

CASE STUDY

STUTTGART AIRPORT NAVIGATION

OVERVIEW

About the Project

Aviation plays a very important role in the transport development worldwide. Still being a relatively new mode of transportation, it experiences enormous growth over the last decades. Airports with necessary facilities are constructed all over the world in order to serve the increasing traffic demand. The following project serves as an assistant in airport landside navigation, based on Stuttgart Airport, Germany. The terminal components' capacity and bottleneck analysis were part of the research project as well.

This app will help users in navigation through Stuttgart Airport and get information on their flight status. It will assist with tracking luggage in real time, provide updates on gate information, calculate load and timing required to process through terminal facilities.

My Role and Responsibilities

UX/UI Designer and Researcher

- User research, interviews and studies
- Competitor and market analysis
- Wireframing, Information Architecture
- Lo-fi and hi-fi designs and prototypes
- UI Design, visual concept, Design System
- Accessibility and inclusion integration
- Usability testing and adaptation

Duration

6 weeks

Tools

Figma
Adobe Photoshop
Adobe Illustrator
Microsoft Office
Miro

OVERVIEW

Problem Statement

Passengers traveling via airports often struggle with navigation due to inadequate navigation cues. There's no integrated solution to layovers, early or late arrivals and departures tracking.

Travellers often spend too much time looking for the baggage drop off counter and gate.

Goals

- Improving way-finding and navigation
- Secure and easy baggage handling
- Hassle-free process through all terminal facilities
- Intuitive and easy to understand system
- One stop solution catering multiple tasks and addressing various needs

Areas of Investigation

- Conceptual models
- Baggage handling
- Transfer processes
- Airport navigation challenges
- Bottlenecks in airport terminal systems

Solution

Stuttgart Airport Navigation App is an one stop solution and it incorporates all the necessary features. The passengers can now navigate through the airport easier and more efficiently. The app analyses the possible bottlenecks and calculates the timing required to process through airport facilities. The new design is very simple to understand and also visually appealing.

WORKFLOW

Briefing

Ideas, details and scope of the project

01

04

Design

Visual concept and layout design

Research

Competitive and visual analysis,
user and market research

02

05

Adaptation

Testing and adaptation of the design

Prototyping

Logical structure of the project

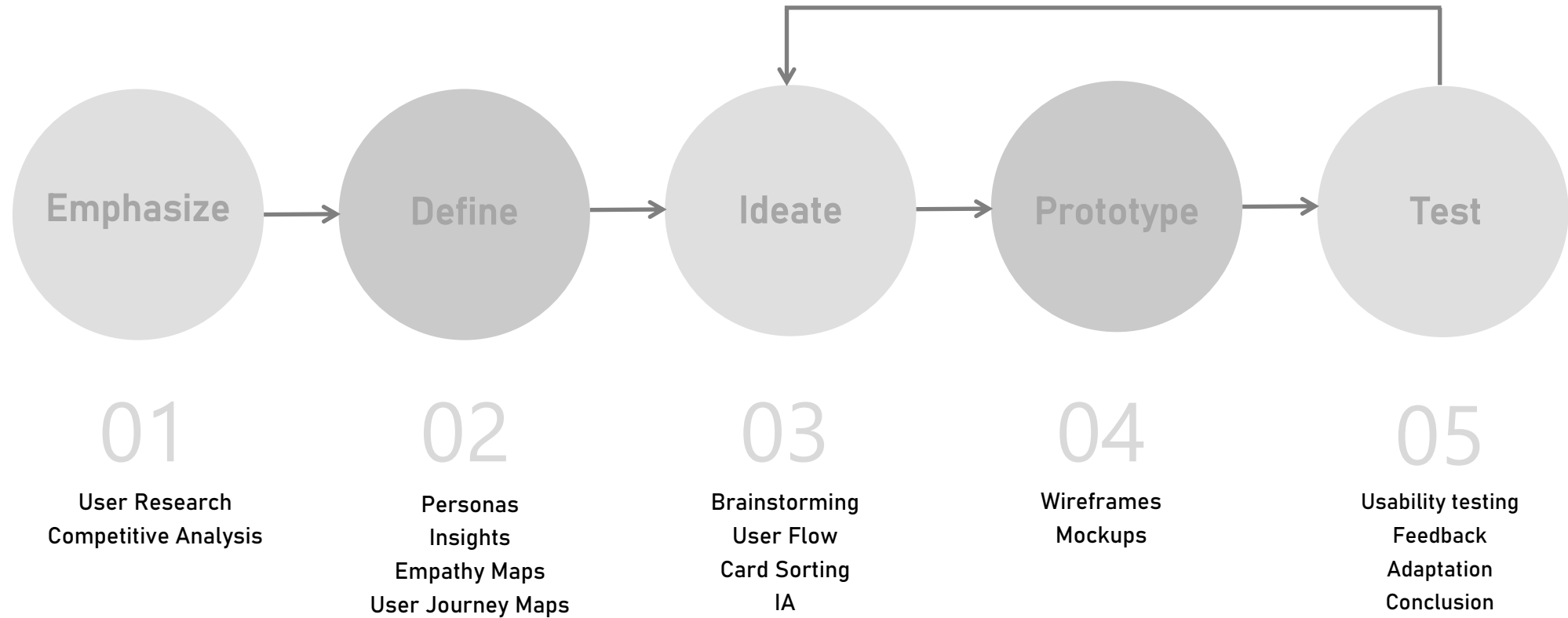
03

06

Development

Final results are ready to be transferred to
development.

DESIGN PROCESS



based on Stanford's d.school diagram

METHODOLOGY & APPROACH

Inspiration

User research, interviews
Hypothesis generation
Competitor research

01



Challenge

How do I get started and stay user-centered?

Ideation

Brainstorming
Creating insights
How Might We

02



Opportunity

How do interpret my learning and turn insights into tangible ideas?

Implementation

Information architecture
Prototyping

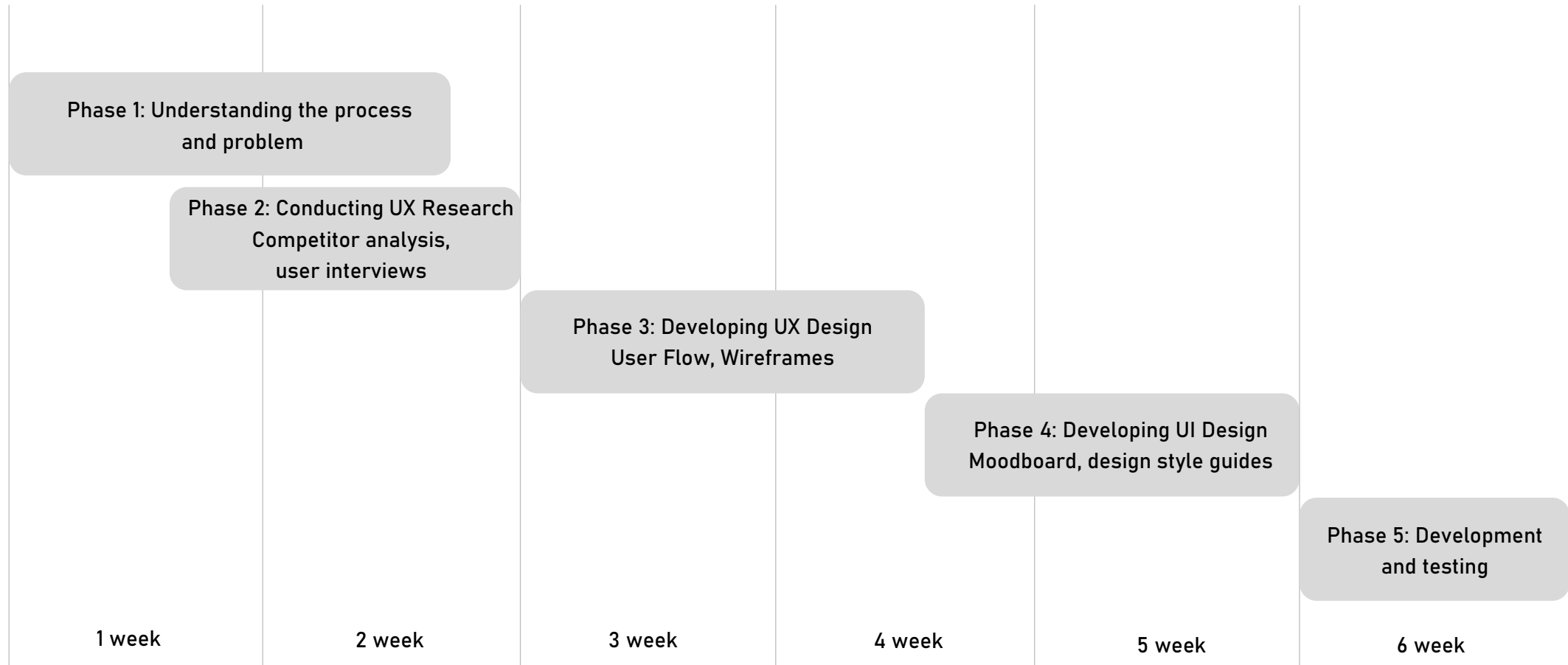
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Solution

How do I make concept real and find out if it's working?

TIMELINE



COMPETITOR ANALYSIS

Features	Tripit	FlightBoard	Flight Tracker	Berlin Brandenburg Airport	Frankfurt Airport
Alerts	x			x	
Trip Status	x	x	x	x	x
Pro features	x		x		
Account	x				
Customer care/help center	x			x	
Modern Theme	x		x	x	
Route navigation	x (pro)			x	
Amenities navigation	x (pro)			x	
Accessibility and inclusion					
Loyalty program monitoring	x				
Travel documents	x				
Travel contacts	x				
Settings and filters	x	x			
Secutiry time	x (pro)				
Terminal and gate info	x (pro)	x	x	x	x
Airport maps	x (pro)			x	x
Free	x (pro features)	x	x (pro features)	x	x
Email sync	x				
Advertisement			x		x
Add your flight	x		x	x	

From analyzing the competitors, there is an opportunity to create an one-stop platform with interactive elements, also considering accessibility and inclusion.

USER RESEARCH

Qualitative Analysis

I conducted interviews of several users, who love traveling and are active travellers, as well as passive travellers or travel occasionally. Interviews were conducted via online calls. In total there were 10 people interviewed. From the user interviews I was able to build personas, discover pain points, gather insights about their challenges and motivations, develop problem and hypothesis statements.

Metric	Age	Occupation	Details
Business Traveler	Adults (24-64 years)	Business employees	Traveling mostly for business purpose.
Personal Traveler	Children (00-14 years) Youth (15-24 years) Adults (25-64 years) Retired (>65 years)	Various	Traveling mostly for tourism and personal reasons.
Occasional Traveler	Youth (15-24 years) Adults (25-64 years) Retired (>65 years)	Various	Traveling occasionally mostly for tourism and personal reasons.

Here are a few questions from the interviews:

- How often do you travel by plane?
- What are the difficulties you face while being at the airport?
- Did you face any issues during your recent trips?
- What is your opinion about the airport you generally fly from or to?
- How long does it take you normally to get from the airport entrance to the gate?
- What are the factors you consider while preparing for your trip in the airport?
- Is processing through airport facilities typically an easy task to accomplish?
- What are the issues you mostly struggle with while at the airport?
- How would you describe your recent airport experience?
- Do you mostly travel through smaller airport or large international hubs?

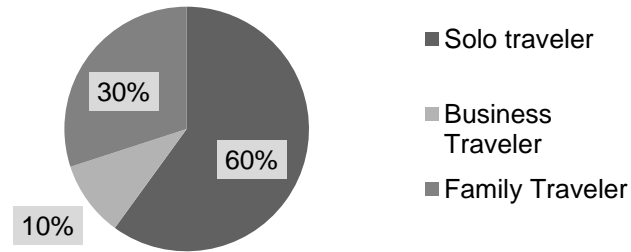
USER RESEARCH

Quantitative Analysis

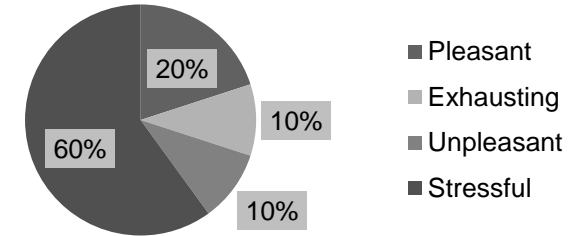
I conducted an online survey via Google Forms to observe the patterns and similarity in potential users. In total there were 50 people responded to the survey which assisted forming the problem.

Here are a few questions from the interviews and screenshots of answer results.

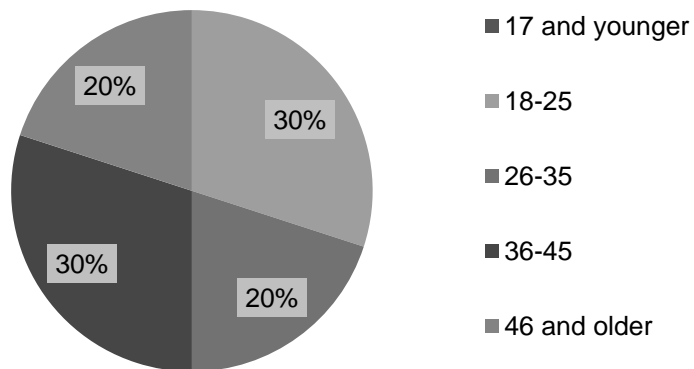
Which of these definitions best describes you?



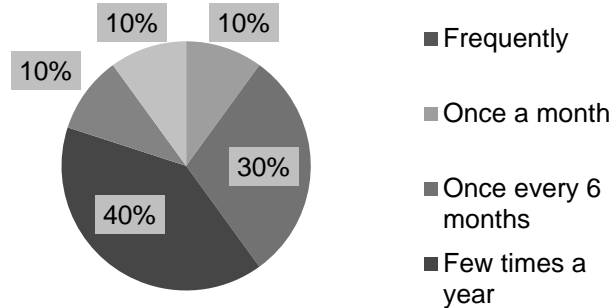
How would you mostly describe your experience at the airports?



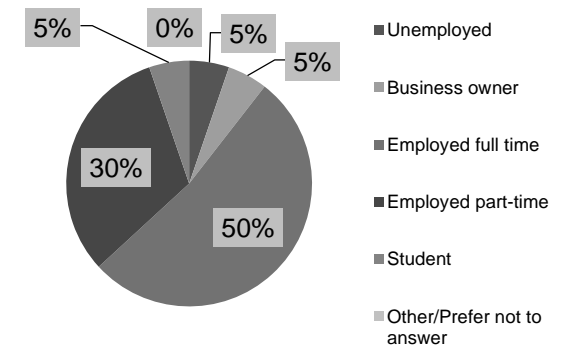
Which age group describes you?



How often do you travel by plane?



What do you currently do?



INSIGHTS & PAIN POINTS

Gate changes may not be able to be tracked properly and sometimes are different than on the boarding pass.

Lost baggage and inability to track the baggage in transit.

Keeping track of flight status and possible delays. Anxiety from missing the boarding/flight.

Accessibility of facilities. Often it's complicated to locate disability access and assistance.

Long queues and waiting times and inability to plan accordingly.

Difficult navigation and way finding, inability to locate necessary facilities and amenities quickly and efficiently.

Internet connectivity and Wi-fi availability is often a problem.

Hassle check in and baggage drop off process with long waiting lines.

PERSONAS

Kathrine



Age: 65
Education: Bachelor of Sociology
Hometown: Esslingen
Family: Divorced, lives alone
Occupation: Retired

Goals

- To maintain active life in retirement
- To be able to travel and visit relatives
- To reduce anxiety when traveling

Frustrations

- Facilities are often not designed to accommodate elderly
- I need assistance with navigation in the airport

Katie is an active person in her retirement. She used to work as a social worker with people with disabilities. Katie likes to travel domestically occasionally, mostly for family visits. She is interested in exploring new places as well.

"I like traveling to see my grandchildren, but I'm always so anxious when I'm in the airport all alone."

David



Age: 40
Education: MBA
Hometown: Berlin
Family: Married, two children
Occupation: Corporate business

Goals

- To maintain good work life balance
- To be able to save time while traveling
- To reduce anxiety and stress when traveling

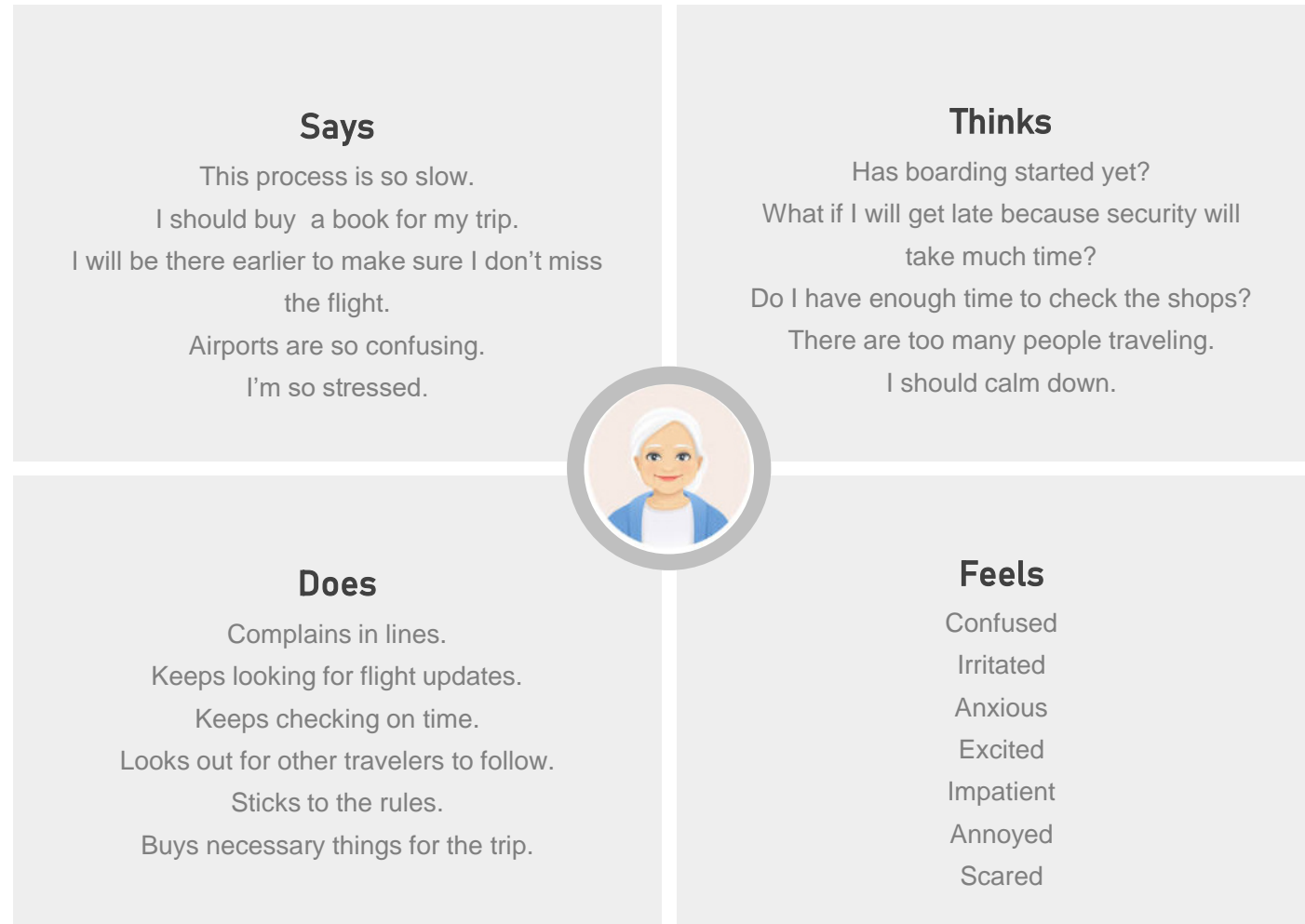
Frustrations

- I'm often stressed I can miss my flights and can't estimate the timing
- I would like to have a more reliable and seamless airport experience

Dave is a busy businessman in financial company. He's an active person and is dedicated to his work. Since he's very busy, he doesn't always have enough time to be able to manage his work trips. Since he needs to travel often for work, he wants to have a seamless airport experience and save time as well.

"I have a busy schedule, so that I can combine work and family, but I don't always find enough time for all."

EMPATHY MAP

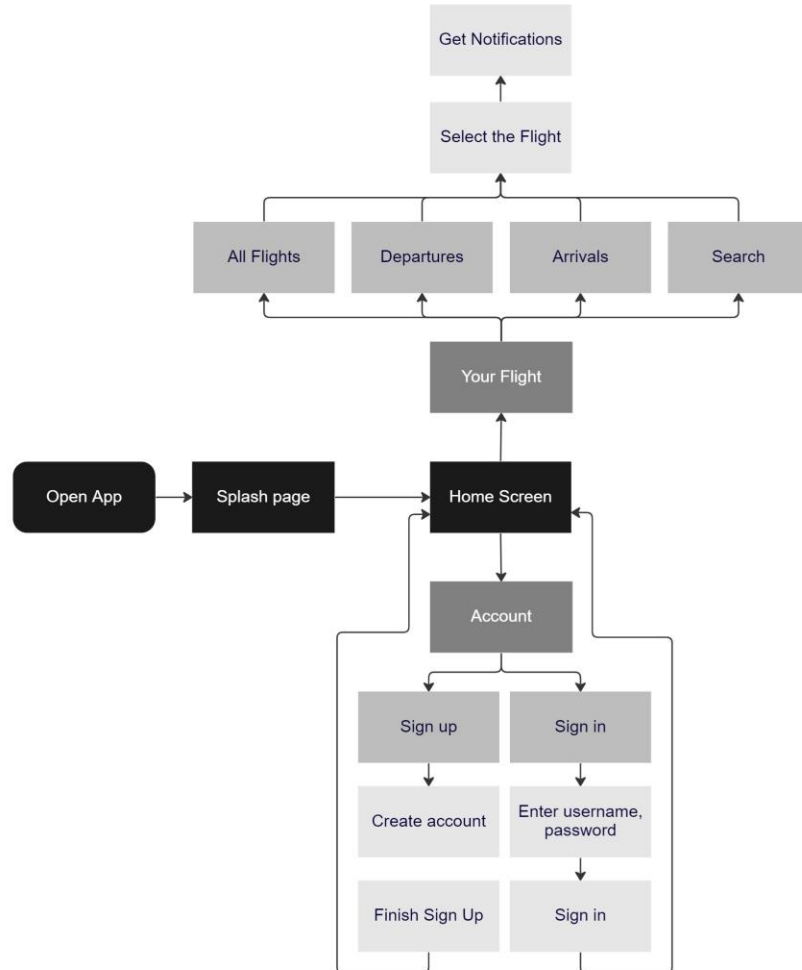


USER JOURNEY MAP

Phase	In the airport, before the flight						In the airport, after the flight					
Activity	Find check-in and/or baggage drop counter	Check in and/or drop off baggage	Go through security	Shopping, resaurants	Find the gate	Board the plane	Disembark the plane	Go to baggage claim	Pick up baggage	Go to exit	Order taxi/rideshare, find public transit	Board taxi, rideshare, public transit
Pain Points	Might be confused with navigation	Long lines, not always possible to weight baggage before	Long lines	Navigation might be confusing	Navigation might be confusing, gate might change	Long waiting	long waiting	Confusing navigation	Confusing navigation, might pick up wrong baggage, can't estimate time of waiting	Confusing navigation	Wifi might not be available	Confusing navigation
Touchpoints	Information screen, information desk, staff, internet	Check in Staff, check in counter, internet	Security Staff, security handling, trays, x-ray machines	Retail and food establishments, staff	Information screen, staff, internet	Boarding counter, staff, bus/plane coridor	staff, bus, plane corridor	Information screen	Baggage handling	Info screen	Staff, internet, airport navigation	Transportation, driver
Customer Feeling												

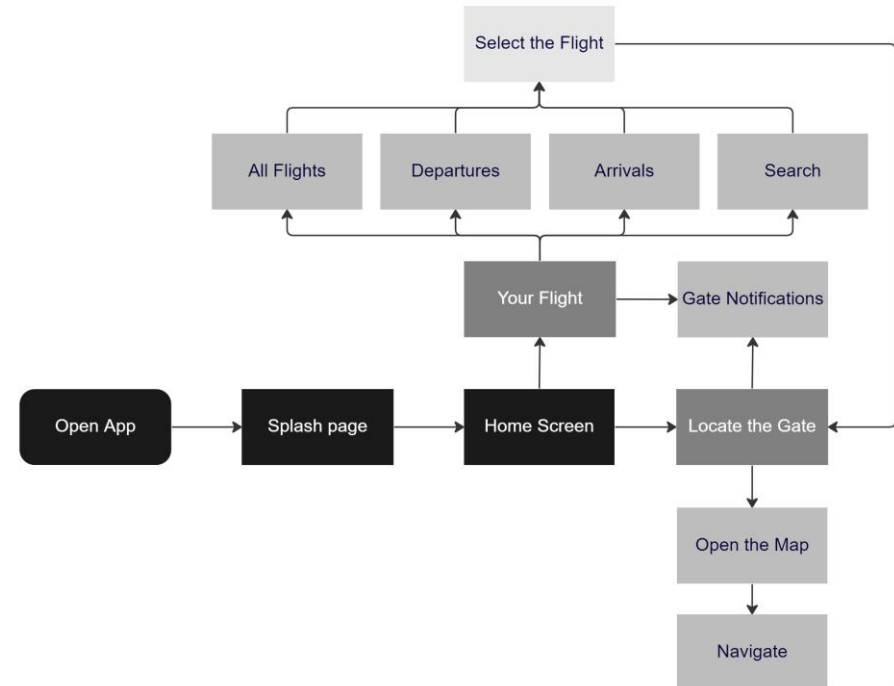
USER FLOW

User task: set up notifications for upcoming trip



miro

User task: locate and navigate to the gate



miro

IDEATION

How Might We?

How might we gain user's trust in this app?

How might we create a seamless and hassle-free experience in this product?

How might we create a clear and visually appealing UI?

How might we improve the notification and alerts section to help users stay up to date with their travel?

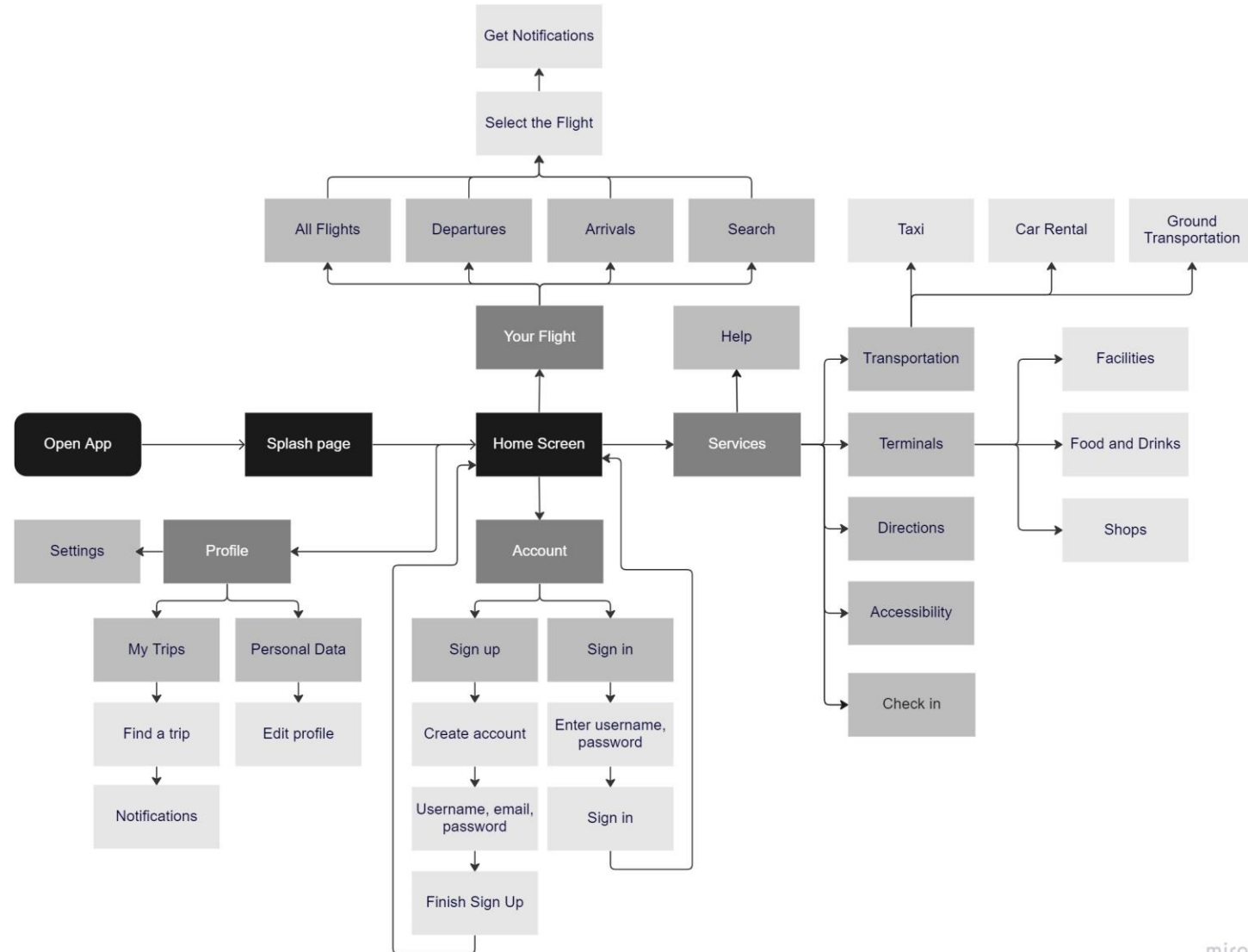
How might we incorporate the real time navigation in the product?

How might we create an experience that will allow users to save their time?

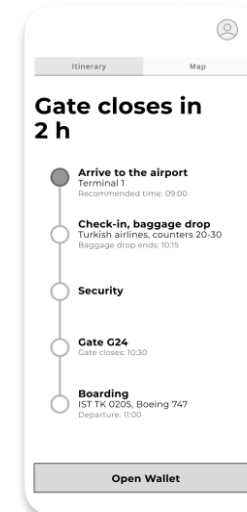
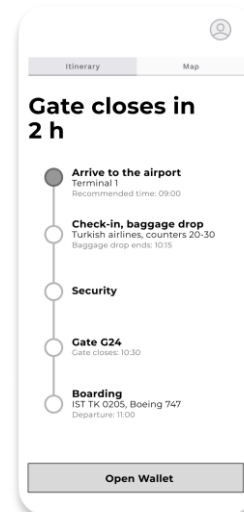
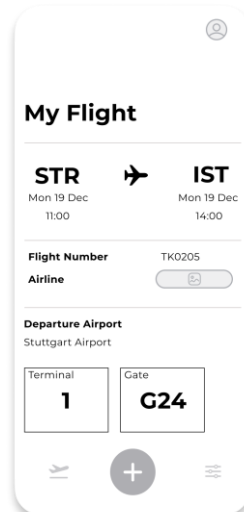
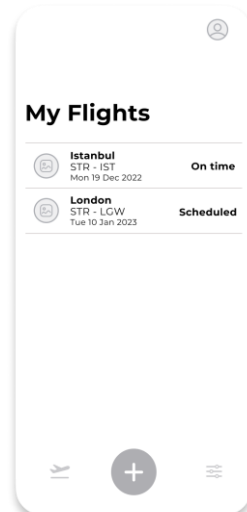
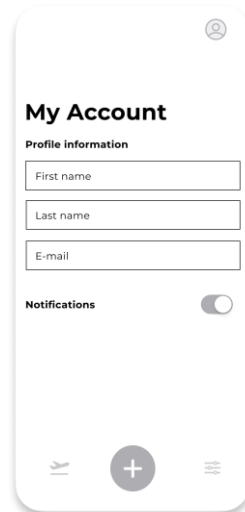
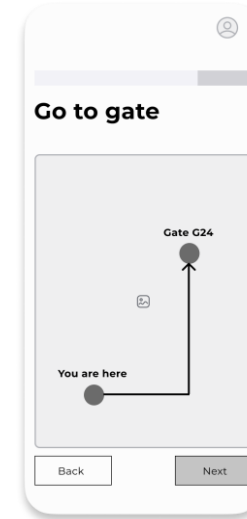
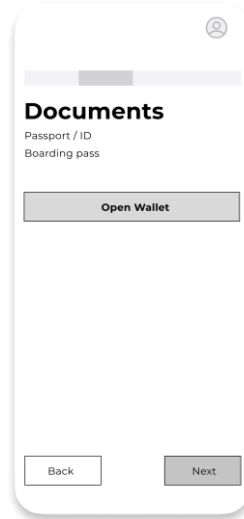
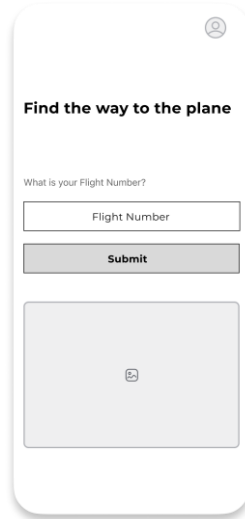
How might we make the information in the product most relevant to the user?

How might we make the user come back to use the tool?

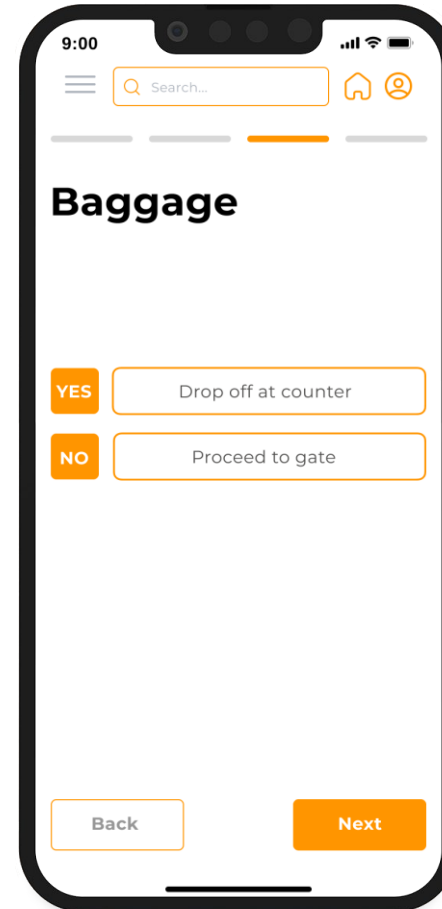
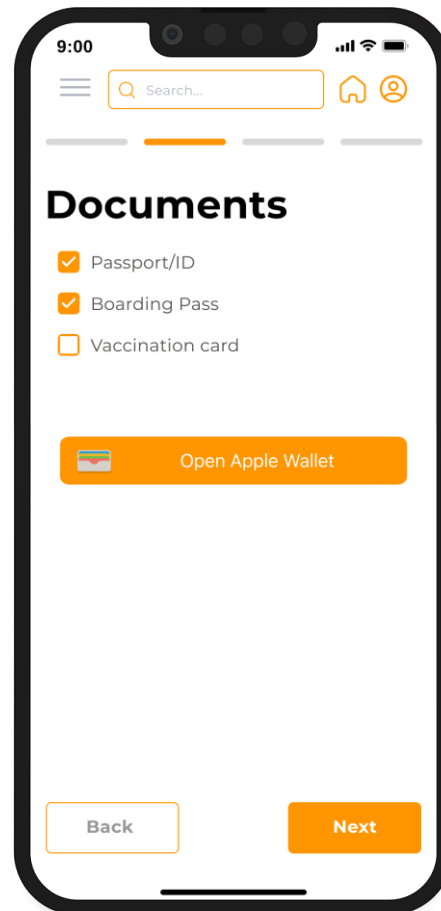
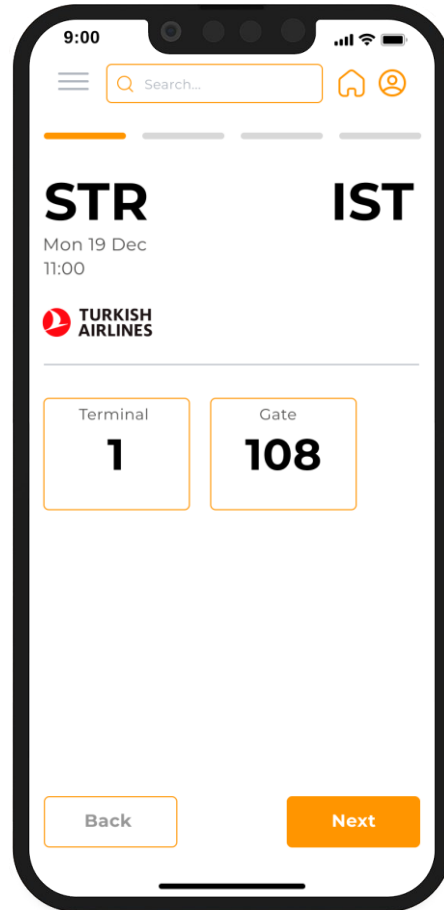
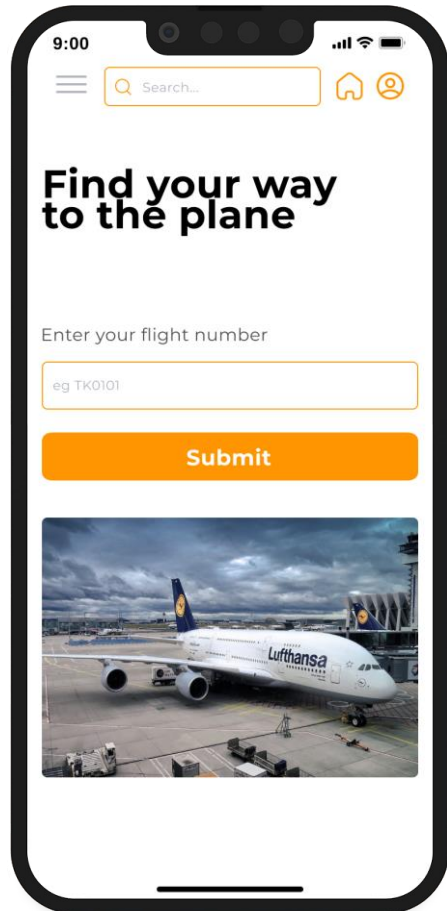
INFORMATION ARCHITECTURE



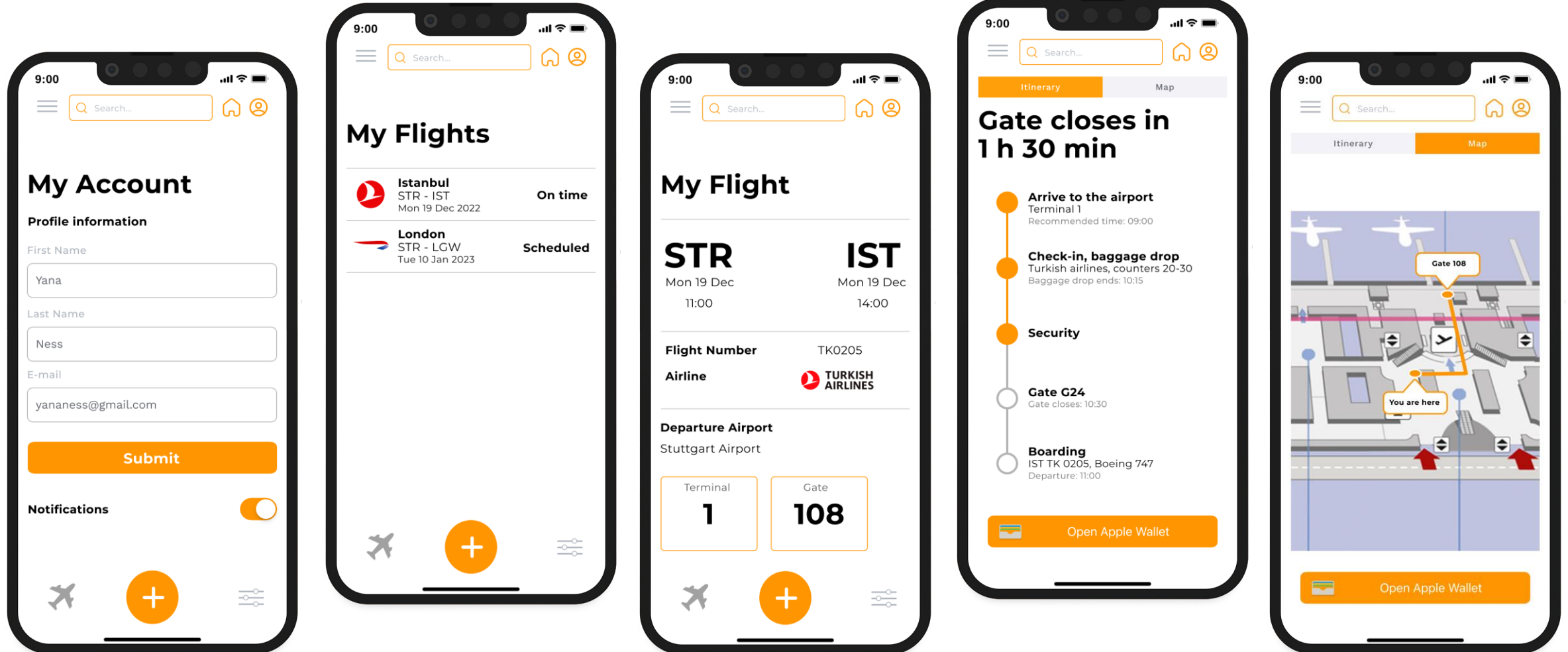
WIREFRAMES

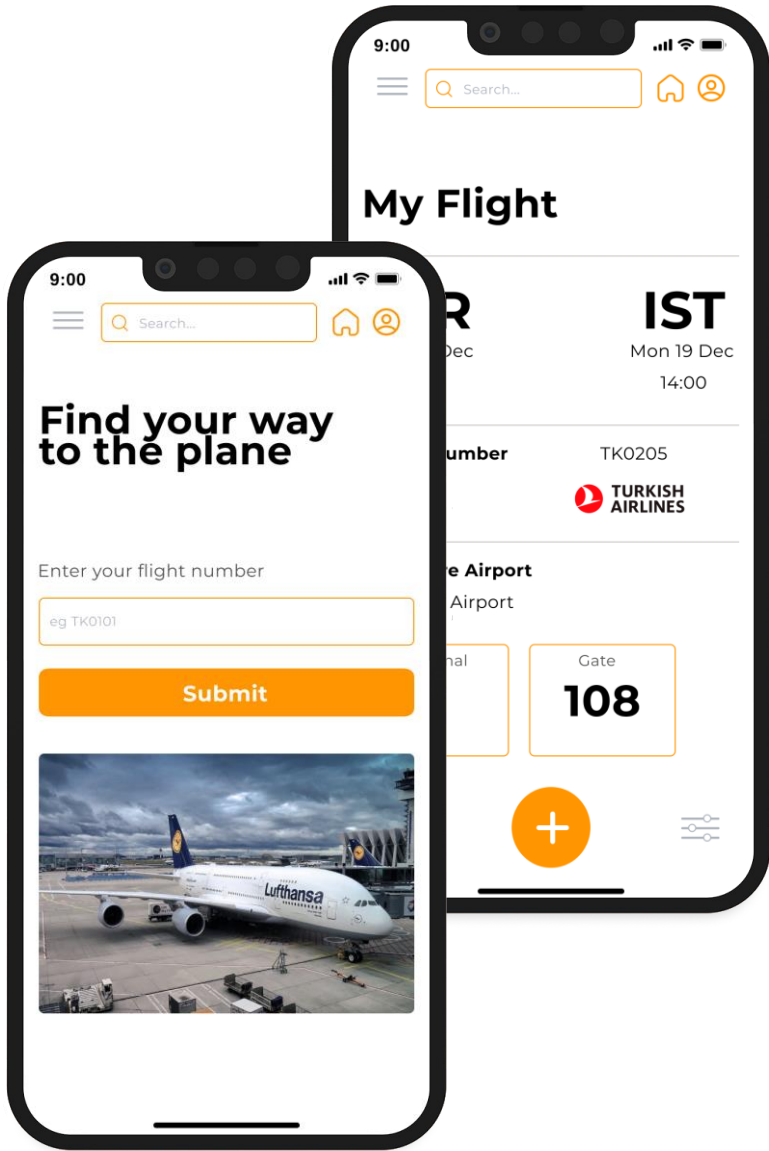


FINAL DESIGN



FINAL DESIGN





THANK YOU