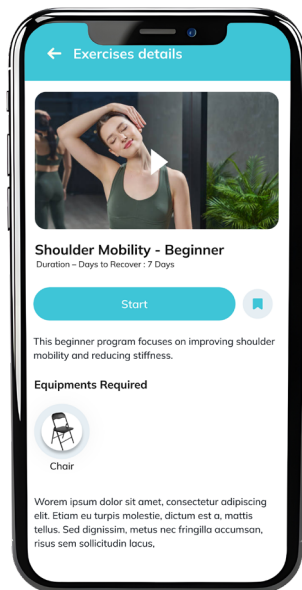
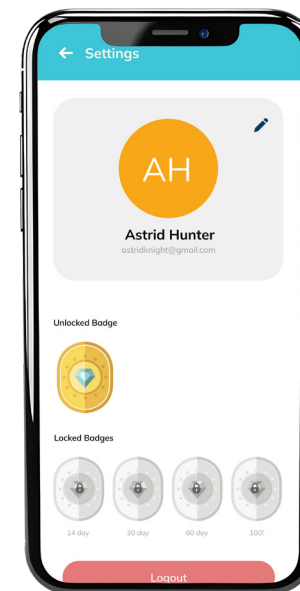
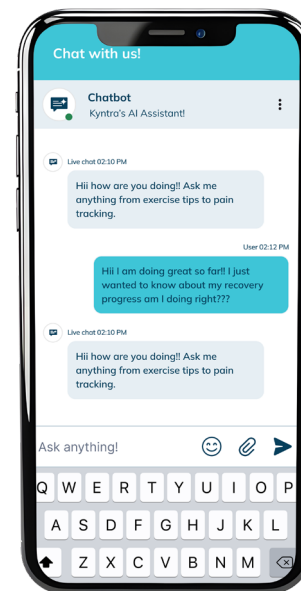
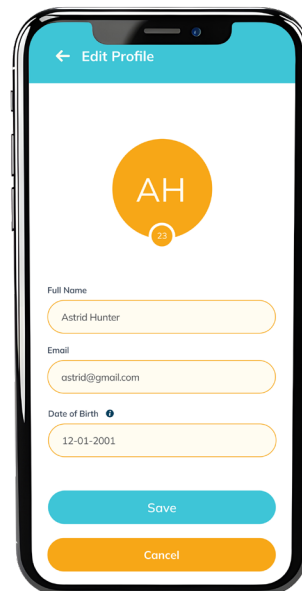
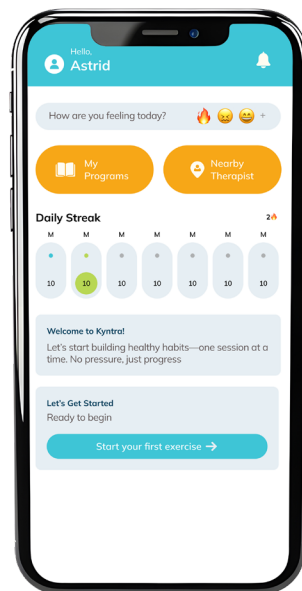
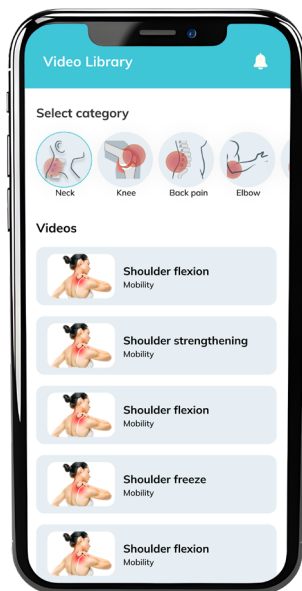






# Mockups





# Business Model

## Kyntra Solo

Free

- ✓ Real-time motion tracking
- ✓ Access to exercise video library
- ✓ Daily check-ins & progress tracking
- ✓ Nearby therapist locator

✗ No observer/monitor access

Basic

## Kyntra Support

\$15/mo

Includes everything in Free plus

- ✓ All features in Kyntra Solo
- ✓ Add 1 observer (family, friend, caregiver)
- ✓ Observer can:
  - View daily progress
  - Get alerts for missed sessions
  - Receive weekly summary reports

Premium



# Meet The Team



**Sourav Shetty**

Full Stack Developer

[in](#) /sourav-s-shetty



**Venkatesh**

Full Stack Developer

[in](#) /venkatesh-pothamsetty



**JASPREET SINGH**

Full Stack Developer

[in](#) /jaspreet-singh



**Surbhi Nayyar**

UI/UX Designer

[in](#) /surbhi-nayyar



**Mashiur Rahman**

UI/UX Designer

[in](#) /mashiur-rahaman



**Adila Nazar**

UI/UX Designer

[in](#) /adila-nazar



**Kartik Bhandari**

UI/UX Designer

[in](#) /kartik-bhandari



**Tomohiro Yamamoto**

UI/UX Designer

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**Dhawal Kumar**

UI/UX Designer

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## How We Brought Kyntra to Life

We combined our expertise in UI/UX design, software development, and user research to bring Kyntra from concept to reality. Through user interviews, detailed personas, and carefully mapped user flows, we ensured the solution addressed real needs. By integrating real-time feedback systems with AI and following a collaborative design and development process, we created a fully realized, user-centered application.





# Kyntra - Your Healing Manta



# Designed with Expert Inputs



“ Kyntra offers a unique solution for home exercise programs by using advanced tracking features to monitor patient performance. It provides feedback when exercises are performed incorrectly, addressing one of the biggest challenges in home exercise prescription for physiotherapists

**Gillian Corbo | Physiotherapist, MPT, MSc, BKin**  
Instructor



Capstone Project

Langara.

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