

CROWD EASE

PROJECT PROPOSAL

The image shows two smartphones side-by-side, both displaying the Crowd Ease mobile application. The phones are set against a dark background with a subtle purple-to-black gradient.

Left Phone Screen:

- Header:** Crowd Ease
- Text:** Preview of this week's events
- Stat:** Total Participants: 8,963
- Bar Chart:** A bar chart showing participant counts for each day from Monday to Sunday. The bars are colored by day of the week: MON (white), TUE (light blue), WED (white), THU (green), FRI (light blue), SAT (white), and SUN (white).
- Text:** Feb 01 - Feb 07
- Button:** View Full Report
- Text:** It seems that February 07 Sunday is the busiest day of this week, would you like to see some promotional opportunities?
- Button:** See Suggestions
- Section:** Event Participants for today
- Stat:** Total Participants 8,963
- Section:** Participants Breakdown
- Icons:** Sun icon for 6am-12pm, Cloud icon for 1pm-5pm, Moon icon for 6pm-10pm.

Right Phone Screen:

- Text:** Let's break Feb07 down, get ready to serve music lovers.
- Date:** February 07, 2023
- Stat:** 1,873,352 participants (23% less than last week)
- Horizontal Bar Chart:** A horizontal bar chart showing the distribution of participants across categories. The categories and their approximate values are: Music (1,000,000), Sport (870,000), Shows (2,000), Festivals (918), Business (382), and Other (52).
- Section:** Major Event of the day
- Text:** Coldplay Concert 🎵
- Stat:** 945,294 participants
- Text:** 93% over concert category



Be in the Know - Track Events
and Monitor Live Crowds with Ease!



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01 PROJECT OVERVIEW

PROBLEM

Managing small businesses such as restaurants and bars can be challenging, particularly when it comes to crowd tracking and resource management, when events are happening near their location. Based on our user interviews, restaurant owners and staff commonly lack information about events around the area.

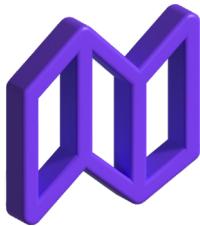
As a result, businesses could experience busy periods brought on by local events or slower-than-normal nights, which leads to incorrect staffing and inventory arrangement. Also, managers could struggle to identify the best promotion plan for their company as they do not have information about events nearby. They require detailed data which explains what might work and what they should do to get things right.

SOLUTION

To address the challenges, we provide a solution by creating an application that uses data analysis and visualization to handle the issues associated with crowd-tracking and resource management in restaurants. The solution offers recommendations based on well-liked events that are happening nearby that can help boost sales.

Crowd Ease is ready to take the restaurant's revenue generation to the next level. With the help of this technology, restaurant managers will be able to monitor crowd movements in real-time, providing precise and timely information on crowd density and activity. Also, it will include tools for managing the schedule of events, like alerts and reminders for approaching occasions.

FEATURES



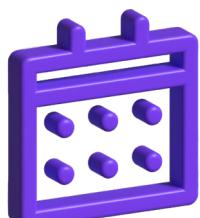
Real-Time Crowd Tracking

Real-time crowd monitoring through advanced heat map technology provides insights into crowd movements and density for effective resource management.



Analytics and Reporting

Plan marketing strategy using analytics and suggestions, furnishing better promotional methods based on event category and participant count.



Event Tracking

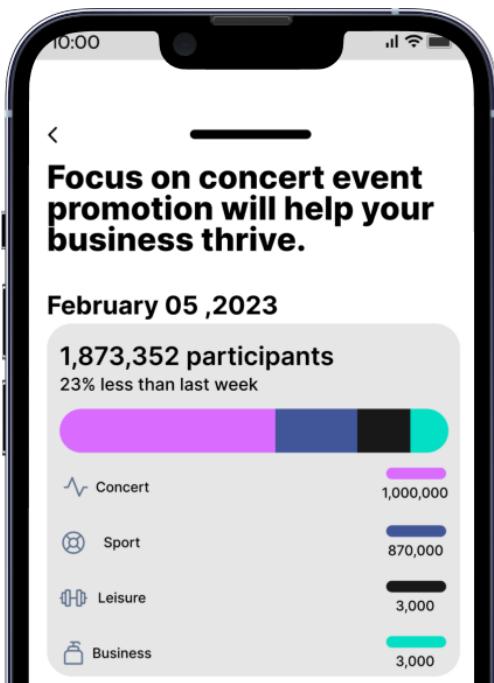
Check-list of events around your business location and set reminders by adding events to bookmarks and receive alerts for upcoming events and activities.

COMPETITIVE ANALYSIS

	 Crowd Ease	 Crowd Alerts	 Crowd Vision	 Crowd Connected
Real-time Crowd tracking	✓	✓	✓	✓
Analytics and Reporting	✓	✗	✓	✗
Event Tracking	✓	✗	✗	✗

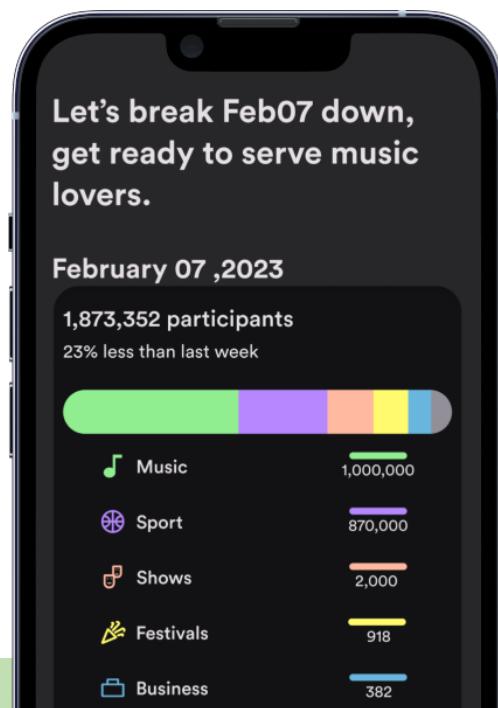
PROJECT

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
C • Team formed and discuss project idea • Team roles and responsibility	C Design • Project idea selection and target user research • User story, persona, user flow	C Design • Revise user flow • Start mobile app wireframe	C Design • Revised mobile app wireframe • UI style research (Mood boards) • Built up design system	C Design • Finalize wireframe and UI components • Start mobile app & landing page • Finalize branding & design style	C Design • Mobile app & landing page mockup revision

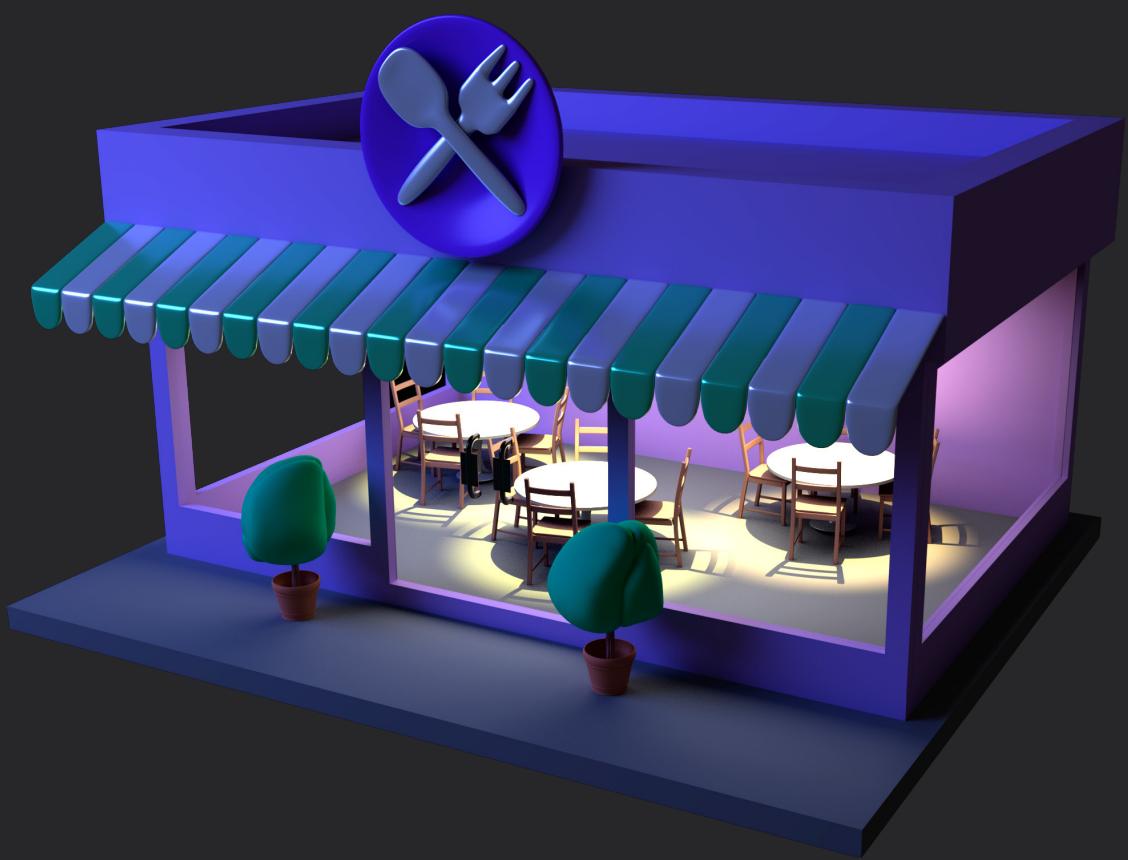


TIMELINE

Week 7	Week 8	Week 9	Week 10	Week 11	Week 12/13
<p>C</p> <p>Design</p> <ul style="list-style-type: none"> • Finalize UI design and Mockup Prototyping • Design handoff to developers <p>Development</p> <ul style="list-style-type: none"> • Mark an event as bookmarked • Show events in map • Search functionality in event screen 	<p>C</p> <p>Design</p> <ul style="list-style-type: none"> • Start project proposal and design system document draft <p>Development</p> <ul style="list-style-type: none"> • Alpha demo • Alpha bug bash 	<p>C</p> <p>Design</p> <ul style="list-style-type: none"> • Continue project proposal & design system • Start marketing website and promotion material <p>Development</p> <ul style="list-style-type: none"> • Alpha bug fixing • Implement live heat maps and rate events 	<p>C</p> <p>Design</p> <ul style="list-style-type: none"> • Continue project proposal, marketing materials • Started working on promotional video & slide presentation deck <p>Development</p> <ul style="list-style-type: none"> • Built beta features (Notification, Heat Map , Rate event) and released 	<p>C</p> <p>Design</p> <ul style="list-style-type: none"> • Finalize slide presentation deck & promotional video <p>Development</p> <ul style="list-style-type: none"> • Beta demo and bug bashing and bug fixing 	<p>C</p> <p>Design</p> <ul style="list-style-type: none"> • Final Presentation <p>Development</p> <ul style="list-style-type: none"> • App testing



02 TECHNICAL OVERVIEW



Landing Page 3D Illustration

TECH STACK

Front End

Our team selected React Native library to develop Crowd Ease because it is a popular cross-platform for building mobile applications, which allowed us to develop for both Android and iOS.

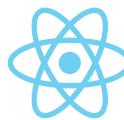
For authentication, we used Firebase Authentication, a secure and easy-to-use service. We implemented the user and password, Google, and Apple authentication.

To enhance the app's type safety and help prevent errors we used TypeScript, a strongly typed superset of JavaScript. To make the navigation between screens for users efficient and customizable we used React Navigation. React Query was used to handle data fetching, caching, and state management, ensuring the app was fast and responsive.

To make the code clean, structured, and easy to maintain we configured ESLint and Prettier rules.



Firebase



React Query



Back End

On the backend, we used Node.js to power the app's server side. We followed the same standard by implementing TypeScript for type detection in the backend as well as in the front end. We used Express.js to make the creation process of REST API and endpoints exposure more efficient. The JSON Web Tokens (JWT) are used for secure authentication and authorization, ensuring that only authorized users can access sensitive parts of the app.



Express The logo for Express.js, featuring the word "Express" in a sans-serif font next to a yellow square containing the letters "JS".



Database and Storage

Our database of choice was MongoDB, a NoSQL database designed for handling large amounts of unstructured data, making it an excellent choice for small projects with dynamic data needs. To simplify connecting the backend with the database and to provide a schema-based solution for managing data, we utilized Mongoose. Mongoose simplifies creating, reading, updating, and deleting (CRUD) data from MongoDB, reducing the boilerplate code needed to interact with the database.

Another reason we used Mongoose is that it makes it easier to enforce consistency and structure in your data, ensuring that we are constantly working with data that adheres to a particular format or structure; considering that we are using TypeScript, this would be another helpful tool. Using MongoDB with Mongoose can help you build a more efficient, scalable, and maintainable application, even for a small project, due to its many features and benefits.

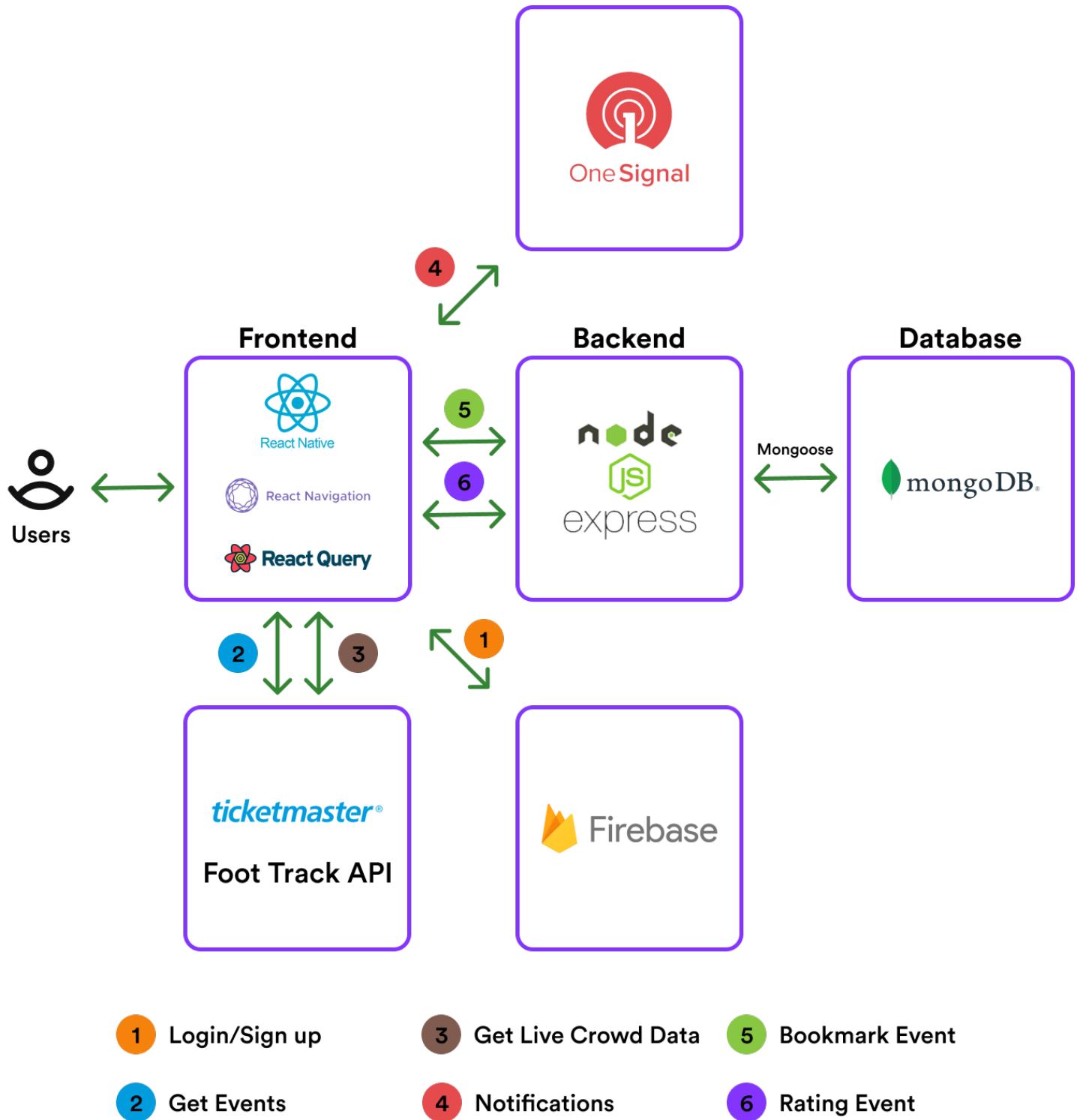


Hosting

We selected Amazon Web Services (AWS) as our hosting platform for the back-end system, as it offers reliable and scalable cloud-based services. For testing, we utilized Postman, which enabled us to streamline the testing process and verify the functionality of our APIs. By using AWS and Postman in combination, we were able to ensure reliable hosting and comprehensive testing of our back-end system.



SYSTEM DESIGN



1 Login/Sign up

2 Get Events

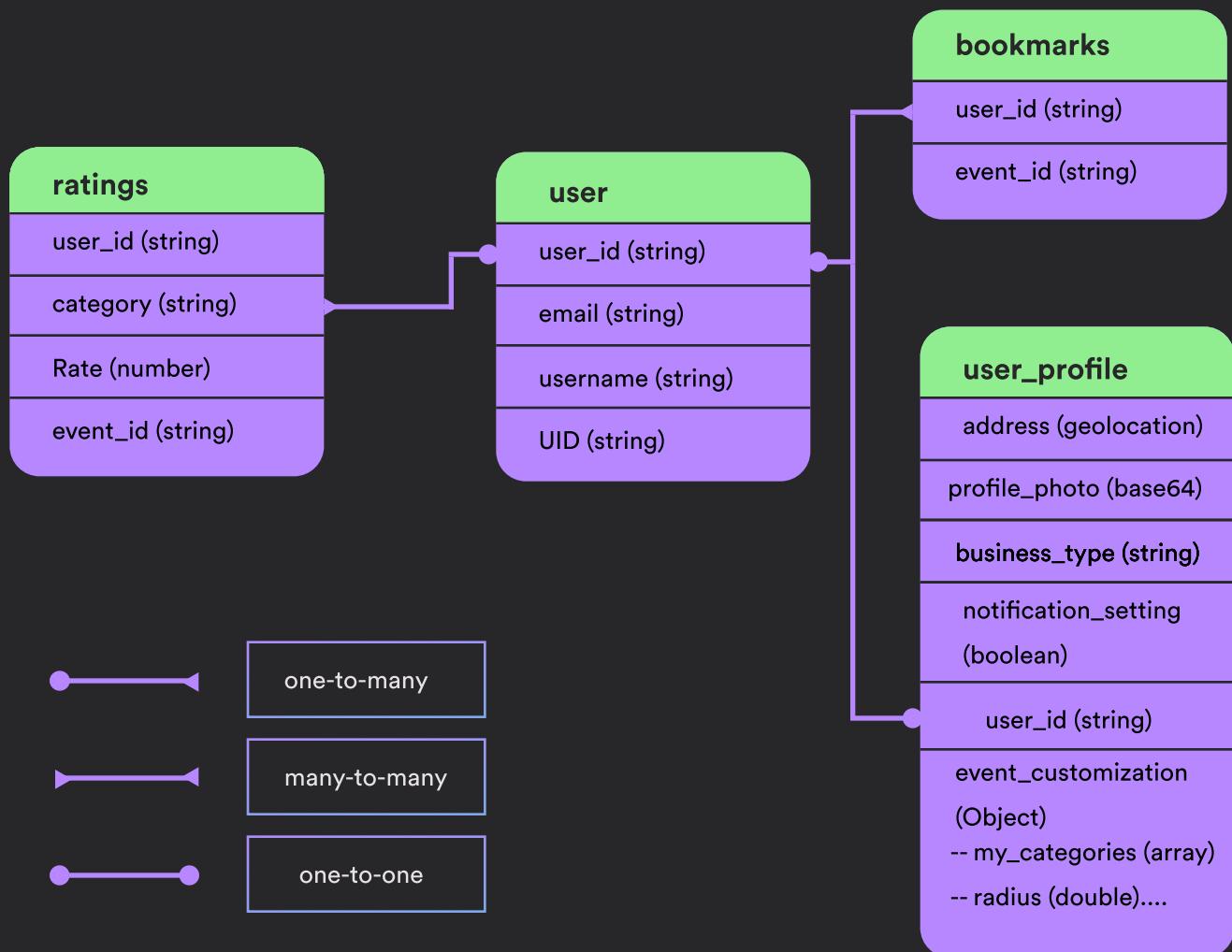
3 Get Live Crowd Data

4 Notifications

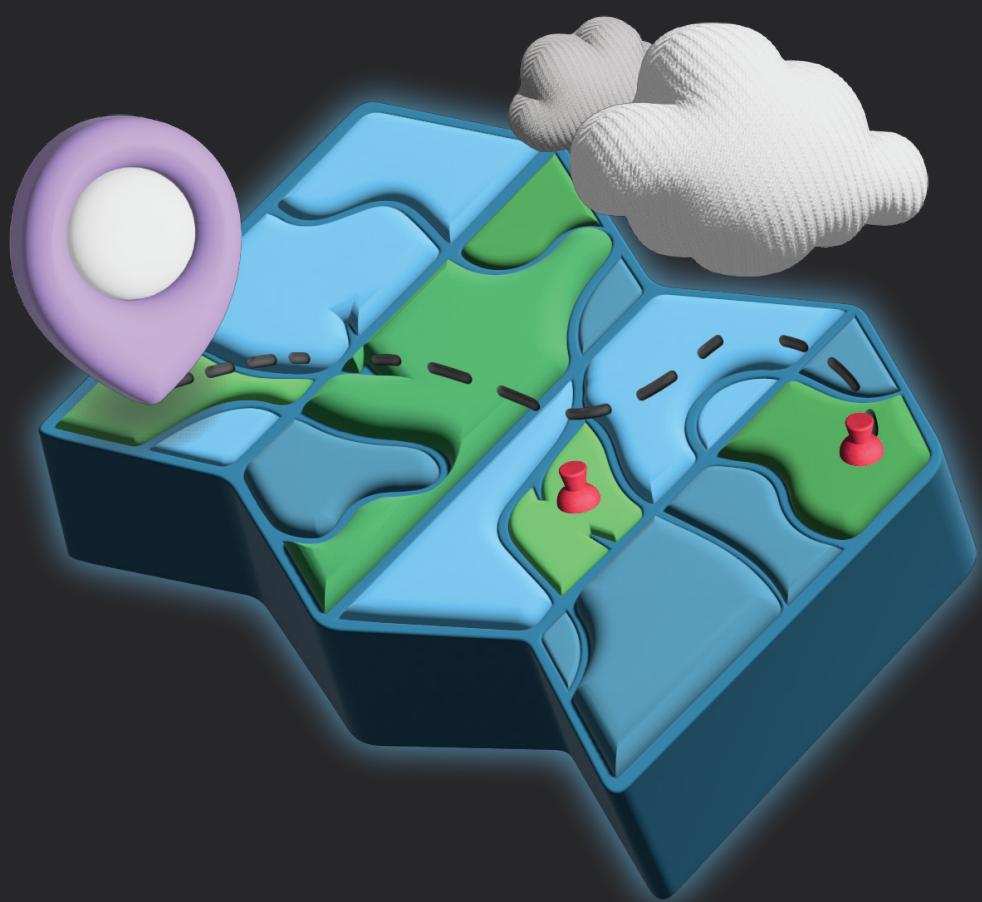
5 Bookmark Event

6 Rating Event

DATA MODEL



03 DESIGN PROCESS



Location Permission 3D Illustration

Design Tools

Figma was used to generate and collaborate on UI/UX design projects such as wireframes and high-fidelity mockups. Adobe Illustrator was used to creating vector-based logos, icons, graphics, and marketing materials.

While idea suggestions were made using Adobe Indesign, pictures were edited using Adobe Photoshop. Also, we use Maya for 3D graphics, Premier for video editing, and After Effects to create motion animations and promotional video stop motion.



Management Tools

Our team used Jira to plan, assign, track, and supervise team-member work. Jira is more widely utilized in the industry than other platforms because of its transparency and customizable reporting features. Additionally, our development team used Github to store scripts and track platform issues, and we used the Slack network to schedule meetings and share information.



USER PERSONAS

Yash Shetty Restaurant Manager

- Age : 38 Years Old
- Speaks Hindi and English
- Located in Downtown Vancouver
- Detail-Oriented
- Introvert and Risk-averse
- Organized
- Curious About Different Cuisines
- Strategic Planner

Frustrations:

Due to a lack of information about consumer traffic caused by local events, there is a shortage of workers and poor resource management. Hence, poor food and service with a negative reputation.

Goals:

A better planning of resources according to the events around his restaurant.

Rachel Lopez Restaurant Owner

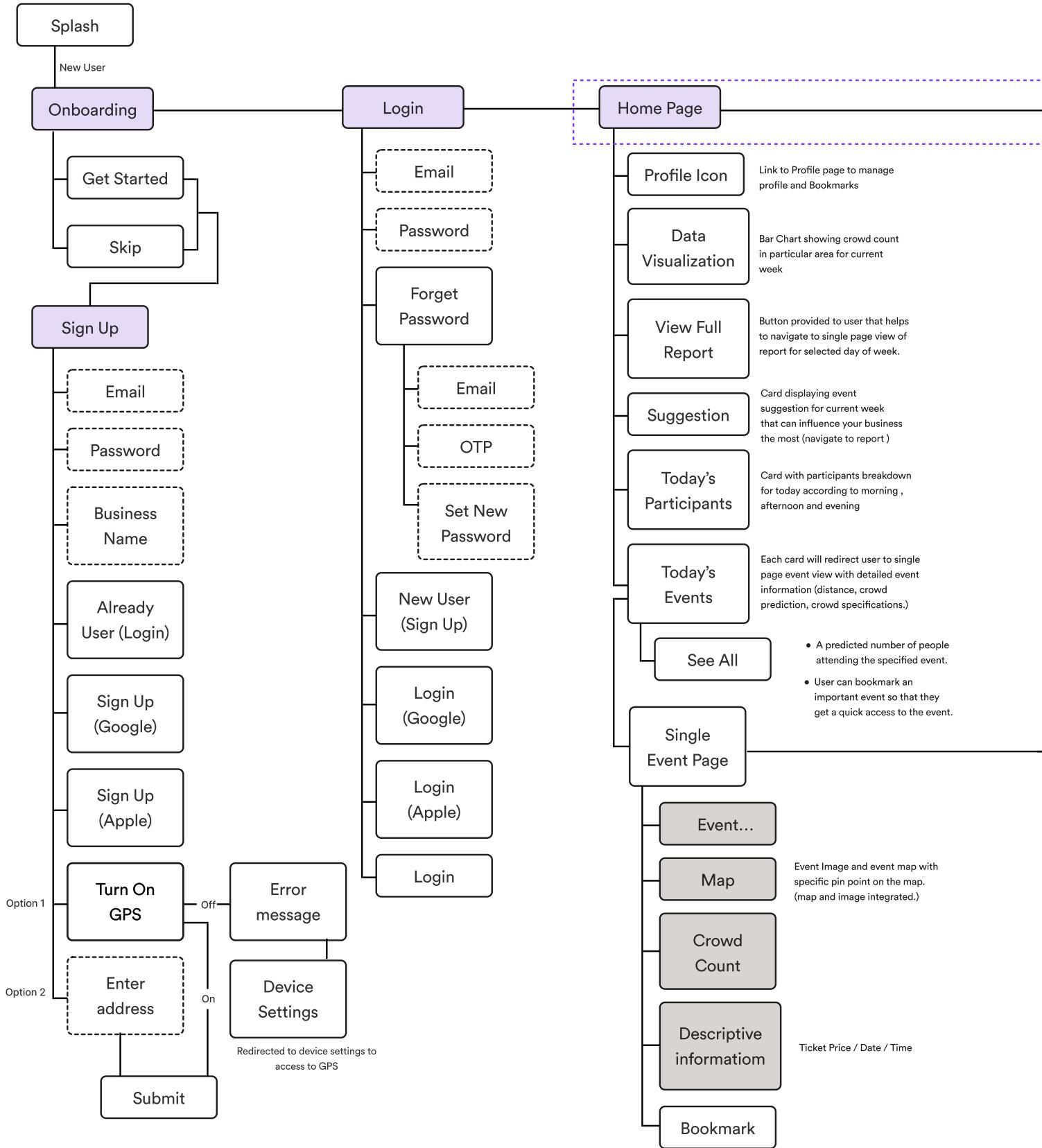
- Age : 29 Years Old
- Speaks Spanish and English
- Located in East Vancouver
- Entrepreneur
- Extrovert and Adventurous
- Cautious
- Creative and Innovative
- Active

Frustrations:

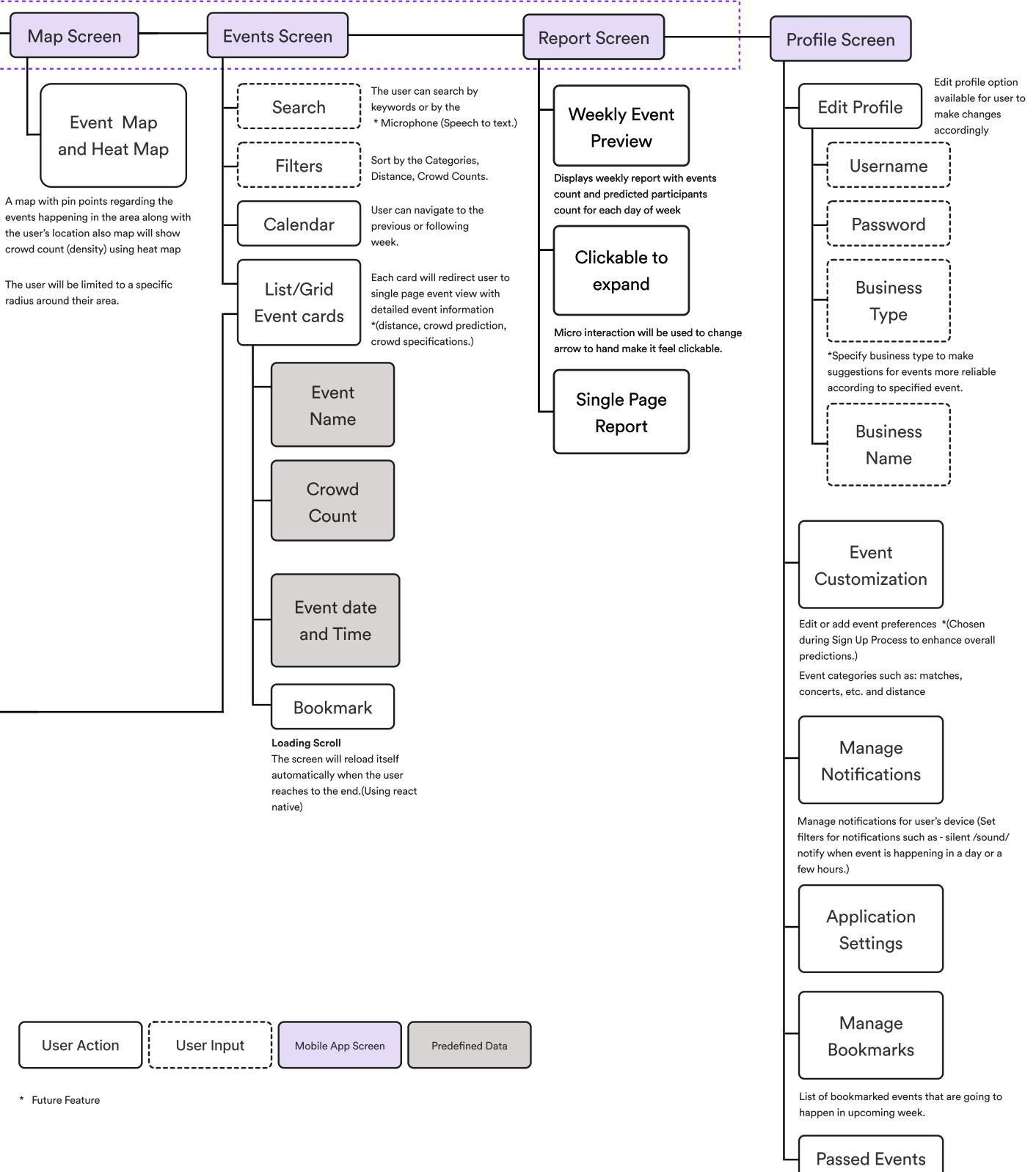
The restaurant business is not good, and she tried different ways to promote it but didn't know what worked and what didn't.

Goal:

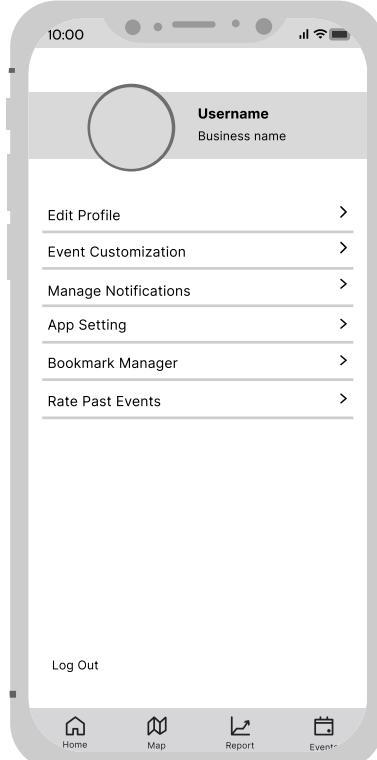
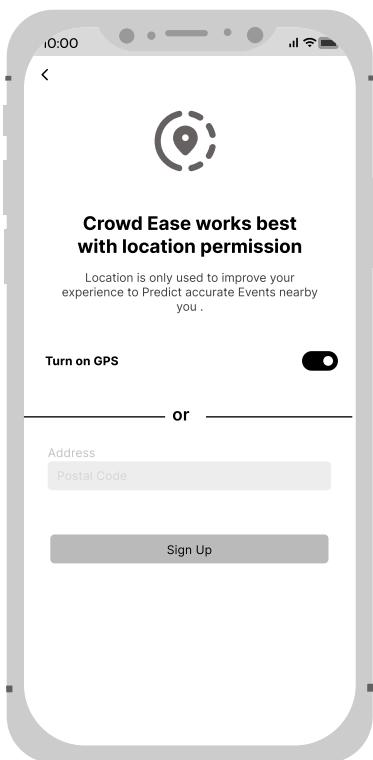
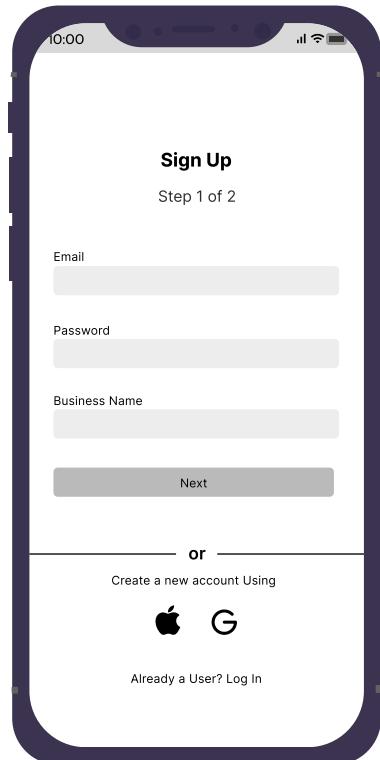
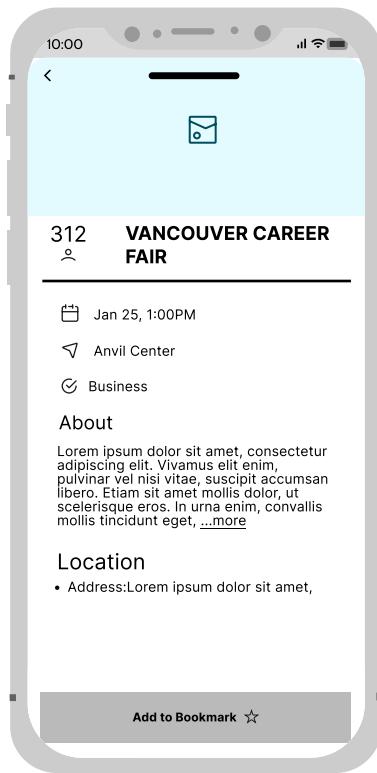
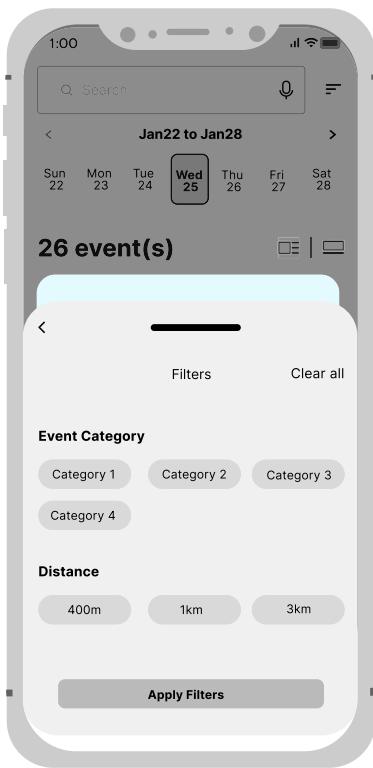
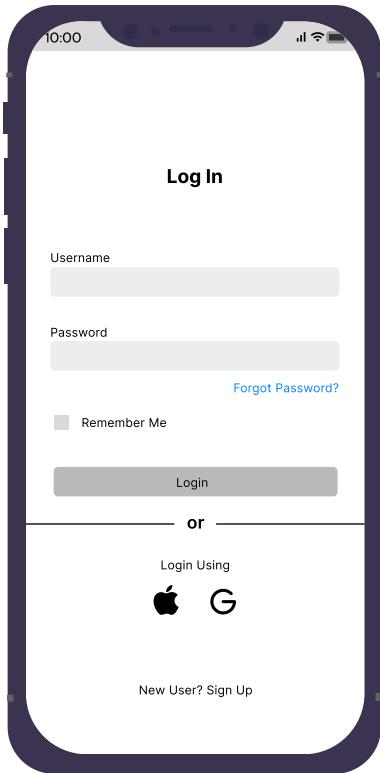
Find out the best approach to business marketing.



Navigation



USER FLOW



WIREFRAMES

Passed Events

29 Jan VANCOUVER COMMUNITY
Barclay Center 540 participants

Rate

29 Jan VANCOUVER COMMUNITY
Barclay Center 540 participants

Rate

29 Jan VANCOUVER COMMUNITY
Barclay Center 540 participants

Rate

29 Jan VANCOUVER COMMUNITY
Barclay Center 540 participants

Rate

Username
Business name

Username testuser1

Reset Password testpassword1

Business Type testbusiness1

Business Name testbusinessname1

Save Changes

Jan22 to Jan28

Sun 22 Mon 23 Tue 24 **Wed 25** Thu 26 Fri 27 Sat 28

26 event(s)

1:00PM VANCOUVER CAREER FAIR
Barclay Center 312 participants

Weekly Event Preview

Week - 22 Jan to 27 Jan

Date	Event Number	Event Participants
Feb05,Mon	5	18,435
Feb06,Tue	1	380
Feb07,Wed	3	3,333
Feb08,Thu	7	24,876
Feb09,Fri	2	950
Feb10,Sat	8	38,000
Feb11,Sun	12	1,873,352

Bookmarked Events

3 Feb 1:00PM VANCOUVER COMMUNITY
Barclay Center 540 participants

3 Feb 1:00PM VANCOUVER COMMUNITY
Barclay Center 540 participants

3 Feb 1:00PM VANCOUVER COMMUNITY
Barclay Center 540 participants

Passed Events

29 Jan VANCOUVER COMMUNITY
Barclay Center 540 participants

Please tell us how much this event affected your business?

★ ★ ★ ★ ★

Submit

Skip

Passed Events

29 Jan VANCOUVER COMMUNITY
Barclay Center 540 participants

Rate

29 Jan VANCOUVER COMMUNITY
Barclay Center 540 participants

Rate

COMPONENTS

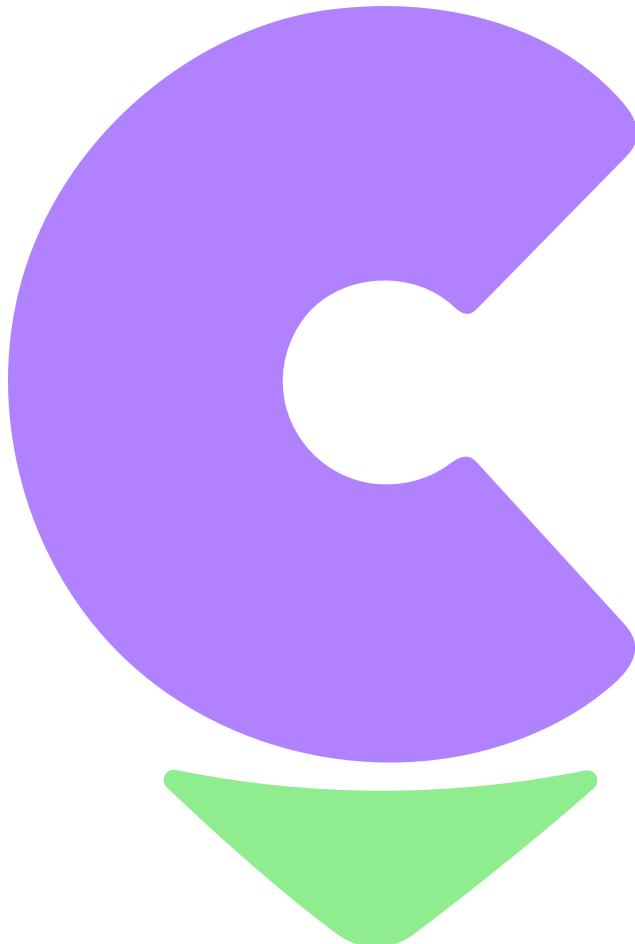
IN INVENTION

LOGO

At first glance, this logo mimics the location pin's notch and the letter "C". The combination of the parts will result in a silhouette of a pin. We prioritised having a simple message in our design: crowd management being accessible for restaurants and bars.

Although our plan did not focus only on a specific enterprise, and that is why this design can be used in many different industries. It also has a negative shape of a person inside the letter "C", representing the central element of the app "Crowd Data."

The concept of the logo is for the audience to play with negative space and articulate its meaning.



Dark Mode Logo



Light Mode Logo



Negative Color
(Black) Logo

COLOR

PALETTE

Primary



Dark Purple Velvet
#8335FD



Light Orchid
#B687FF

Secondary



Dark Green
#338433

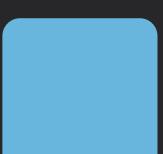


Light Pastel Mint
#90EE90

Accent



Dark Sapphire Blue
#2C4D5E

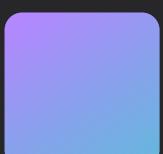


Light Sky Blue
#68B5DE

Gradient



Dark Gradient
#8335FD
+ #338433
+ #2C4D5E



Light Gradient
#B687FF
+ #90EE90
+ #68B5DE

TYPOGRAPHY

Circular STD is a humanist sans serif font with geometric and organic forms. It is a quality sans-serif typeface with solid circle-based shapes which translate the feelings such as friendly, Easygoing and approachable to the user. Circular Std also offers full support for the Latin alphabet while supporting many other alphabets, which is an advantage for language localisation.

Font Circular STD

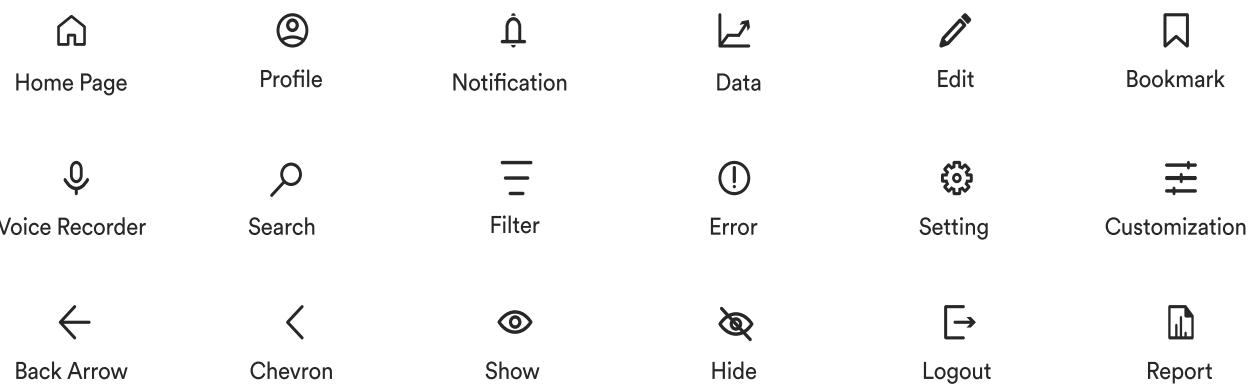
Headlines	Weight	Size	Letter Spacing
Headline 1	Bold	28/36	0px
Headline 2	Bold	24/28	0px
Subtitle 1	Medium	20/24	0.025px
Subtitle 2	Medium	16/20	0px

Body	Weight	Size	Letter Spacing
Body 1	Book	16/20	0.08px
Body 2	Book	14/18	0.04px

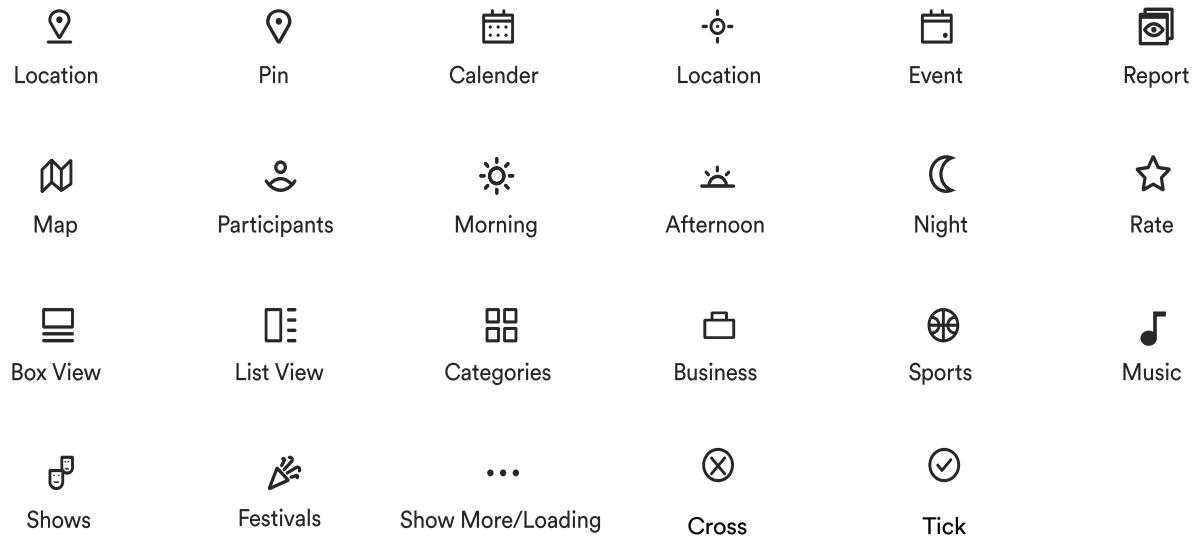
Button / Caption	Weight	Size	Letter Spacing
Button	Book	14/18	0.80px
Caption	Book	12/16	0.08px

ICONOGRAPHY

System and Navigation



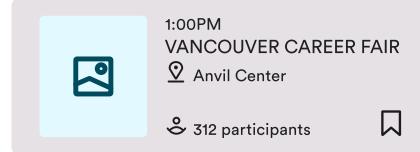
User Interface



Cards



Dark Mode List View Card



Light Mode List View Card



Dark Mode Box View Card

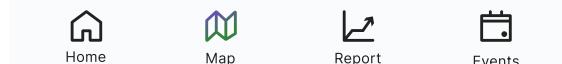


Light Mode Box View Card

Navigation



Dark Mode Bottom Navigation



Light Mode Bottom Navigation



Dark Mode Top Navigation



Light Mode Top Navigation

Calendar



Dark Mode Calendar



Light Mode Calendar

BUTTONS & FIELDS

Buttons

Primary

Default

Click

Disabled

Normal

Default

Pressing

Disabled

Small

Default

Pressing

Disabled

Secondary

Default

Click

Disabled

Normal

Default

Pressing

Disabled

Small

Default

Pressing

Disabled

Tertiary

Default

Click

Disabled

Button

Button

Button

Fields

Default

Focus

Typing

Input

Title

Text 2
[Text]

Text 2
Text 1

Search

Title

Title

Title

Dropdown

Title



Title



Title



Category Chips

Other ...

Music

Shows

Festivals

Business

Sports

ILLUSTRATIONS

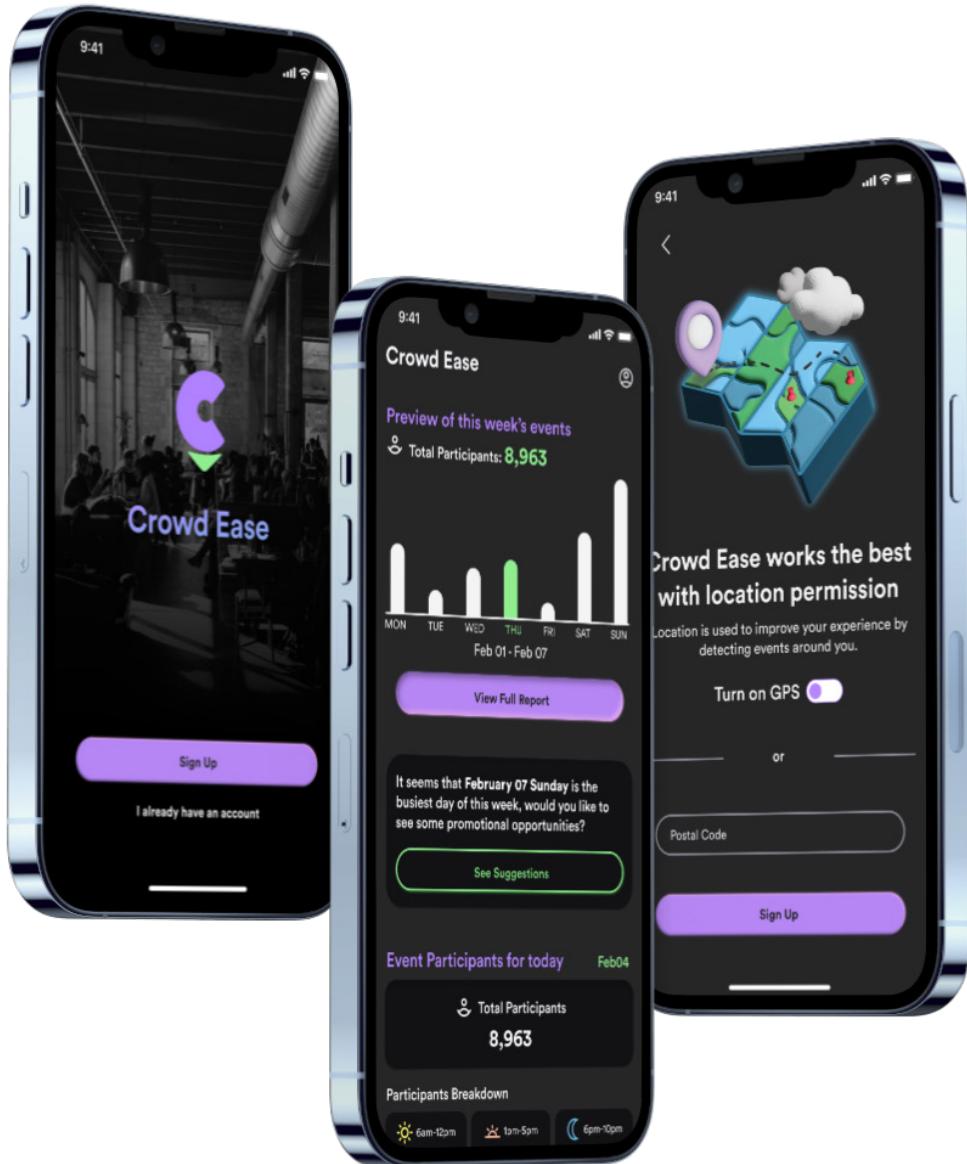
Our team tried to explore a different design style for UI Kit elements such as buttons, input fields and in-app illustrations!

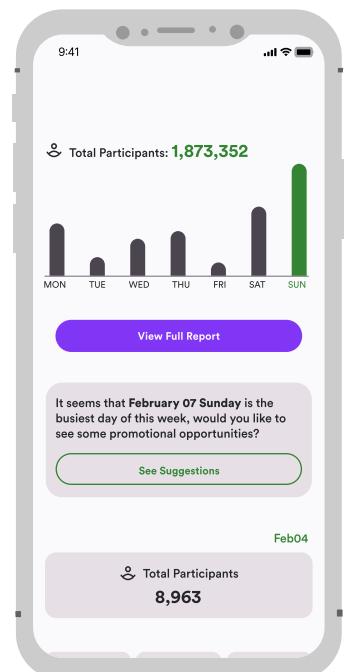
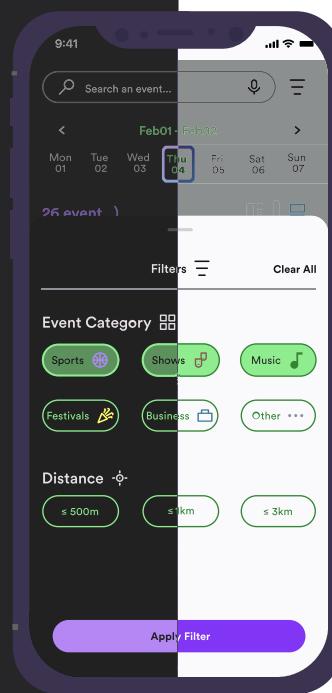
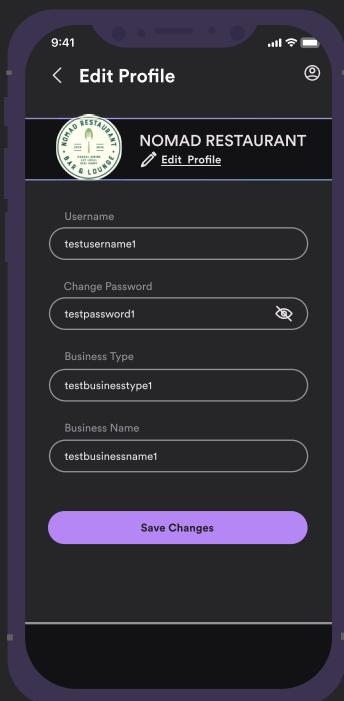
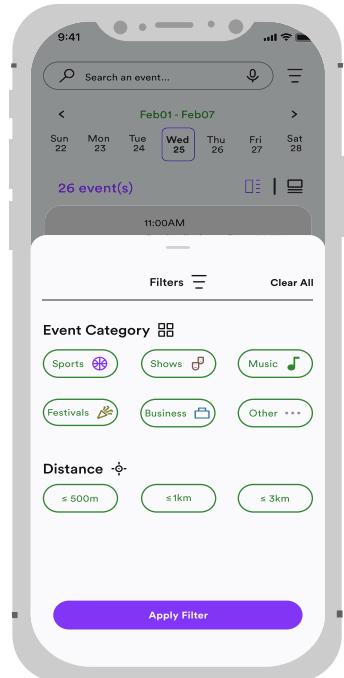
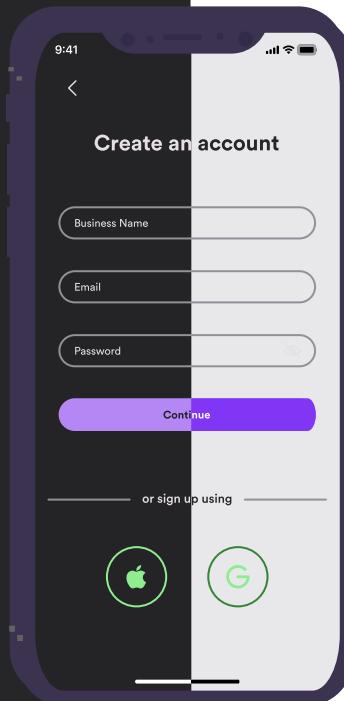
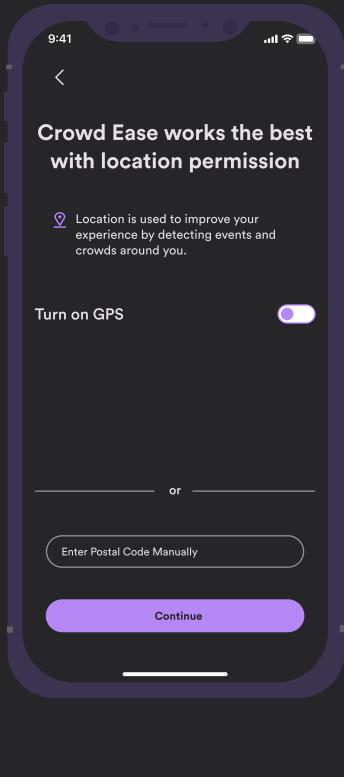
The goal behind using 3D illustrations and neu-morphism in UI Kit was to mimic the natural feeling of our environment for the user.

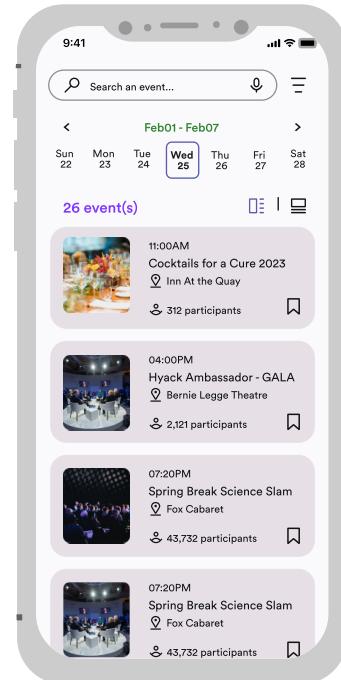
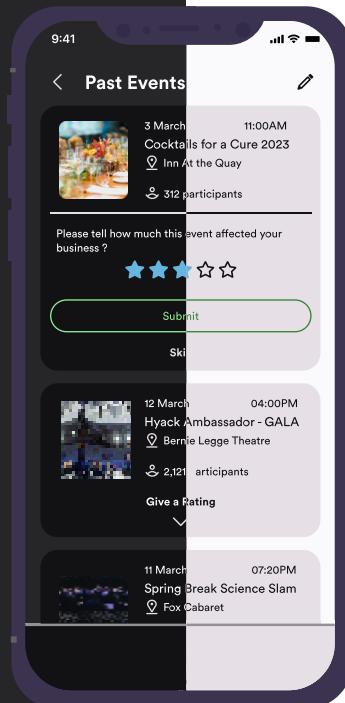
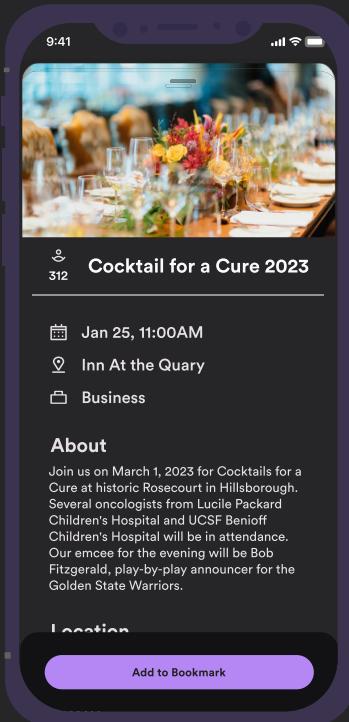
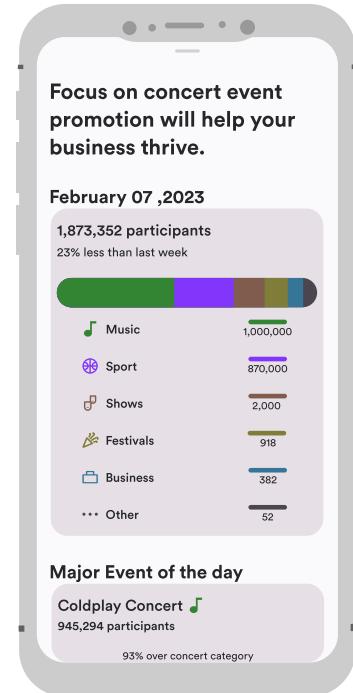
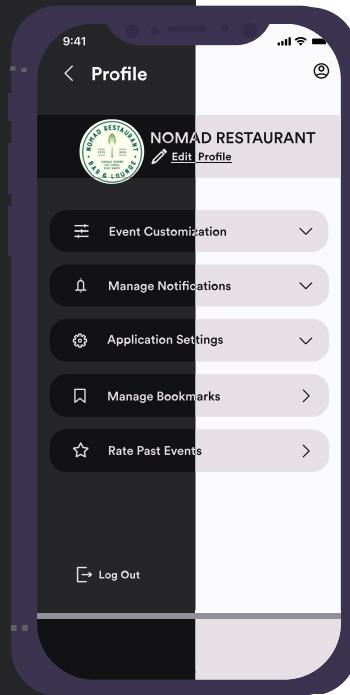
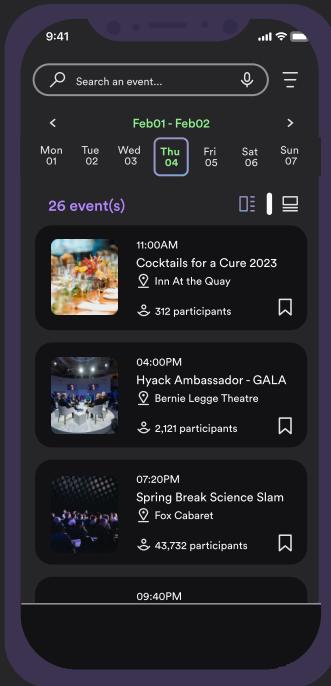
Both new styles challenged our design team, yet we adapted and learned many new skills to be better designers.



MOCKUPS







MEET OUR TEAM



Yas Fazeli
UX/UI Designer

/yasfazeli

I graduated in Game Design, which opened my path to the media industry and led me to study Film & Visual Art Design—experience in Art and Graphic Design with more than five years of background. To me, UI/UX is the world behind the future in technology, specifically, UI that intersects psychology, design and technology. The influential art of creating a visually pleasing, functional user experience made me most passionate about this industry.



Andrew Yip
UX/UI Designer

/andrewthyip

Graduated with a Bachelor's in Sociology with experience in digital marketing. Interested in implementing psychological theories into the design process. Responsibilities for the project include data visualisation report, map design for crowd tracking, design system, and design handoff.



Anmoldeep Kaur
UX/UI Designer

/anmoldeep-kaur12

I find myself a graphic designer who always focuses on minor details for the smallest components of the product and provides the best results without any loopholes. I always love to play with shapes and colors. User interactions are always my main focus point to perfection.



Manpreet Kaur
UX/UI Designer

/manpreet-kaur07

Graduated with a Bachelor's Degree in Computer Science and Engineering with 2 years of experience as a Product Designer. Responsibilities for the project include evaluating the scope and estimating the probability of risks, conducting user and market research, write user stories, build design with a user-centred approach.



Florida Joca
Full Stack Developer
 /florida-joca

I am an experienced mobile developer. I have a strong passion for coding and enjoy staying up-to-date with the latest technologies and development trends. I thrive in dynamic environments and I am always eager to learn new things. I enjoy taking on new challenges and finding creative solutions to complex problems.



Rojin Taghadosi
Full Stack Developer
 /rojin-taghadosi

I am a Full Stack developer with knowledge of common web and mobile app technologies and languages such as JavaScript (ES6), React, and Node.js. I am committed to developing high-quality, user-friendly online apps and embrace challenges as opportunities to learn and grow beyond my current capabilities. Prior experience working in teams and collaborating with designers to accomplish project goals.



Diego Santa Cruz
Full Stack Developer
 /diegosantacruzm

As a full-stack developer with a “big picture” mindset, I prioritize clean, maintainable code for seamless team collaboration. By ensuring each component fits into the larger system, I create a scalable, flexible codebase that's easy to enhance over time, resulting in a stronger, more efficient product that exceeds expectations



Winall Lopes
Full Stack Developer
 /win-all-lopes

I am a Full Stack Developer with experience building projects in technologies such as Javascript, ReactJS, React Native, NodeJS. I also bring experience as an IT Analyst in Supply Chain and Warehousing domains. As a part of CrowdEase project, I worked on implementing the backend integration, deploying the backend on AWS, API endpoint security, OneSignal integration, and developing front-end screens.



Bhanuj Nagpal
Full Stack Developer
 /bhanujnagpal

I am an experienced Full Stack Developer. I have been responsible for developing and maintaining complete web applications or software products, from server-side components to client-side. I have work with various technologies such as HTML, CSS, JavaScript, React, Node.js, MongoDB, and SQL, among others, to create web applications that meet client or user requirements.

REFERENCES

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This proposal was made with devotion and passion by team Big Bang.

