

# Design document application

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## Introduction

We made this design document to explain our design choices and to make it easier for the people who work in the project after us to understand our reasoning behind certain ideas.

## Context

A lot of healthcare workers choose to no longer work inside hospitals and healthcare institutions. This results in a shortage of healthcare workers and an increase in waiting lists and care that cannot be performed. To try to mitigate this problem, the *Samen aan Z* project wants us to design and build an application to get healthcare workers to fill in surveys that ask them what they think about their work. This research will be used to improve the working conditions of said healthcare workers.

A big part of the development of our application is the fact that the workers tend to not finish all of the surveys that they are supposed to fill in. They start very enthusiastically, but during the course of the project more and more workers forget to fill in the surveys. One of the goals of our application is to get the healthcare workers to continue filling in the surveys for the entire run of the project in their department, either by adding features to the application or by giving advice on how to implement the application better in their work environment.

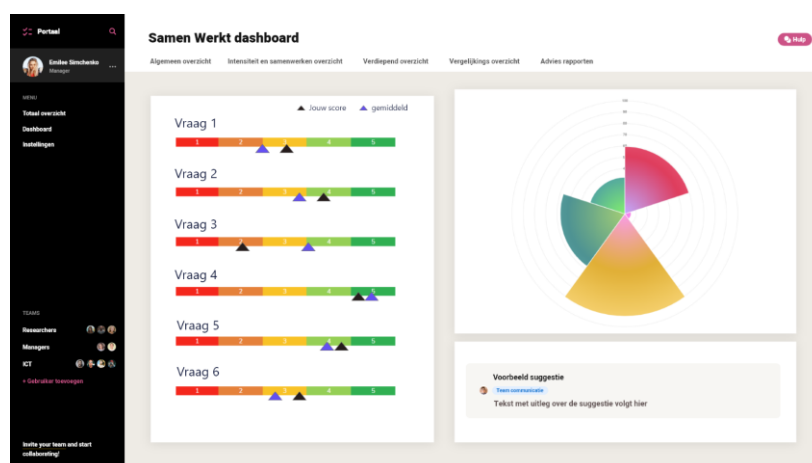
## Main goals

To reiterate, the main goals of our application are:

- Making an application where users can fill in surveys.
- Making the application compatible with the devices that our users use most.
- Searching for ways to increase the number of surveys filled in by users.

## Starting point

While we developed the application from nothing, we did have a starting point in the application designed by Steven. He sent us an Adobe XD file with the proposed design for the *Samen aan Z* desktop application: a dashboard where the users can only fill in the surveys. The design uses the colors from the municipality of Antwerp in their design, as they are developing the dashboard primarily for them.



(t Klooster, 2023)

Before we started developing the application, we as a group discussed what quality criteria would be important to define for our application. These criteria are the most important points to keep in mind during the entire development process.

- We will use the Roboto font.
- We use light colours to keep the app uniform.
- Have the important pages be available via a navigation bar.
- Make the reward system optional to visit for the user.
- Keep the things that are not related to the surveys focussed to the reward system and limit it on the other pages.
- The application has to be multiplatform (iOS/Android and Windows/Mac).
- The main reference for the mobile development is a Samsung Galaxy S23 Ultra. For viewing on desktop, this means we have to select the Samsung Galaxy S20 Ultra. The S20 Ultra and the S23 Ultra have the same screen size and aspect ratio, so they're comparable to each other.

## Mobile and desktop

We made two different versions of the application, one for mobile and one for desktop. There are two different versions of the application, because we want to make the surveys easy to fill in. We don't know if all the healthcare workers have access to a laptop during their work time or after work, but it's likely that almost all the workers have access to a mobile device.

With a mobile application we also make it possible for the workers to fill out the surveys during their downtime, since it's a lot easier to go on your phone and open an app than having to take out your laptop and fill them out there.

We do want to make sure that we have a desktop version, so that it's easier to see your results. The results can be more elaborated on in a desktop version, since there is more space to explain everything.

We developed the application as a progressive web app (PWA), as the Samen aan Z development team is already working on a desktop PWA. This way we can use the library (SurveyJS) that they are going to use. An additional benefit is that the PWA works on all platforms with a web browser (so we don't have to develop a separate iOS and Android application for example).

## Reward system

Robin and Tessa wanted to implement a reward system in the application so that we could keep the healthcare workers motivated to fill out the surveys. We thought that a collecting system would potentially work. We wanted to give people pleasure, knowledge and a sense of recognition (Cooper, 2023) with the collecting.

We made a badge collecting system in the form of a garden where you collect plants. We wanted to make it a garden, because we ourselves like the garden and collecting plants.

### Flower icon pack

To build the garden, Tessa and Robin wanted a background and a few plants as the foreground. These plants should not be part of the background image, as they get added based on the number of surveys the user has filled in (the page has to be dynamic).

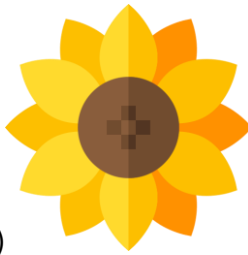
Robin searched for a pack of flower icons by googling 'flower icon pack' and found the following website with several icons of flowers that we used during development.

We used three flowers from this page: a rose (two images), a lavender (two images) and a sunflower (two images). The credits are in a text file inside of the application, so that the creators can be

credited in case the application is implemented. Most of the images are made by the same designer to uphold consistency in the application. For the icons that are designed by someone else, Robin made sure that the icons are in the same style as the rest of the icon pack.



(Freepik, n.d.)



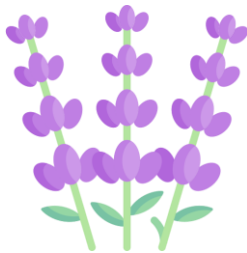
(Freepik, n.d.)



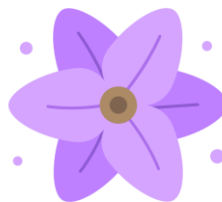
(Adi\_sena, n.d.)



(Flat Icons, n.d.)



(Freepik, n.d.)



(Kroffle, n.d.)

Each flower will have two different icons. The icon for the 'add flower' screens is a zoomed in icon of the flower, while the 'garden' screen needs an icon of the planted flower. I chose to have two different icons because I really liked the more zoomed in images, as they show a beautiful illustration of the plant. But as we are building a garden, I cannot use these images in the garden screen (as they aren't planted plants). While these double icons aren't needed, I do personally really like them. And we can always make the choice to only use one icon later, if it turns out that these double icons create a problem (either during development or because not all plants have a zoomed in icon).

## Background

Tessa and Robin wanted to give the garden some feeling for when you plant a flower, so we wanted to give it a garden background. Tessa first wanted to have a more colourful and comic background. So she searched for a background by googling 'garden drawing'. There she found an empty garden that could function as the garden.



(BNP Design Studio, n.d.)

Tessa wanted to know how to add a separate background for an individual page, so Robin showed her how to add a separate style in a page with a background. This resulted in the following code:

```
<style>
  body {
    background-image: url('/images/garden.jpg');
  }
</style>
```

We (Tessa and Robin) then worked together to get the background to fill the entire screen only once, as the current code would have a second image added to the bottom of the screen. We tried several solutions, as shown here:



```
<style>
  body {
    background-image: url('/images/garden.jpg') ;
    background-size: cover;
  }
</style>
```

```

</html>

<style>
  body {
    background-image: url('/images/garden.jpg') ;
    background-size: contain;
  }
</style>

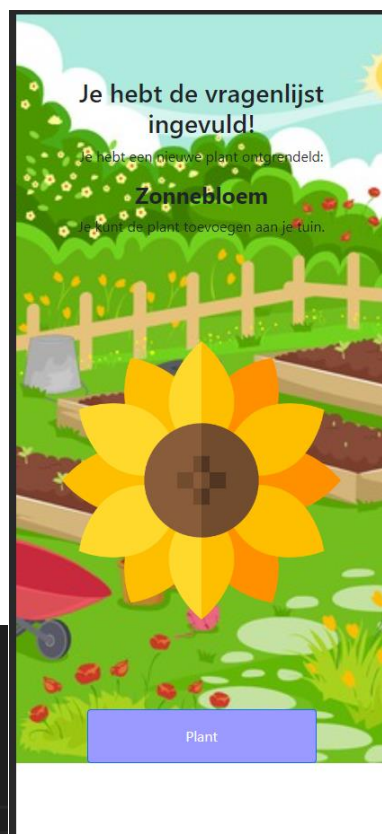
```



```

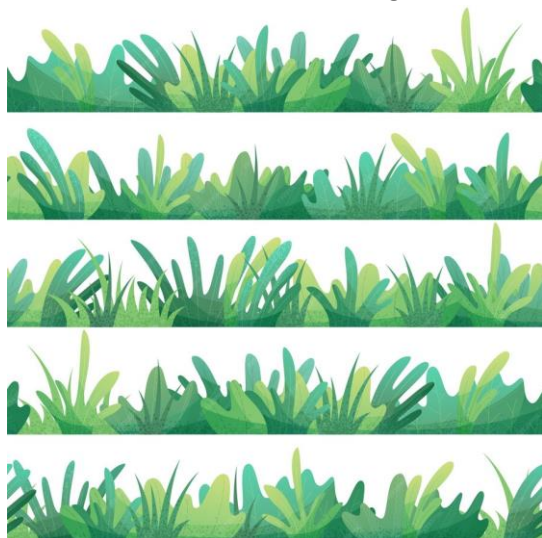
<style>
  body {
    background-image: url('/images/garden.jpg') ;
    background-size: cover;
    background-repeat: no-repeat;
  }
</style>

```





During the testing of how to put in the background Tessa came to the conclusion that the background wasn't easy to use in terms of coding and she also found it a bit too childlike for a hospital application. So she searched for a different background by googling 'empty garden drawing for mobile'. There she found an image on IStock that repeated itself and had rows of plants.



(Maljuk, 2019)

This image is easy to use, since if you place it twice in a row the image becomes a bigger version of itself without it appearing like there are two images, the other nice thing about it is that it has the same spacing between the rows. This makes it easier to code the plants appearing in the correct spot.

### Facts

During the creative process of the garden, Robin and Tessa figured out that while the garden is a fun idea, it's very static and doesn't add that much on its own. There wasn't much reason to go to the



garden screen, other than to see the plants. We would like to make this screen a bit more interactive and to create another reason for users to go to the screen.

### Roos

Wist je dat **rozen in Nederland bekend zijn vanaf de zestiende eeuw**. Toen werden rozen vooral geteeld in formele paleistuinen. In 1829 bestonden er al 2562 verschillende soorten rozen. Maar mogelijk is de teelt van rozen al zo'n 5000 jaar geleden in de buurt van de Indus-vallei of in China voor het eerst ontstaan (Surprose, n.d.).

### Zonnebloem

**De bloemknoppen en jonge bloemen draaien langzaam mee met de zon als deze zich verplaatst van oost naar west**. De zonnebloem bloeit op grote hoogte. Sommige soorten kunnen wel 3 meter hoog worden. De meesten groeien echter tot 1,5 tot 2,5 meter (Fleurop, n.d.).

### Lavendel

Lavendel wordt door veel mensen gezien als medicinaal middel. Het zou kalmerend zijn voor de zenuwen en het zou de geest in balans brengen. Tip: leg een takje lavendel naast je kussen in bed. Geeft een rustig gevoel én een fijn geurtje! Je treft het zo nu en dan ook in Franse hotels aan (Langenberg, n.d.).

### Inspiration

The inspiration for the 'Did you know?' section was an old video game developed for the Postbank, a bank that Robin and Tessa used to have their bank accounts with when they were little.



'Blue World' is an educational video game that helps children learn how to handle money. The game has a digital version of the Euro, and each player gets a digital bank card that can be used to earn and spend money. The game also had an

The 'Wist je dat?' section in the game can be found in the ATM machines. You can click a button to get facts about money, to make kids learn some facts about such subjects. This is a fun addition to make the garden a bit more interactive and make the plants more than just still images.

### Pop-up box

Tessa wanted the fact to be visible in a pop-up box. This way you don't break the immersion of the garden system when you want to read a fact about the flower. However due to time constraints the first version was in a different page, also because the Z-index didn't want to cooperate. This was solved by the help from Matias. Tessa made the pop-up box green, to keep the nature theme.





## Milestones

After a feedback session with our teachers Tessa made the plants have milestones as well. These milestones refer to the surveys and their results. This way the healthcare workers can check back on what's been done with the results and what they have helped achieve. This would hopefully motivate the worker to fill out more surveys, since they would then be able to see the actions that have come forth from the data of the surveys.



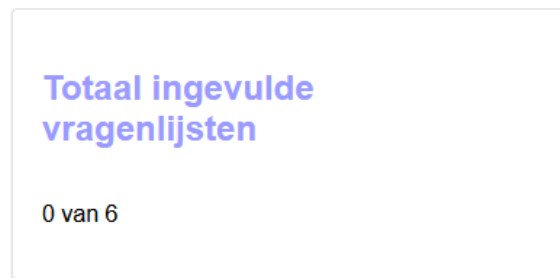
## Survey counter

Robin developed a way for the application to count the number of surveys filled in. The code will create this integer in local storage, and it can increase by adding a piece of code to the survey-finished page. The number can be accessed from anywhere in the app.

The main point of this piece of code is to make it possible to add new rewards based on the number of surveys that the user has finished. The code can also be used for an overview screen where the user can see the number of completed surveys.

In the current version of the application, only the survey counter has been implemented. Because we're testing the rewards system with users, we haven't implemented the code into the rewards

system, as we want to make sure that the user sees the rewards immediately. The code can be added to the rewards system in a later iteration of the project.



## SurveyJS

The project is already using SurveyJS for the surveys, so Robin and Tessa made the two survey pages also with it. They made two different versions of the surveys, so that we could test both versions and see which one would work best for the user. Robin made a one-page version with numbers before the questions and numbers as answers (as per the original questionnaire), and a counter at the top that shows how many questions the user has answered.

### Vragenlijst 2

Kan u de volgende vragen beantwoorden met betrekking tot het online platform van Samen aan Z?



Geantwoord 0/10 vragen

1. Ik denk dat ik dit systeem vaak zou willen gebruiken. \*

1 = Helemaal niet akkoord / 5 = Helemaal akkoord

2. Ik vind het systeem onnodig ingewikkeld. \*

1 = Helemaal niet akkoord / 5 = Helemaal akkoord

3. Ik vind het systeem gemakkelijk te gebruiken. \*

1 = Helemaal niet akkoord / 5 = Helemaal akkoord

4. Ik denk dat ik de hulp van een expert

HOME SURVEYS RESULTS REWARDS SUPPORT

Tessa made the survey with 4 pages, with 3 questions on each page. At the top the user could see how far they were with the parts. She also didn't add any numbering to the questions. The Likert scale was done via the use of smileys to test if the user wanted a more visual thing than just the numbers. The smileys also have a colour corresponding to if you agree with the sentence the smiley is green and if you disagree with the sentence the smiley is red.

# Half jaarlijkse survey 1

Dit is het eerste deel van de halfjaarlijkse survey

Pagina 1 van 4

## 1. Betekenis:

Het werk dat ik doe is erg belangrijk voor me \*

Links = zeer mee oneens / Rechts = zeer mee eens



Mijn werk is voor mij persoonlijk zinvol \*

Links = zeer mee oneens / Rechts = zeer mee eens



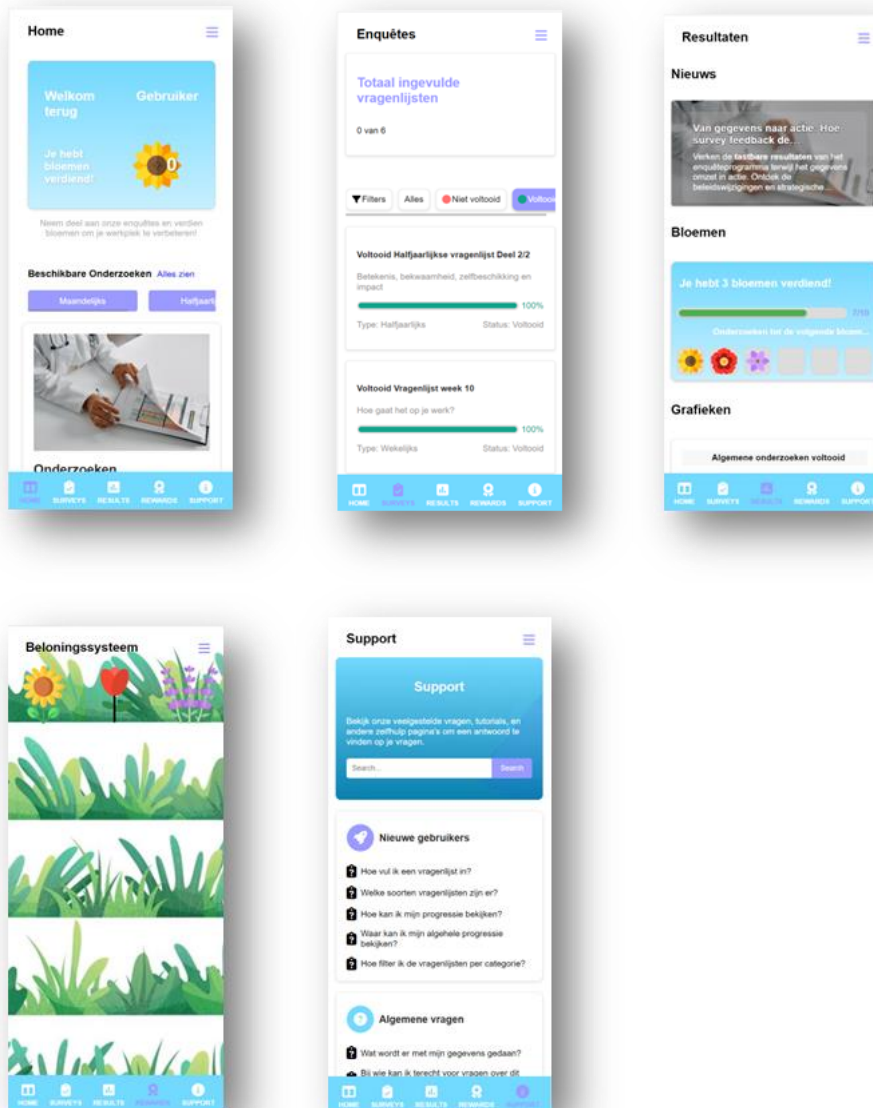
Het werk dat ik doe is zinvol voor mij \*

Links = zeer mee oneens / Rechts = zeer mee eens



Volgende

## Final Product-Mobile Version

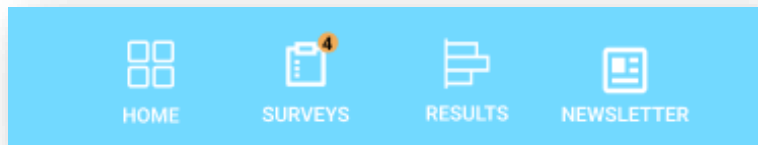


After many discussions with people involved in the project, we decided to make some small but important changes to our mobile dashboard. We took their feedback into consideration and implemented them to improve the dashboard.

As we worked on it, we made slight changes to the code, making sure the dashboard not just looks good but also good in how it functions and works. We did this by paying close attention to the feedback and some trial and error.

### Button Placement on Mobile Dashboard

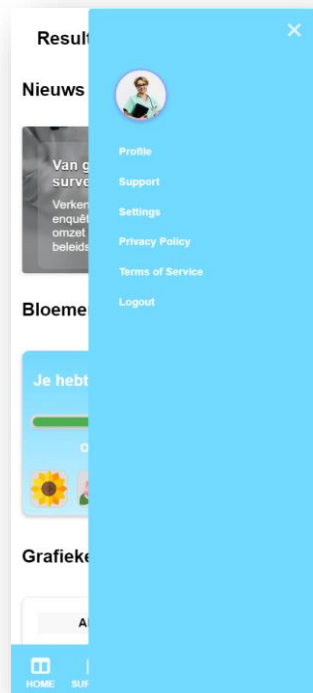
During our coding phase there were some design changes, like the button placement and design for our final prototype. When making these changes there were things to keep in mind such as accessibility, the user flow, its visibility, and consistency.



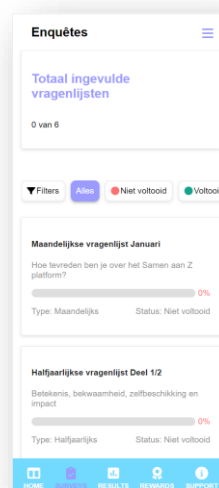
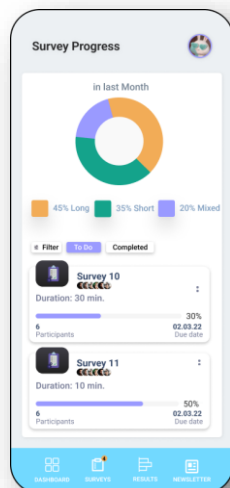
We decided to change the icons by using premade icons from FontAwesome due to time constraints and to have it more responsive. Another key change we made is adding the rewards button and replacing the newsletters button with the support button. The reason behind this was that the newsletters could be implemented on the results pages rather than having a button to direct the users to the actual news page.



Another change we made was that we decided to implement a Burger menu instead of having the circular profile icon. We made this decision because it felt more of a better intuitive/ standardized design and implement the profile icon in the dropdown menu.



The filter section which was made for the surveys page also was changed. We improved the design and added an extra filtering option to view all the surveys which were not done in the prototype.



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