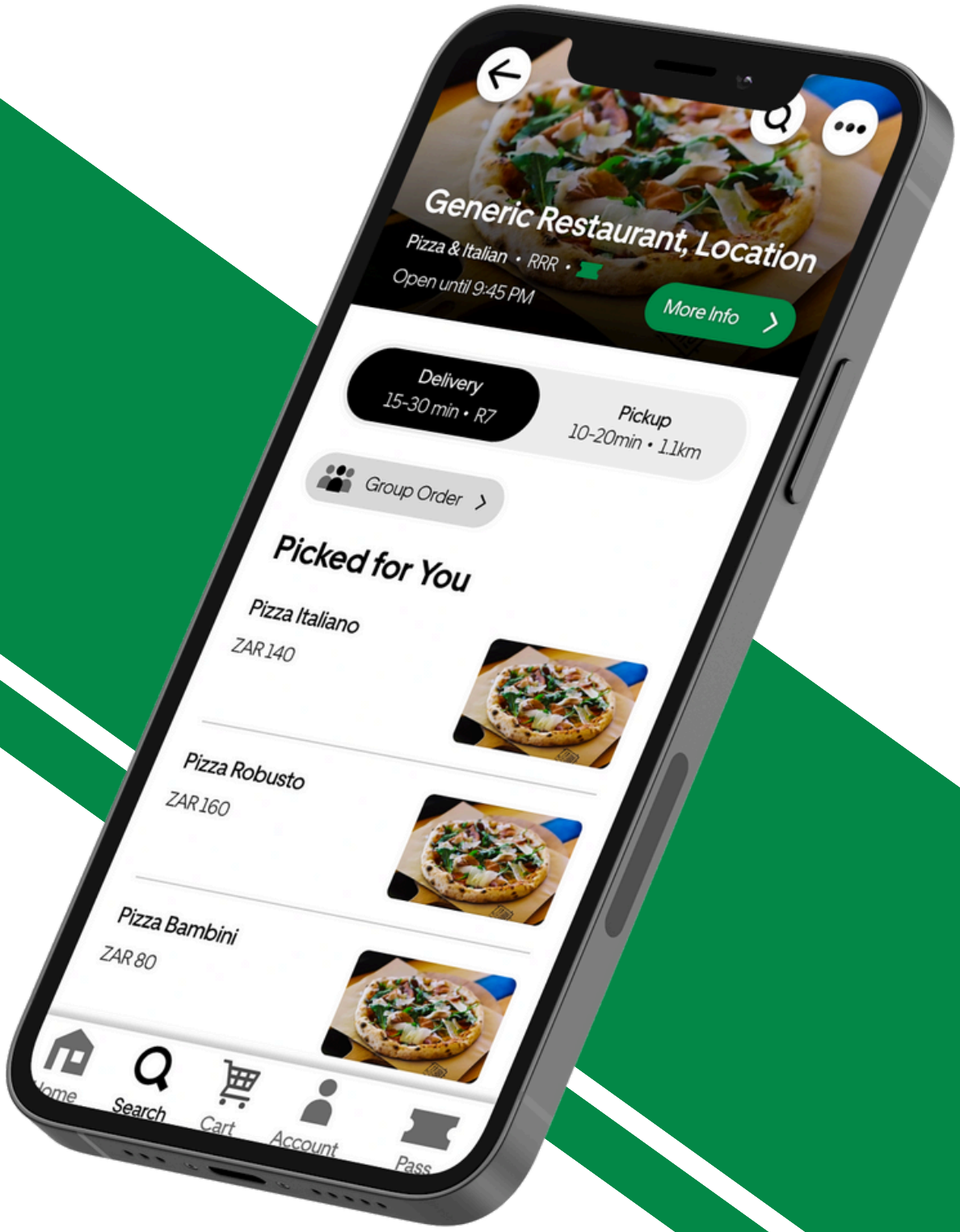
Leo Grill - ST10061985

DIGG6112-PROJECT 1

Accessibility



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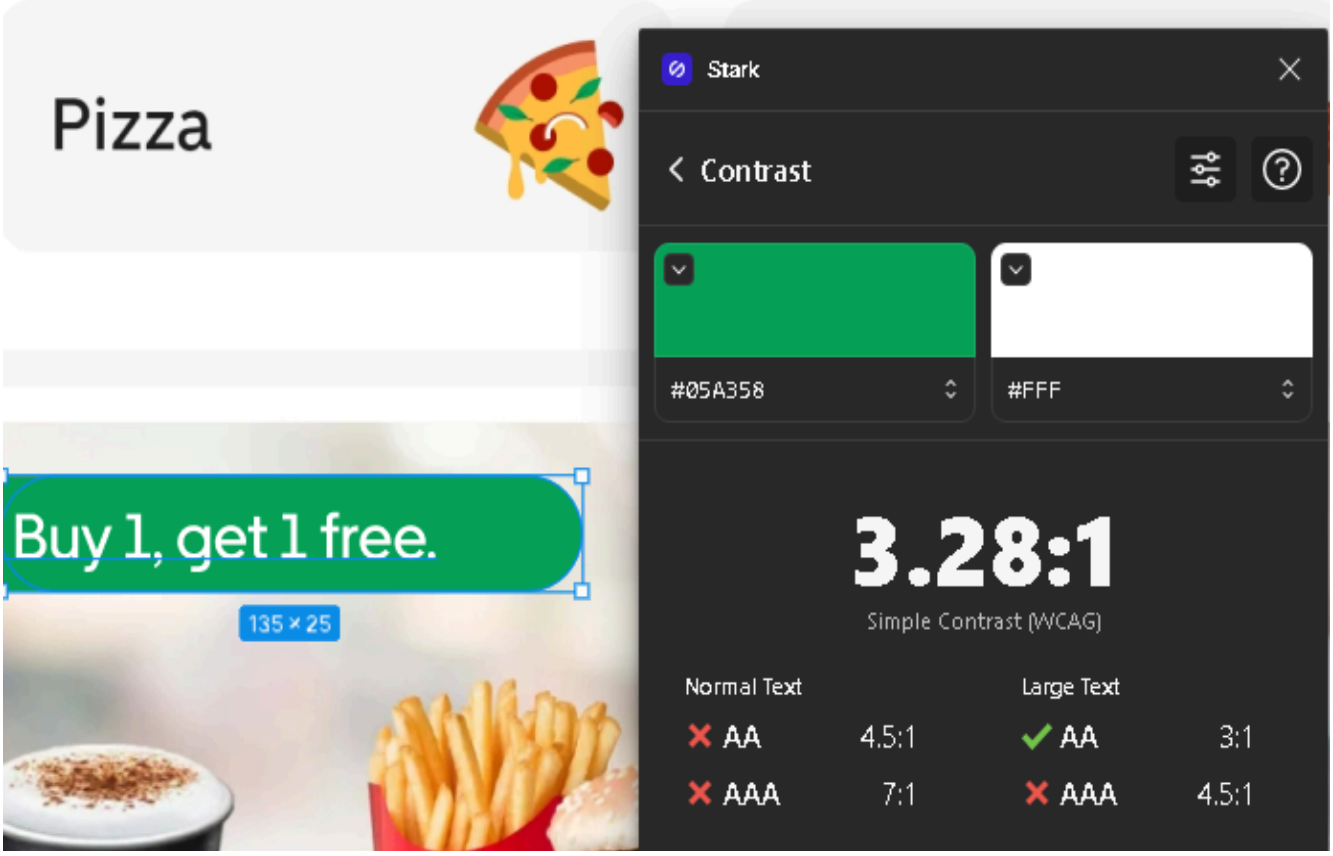
PART A2

Critical Evaluation

Critical evaluation of accessibility and usability of the Uber Eats application to identify shortcomings in the aforementioned categories.

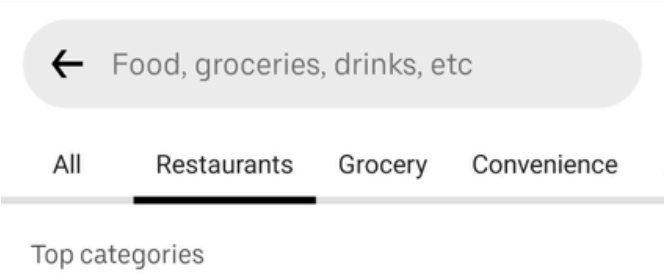
Perceivable

The first thing to check in the category of perceivable, is the contrast of the app. The method was recreating parts of the Uber Eats app from screenshots, using the font native to the app, as well as the colours and text sizes, to recreate parts of the app. Then I used a plugin called "Stark" to check the contrast of certain elements.



There are multiple examples, such as the labels which show the promotions on certain items or restaurants, where the contrast of normal text does not meet the WCAG 2.1 accessibility guidelines.

There are certain labels missing to form fields such as the search bar, it contains placeholder text, but no label.



Therefore, screen reader software for the visually impaired can not read the search field's label to the user, making it practically invisible to them.

I tried navigating the app with Android's "TalkBack" screen reader, and there are a few flaws I noticed. The horizontal scrolling ads and suggestions within the longer vertical scrollable portions of the app, have an automatic animation, which makes the section disappear within the time it takes "TalkBack" to read out the content displayed, making it extremely confusing and frustrating to navigate. There is also no audio cue for scrolling sideways, so it is impossible for blind people to use these sections.

Besides this there are simply many alt-tags missing from things as fundamental to the user flow as back buttons, which are just read out as: "unlabeled button".

Another major flaw is that there is no dark mode in the Uber Eats app. Many people prefer dark mode, and it may be helpful to people with epilepsy or sensitive eyes access the app.

Operable

As mentioned before, there are certain flaws in the Uber Eats app from the perceivable category, which translate to the operable category. Namely, the side scrolling, which is not only impossible for the visually impaired, but can also pose difficulties for people with limited motion or impaired fine motor skills. The same applies for some of the buttons which are simply too small to be activated successfully by people with limited movement.

Hereby the list of people who the app is not accessible to grows longer, including people with Parkinson's Disease, or Arthritis, Amputees, and people with limited movement, may it be temporary or permanent.

Understandable

There are also some things that stood out to me when looking at the understandable portion of the WCAG's guidelines.

Once again the culprit is the mix of vertical and horizontal scrolling. This can be especially hard to understand for people who are not very tech-savvy, such as elderly people, or people in emerging countries first experiencing the digital age, without witnessing the progression from Web1.0 to Web3.0. The same applies to people who might have some form of cognitive impairment and therefore struggle to understand the two dimensional app structure.

Additionally, the complexity of the apps navigation is simply overloaded with options and elements, (creating a sitemap of the existing app sounds daring) which makes it hard for the abovementioned crowd to get from opening the app to completing checkout, as it is hardly a linear user flow, which does not intuitively direct the user to the goal, and therefore narrows the conversion funnel of the app significantly.

Robust

A discussed in the "perceivable" category above, assistive technology such as screen readers require the correct labeling of the alt tags corresponding to elements on the page. Although the app is compatible with iOS's and Android's screen readers, it is hardly optimized for the use of such software.

It is possible to toggle all elements, but it gets tricky when there are auto animations which do not interact well with the screen readers software.

The app allows filters within the OS to adjust colours for people with different types of colour blindness, but has none native to the app.

PART A3

User Personas

Analysis of the provided elderly User Personas. What Users might expect, need, and love.

Expectations

Mrs. Moodley expects the app to have support for specific dietary requirements and is therefore repelled by food delivery apps which do not have such features. Uber Eats currently does not have such support.

Similarily, Ms. Nkosana expects the app to have display health information such as the ingredients and possibly calories. Uber Eats currently does not have such information displayed anywhere.

Mr. van der Merwe expects technology to be too complicated and dangerous. The current Uber Eats app is rather complicated and might seem daunting to users in his age group.

Needs

Mrs. Moodley needs the app to have support for specific dietary requirements, in order to filter by what she can eat. Uber Eats currently does not have this feature.

Ms. Nkosana needs the app to display things like ingredients and the meals calories. Uber Eats currently does not have this information displayed anywhere in the app.

Mr. van der Merwe needs the app to be as simple and user-friendly as possible. If the app is not simple enough, he may not convert. The current Uber Eats app's navigation is convoluted and puzzling to the elderly.

Loves

Mrs. Moodley loves the convenience of getting food or groceries delivered to her doorstep, as this allows her to not go out and pose the risk of being robbed.

Ms. Nkosana loves apps which actively help her to achieve her health goals. She likely loves apps that help her track calories and are transparent about the ingredients in the food served.

Mr. van der Merwe loves that he can get groceries delivered to his doorstep by a food delivery app, as he is temporarily immobilised by his hip replacement

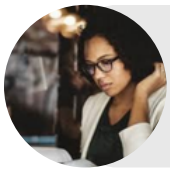
The Target Audience

Elderly

People who are not used to interacting with UI, may have bad eyesight

Disabled

People who are temporarily or permanently disabled.



Anyone & Everyone

People who might benefit from the upgrades regardless of ability

PART A4

Findings & Insights

Summary of the findings, Insights and actionable solutions.

Findings	Insights
No native colour blind filters in app	Colour blind users experience exclusion through not being represented
Not meeting WCAG's standards for contrast or size	Users with visual impairments may feel frustrated and excluded
Alt tags not added to all elements	Visually impaired users may feel anxious and disoriented
Poor optimization for assistive technology	People who use screen readers experience may feel alienated or unsupported
Horizontal scrolling adds barriers to motion	Users with impaired fine motor skills may feel discouraged
Overloaded navigation options	Users may feel lost and frustrated in finding desired content
App has no allergen information which could be lethal	People that have allergies can not use the app, because it could be lethal to them
App does not cater to specific diets	App catalyses unhealthy eating habits and excludes people with specific dietary requirements
App has no ingredient list for meals ordered from restaurants	App is not transparent about the ingredients used in food

PART A5

Creative Strategy

Summary of the findings, Insights and actionable solutions.

Insights	Action
Colour blind users experience exclusion through not being represented	Add shortcut to activate colour blind filters native to OS
Users with visual impairments may feel frustrated and excluded	Update color scheme and text size to meet WCAG 2.1 guidelines
Visually impaired users may feel anxious and disoriented	Name objects to correspond with desired alt text
People who use screen readers experience may feel alienated or unsupported	Refrain from (autoplay) animations
Users with impaired fine motor skills may feel discouraged	Make scrolling one dimensional and replace small buttons with larger touch targets
Users may feel lost and frustrated in finding desired content	Simplify navigation and organize content hierarchically
People that have allergies can not use the app, because it could be lethal to them	Build input platform for businesses to add allergens
App catalyses unhealthy eating habits and excludes people with specific dietary requirements	Add categories sorted by ingredients and specific dietary requirements
App is not transparent about the ingredients used in food	Build input platform for businesses to add ingredients

Findings

The current Uber Eats app does not meet WCAG's accessibility standards, has several accessibility and usability issues, such as insufficient color contrast, missing labels, incompatibility with screen readers, absence of dark mode, difficulty navigating for users with limited motion, confusing scrolling, overloaded navigation options, and poor optimization for assistive technology.

Insights

Many people with different abilities hit barriers and therefore feel frustrated, excluded, overwhelmed, and discouraged, especially the vision impaired, elderly, movement & fine motor skills impaired, the cognitively impaired and people with certain allergies or diet requirements. By addressing these issues, I will create a more user-centered design that caters to the functional and emotional needs of the users, leading to a more positive and inclusive experience.

Objective

Make Uber Eats accessible to all! This will be done through the addition of 3 new modes: Dark Mode, Text-To-Speech Mode, Simple Mode. An accessibility menu will be added to the screen as a static overlay. Furthermore Restaurants will be required to declare all ingredients to any of the dishes they prepare, and an estimation of the calories contained, whereby the app can filter by dietary requirements.

Message

ACCESS GRANTED - Uber Eats is now accessible to all!

Concept

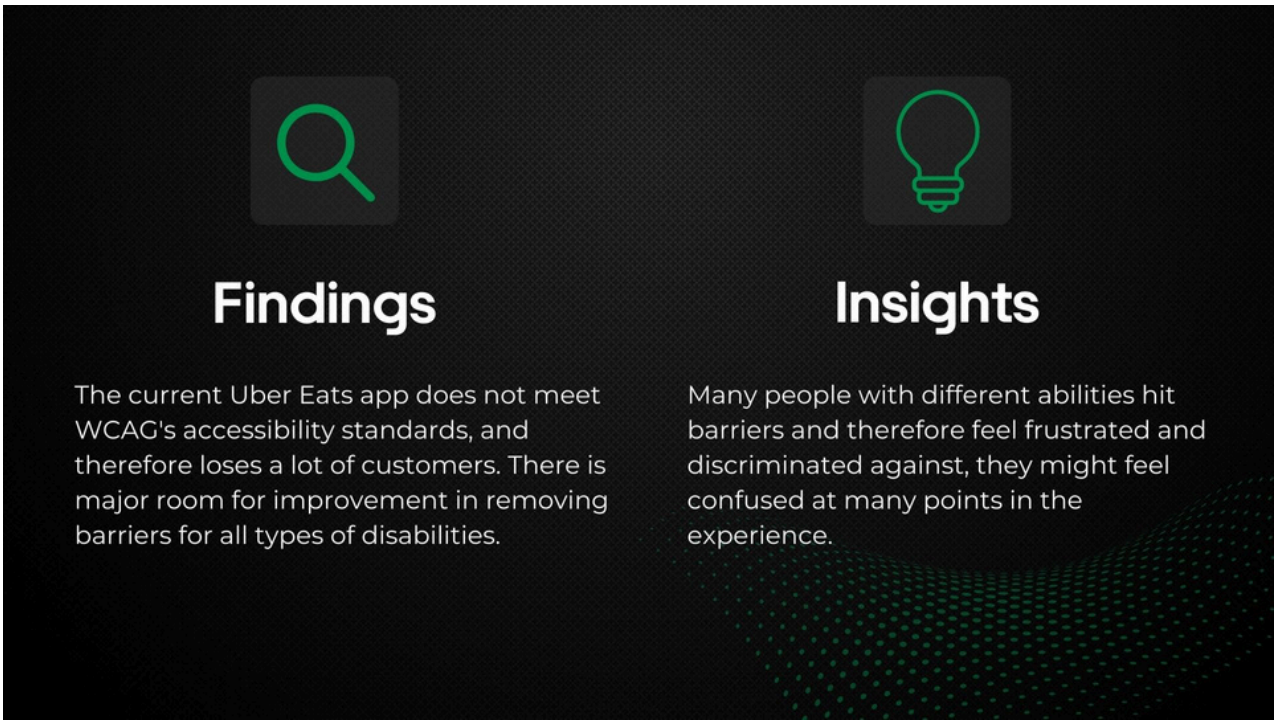
Modes

1. Dark Mode - Mode that inverts the lighter colours, like the white background, in the UI to darker colours, and makes dark elements like text lighter, being easier on the eye and better at night.
2. Text to Speech Mode - A mode that is designed specifically for the visually impaired with larger icons, text, buttons and alt text that guarantees compatibility with Screen Reader software.
3. Simple Mode - A mode that is very streamlined, simple to understand and guides the user step-by step towards their goal of ordering food. Helps the cognitively impaired, elderly and people with no impairments who desire a quick and efficient process.

General Improvements

1. Restaurants are now required to list the ingredients they add to their food, and an estimated calorie count, as well as any allergen information.
2. Accessibility Menu overlay over every page of the app makes it easy to access any any settings that may enable people in different situations.
3. Higher contrast abiding to WCAG's standards for accessibility, colour blind filters, and larger text.
4. Full accessibility menu when first opening app.

Pitch Presentation



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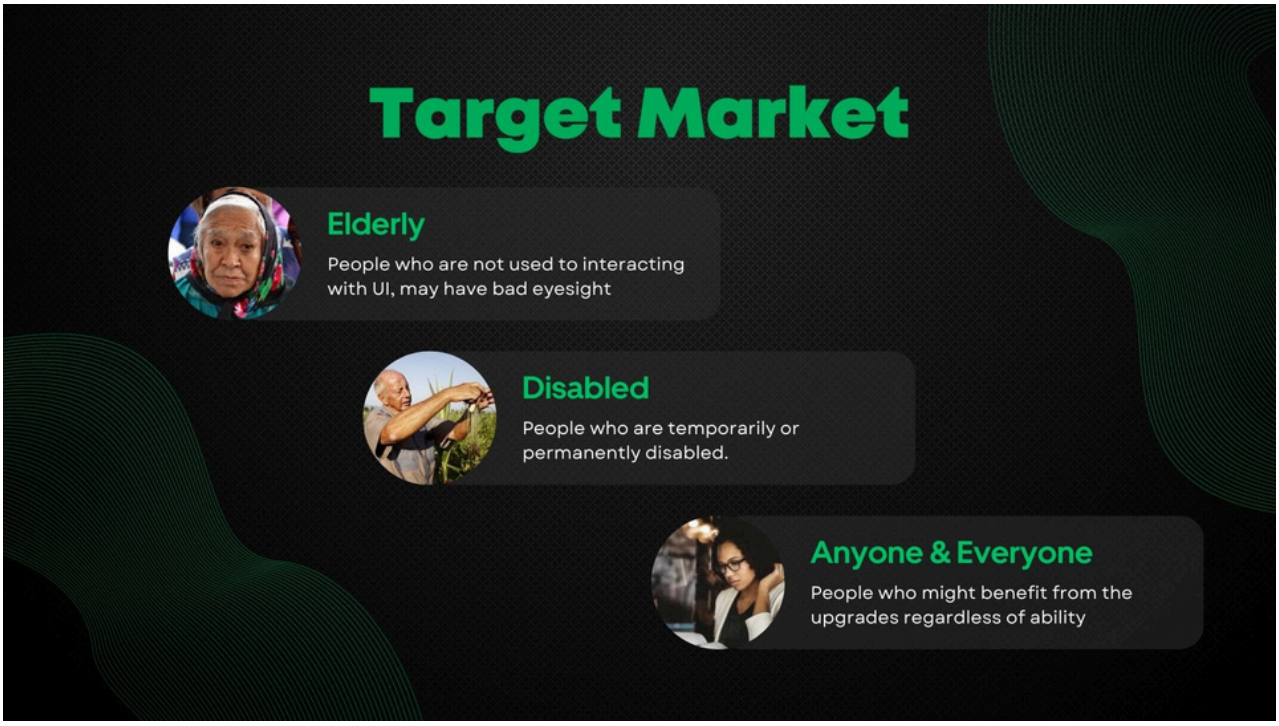

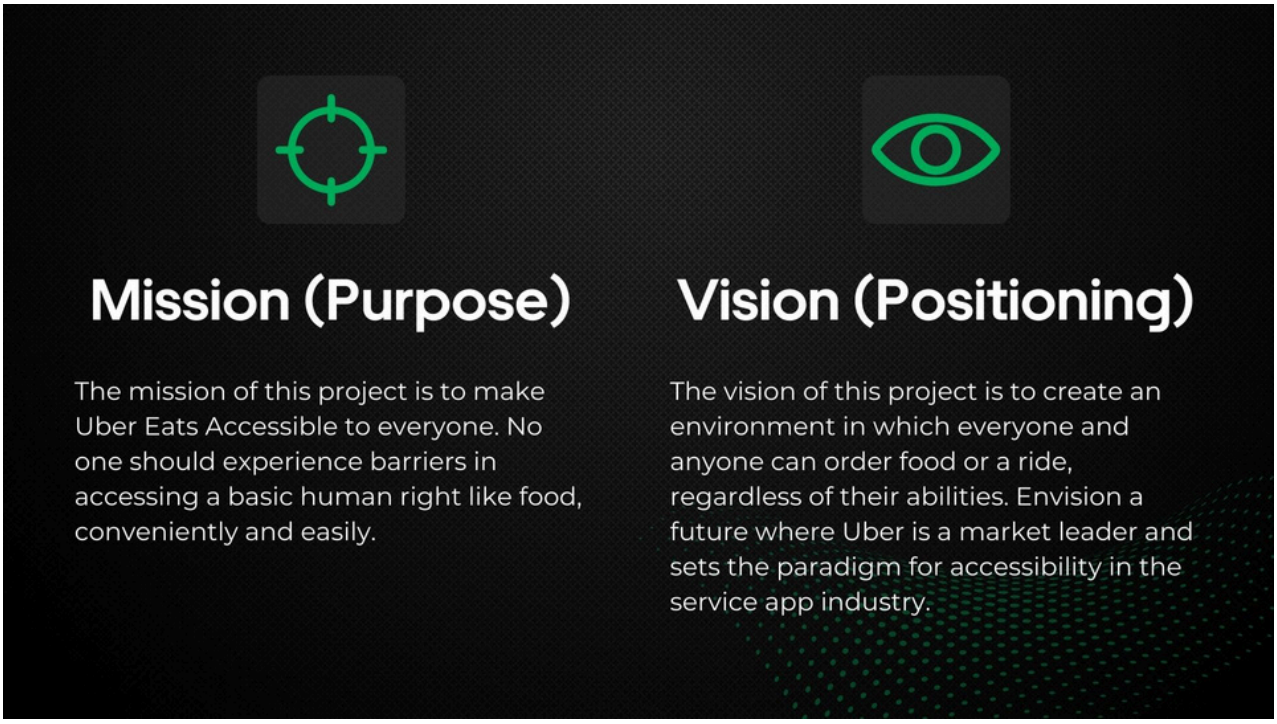

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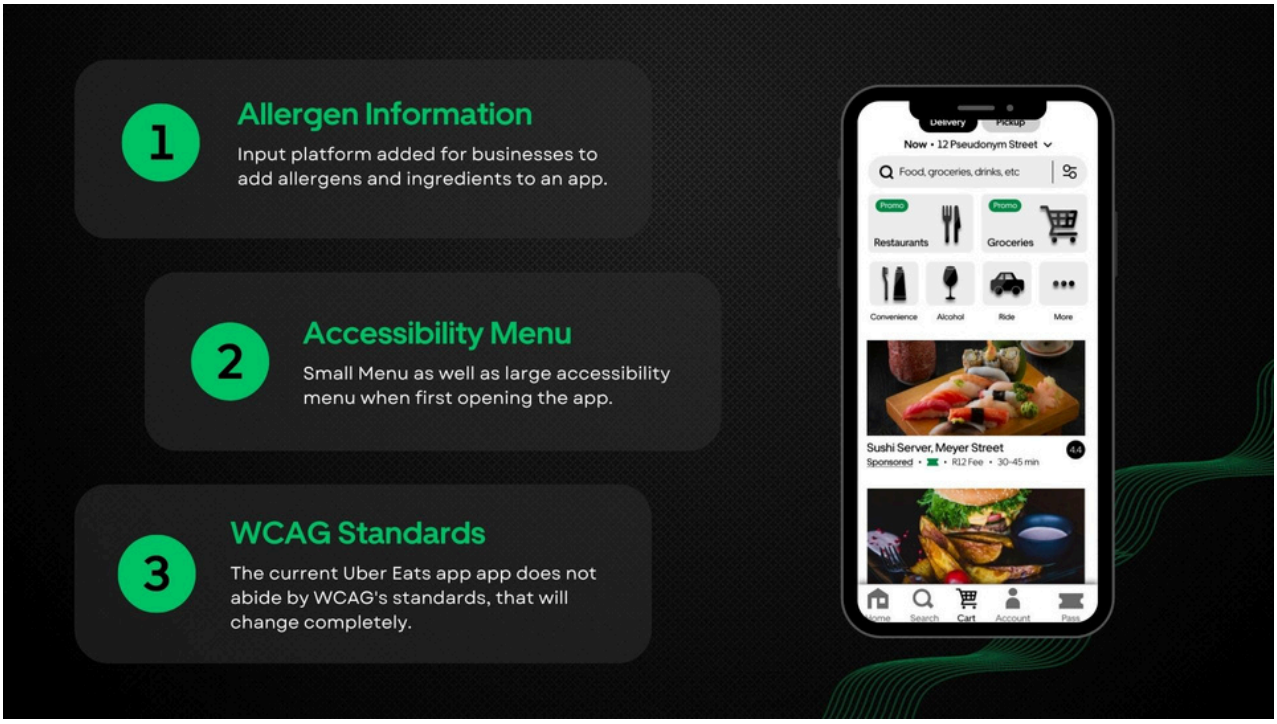
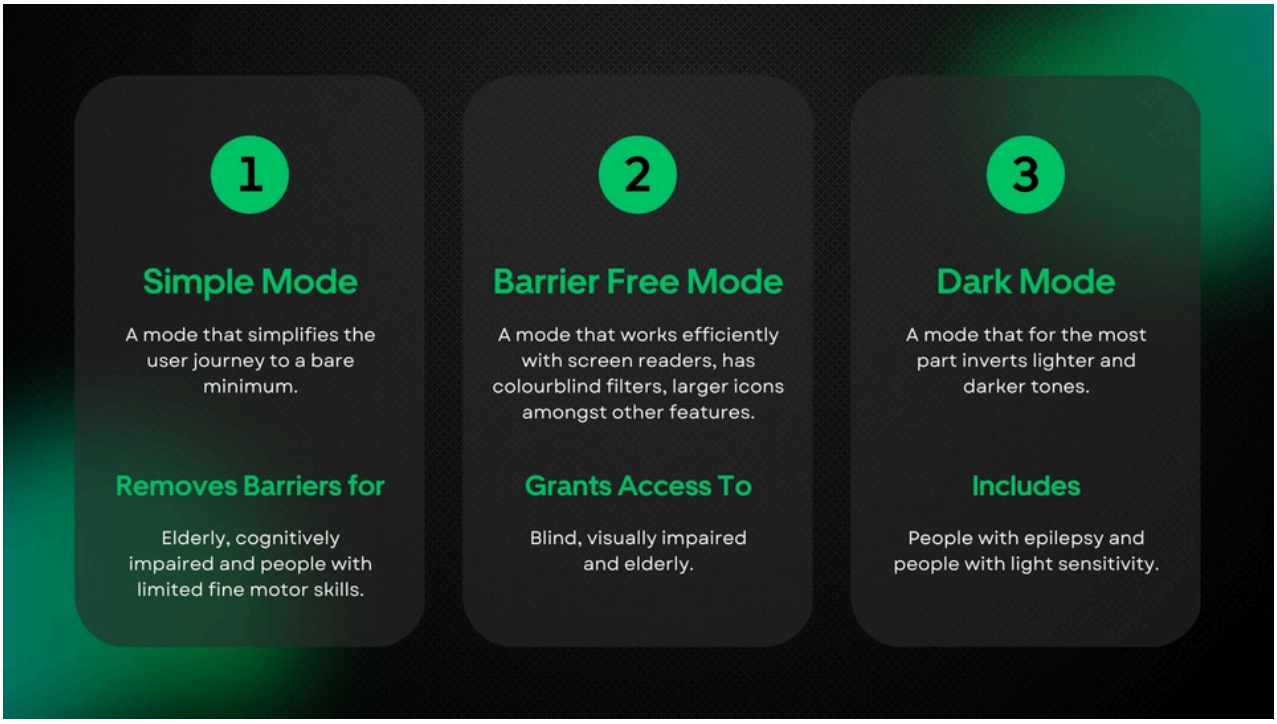


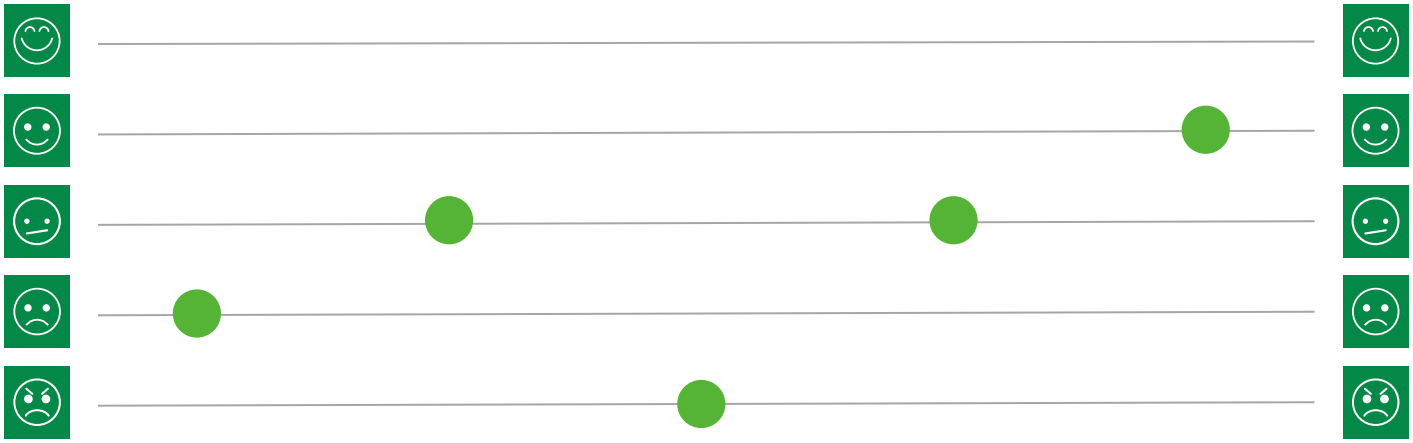


PART B1

Planning

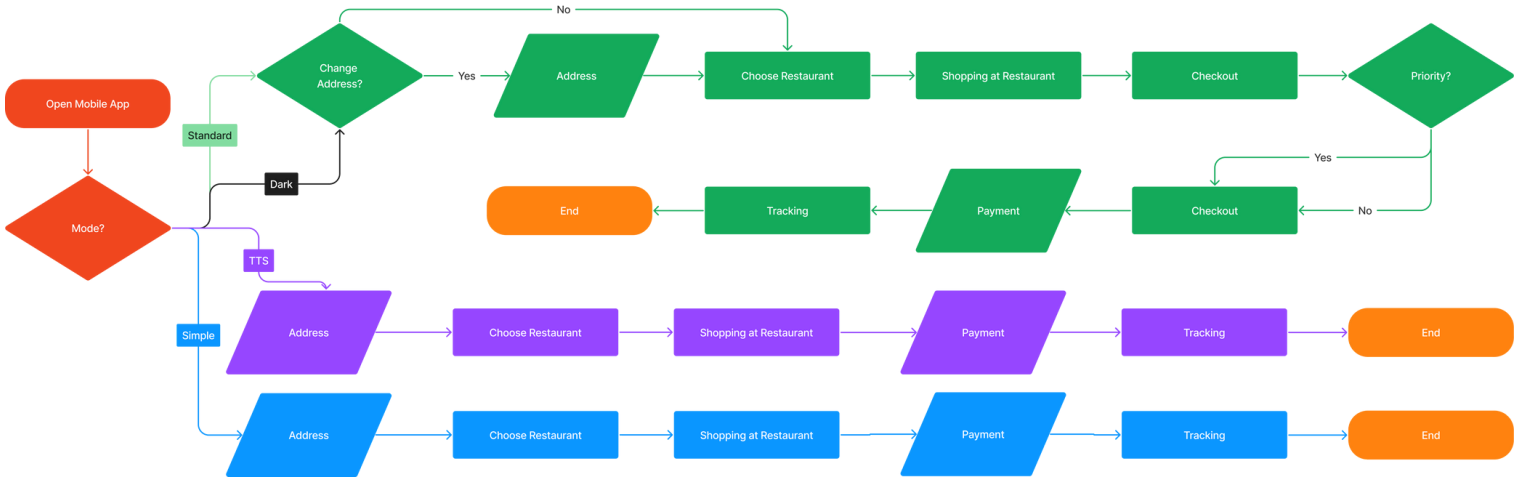
All the planning I have done

User Journey

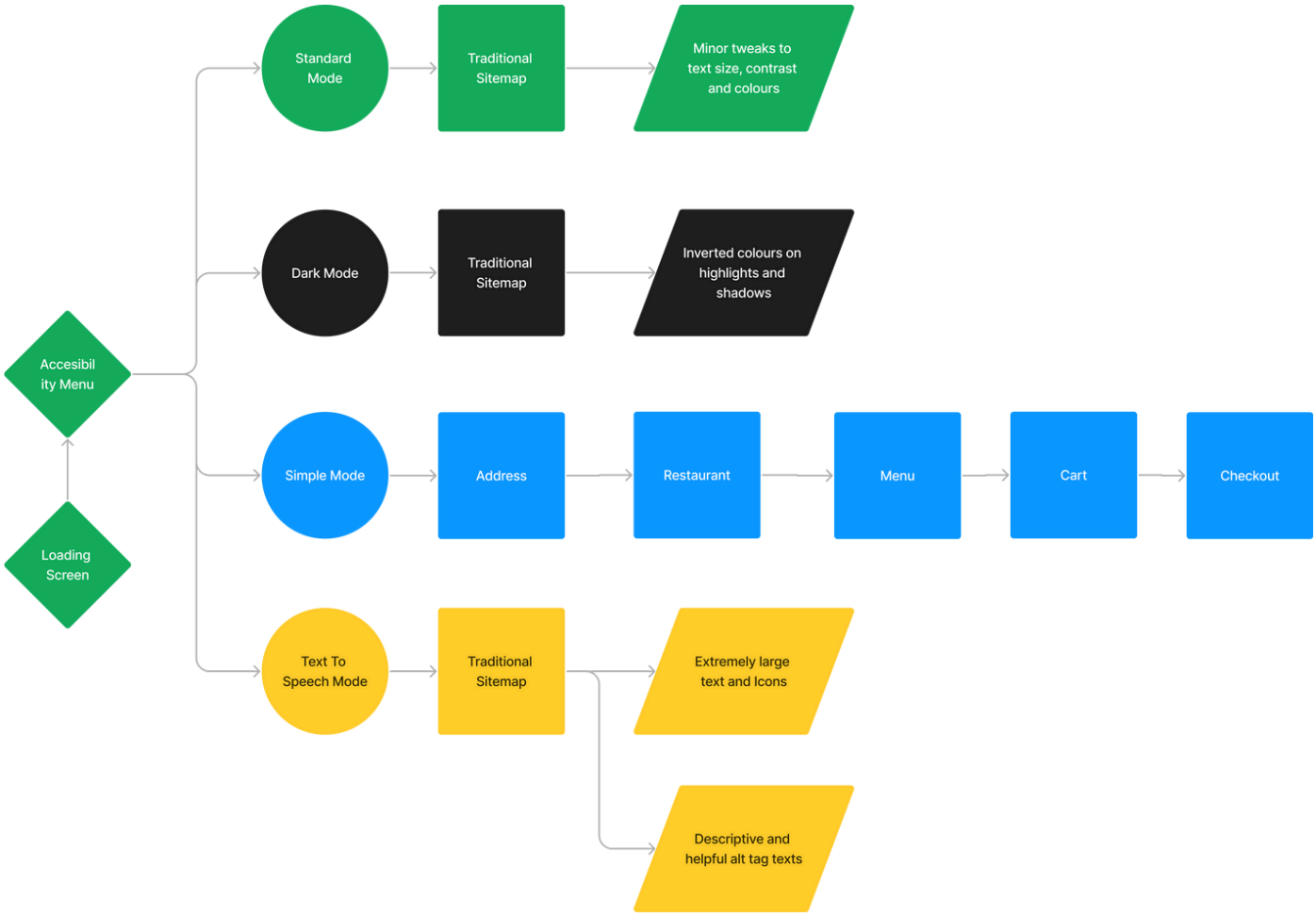


	Address	Restaurant	Shopping	Payment	Tracking
Pain Points	There are certain labels missing to form fields such as the search bar, it contains placeholder text, but no label.	Mix of horizontal and vertical scrolling. Users may be confused by the combination.	People that have allergies can not use the app, as there is no allergen information.	Appp is not meeting WCAG's standards for contrast or size.	The app has many overloaded navigation options.
Emotions	Users with visual impairments feel excluded and discriminated against.	Users may feel lost and frustrated in finding desired content	These people would literally gamble with their life to be able to order food.	Users with visual impairments may feel frustrated and excluded	Users with impaired fine motor skills may feel discouraged

Task Flow


Open Mobile App
Mode?
Standard
Dark
Simple
TTS
Change Address?
No
Yes
Address
Choose Restaurant
Shopping at Restaurant
Checkout
Priority?
Yes
No
Checkout
Payment
Tracking
End
Address
Choose Restaurant
Shopping at Restaurant
Payment
Tracking
End
Address
Choose Restaurant
Shopping at Restaurant
Payment
Tracking
End

Information architecture



PART B2

Execution

The final product.

Style guides

#06C168	GO Green
#038847	Philippine Green
#E7F9F0	Honeydew
#FEFAEF	Floral White
#FFFFFF	White
#EEEEEE	Bright Gray
#CBCBCB	Chinese Silver
#6B6B6B	Dim Gray
#1F1F1F	Eerie Black
#000000	Black
#D7FFFF	Pale Pink

Heading 1

Heading 2

Heading 3

Heading 4

Heading 5

Paragraph Text 1

Paragraph Text 2

Paragraph Text 3

Inline link

#006734	Cadmium Green
#00AF5C	GO Green
#000307	Rich Black
#1F1F1F	Eerie Black
#313131	Dark Charcoal
#6B6B6B	Dim Gray
#CAC9C9	Chinese Silver
#E0E0E0	Chinese White
#FFFFFF	White
#005454	Dark Chocolate

Heading 1

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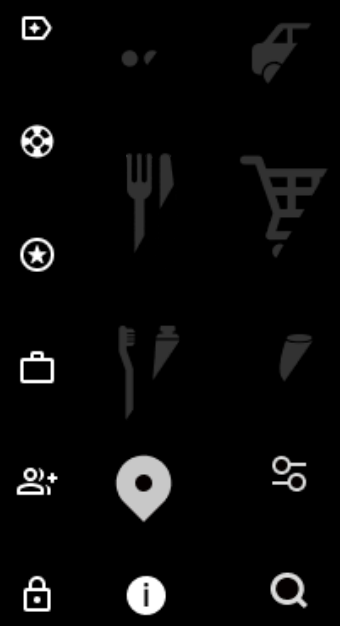
Heading 4

Paragraph Text 1

Paragraph Text 2

Paragraph Text 3

Inline link



FULL STYLE GUIDES ON FIGMA DOCUMENT

Style guides

#06C168	GO Green
#038847	Philippine Green
#E7F9F0	Honeydew
#FFFEFA	Baby Powder
#FFFFFF	White
#EEEEEE	Bright Gray
#CBCBCB	Chinese Silver
#6B6B6B	Dim Gray
#1F1F1F	Eerie Black
#000000	Black
#932A2A	Vivid Auburn
#FFB800	Selective Yellow
#8F00FF	Electric Violet

Heading 1

Heading 2

Heading 3

Heading 4

Heading 5

Paragraph Text 1

Paragraph Text 2

Paragraph Text 3

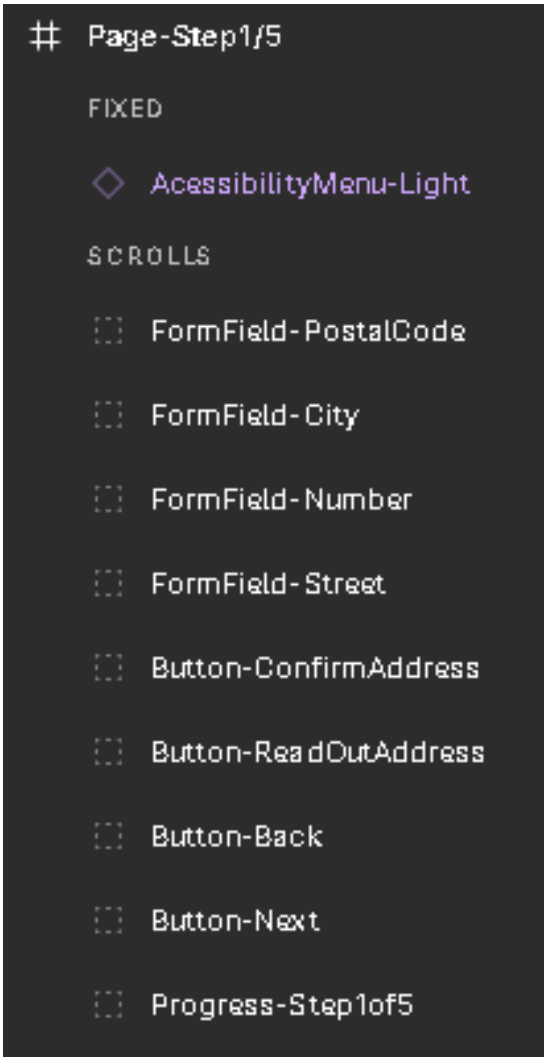
Inline link

FULL STYLE GUIDES ON FIGMA DOCUMENT

Rationale

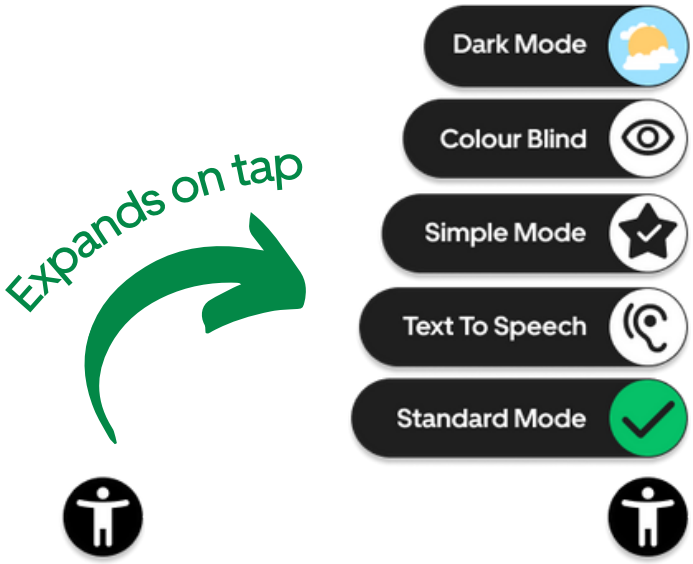
My visual research found many user pain points and breaches of the WCAG's guidelines, including issues with contrast, missing labels for screen readers, lack of dark mode and difficult navigation, within the Uber Eats App.

During the design process of the Text-To-Speech mode, I tried to do the best I could to ensure seamless integration with assistive technology. I imagined the programmers coding the app and needing to put in all the alt tags for every element. So I decided to Name all elements accordingly and order my assets panel in groups. I first wrote what type of element it is, a dash and then the Alt-Text (e.g, a "Button-ClickHere", nested in a group called "Section-Restaurants").
As I did not know as much about programming I used Camel Case for the "alt tags", not knowing that alt tags could of course have spaces.



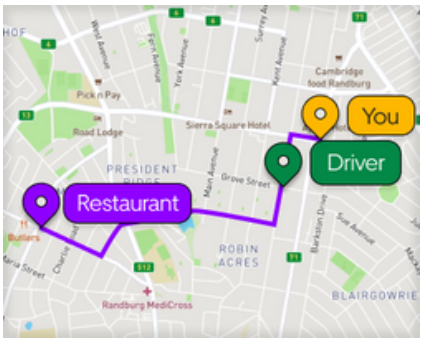
I spent a lot of time on interactivity and even micro-interactions, such as the dark and light mode switch in the accessibility menu.

The accessibility menu is accessible on most pages on all modes except for simple, as this functionality might overwhelm people looking for an easy experience. This is the portion of the navigation which connects all the different modes seamlessly.



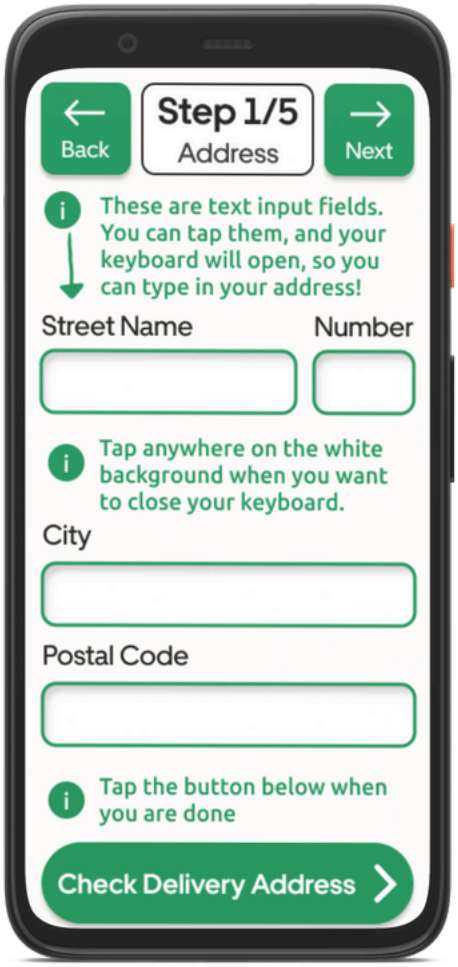
The first page that pops up after the loading screen is also a menu connecting all the modes and acts as a user flow starting point. for all modes.

When designing the simple mode I focused on designing intuitive controls for easy navigation through the app. I used horizontal scrolling in the dark mode and the standard mode only, but refrained from using any in simple mode. I also tried to minimise scrolling in general, to not overload users with information, but rather only provide the necessary information in one screen when possible.

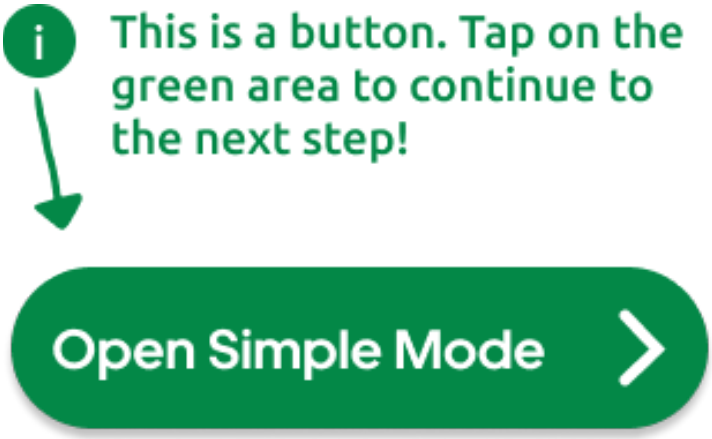


I used a tertiary colour scheme for the accent coloured markers on the map in simple mode, to make them easily distinguishable.

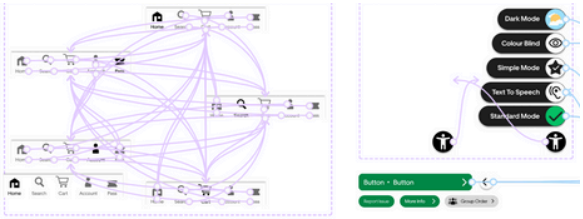
The markers are also by default labeled, but disappear on tap.



I also added a mode within a mode. The first time the user opens the simple mode, they will run through it with a variety of tips to help them not only learn to navigate the simple mode, but also learn general things about working with app UIs, such as what a button, switch or search bar does.



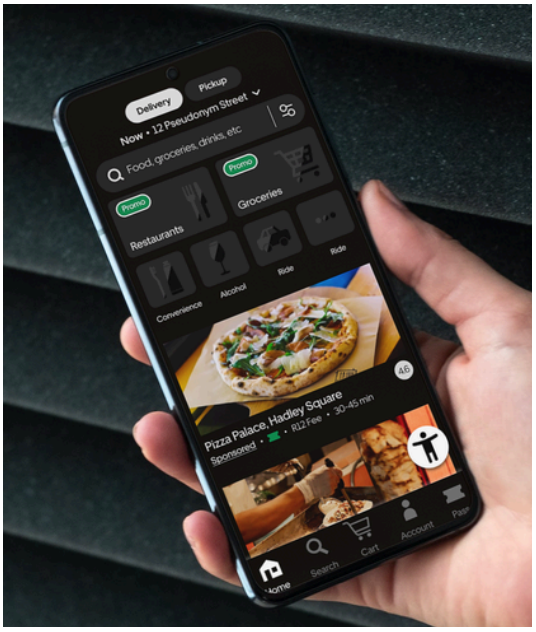
Once they have completed the tutorial the tips disappear and the user can now access all accessibility modes from the expanding mini menu again.



Choices

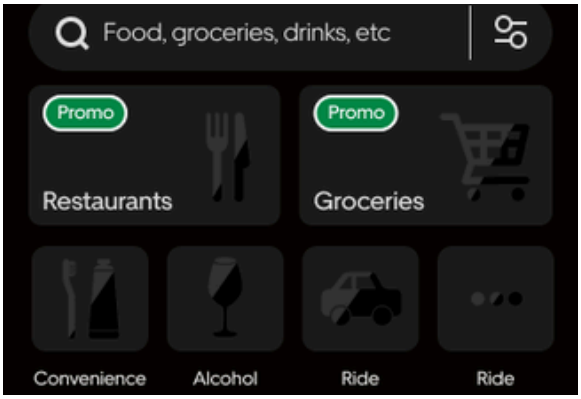
I wanted the Prototype to be as lifelike as possible, so I decided to make every single interactive element, truly interactive, so I spent a few hours figuring out how to prototype, for example a 5 star rating system in a high fidelity manner.

I made a sheet of components for every single mode and altered them to fit the needs of that specific mode.



Dark mode was quite fun to design. Once I had the standard mode built out from screenshots of the current Uber Eats App, I started by inverting all the colours with a new palette that i chose, which uses darker shades of green for the accents and a colour called rich black, which I chose to ease eye strain by having warm tones mixed in with the black, at a sub-perceptual level.

I also thought that the Icons in the normal app are overwhelming for visually impaired people, therefore I decided to illustrate very simple icons that I stylised by adding a sort of half shadow to them by lightening a certain area at a consistent angle.



Overall, I must say I really enjoyed this project, and am glad I got an extension, as even though I I spent so many hours on this, I could not get to where I wanted to be at without the extra time.

Figma is also probably my favourite design tool, as UI is my favourite digital design discipline, so this project was very fun to me!

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