Design Document

Global Radiant Youth

1 INDEX

2 INTRODUCTION

2.1 PROJECT DESCRIPTION

The goal of this project was to create the front-end application for the project that was commissioned by the Global Radiant Youth nonprofit organization. The goal of that main project is to create an application that provides the ability for people to support the organization, mainly by donating money.

This project developed the concept, designed the front-end application, and realized this design. The final product is a progressive web app created with React.

2.2 SOURCES

Where applicable this document will refer to the external documents for more detail, but all documentation, including the coded product, can be found here.

The mock backend that was used during development can be found here.

3 CONCEPT

Here the final concept and what it is based on is defined.

3.1 INITIAL CONCEPT

When the project was commissioned a first iteration of the concept was provided. This consisted of the following points:

- The user can donate money.
- The user can buy specific items the organization needs.
- The user can send the organization physical goods.
- The application works on android devices.

This was the starting-off point for the project, and these points were further developed.

3.2 FINAL CONCEPT

The final concept for this project consists of the following user stories and requirements. Not all user stories and requirements that were inferred from the research were realized. A list of unimplemented ideas from the research has been included as advice later in this document.

3.2.1 Requirements

ID	Definition
RQ1	The application works on android devices.
RQ2	The application is available in English.
RQ3	The application provides the ability to donate money towards the organization.

3.2.2 User stories

ID	Actor	Definition
US1	PO	As the actor I want prospective donors to have the ability to donate money towards the charity, so the charity can do more impactful work. I want the only significant steps to be choosing the amount and completing the actual payment, so as many minor inconveniences will be removed as possible before the payment.
US2	PO	As the actor I want prospective donors to have insight in the other donors' donations during the donation process, so a bar will be set for donation amounts with social pressure and public recognition is offered as a reward for donating. The information they should have insight in is the name, message, and amount donated. I want this information to be asked after the payment has been completed and be optional, so there are no deterring inconveniences like social pressure and time needed to complete the donation.
US3	PO	As the actor I want prospective donors to be able to choose from a list of smaller projects to support, so the donation becomes more personal and impactful, the prospective donor is provided with a level of agency, and scope bias is prevented by scaling down the goals.

US4	PO	I want completed projects, with the contributors, to be promoted publicly (the website, the charity's social media etc.), so more recognition is offered as incentive and the charity proves their validity.
US6	PO	As the actor I want donors to receive a reaffirming thank-you message, so more and increased future donations are incentivized. The content of this message should reaffirm the donor's generosity and the impact of their donation.
US9	PO	As the actor I want a newsfeed for social media posts to be available to the prospective donor, so charity's validity will be proven to motivate a donation and increase the amount donated.
US13	PO	As the actor I want projects to include a picture, so the projects will become more personal and stronger emotions are evoked with the potential donor.
US15	PO	As the actor I want the request for support for the charity to be prominently placed, so prospective donors will not avoid the request.
US19	PO	As the actor I want requests for support to be formulated as a number instead of binary, so the likelihood of donations increases. For example, how much to give instead of whether to give. I want prospective donors to be given multiple choices of donation amount with a custom option, so the barrier of donation is lowered. I want the request to be framed as it being a single occurrence, so donors are not burdened with the immediate request of future costs before making the current payment. I do not want a minimum amount to the donation, so prospective donors that want to donate below that amount do not get alienated.
US21	PO	As the actor I want to give the prospective donor alternative charity options than the current one, so the prospective donor can exert agency and the charity's image improves.
US22	PO	As the actor I want the information that is offered about the charity to be less prominent than the donation process, so the information is available for the small group of bigger donations that want it, but it does not interfere with the bigger group of smaller donations.

3.3 RESEARCH

Here the research that went into creating the concept is defined. Both research reports are delivered as attachments.

3.3.1 Behavior and motivation around donations

The main functionality of the application is donating money to the organization. To properly implement this functionality in the concept and design we did research into the behavior and motivation around donations.

The research question was as follows:

> *What factors Influence someone's willingness to donate and the amount they donate towards a charity?*

This research provides a list of factors that the final concept is based on like using social pressure, evoking emotions, proving the charities validity, time bias, framing of the request for support and more.

The research can be viewed in-detail in the research report here.

3.3.2 A dreaming child

The commissioner of the original project is the founder of the Global Radiant Youth organization – Dieudonné Gakire. Before he founded this organization, he wrote a book called a dreaming child about his experiences with surviving Rwanda's genocide.

Since this nonprofit organization came forth from his experiences in the genocide, we decided this would be an important source of information to create a design that emits the right message and is meaningful for the commissioner.

The main concept that the book provided us:

Icyotero

This means a place around the campfire where people can sit to warm themselves, discuss things, and cook. This was the name for a community of genocide survivors that Dieudonné founded.

Another important idea that also came from the book:

Misfortune breeds blessings.

For multiple reasons described in the book, these are important concepts for the commissioner and the organization and are implemented into the final concept and design.

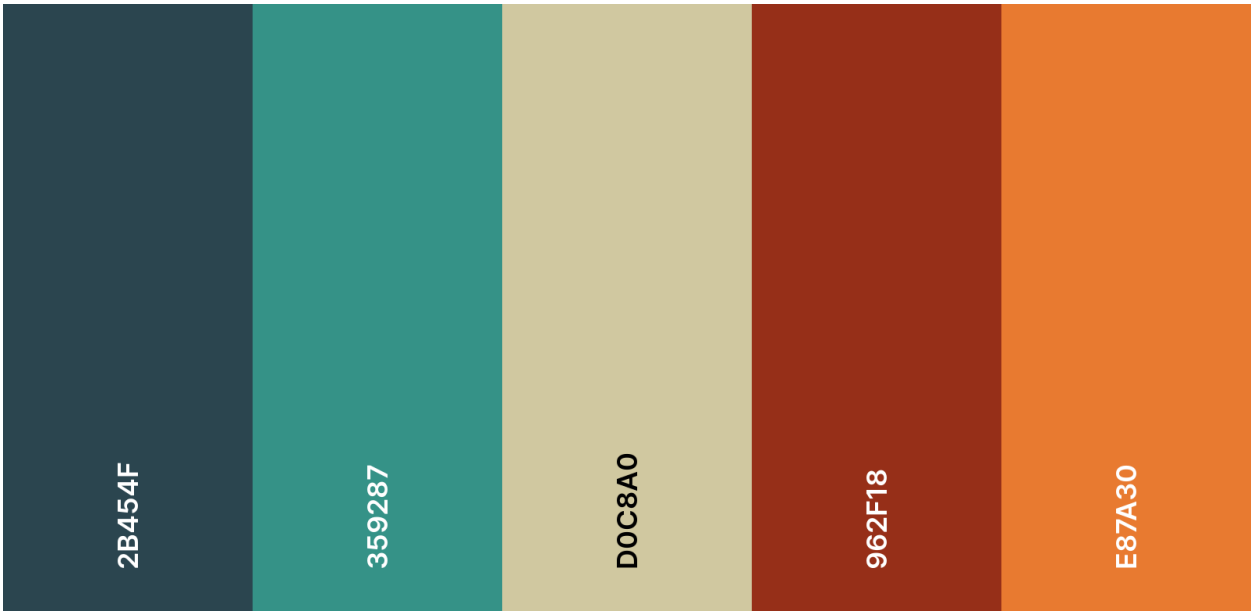
4 Design

4.1 General info

Name	Icyotero
Description	Misfortune breeds blessings

4.2 Colors

The design uses a color palette that is based on the Rwandan flag and a campfire, and can be found in detail here.



4.3 Logo

The following images are the final logo and different iterations. All original images and SVG files are delivered as attachments.

First iteration

Second iteration

Final logo

4.4 FONT

The font used in the design is Roboto – which can be found here.

Thin 100

Almost before we knew it, we had left the ground.

Light 300

Almost before we knew it, we had left the ground.

Regular 400

Almost before we knew it, we had left the ground.

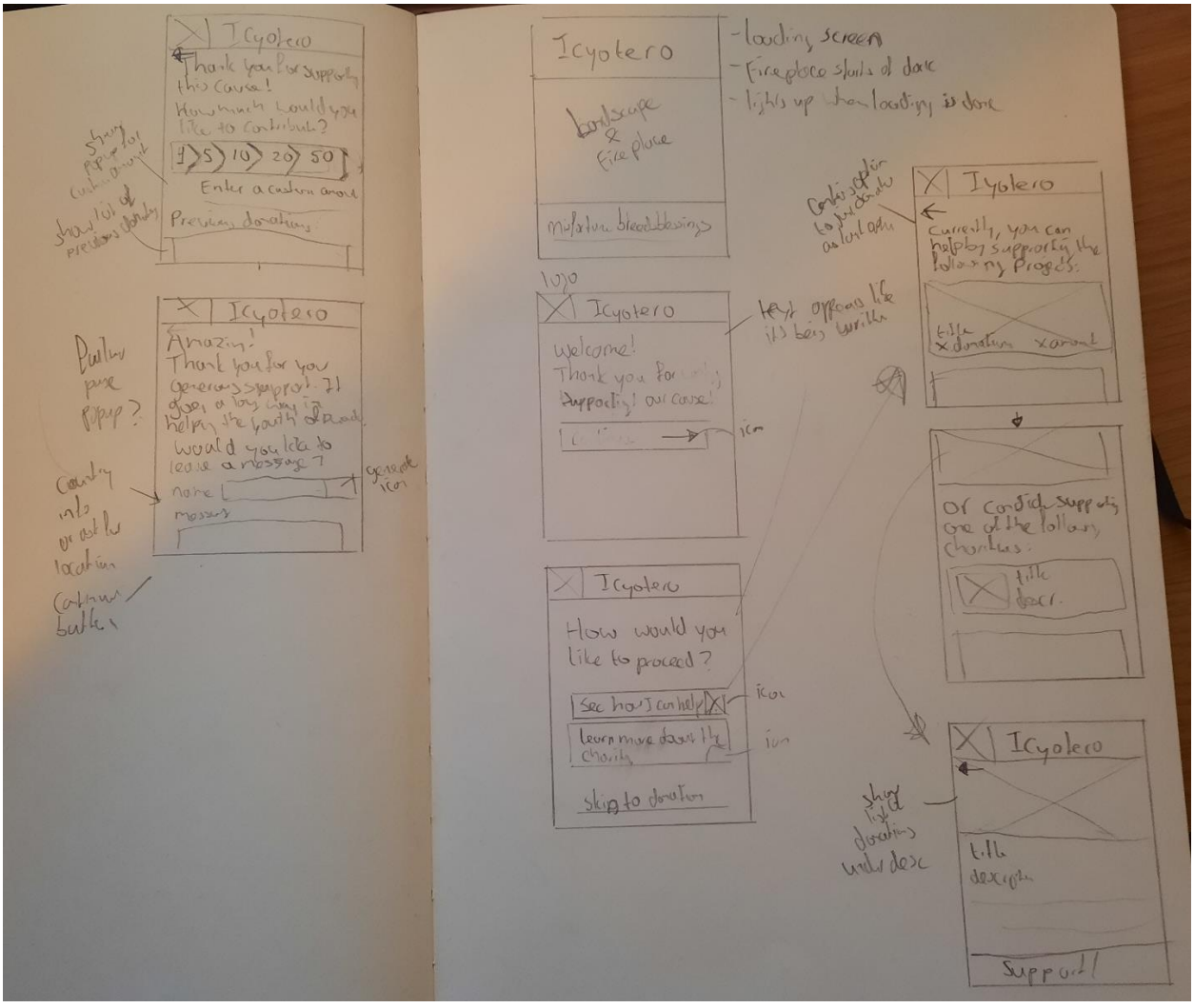
Medium 500

Almost before we knew it, we had left the ground.

Bold 700

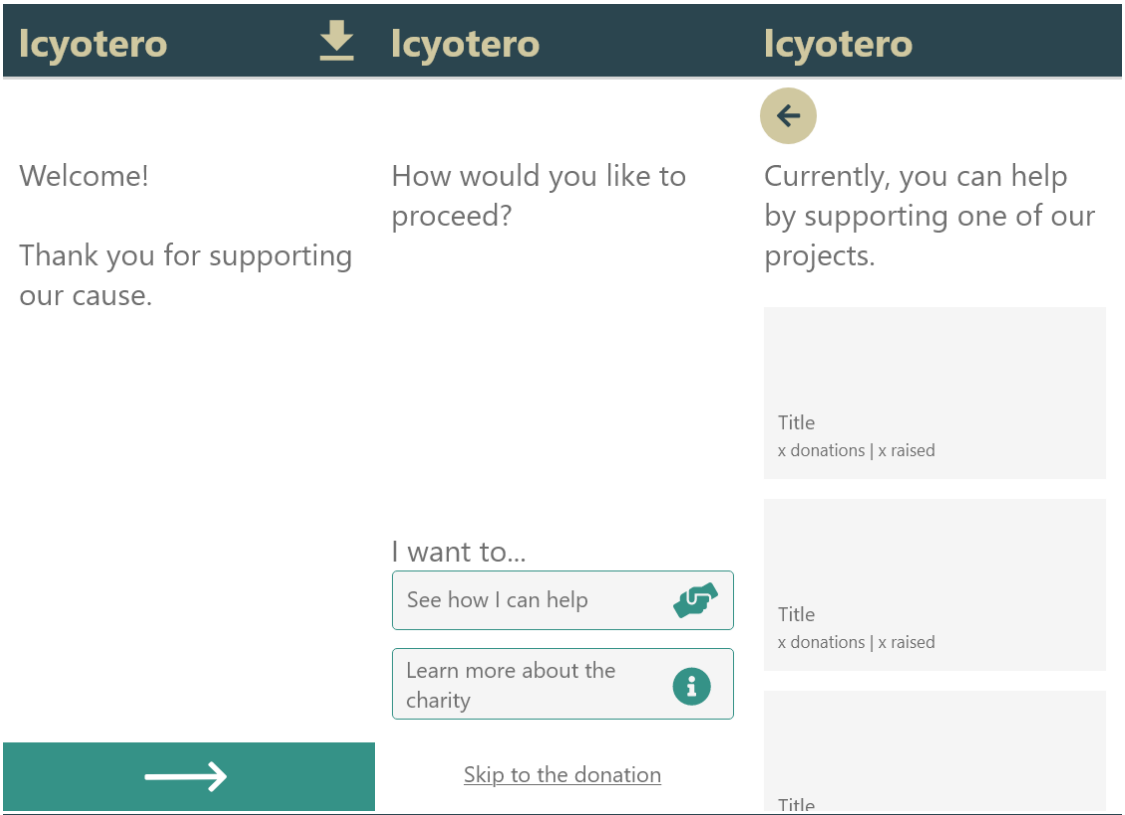
Almost before we knew it, we had left the ground.

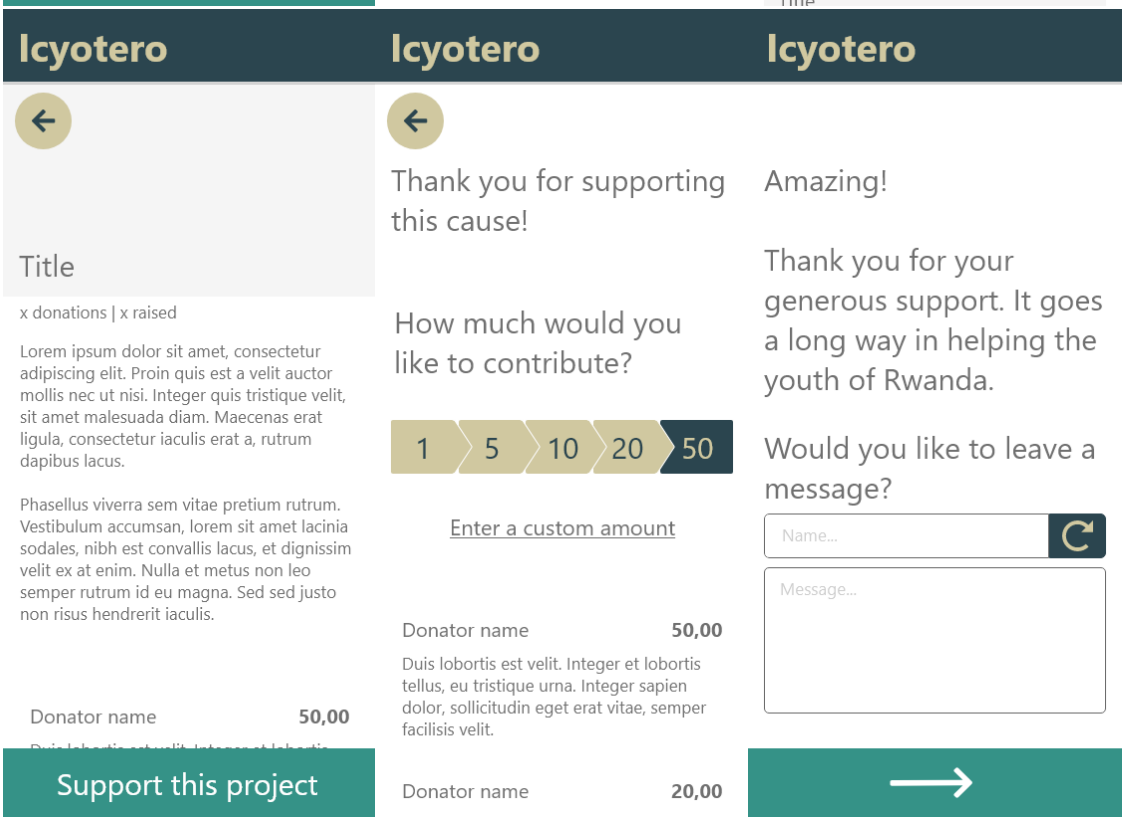
4.5 WIREFRAMES



4.6 PROTOTYPE

This clickable prototype was created in Adobe XD. The full clickable design is delivered as an attachment.





5 IMPLEMENTATION

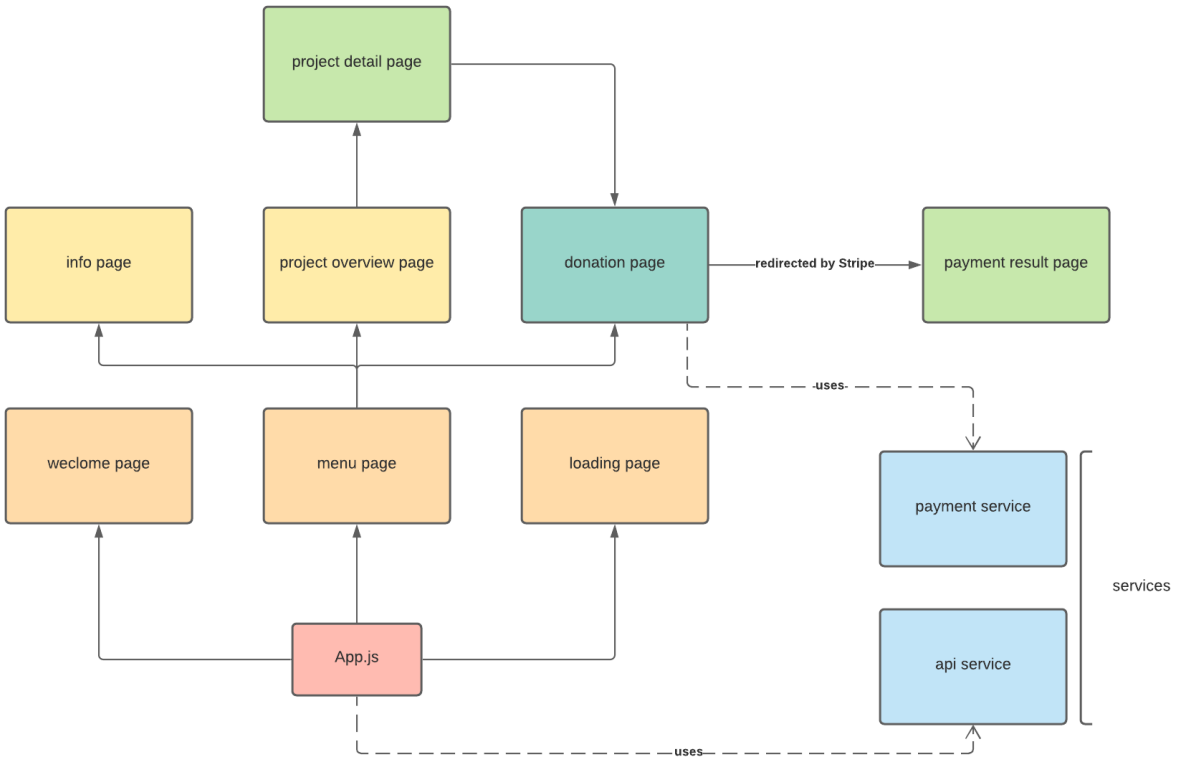
5.1 TECHNOLOGIES

The application is a progressive web app created using React. During development, a mock backend was used created with Spring, which can be found here.

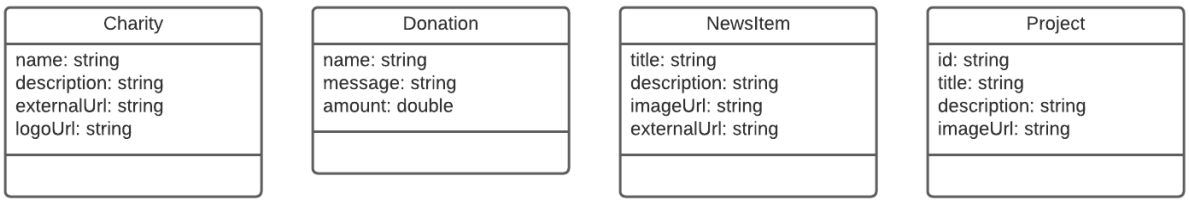
5.2 PROJECT STRUCTURE

The React project follows the following structure:

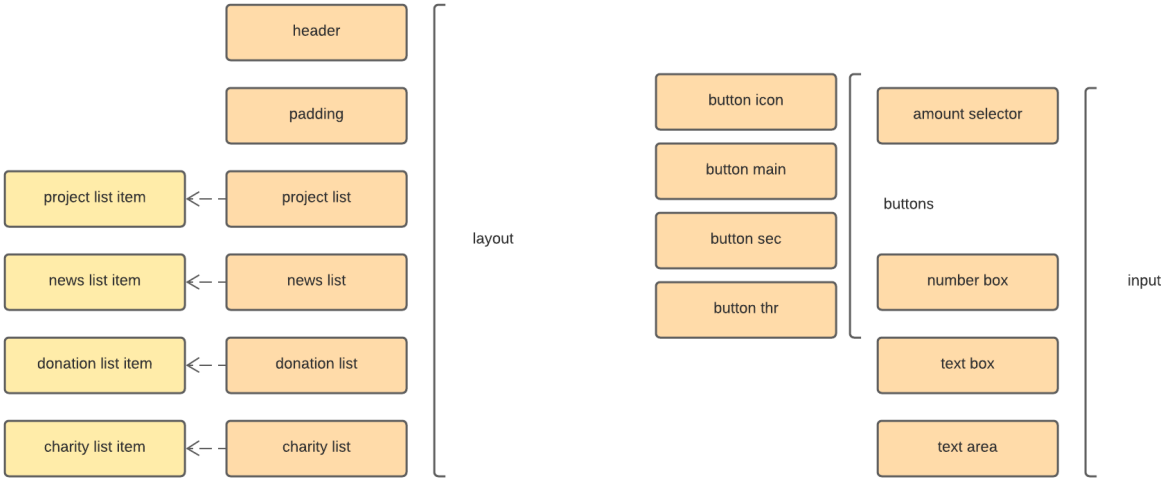
5.2.1 Flow



5.2.2 Models

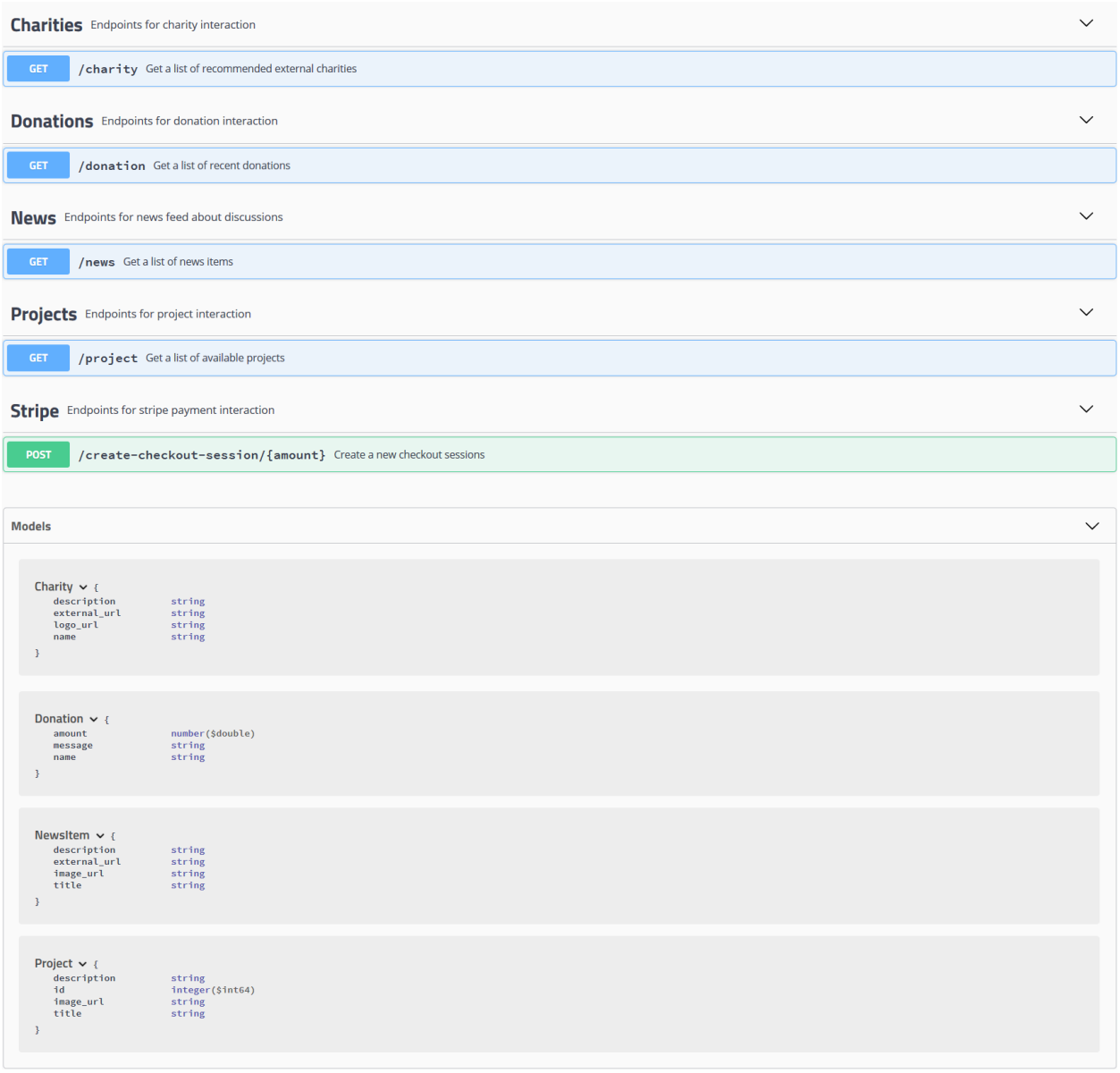


5.2.3 Components



5.3 API DEFINITION

The frontend consumes the following API, which can be viewed in detail in the API document delivered as attachment, or live in the mock backend:



5.4 RESEARCH

Here the research that went into developing the application is defined. Both research reports are delivered as attachments.

5.4.1 Technology choice

When making the decision about which technology to use there were a lot of options since the only requirement was that it should be able to run on android devices. To make sure we picked the right technology we first did research.

The research question was as follows:

> *What is the right front-end technology for this project with regards to the project's requirements, functionalities, the development team's capabilities, and security?*

The research concludes with the choice of creating a progressive web application using React.

The research can be viewed in-detail in the research report here.

5.4.2 Payment methods

Because of the importance of the payment functionality and the short time frame for the project, research was done into implementing payment methods.

The research question was as follows:

> *How can payment methods be implemented in our React application, and how can these functionalities be properly tested?*

The research concluded that because of the short time frame, the importance of the amount of payment methods, and the security aspect of the project we should use Stripe.

The research can be viewed in-detail in the research report here.

5.4.3 Security

Research was done into the security aspects of creating a progressive web application. Unfortunately, due to time constraints this did not come to a usable conclusion.

6 ADVICE

Here advice is given from the development team on where to go from the end of this project.

6.1 IMPLEMENTING THE FRONT-END

6.1.1 Redefining models

Since the backend was not ready yet the front- and backend are not properly synchronized. It is likely that the models that the front-end consumes differ from the models in the backend.

The API calls from the API service in the frontend should be re-implemented to properly convert the production API models to the front-end models.

6.1.2 Front-end properties

The front-end property file should be updated with the production backend data since it used the mock backend data during development.

The properties that must be changed are the server properties, resource endpoints, and the payment endpoint.

6.1.3 Implementing SSL

Since the application is a progressive web application everything must be served over SSL. For development this is not necessary, but for production this must be implemented.

6.2 USER STORIES

During the finalizing of the concept and design a long list of user stories has been inferred from the research, but only a few could be realized in the project's short timeframe.

Here the remaining user stories are defined:

ID	Actor	Definition
US5	PO	As the actor I want prospective donors to be able to create a project with a goal that can be shared and reached with friends, so the charity gets more exposure. I want the project to show the creator and donations towards reaching the goal, so the social pressure and public recognition motivates friends to also donate and increase the amount donated. The goal of the created project must be chosen from a list of suggestions provided by the organization.
US7	PO	As the actor I want prospective donors to have insight in the total number of donations during the donation process (once a certain threshold of number of donations has been reached), so this will validate the charity and provide social pressure to donate. A threshold is set so this will not work counterproductive, and the specific number will be provided later.
US8	PO	As the actor I want the donation information provided to the prospective donors to also show the donor's country, so the donors are more relatable, and competitiveness is instilled.
US10	PO	As the actor I want prospective donors to have insight in the minimum and maximum donation amount (over a certain period decided at a later time) during

		the donation process, so selective recognition and social pressure will motivate them to increase the amount donated. The shaming aspect of this should not be too obvious.
US11	PO	As the actor I want generated generic names for anonymous donors, so prospective donors can easily relate to these donors. For example, google drives anonymous readers.
US12	Donor	As the actor I want to customize the goal of my created project, so the project is more personal and impactful.
US14	PO	As the actor I want to provide prospective donors with a profile of people who were helped by the charity, so the donors can better identify with the people they are helping and they are more motivated to donate or increase the amount donated, and to make their donation more impactful. I want the profiles to be positive and include a picture, to emphasize this effect, so that the emotions that it evokes will be positive.
US16	PO	As the actor I want donors to have the ability to pledge another donation for a certain amount in the future, so the burden of donating is removed until after the pledge has already been made. Donors should only be given this option after they have already donated or decided not to donate to prevent procrastination.
US17	PO	As the actor I want donors to be sent a reminder asking for support, so the barrier of reminding to donate is removed. I want the requests to contain information about what has been achieved with their previous donation, so they are reminded of their previous donation and inclined to continuously support the charity.
US18	PO	As the actor I want donors to be able to opt-in for a weekly draw where the donation with their message is prominently advertised as donation of the week, so donors are incentivized to recurrently donate and to set the bar for other prospective donors.
US20	PO	As the actor I want project goals to be formulated very concretely, so prospective donors are more inclined to donate.
US23	PO	I want the projects to show the progress towards reaching the goal with the number and amount of the donations and a list of donations made, so the social pressure and public recognition motivates prospective donors to donate and increase the amount donated and the progress proves the validity.

6.3 SECURITY

Unfortunately, there was not enough time during the project to properly research the security aspect of the application. Since the application does not save any personal data, uses Stripe to handle payments, must be served over HTTPS, and is created using React the application is secure, but since we could not do enough research into this aspect, we cannot guarantee this.

It is advised to look into this aspect of the application again.