

# Skatrixx Kick off

Date and location: 6-12-2021, 14:00. TQ4-1

Client Contact: Raymund ten Broek

Client organization: Urban Sports Performance Centre (USPC)

## Briefing

The presentation from Raymund was short, but full of information. He explained to us what his organization was, what his new prototype was, how it worked and how previous students have already worked on the skateboard. For instance, the data was already being collected, there was already a lot of research available and there was already a clickable prototype. This left the imagination to us.

## Debriefing

- The board uses Arduino sensors and usb to send data
- There is research available to us
- There is already a XD prototype, and a clickable prototype
- The board is available to use, and modify
- The source code for the Arduino and data is available to us
- It is not expected from us to complete the trick recognition
- We have data for different tricks, that are stored in excel files

## Assignment

So what do we need to do? We need to create *something* (could be an app, didn't have to be) that uses the data from the board, and create an experience. Could be a game, could be data visualization, could be something else.

## Time frame

We have 4 weeks to think of, and develop something. This is from **6-12-2021** until **21-1-2022**.

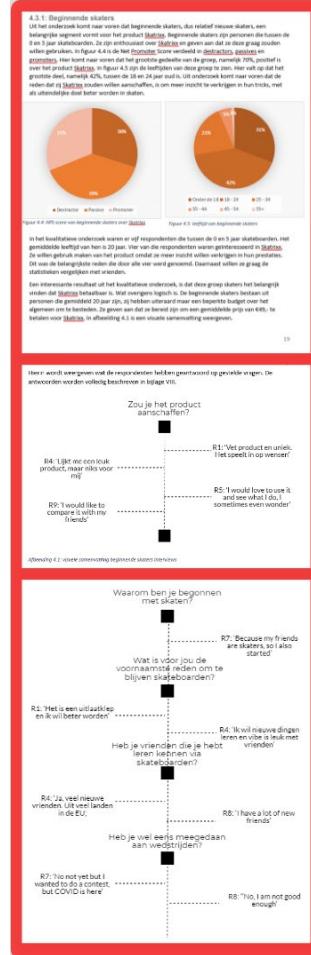
# Research report

## Research

We started the project by doing research on the topic and the focus group. We found the following:

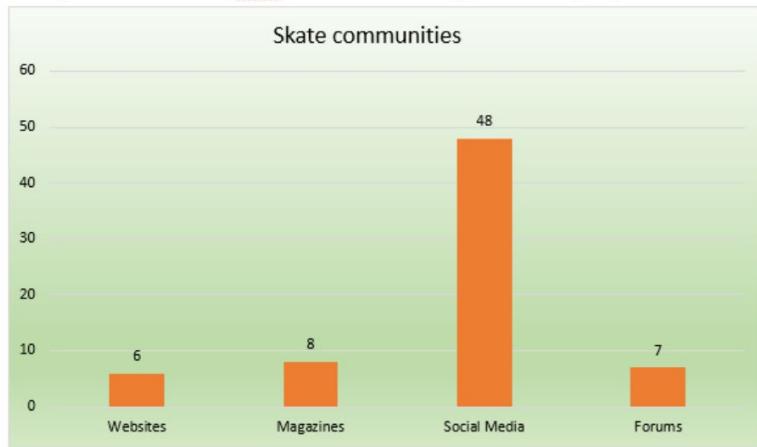
### Beginners

#### When and why, they started skating | Communication tool



#### 4.5.3: Onderzoeksresultaten beginnende skaters

In figuur 4.39 wordt weergeven via welke communicatiemiddelen beginnende skaters aangesloten zijn bij skate communities. Het grootste gedeelte gebruikt social media. In figuur 4.40 wordt weergeven op wat voor manier beginnende skaters op de hoogte blijven van skate nieuws en trends. Hierbij komt naar voren dat social media veruit de belangrijkste bron is (48%).



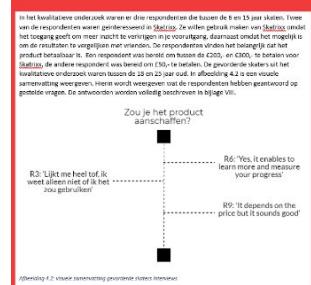
Figuur 4.39: gebruikte communicatiemiddelen om aan te sluiten bij een community door beginnende skaters



Figuur 4.40: op wat voor manier beginnende skaters op de hoogte blijven omrent trends

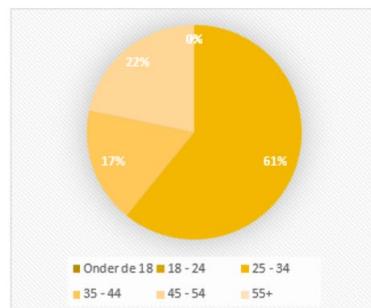
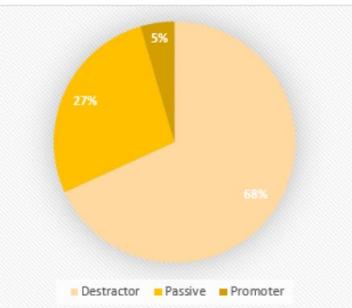
## Advanced skaters

### Age, interests and hobbies



### Erfaren skaters

Erfaren skaters zijn personen die meer dan 15 jaar skateboarden. In figuur 4.8 is de Net Promoter Score verdeeld over deelnemers, passives en promooters. Hier komt naar voren dat het grootste gedeelte, namelijk 68%, negatief is over het product Skatrixx. In figuur 4.9 zijn de leeftijden weergegeven van ervaren skaters. Hier valt op dat het grootste gedeelte, namelijk 61%, tussen de 25 en 34 jaar oud is.



In het kwalitatieve onderzoek was er één respondent die langer dan 15 jaar skate. Deze respondent was niet bereid om Skatrixx aan te schaffen. De reden dat de respondent Skatrixx niet wou was omdat hij het niet nodig had. In afbeelding 4.3 is een visuele samenvatting weergegeven. Hierin wordt weergegeven wat de respondenten hebben geantwoord op gestelde vragen. De antwoorden worden volledig beschreven in bijlage VIII.



## All skaters

## Occupation & most favored social media

	<b>Beginnende skaters</b>	<b>Gevorderde skaters</b>	<b>Ervaren skaters</b>
<b>Situatie</b>	1. Werk – fulltime (36%) 2. Student (36%) 3. Student – bijbaan (19%)	1. Werk – fulltime (48%) 2. Geen werk én student (16%) 3. Student - bijbaan én Werk – parttime (10%)	1. Werk – fulltime (70%) 2. Student (15%) 3. Werk – parttime (10%)
<b>Aantal uren skaten per week</b>	1. 3 – 6 uur (23%) 2. 10 – 12 uur (22%) 3. 0 - 2 uur én 7 – 9 uur (21%)	1. 3 – 6 uur (41%) 2. 7 – 9 uur (21%) 3. 16+ uur (14%)	1. 3 – 6 uur (32%) 2. 7 – 9 uur (24%) 3. 0 – 2 uur (16%)
<b>Favoriete skateplek</b>	1. Op straat (46%) 2. Outdoor skatepark (43%) 3. Indoor skatepark (9%)	1. Op straat (41%) 2. Outdoor skatepark (38%) 3. Anders, namelijk (12%)	1. Outdoor skatepark (67%) 2. Op straat (20%) 3. Indoor skatepark (6%)
<b>Hobby's naast het skaten</b>	1. Gamen (13x) 2. Muziek maken (11x) 3. Kunst én fitness (7x)	1. Kunst (18%) 2. Muziek maken én gamen (14%) 3. Filmmaking (11%)	1. Muziek maken (17%) 2. Muziek (18%) 3. Gamen, kunst én graphic design (12%)
<b>Muziek die ze luisteren</b>	1. Hip Hop/Rap (23%) 2. Pop, R&B én Alternatice (14%) 3. Drum & Bass (11%)	1. Hip Hop/Rap (26%) 2. Alternative (19%) 3. Pop (15%)	1. Hip Hop/Rap (26%) 2. Alternative (15%) 3. R&B, Dance, Pop, Drum & Bass (11%)
<b>Social media platforms die ze gebruiken</b>	1. Instagram (34%) 2. Reddit (20%) 3. Snapchat (16%)	1. Instagram (41%) 2. Facebook (19%) 3. Snapchat (15%)	1. Instagram (44%) 2. Facebook (21%) 3. Reddit (17%)

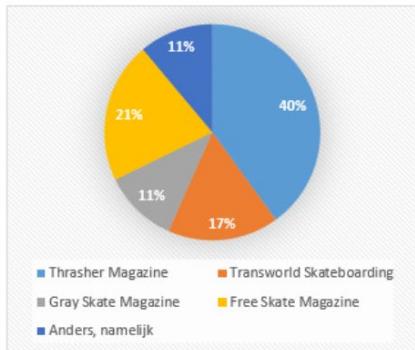
## Influencers and most viewed skate magazine

### 4.6: Deelvraag 6

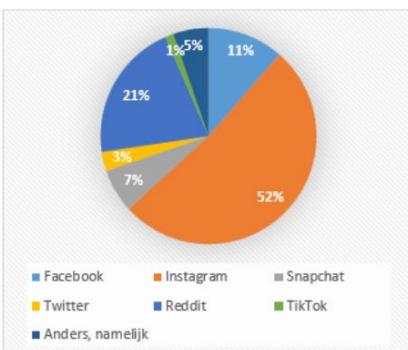
Deelvraag 6 luidt als volgt: *Met welke marketingcommunicatie instrumenten kan de potentiële doelgroep het beste bereikt worden?* Om deze deelvraag te beantwoorden is gebruik gemaakt van deskresearch, kwalitatief- en kwantitatief onderzoek.

#### 4.6.1: Onderzoeksresultaten hele populatie

In figuur 4.45 is weergegeven van welke magazines skaters gebruik maken. Hierbij valt op dat een groot deel van de skateboarders het liefst gebruik maken van Thrasher Magazine, namelijk 40%. Free Skate Magazine volgt met 21% en Transworld Skateboarding met 17%. Figuur 4.46 laat zien van welke kanalen skaters gebruik maken om op de hoogte te blijven van skateboarding trends. Hierbij valt op dat een groot deel van de potentiële doelgroep gebruik maakt van Instagram (52%). Reddit volgt met 21%.

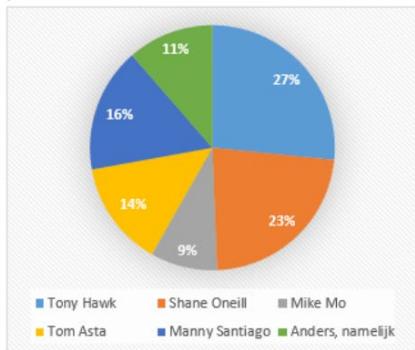


Figuur 4.45: magazijnen waar skaters gebruik van maken

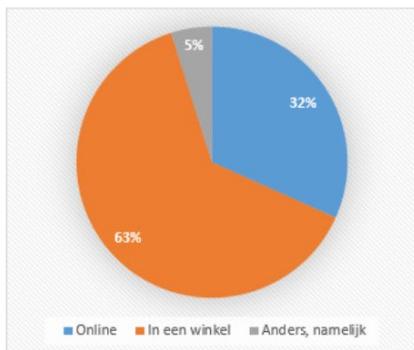


Figuur 4.46: kanalen die gebruikt worden voor skateboard trends

In figuur 4.47 wordt weergegeven welke influencers de skaters volgen. Hier komt naar voren dat Tony Hawk (27%) en Shane O'Neill (23%) het populairst zijn. Manny Santiago en Tom Asta volgen met 16% en 14%. Figuur 4.48 laat zien waar skaters het liefst producten voor hun skateboard aanschaffen. Hierbij gaat het om producten zoals trucks, wielen, decks en griptape. Hier valt op dat skaters het liefst producten aanschaffen in een winkel (63%). 32% van de respondenten schaft het liefst producten online aan.



Figuur 4.47: influencers die door skaters gevolgd worden



Figuur 4.48: favoriete aanschafmethode skateproducten

4.6

## How did we use this information?

Thanks to this research we were able to find out at what age our focus group started skating, what their preferences are, what they do beside skating (their occupation), their communication tool, their favored social media & influencer and more.

## Persona

**PERSONA**

**User**  
Danny de Groot

**Basic info**  
Nationality: NL  
Income: \$50.- (duo)  
Education: MBO Niveau 3  
Age: 16-26  
Place of residence: Eindhoven  
Relationship: None  
Children: No

**Quote**  
"Met een skateboard is iedereen gelijk"

**Hobbies**  
Skateboarding  
Music / Creating music  
Videogames

**Goals**  
- Getting better at skating  
- Landing better tricks  
- Visiting more skatespots around the world

**Characteristics**  
Extrovert  
Intelligent  
Budget voor activiteiten

**Biography**  
Daan is a regular student that loves to skate. He skates almost everyday with his friends. He likes to socialize with other skaters and play games of skate. When he isn't skating you can find him online playing videogames. He travels a lot to find new skating spots for him and his friends. (beginner/novice)

**Opinion about skating**  
I really like going skating with my friends, it's not only a nice activity but it's a way to connect with my friends. I would call myself a beginner skater, maybe a novice. When I go out skating, I don't want people to interrupt me, this could be kids that are skating everywhere, but also people complaining that we are skating in a certain spot. I would like to get better at skating, but I don't really know what I'm doing wrong. I think I just need to keep on practicing until I get better at it.

**Brands**  
Vans Off the Wall  
Dovee for Me.  
Spotify  
Snapchat  
Instagram  
Apple  
Thrasher

With all that information we were able to create a realistic persona. His hobbies, interests and occupation are all based on our research. Danny is made to look like a average skater boy that does and likes the same thing the modern skaters (our focus group) also likes.

## Empathy map

<b>Says</b>	<b>Thinks</b>
<ul style="list-style-type: none"> <li>- Do you have time to go skating?</li> <li>- I landed that kick flip yesterday!</li> <li>- When do you get your new board?</li> <li>- Listen, I made this new beat.</li> <li>- Did you hear the new Travis Scott song?</li> <li>- Can you pass me a cigarette?</li> </ul>	<ul style="list-style-type: none"> <li>- I want to go skating</li> <li>- Why is school taking so long</li> <li>- I need some more money because my board broke</li> </ul>
<b>Does</b>	<b>Feels</b>
<ul style="list-style-type: none"> <li>- Skateboarding</li> <li>- Socializing</li> <li>- Hanging out/ Chilling</li> </ul>	<ul style="list-style-type: none"> <li>- Bored</li> <li>- Feels not challenged</li> <li>- Feels annoyed when there are no friends around.</li> <li>- Feels excited completing a trick</li> <li>- Feels hyped when friends succeed</li> </ul>

We empathized with Danny by using our research. We wanted to know what someone like Danny would say, think, do and feel. We could answer all these questions with the research we did. We did enough research to understand Danny's character as if he was a real person. We wanted to make sure that by emphasizing with him, that we would be able to understand our focus group.

In order to come up with a concept we had to visualize and understand the wants and needs of our focus group.

## Gamification

(Market research report)

There are a number of trends and developments in the skateboard market. An important development is that skateboarding will become an Olympic sport. This makes skateboarding a step further towards an organized sport. The result of this is that there will be more facilities and more room for the development of innovative resources. In addition, it appears that skateboarding is becoming increasingly popular. The number of skate parks is increasing and more and more skate games are being released. Also, the COVID-19 pandemic has had a positive effect on the popularity of skateboarding. Another trend is that more and more companies want to make people move smarter, more effectively and more sustainably. They want to do this by connecting sports with data. With the emergence of various technological means, more and more people will want to measure and share information about their performance and health.

Games will also be used to make sports and exercise more attractive and personal. These can be various mini-games or certain objectives to be achieved. Because athletes are increasingly tracking their performance and health, more data is being released that contribute to knowledge about exercise behavior (Kennisbank Sport&Beweeg, 2017). The increasing importance of social media and the various apps makes it easier for more and more people to make agreements to exercise with each other, to compare each other's performance, to share different sports locations and routes and the like (Gooisemeren, 2021).

## Design

(Library research report)

Seeing all the different websites that are centered around skating and target the skater audience. You can see they get a lot of inspiration from websites stemming from the early era of the internet around 2010. Brands like thrashers krooked santacruz et call use this old school website style but they also implement a somewhat crumpled paper look. You can also notice this oldschoold style in skating videos they will use cameras stemming from the late 90s to 2010s for a retro effect. Another thing that is heavily used is the urban look so things like graffiti messy typography (which is not always the case) and other cool looking artwork.

## Sources

<https://www.blue-tomato.com/nl-NL/brand/Thrasher-6537/>

<https://www.thrashermagazine.com/>

<https://www.supremenewyork.com/>

<https://www.palaceskateboards.com/>

<https://www.area51eindhoven.nl/>

<https://www.100procentskateshop.nl/home/>

<https://www.vans.nl/>

<https://krookedskateboarding.com/falliday-2021/>

<https://santacruzskateboards.com/>

<https://www.spitfirewheels.com/>

# Conceptomschrijving

Industry Project

Groep 1

## Introduction

In this document we want to describe the concept that we came up with through brainstorming. We will first briefly discuss this, then we will go deeper into the functions.

## Description

### Idea

The idea is to create a battle royale in an app. Players are given a certain time slot to do a trick, if they fail it, they are eliminated. The group of players is getting smaller and smaller, because people lose weight after each time slot if they don't get the trick. The tricks get one step more difficult each time, and the time slot in which the trick has to be done gets shorter and shorter. One player is eliminated each round. When everyone has done the trick, the last one who did the trick is eliminated. The last one standing wins.

### What do we achieve?

By using gamification, we want to be able to teach players things, or encourage them to learn something. The players want to win the battle royale, so he wants to be able to do the tricks in a short time slot, this requires experience.

### How do we achieve this?

We want to make an app for this game. We would like to do this in PWA form, but this may change according to the needs we will need. Maybe we can only do some features natively.

Some of the features we have already come up with are:

- Recognizing tricks: We need to see which tricks the player performs by means of the existing sensors on the skateboard.
- Creating a lobby: We can do this in custom game form, for example a group of people skating together, but also matchmaking, for example looking for a match in Eindhoven.
- Create time slot: This goes without saying, we need a time slot in which the trick must be done, if this fails, the player fails and is eliminated.
- Making the tricks more difficult: By looking at how many players are still in the game; we want to make the tricks more difficult. Otherwise, the games will take too long.

Any features we can add.

- Leader boards: The player naturally wants to get a sense of accomplishment. Here you can see that if you are high on the leader boards, you have also won a lot of games.
- XP and Levels: The same principle applies here, but with XP and Levels we can link rewards.

## Details

### Gamification

leaderboards. Friendly & Rural. The driven skaters want to be able to compare themselves with professionals. Also, for that reason they are more driven to get better, it is a generous stimulant.

Challenge games that are coordinated in advance with the target group.

Variation on length, difficulty and completion time of the challenges.

Transparent rewards system; Points and progression in a fair and consistent manner.

Levels & Badges to boost motivation. Collect page of the badges.

*This information has been acquired from previous research done by other students.*

### Actual game

If no one does the trick within the time slot, everyone advances to the next round.

If everyone gets the trick, the last person to complete the trick is eliminated.

Pre rounds: for each trick you get a tutorial of the trick of 10 seconds, if you already know how the trick goes, you have a rest.

You have 1 minute for each trick. This always stays the same.

On the final round, the two players continue to play until one of them drops out.

### Player count

We want to have 10 players. Because we want the jars to last 10 minutes. This is because they have to be fast games so that if you are the first to lose weight you don't have to wait too long, and you can quickly move on to a new round

### Lobby's

Lobbies can be online and offline.

Offline lobbies can be compared to custom games.

Offline lobbies can be manually changed in difficulty.

Online lobbies are created through matchmaking.

Online lobbies can also be created if there are people around who also happen to want to play.

### Gamemodes

With online you only have the choice to play 1 game mode.

If you create a custom game, you can add your own challenges. This could be anything.

### Skill based matchmaking

In skill-based matchmaking, we want to ensure that everyone has a chance to win. With solo players this is easy to achieve, because we know his/her skill. However, if we start watching with groups it becomes more difficult, because the skill of the players differs. This feature is purely conceived for online play, if you physically play with each other in real life, you can choose the difficulty level yourself.

### Motivating

You will receive notifications (e.g. every week) that you have landed a certain trick a percentage more often than last week.

Example:

*You landed a kickflip 21% more this week compared to last week, keep it up!*

### [Practice mode](#)

Practice tab where you play the game alone with no time limits and rules, the focus here is on practicing tricks and preparing for the real game. Progress will also be tracked so that the user has a clear picture of his or her progress.

# Persona

## PERSONA

**User**  
Dave Janssen



**Basic info**

- Nationality: NL
- Income: \$50.- (duo)
- Education: MBO Niveau 3
- Age: 16-26
- Place of residence: Eindhoven
- Relationship: None
- Children: No

**Goals**

- Getting better at skating
- Landing better tricks
- Visiting more skatespots around the world

*Doesn't have many goals, he is just living his live day to day.*

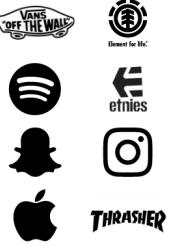
**Characteristics**

Extrovert	+	
Intelligentie	+	
Budget voor activiteiten	+	
0 uur	Vrije tijd weekend	24 uur

**Biography**

Daan is a regular student that loves to skate. He skates almost everyday with his friends. He likes to socialize with other skaters and play games of skate. When he isn't skating you can find him online playing videogames. He travels a lot to find new skating spots for him and his friends. (beginner/novice)

**Brands**



**Opinion about skating**

I really like going skating with my friends, it's not only a nice activity but it's a way to connect with my friends. I would call myself a beginner skater, maybe a novice. When I go out skating, I don't want people to interrupt me, this could be kids that are skating everywhere, but also people complaining that we are skating in a certain spot. I would like to get better at skating, but I don't really know what I'm doing wrong. I think I just need to keep on practicing until I get better at it.

**Quote**

"Met een skateboard is iedereen gelijk"

**Hobbies**

- Skateboarding
- Music / Creating music
- Videogames

**Frustrations**

- People that interrupt my skating
- Fake people
- Falling
- Not enough skatespots
- People complaining
- Not having enough time to go skating

## Empathy-map

User Dave



**Says**

- Do you have time to go skating?
- I landed that kick flip yesterday!
- When do you get your new board?
- Listen, I made this new beat.
- Did you hear the new Travis Scott song?
- Can you pass me a cigarette?

**Thinks**

- I want to go skating
- Why is school taking so long
- I need some more money because my board broke

**Does**

- Skateboarding
- Socializing
- Hanging out/ Chilling

**Feels**

- Bored
- Feels not challenged
- Feels annoyed when there are no friends around.
- Feels excited completing a trick
- Feels hyped when friends succeed

# Interviews and User tests

Skatrixx - Group 1

## Usability test method

This usability test is created after our first fully functional Adobe XD Prototype. The results of this user test are going to be used as validation, or as criticism. We want our app to be compatible and easy to use for our target audience, which is beginner/novice skaters. We wanted to focus on the game aspect of the app. With that, also came the general flow. For the usability tests we used Microsoft Teams and external software like AnyDesk or Teamviewer.

## Purpose and approach

The goal of this usability test is to check the user friendliness of our prototype/application “Skatrixx”. Our prototype is made in Adobe XD. We want to test if our prototype has a logical lay-out, is accessible to our target audience, has content that can easily be scanned and if it has effective navigation.

We are going to use different scenarios to test these things. The steps that the user takes, and the possible bottlenecks will be noted and recorded. In the end we will ask a few extra questions to our user and ask for the users' opinion about the design.

## Usability tests

### Scenario's

1. The user wants to join a public game
2. The user wants to create a custom game
3. The user wants to start a free roam session
4. The user wants to see how his friends are performing in the leaderboards
5. The user wants to see his statistics
6. The user wants to see his achievements
7. The user wants to see his level

### Test Materials

- Laptop/pc that runs the prototype (XD)
- Laptop to note the feedback that the user supplies
- Participant('s) • List of questions for the participant('s)
- Microsoft Teams

### Questions

The questions are scaled through 1 (totally disagree) to 10 (fully agree)

1. The prototype has effective navigation
2. The content is easily scanned
3. The buttons are clearly clickable
4. The prototype has a logical lay-out
5. What would you change to make it more user friendly?

# Results

## Interview

### Interview method

The interview is going to be held with people from our target audience, approached by us. They are beginner/novice skaters, and are no more than 26 years old. We want these interviews to serve as validation, criticism, but also to perhaps create more ideas for the future of our application.

### Test Materials

- Laptop to note the feedback that the user supplies
- Participant('s) • List of questions for the participant('s)
- Microsoft Teams

### Questions

1. How long have you been skating?
2. Would you call yourself a beginner/novice skater?
3. How does a typical day of skating look like?
4. Do you skate with friends? If yes, how many?
5. Do you think you are a competitive person?
6. Do you play any skating games? As in games while skating, not skating games like Skate 3.
7. Do you use any apps to monitor your skating?
8. Do you think you are improving your skating skills?
9. Would you be interested in a skating game on your phone?
10. What is your opinion about Skatrixx?
11. What is your opinion about the battle royale game in Skatrixx?
12. How would you approach a game like this?
13. Would you play this game?
- 14.

Interview Jan Dekkers:

### Information:

*Age: 19 almost 20*

*Lives in: Helmond*

*Gender: Male*

## Interview

### How long have you been skating?

When I was younger around 10, I skated for a year. I recently picked skating back up but there was a long time where I did not skate. I did skate last summer for quite a long time

**Would you call yourself a beginner/novice skater?**

I would consider myself a beginner. Since I have not skated that long, and I can only do the basics. I can balance, I can do drops, an ollie, and a little bit of other tricks.

**How does a typical day of skating look like?**

When I go and skate outside it is summer, I do have to work during the day so I'll go to the local skate park in the evening and skate until it's dark with friends and when it is dark I'll go and chill out with them, but I stop skating. I sometimes do go to an indoor skating park.

**Do you skate with friends? If yes, how many?**

I always skate with friends. I never go skating alone I think that is boring. Most of the time it is with either one or 2 close friends but sometimes the group of friends can be around 6 people and some other friends might come and watch. When I meet random people at the park, I might skate with them too.

**Do you think you are a competitive person?**

No, I am not. I like to see others succeed too, and I do not only say that for the skateboarding part but also in general I am not that competitive.

**Do you play any skating games? As in games while skating, not skating games like Skate 3.**

I do, but I basically only know one game and that is the game of skate. One person will do a trick or a couple of them, and you will have to reenact them if you can't/fail you will get a letter and when you have all the letters of the word SKATE you will lose.

**Do you use any apps to monitor your skating?**

No, I do absolutely not. I have never used an app for skating so no.

**Do you think you are improving your skating skills?**

Yes, I would say I am improving, slowly but surely. I get better at trick I am learning a lot more so yeah.

**Would you be interested in a skating game on your phone?**

I am going to be honest with you. No, I do not. (NOTE: felt a bit hesitant to give this answer he kind of tried to not be to mean) I am never on my phone while skating or when I am doing any other activity outside and I do not see me using an app for skating in the future either.

**What is your opinion about Skatrixx?**

I think it could be a fun experience and be fun to play with random people at the park. This way you can meet new people.

**What is your opinion about the battle royale game in Skatrixx?**

I think it's fun to play with people at the park. This way you can also see what everyone is capable of, and you could improve your own skills.

**How would you approach a game like this?**

I would not train for a match. I would just ask my friends to play the game with me.

**Would you play this game?**

Yes, I would but I do not know for how long this would be fun.

**Results:**

I could see the person being interviewed was a bit hesitant to be negative but as I assured him it was fine to be negative and that it is also useful to us, he spoke quite freely. The idea of the app did make sense to him and was interested to play it. But he stated during and after the interview that he did not think this would remain fun for the long run. He mostly liked the social aspect of the app and the gamification of it. I did notice that he would probably not use the free mode based on that he does not want to be on his phone whilst skateboarding and does not skate alone either.

Interview Daan Boom:

**Information:**

*Age: 19 almost 20*

*Lives in: Helmond*

*Gender: Male*

**Interview****How long have you been skating?**

I have been skating for half a year. I did skate years ago but that lasted for just a short while. But I have recently been skating again.

**Would you call yourself a beginner/novice skater?**

yes

**How does a typical day of skating look like?**

Most of the time I skate in the evening. I'll go and eat then head over to the park and skate with my friends after that I go home.

**Do you skate with friends? If yes, how many?**

Yes I skate with my friends most of the time. 3 or 2 friends and sometimes more.

**Do you think you are a competitive person?**

No, only when I play games.

**Do you play any skating games? As in games while skating, not skating games like Skate 3.**

I only play the game of skate that is the only game I know of.

**Do you use any apps to monitor your skating?**

No.

**Do you think you are improving your skating skills?**

Yes, I do improve. I am a beginner so in that case its go's even faster.

**Would you be interested in a skating game on your phone?**

Yeah, I feel like it would be interesting if skating alone.

**What is your opinion about Skatrixx?**

I do not like the idea.

**What is your opinion about the battle royale game in Skatrixx?**

I do not see the use for an app in this case you can do this without the app.

**How would you approach a game like this?**

I would implement a feature like seeing where people are skating so you could join them.

**Would you play this game?**

I do not think so I don't really know to be honest.

## **Results:**

He did not really see the purpose of using a skateboarding app. Every feature that we want to implement did not speak to him. He suggested a feature that does something way different. You could probably conclude that at least without them using a finished product he does not feel interested in the product.

## **Conclusion:**

People that fit into the category of beginner skaters do not feel that much for a skating app since they feel like not using their phone whilst skating/during skating. The features that we proposed are nice but some feel like it is not necessary to use an app for it. People do have a need for a social feature not only for them and their friends but also to meet new people that have a passion for skating.

# User test: Daan Boom

## Information:

*Age: 19 almost 20*

*Lives in: Helmond*

*Gender: Male*

<https://youtu.be/iRIGC6axPJw>

### The user wants to join a public game

Went very smooth but stopped to ask me Wich difficulty to choose. I told them that he could decide himself.

### The user wants to create a custom game

He thought it as at the private game section. I had to tell him that it had to be public. After this he clicked on the public menu. He was however confused by the fact that the first screen that popped up was the difficulty level. Eventually he did manage to fin did by choosing a difficulty but was clearly a bit confused.

### The user wants to start a free roam session

Note: was not linked yet

### The user wants to see how his friends are performing in the leaderboards

He first clicked on the achievements board. After that immediately switched to the leaderboard section so it went quite smooth.

### The user wants to see his statistics

He first clicked on the leaderboard. When i helped by saying they are located at your account he managed to fin did with ease.

### The user wants to see his achievements

This went very smooth.

### **The user wants to see his level**

This went very smooth.

## Questions

### **The questions are scaled trough 1 (totally disagree) to 10 (fully agree)**

#### **The prototype has effective navigation**

Only thing i did not like was the create screen. It should be at the home screen. And maybe only see your achievements one time so not at 2 different places. I would give it an 8.

#### **The content is easily scanned**

Yes, everything is readable and clear. I'll give it a 10 I could see where everything was.

#### **The buttons are clearly clickable**

10 everything had the right size and was very clickable. I could clearly see what a button was.

#### **The prototype has a logical lay-out**

Yeah, it is logical only the top 2 things i mentioned at navigation are the ones i would change.

#### **What would you change to make it more user friendly?**

Has been answered enough read the first question

## Results

The user quite liked the design of everything we also spoke before hand and afterwards. I showed him every design iteration also the ones from USPC he kind of liked their design but did like our final design a lot more. During the test he was positive, and it mostly went smooth. There were problems with the questions that we asked we asked for functions that had a different name in the prototype. Also, the screen order should be changed at the public lobby and create functions.

## User test results: Jan Dekkers

### **Information:**

*Age: 19 almost 20*

*Lives in: Helmond*

*Gender: Male*

<https://youtu.be/G5uxd7vpUyY>

### User test 1

#### Scenario 1

User clicks on login, user clicks on public session, user clicks on beginner, user clicks on lobby and joins game, finished.

#### Scenario 2

User clicks on login, user clicks on public game, user clicks on difficulty, user clicks on the red plus button, user creates game, finished.

#### Scenario 3

User clicks on login, user clicks on free play, user is in free play session, finished.

#### Scenario 4

User clicks on login, user clicks on trophy in bottom navigation, user clicks on friends, finished.

#### Scenario 5

User clicks on login, user clicks on profile in top right, finished.

#### Scenario 6

User clicks on login, user clicks on medal in bottom navigation, user finds achievements, finished.

#### Scenario 7

User clicks on login, user clicks on profile, user finds level, finished.

### Questions

#### *Question*

*1*

9, user could find anything easily in one instant.

#### *Question 2*

10, no further comment, just clear.

#### *Question 3*

9, maybe the profile button is not clear. For every other button, no problems.

#### *Question 4*

9, it makes sense where you start and where you can click.

#### *Question 5*

Achievements on one page, not split on two pages. Not necessary, but if I need to say anything, that's it.

### Results

In short, everything went well with the test subject and the prototype. There were a few minor things that he commented on. These were things like; Profile button might not be clear, and achievement split in two sections might not be the best idea. Initially, the test subject had nothing to comment, but if he was to nitpick, he would change these.

## **Conclusion**

We should change some of the order at the create and public screens. People are positive about the designs and say it is user friendly.

# DESIGN DOCUMENTATION



INDUSTRY PROJECT  
SKATRIXX GROUP 1



## FONTS:

**HEAVITAS**

Open sans

## BUTTONS:

CONTINUE >

## ICONS:



## COLORS:



+31 0800 4503  
skatrixx@gmail.com

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respected owners ©

## BRANDSTYLE-GUIDE

Having done our research on the skating culture and its design aspects we came up with our own design. We tried sticking to some of the aspects of the design that the previous group had delivered, we did however change a lot. In our final design we went and picked colors that were a bit more muted to match the more paper looking style. We wanted to achieve this because our own research showed that the paper look is really prominent in the designs of most of the skating brand websites, it is also a design trend in the broader spectrum of ux design. We picked the color red because the old prototype also made use of (a much bolder) red and because the color red should give people the feeling of excitement energy and it also really stands out.

We made use of 2 different fonts Heavitas and Open sans. The Heavitas font is bold and stands out it also looks clean but slightly playfull and because we did not want the app to look to serious this was the perfect font. The decision to include Open sans for the smaller text was made because heavitas was to bold to use for every piece of text. Open sans is very clean and is not hard to read.

We chose a grey/blackish background color because we wanted to really build the dark mode version. We also used white and red as stated earlier.

We made use shadows to highlight the clickable attributes in the app and make them pop out some more. To further make the app look a bit more playfull we added some dots on everypage as a comic/cartoonish extra to make the app less serious looking.

# HOMESCREEN

## VERSION 1:

The main feature of our app is a battle royale type of game. The player has the choice to play with friends only or new people. Since skating is an exercise, you also have the choice to just monitor your skate session which you can do with free play. Like all the other screens this screen follows a similar layout with a header section, main section and footer section.

Version 1



## VERSION 2 (FINAL VERSION):

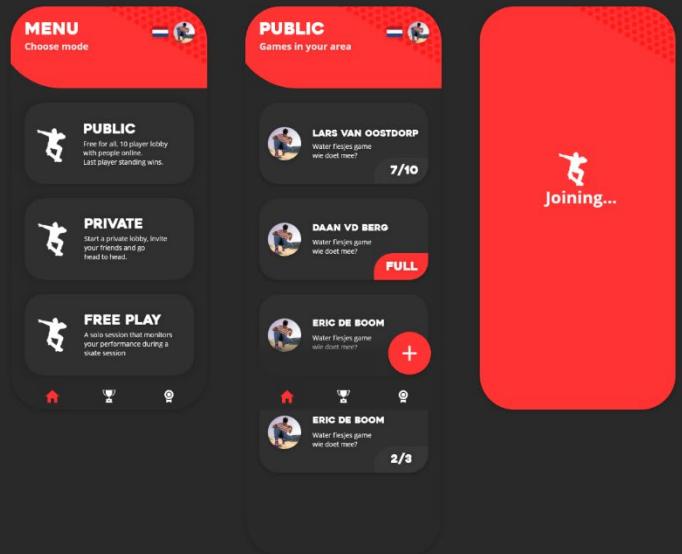
The Home screen shows the most impactfull changes. We changed the footer the header.

*(The footer and header will from now on either not be mentioned or talked about, since it is the same for every screen in the app.).*

With our second iteration we changed all the colours to a lighter red and a greyer background. To give it a more modern look we changed the top to have a rounded edge. In the footer we got rid of the line. This was done to make the navigation bar fit in more with the rest of the app. We also added the dots in the top corner for a more paper type of look. In some cases next to the users profile picture a flag from the country they selected will be displayed since the skating community is verry popular internationally. We noticed this when skating in different skate parks there were a lot of people from different countries.

The options/buttons got a bit more rounded and a different color of grey, we removed the image and fade, Added icons (wich are now the same for every option but should be changed in the future with different icons) and added some shadow to make it stand out more as clickable objects.

Version 2 (Final version)



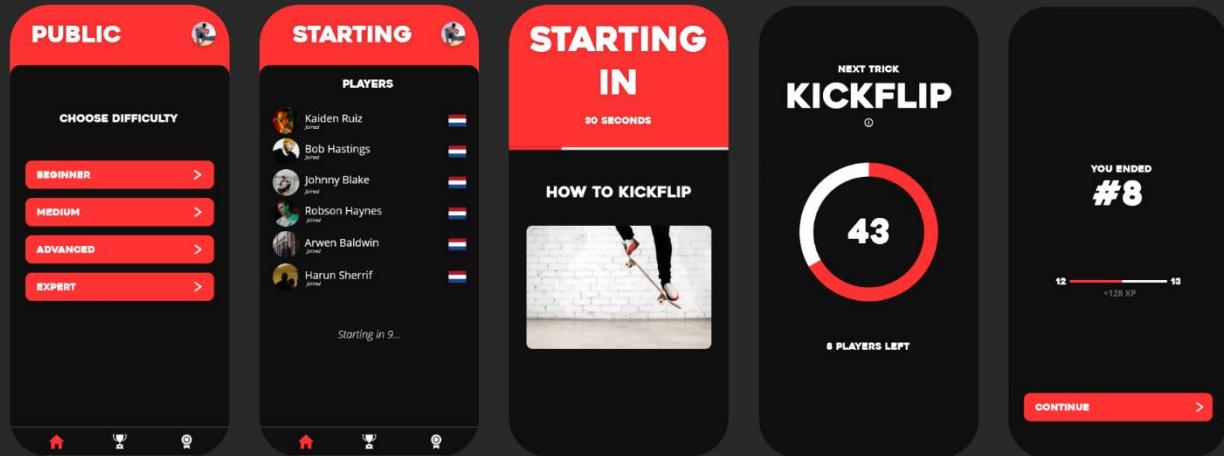
The public joinable lobbies now have a different layout. By making use of different colors depending on the ability to join the lobby is a great way of easily seeing which lobby is available without having to read. We used the color red for the full lobbies because red is also associated with stopping something/ do not do something.

As an extra a joining animation was added in case there is a joining waiting time

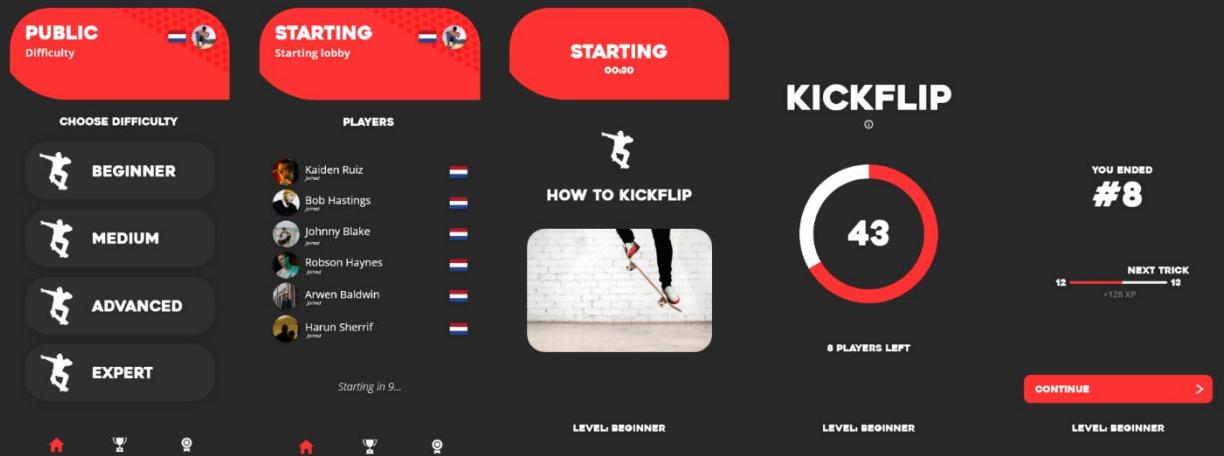
# SKATRIXX:

Battle royal design iterations

Version 1



Version 2 (Final version)

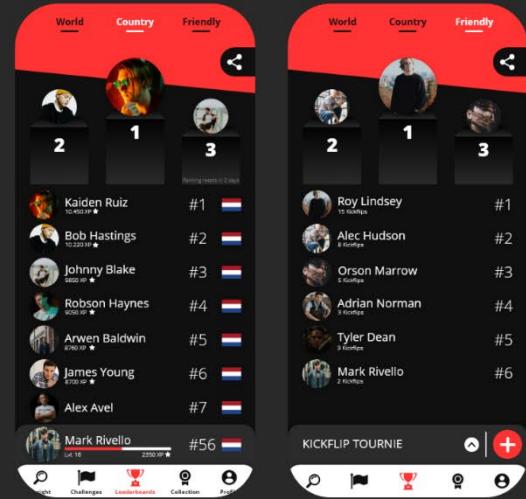


## BATTLE ROYAL

The battle royal mode was a new idea so it didn't yet exist. There were quite a lot of screens that we had to design for this function. Hierarchy navigation and structure was very important for these screens. We wanted to make everything easy to understand so we wanted to make use of a lot of visualisation. The decision was made to not only display the time by using a counter but also implement an animation of a ring that slowly turns red based on the amount of time. The tricks were displayed by using a Gif. To make sure people knew how to do a trick we made sure there was enough time to observe the gif before each challenge starts. For the different versions the only big change was the difficulty selection screen. The buttons got the same look as the main menu because the first version used too much red and was less readable and nice to look at.

# LEADERBOARDS

Version USPC



Version 1

## VERSION 1:

On our first iteration we divided the page in three parts, header section, main section and footer section so nothing overlaps with the other.

We used the material design guidelines which to make our design adaptable across different devices.



## VERSION 2 (FINAL VERSION):

Beside all of the usual changes we made in the second final version, we only repositioned the top navigation between the different leaderboards to fit more with the header.

Version 2 (Final version)



# ACHIEVEMENTS

## VERSION 1:

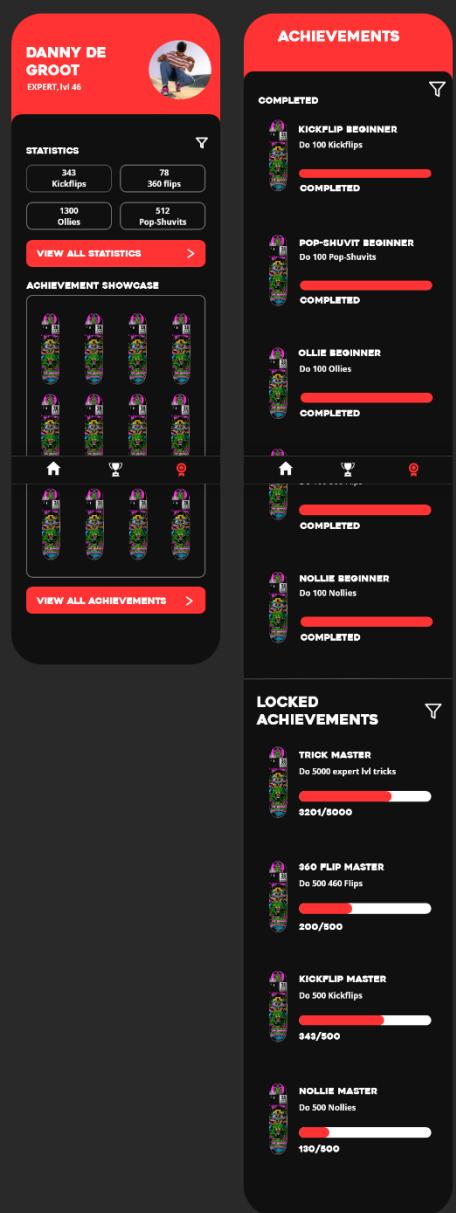
We swapped the red and white colours with a static dark colour and use red and white as overlay and font colours.

Instead of creating a light mode we've decided to use a dark mode two reason; it reduces strain on your eyes, and it conserves battery power on smartphones with OLED displays.

Version USPC



Version 1



## VERSION 2 (FINAL):

After making the general changes we wanted to make sure that the navigation became a bit smoother. We changed the clickable stuff to grey boxes with a little bit of shadow instead of just an outline with a transparent background. This way it also looks a lot more scrollable and more well sorted.

Version 2 (Final version)

The screenshot shows the achievements section of a mobile application. At the top right, there is a profile card for "DANNY DE GROOT" (Expert, lvl 46) with a small thumbnail of a person and a flag. Below the profile, there are sections for "STATISTICS" and "ACHIEVEMENT SHOWCASE". The statistics show: 343 Kickflips, 78 360 flips, 1300 Ollies, and 512 Pop-Shuvits. There are buttons to "VIEW ALL STATISTICS" and "VIEW ALL ACHIEVEMENTS".

**ACHIEVEMENTS**

**COMPLETED**

- KICKFLIP BEGINNER**  
Do 100 Kickflips  
COMPLETED
- POP-SHUVIT BEGINNER**  
Do 100 Pop-Shuvits  
COMPLETED
- OLLIE BEGINNER**  
Do 100 Ollies  
COMPLETED
- 360 FLIP BEGINNER**  
Do 100 360 flips  
COMPLETED
- NOLLIE BEGINNER**  
Do 100 Nollies  
COMPLETED

**LOCKED ACHIEVEMENTS**

- TRICK MASTER**  
Do 5000 expert lvl tricks  
9201/3000
- 360 FLIP MASTER**  
Do 500 460 Flips  
200/500
- KICKFLIP MASTER**  
Do 500 Kickflips  
343/500
- NOLLIE MASTER**  
Do 500 Nollies  
130/500

# FREE-PLAY

Version USPC

## VERSION 1:

Free play stays like USPC's iteration but in our iteration, we went for a flat design instead of 3D. We've removed the cards and you will see one page with general data about your skate sessions.

## VERSION 2 (FINAL VERSION):

Besides again changing the usual stuff we made some changes to the header again. Under the main top header text it now says stats to give a better description to the page for people who might not know what they are looking at. Further more we changed the button "Stop session" to match all of the other buttons within the app to make it more cohesive.

And lastly the top of the body now does not display the users profile picture since it did not add enough value to the page and it is already placed at the top right corner of the header. We also stretched the bar to fill up more of the space and make it a bit easier to look at.



Version 1



Version 2 (Final version)



# Technical Documentation

Skatrixx – Group 1

## Intro

In this document we are going to be explaining the technical side of the work we performed for Skatrixx. We will mainly focus on the PWA, the database, how you could set-up your own database, and the Arduino.

## PWA

We are going to be focusing mainly on the backend, as the front end is quite simple and minimalistic, so that requires less explanation.

### PWA technical

#### Service worker

The service worker serves as a setup for the PWA itself. It defines the functions that the PWA can perform. You could add functions here like offline caching, push notifications and a lot more.

```
self.addEventListener("install", (installing)=>{
  console.log("Service Worker: I am being installed, hello world!");
});

self.addEventListener("activate", (activating)=>{
  console.log("Service Worker: All systems online, ready to go!");
});

self.addEventListener("fetch", (fetching)=>{
  console.log("Service Worker: User threw a ball, I need to fetch it!");
});

self.addEventListener("push", (pushing)=>{
  console.log("Service Worker: I received some push data, but because I am still very simple I don't know what to do with it :(");
})
```

The service worker is being called to in the registerserviceworker.js file.

```
//see if the browser supports Service Workers, if so try to register one
if("serviceWorker" in navigator){
  navigator.serviceWorker.register("serviceworker.js").then(function(registering){
    // Registration was successful
    console.log("Browser: Service Worker registration is successful with the scope",registering.scope);
  }).catch(function(error){
    //The registration of the service worker failed
    console.log("Browser: Service Worker registration failed with the error",error);
  });
} else {
  //The registration of the service worker failed
  console.log("Browser: I don't support Service Workers :(");
}
```

#### Web manifest

The web manifest serves as a setup for the app. You can change the title of the application, the logo, the main colours, accent colours and a lot more. If you want to create a web manifest, there are a lot of generator tools that you can use online.

If everything is done correctly, you can install the PWA when you go to the website on which the service worker and the web manifest is running.

## Database

What database did we use

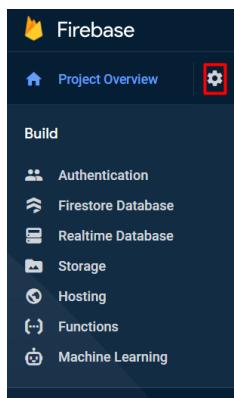
We used Firebase database from Google. The database is easily accessed, shared and editable. You can go to [www.firebaseio.google.com](https://www.firebaseio.google.com) and create a database for free.

Getting started

When you go to [www.firebaseio.google.com](https://www.firebaseio.google.com), it will ask you if you want to create a database, click yes, name your database, and it will do the work for you. Once you are on your dashboard, you will need to go to setup a web app.



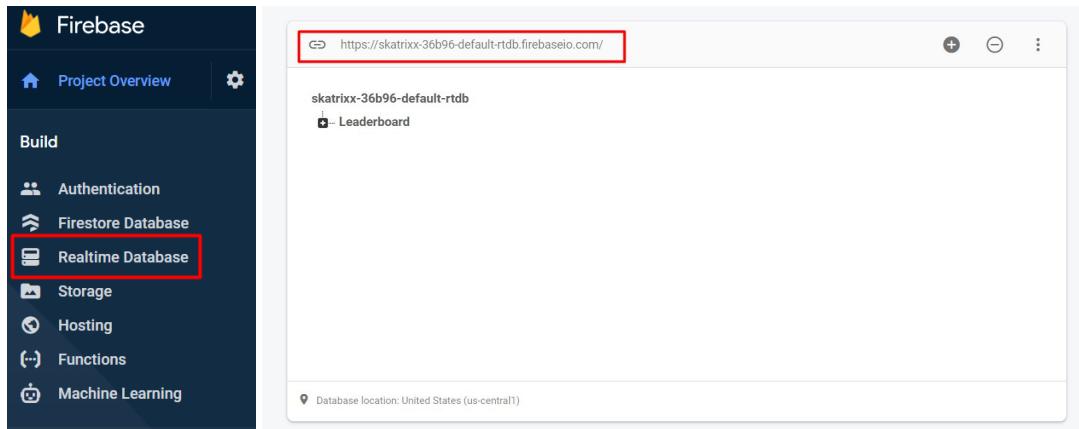
Once you have done this, go to your project settings.



Over there, you can see the data you will need for initialising the connection between your app and the database.

```
// Your web app's Firebase configuration
const firebaseConfig = {
  apiKey: "REDACTED",
  authDomain: "REDACTED",
  databaseURL: "REDACTED",
  projectId: "REDACTED",
  storageBucket: "REDACTED",
  messagingSenderId: "REDACTED",
  appId: "REDACTED"
};
```

Going back to the code, you will need to go to *script.js*, and change the data that is in the *firebaseConfig const*. You will notice that in the code that we wrote, there is one additional line, **so don't copy paste your data over ours**. The additional line is the database url.



You can find your database URL by going to Realtime Database and checking the top line.

The last step is installing firebase for your project through Node.js. To start, you will need to download Node.js, you can do this at <https://nodejs.org/en/>. If you have downloaded and installed node.js, go to the console when your project is opened. If you are using Visual Studio Code, the shortcut for this is CTRL + ` . When the console is opened, you will need to type **npm install firebase** and let it install.

If you have done the steps correctly, you now have a functioning link between your database and your web app.

### Writing data

```
// Writing user data

function writeUserData(xp, name) {
  console.log(database);
  xp = document.getElementById('xp').textContent;
  name = "Kyle";
  set(ref(database, 'players/' + 'playerfive/'), {
    xp: xp,
    name: name
  });
  console.log("Pushed successfully to Database");
}

if (window.location.href === 'http://127.0.0.1:5500/winner.html') {
  document.addEventListener('DOMContentLoaded', (event) => {
    console.log('DOM fully loaded and parsed');
    document.getElementById("mainbuttonDatabase").addEventListener("click", e => {
      console.log('nextpage')
      writeUserData();
    });
  });
}
```

```
function writeUserData(xp, name) {
```

On the top, you can see which lines we are going to write. In our instance, these are “xp” and “name”.

```
xp = document.getElementById('xp').textContent;  
name = "Kyle";
```

On the third line, we define what our content of “xp” and “name” is. In our instance, this is the value of the id “xp” in our html page, and the name is just declared right there as a string. You can change this to anything.

```
set(ref(database, 'players/' + 'playerfive'), {  
  xp: xp,  
  name: name  
});  
console.log("Pushed successfully to Database");
```

The last bit of code is reading the structure of the database, and actually pushing it. When you look at the first line of the code, you will see the hierarchy that we have used in the database. We have an array of “Players”, and in that array, we have another array called “playerfive”. In this array, we want to write data.

The second and third lines, are the content that we want to push to the database. We want data called XP, which includes the xp that we declared one step above this. And we want name, which also includes this.

```
document.addEventListener('DOMContentLoaded', (event) => {  
  console.log('DOM fully loaded and parsed');  
  document.getElementById("mainbuttonDatabase").addEventListener("click", e => {  
    console.log('nextpage')  
    writeUserData();  
  });  
});
```

Then, you can use an event listener to execute this function. As you can see on the third line, we use an id called *mainbuttonDatabase*. So in short, when you click the id *mainbuttonDatabase*, it will execute *writeUserData*, and write data to the database.

Reading data

```

skatrixx-leaderboard-default-rtdb
  players
    playerfive
      name: "Kyle"
      xp: "+1214 XP"
    playerfour
      name: "Dannis"
      xp: 7564
    playerone
      name: "Ace"
      xp: 4568
    playerthree
      name: "Claire"
      xp: 5123
    playertwo
      name: "Ben"
      xp: 8765
  tricks
    0

```

Database location: United States (us-central1)

```

150  onValue(dbref, (snapshot) => {
151    const data = snapshot.val();
152    // updateStarCount(postElement, data);
153    console.log(data.playerone);
154    snapshot.forEach((childSnapshot) => {
155      const childData = childSnapshot.val();
156    })
157

```

Through the “onvalue” function we were able to ‘get’ the data from the database. This function makes a ‘snapshot’ of the data. The value of this ‘snapshot’ is put inside the const data. This ‘snapshot’ has the value of the whole database.

```

var name_one = data.playerone.name;
var xp_one = parseInt(data.playerone.xp);

var name_two = data.playertwo.name;
var xp_two = parseInt(data.playertwo.xp);

var name_three = data.playerthree.name;
var xp_three = parseInt(data.playerthree.xp);

var name_four = data.playerfour.name;
var xp_four = parseInt(data.playerfour.xp);

var name_five = data.playerfive.name;
var xp_five = parseInt(data.playerfive.xp);

```

In these codes we are specifically asking for the data of each player (and not the whole database). This data is put inside a variable and this variable will be used for the leaderboard, so that the data on the leaderboard and the database are the same.

### Randomized tricks from database

We randomize the tricks that the users will receive in the battle royale game. The tricks are stored in the database.

The code that we use for this is in the *script.js*. And it’s called *function tricks*.

```

export default function tricks() {
  const dbRef = ref(getDatabase(app));
  const random = Math.floor((Math.random() * 3));

  console.log(dbRef);
  get(child(dbRef, "tricks/" + random)).then((snapshot) => {

    if (snapshot.exists()) {
      document.getElementById('imageTrick').src = snapshot.val().imgURL;
      document.getElementById('randomTrick').innerHTML = snapshot.val().title;
      document.getElementById('randomTrick2').innerHTML = snapshot.val().title;
    } else {
      console.log("No data available");
    }
  }).catch((error) => {
    console.error(error);
  });
}

```

```

export default function tricks() {
  const dbRef = ref(getDatabase(app));
  const random = Math.floor((Math.random() * 3));

```

The second line is making the connection to the database, we create a const so that we can call the database at any time that we want.

The second line is creating a const random, this is so the tricks are random. You can change the 3 in our instance, to anything you want. We currently have 3 tricks in our database , so we will only need 3.

```

console.log(dbRef);
get(child(dbRef, "tricks/" + random)).then((snapshot) => {

```

We log the dbRef in our console, so that we can see that we have made a connection.

The second line is reading the database. We get every child under the parent “tricks”. When we receive the data for this, we execute the random function so that the trick we will receive is actually random, remember that we wrote it needs to choose from 3. After that we create a snapshot of the trick so that we can use the data.



*This is the layout of our database.*

```

if (snapshot.exists()) {
    document.getElementById('imageTrick').src = snapshot.val().imgURL;
    document.getElementById('randomTrick').innerHTML = snapshot.val().title;
    document.getElementById('randomTrick2').innerHTML = snapshot.val().title;
} else {
    console.log("No data available");
}

```

The last bit of code checks if a snapshot exists, it should because we just created one. And then you can receive data in the id's of your html code. In our case, we want data from the database in *imageTrick*, *randomTrick* and *randomTrick2*. So we get the elements by the id, and for *imageTrick* we need the gif, so we do *.imgURL* (this is the name we gave it in the database, check your layout if you don't know what yours is). But for the other two id's we need the title of the trick, so we do *.title*.

If there is no data in the array of the database, we will log this in our console "No data available".

## Gamepage

On the gamepage, we switch between 2 screens. One is showing the pre-game, with the random trick from the database. If (x) seconds go by, it switches to another screen which tells you to perform the trick. Then, after (x) seconds, you will automatically lose, however, if you complete the trick, you can click the button and you will see another trick. Lastly, there is no way to finish the game at the moment, that is why we made a link on the beginner text on the bottom of the screen. If you click this, you will head to the winner screen.

<pre> function showGame() {     var prepare = document.getElementById("prepare");     var battle = document.getElementById("battle");     var footer = document.getElementById("navbar");     var header = document.getElementById("headerId");      if (prepare.style.display === "block") {         prepare.style.display = "none";         battle.style.display = "block";         footer.style.display = "none";         header.style.display = "none";         clearInterval(downloadTimer);         timerToFail();     } else {         prepare.style.display = "block";     } } </pre>	<pre> function showCounter() {     var prepare = document.getElementById("prepare");     var battle = document.getElementById("battle");     var footer = document.getElementById("navbar");     var header = document.getElementById("headerId");      if (prepare.style.display === "none") {         prepare.style.display = "block";         battle.style.display = "none";         footer.style.display = "block";         header.style.display = "block";         location.reload();     } else {         prepare.style.display = "none";     } } </pre>
---	--

In the bottom, there are two timers, one for the pre round, and one for completing the trick. This can be changed

```
function timerToFail() {
    var timeleft = 20;

    var trickCompleted = setInterval(function(){
        if(timeleft <= 0){
            clearInterval(trickCompleted)
            location.replace("./loser.html");
        } else {
            }
        timeleft -= 1;
    }, 1000);
}

var timeleft = 10;

var downloadTimer = setInterval(function(){
    if(timeleft <= 0){
        showGame();
    } else {
        document.getElementById("countdown").innerHTML = timeleft;
    }
    timeleft -= 1;
}, 1000);
```

If you want to change the time, you need to change the var timeleft. In our instances these are 10 seconds for the pre round, and 20 seconds for the actual trick. This could be expanded to add a function in the custom games, in which you can change the timers specifically for your lobby.

# Sprint reviews

Industry project

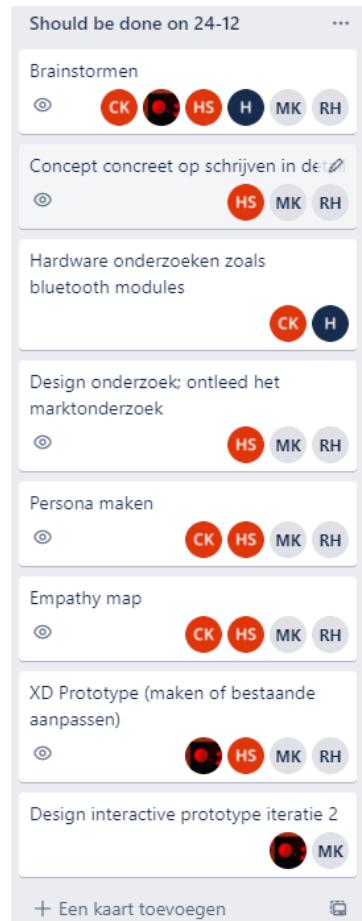
Skatrixx group 1

## Review 1

During the review we showed the research we did and how we got the idea. We then showed our design and gave a short demo of how it is going to work.

Raymund was positive about the idea and liked we worked on many aspects of the app. He was also glad that some of their research on gamification was used and like the idea of integrating skate with battle royale.

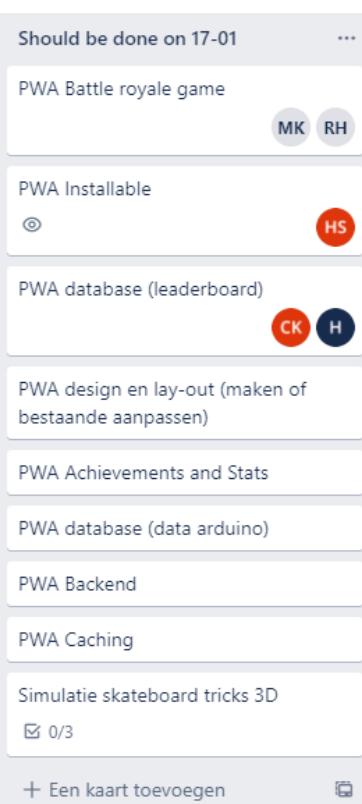
His final words were “Really cool and creative”



## Review 2

The second review we had worked out our idea into a PWA. We split the pages up and branches and had everyone do one branch. We eventually merged it all and tested the app ourselves before presenting a demo to Raymund.

In this review Raymund thought the app looked good and liked that it was partially functional. We could not get the trick recognition working but he already expected that and asked us to continue other aspects of the app. He wanted to know more about how a public match works and how customizable it is. We explained everything and answered his questions so everything would be clear to him.



# Adviesrapport Skatrixx

## **Introduction**

This advisory document is created to highlight the features we created for the Skatrixx app. Urban Sports Performance Centre has a skateboard that can send data to a computer, their goal is to recognize this data as tricks done on the skateboard. Our assignment was to come up with an idea for what this skateboard can be used for.

## **Why/Goal:**

Skateboarding is an individual sport but it is always nice to do it in a group, that will give you a motivation to improve your skills. You can learn from others, learn their tricks and have fun time.

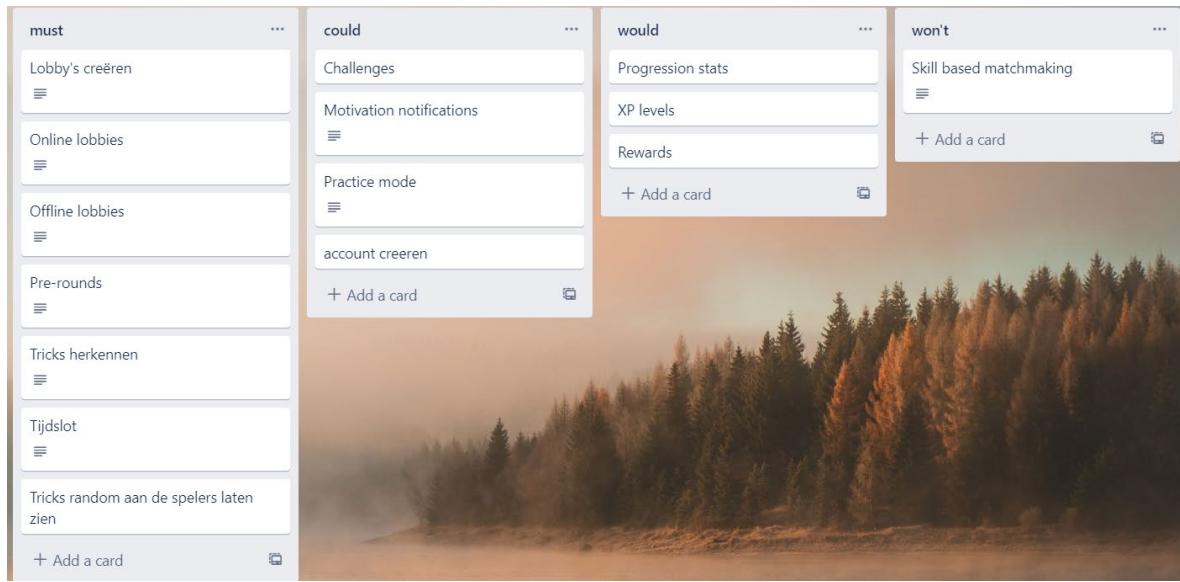
That's why our main goal was to bring all the skateboarders together in a nice challenge using the technology to let them have a fun time and to give them the chance to practice more to improve their skills.

## **Idea in short**

We used Urban Sports Performance Centre's skateboard for gamification, we have build an app with a twist on the Battle Royal genre to make a fun and interactive game.

## **General idea**

The idea is to create a battle royale in an app. Players are given a certain time slot to do a trick, if they fail it, they are eliminated. The group of players is getting smaller and smaller, because people lose weight after each time slot if they don't get the trick. The tricks get one step more difficult each time, and the time slot in which the trick has to be done gets shorter and shorter. One player is eliminated each round. When everyone has done the trick, the last one who did the trick is eliminated. The last one standing wins.



## Features we actually realized

We have created some of the Must have features for the game:

- **Menu:** The player would be able to choose a mode. The menu consists of different modes such as public, private or free play.
- **Lobbies:** The player will see a list of existed lobbies with the number of the joined players, he can choose a lobby and wait for the start. During the waiting the player will watch a short movie how to do a trick.
- **Timeslot:** The player will get a specific time to finish the challenge and to do the trick.
- **Leaderboard:** The player would be able to see his ranking and the points he gets.



### **Extra advice based on Interviews.**

The target audience is beginner skaters. We have talked to different skaters and interviewed them, we also talked to more advanced skaters, and we found out that most people do not get excited about the use of an app on their phone in combination with skating. So, our advice is that you might want to really build everything. After doing this, let people test this and see if their opinions might change. Another option is to reconsider the use of an app and maybe opt for a different way of displaying data (so by not using a phone app).

### **Our advice for continuing this project**

- **Trick recognition:** being able to recognize the data from the skateboard as a trick.
- **Custom games:** being able to customize all the rules as you like and adding challenges to the game.
- **Practice mode:** being able to play the game solo so you can focus on mastering and learning new tricks.
- **User profile/achievements:** being able to see your profile page with statistics and achievements you unlocked and are close to unlocking.
- **Expanding the database:** adding users, more tricks.
- **Do a lot more user testing**

### **How to setup**

A clear description is added to our code source, and you will easily find the guidance to complete work on this project. This could also be found in the technical documentation.

# Maarten Kasdorp

## Situatie

Ik zit in semester 4 – smart mobile. We hebben een opdracht gekregen van Urban Sports Performance Center (USPC). We hebben de methode design thinking gebruikt voor ons project. We moesten werken met een prototype van USPC “Skatrixx”. Dit was een skateboard met enkele sensoren eraan toegevoegd.

## Taak

Creëer iets (kan een app zijn, kan ook iets anders zijn), dat de data van de sensoren op Skatrixx gebruikt, en creëer hierbij een ervaring. Dit kan een spel zijn, kan data visualisatie zijn, maar ook iets helemaal anders. Ik wilde bereiken dat ik uit een open opdracht, iets vooruitstrevends kon bedenken dat nog niet bestond (tenminste, met skating), en dit goed uit ging werken door middel van design en code.

## Actie

Ik ben begonnen met het brainstormen van ideeën. Wilde we Gamification doen? Of wilden we juist voor de serieuzere kant gaan en data visualisatie toepassen? We hebben gebrainstormd door gebruik te maken van de eerste fase van de Double Diamond method. Eerst veel ideeën bedenken (divergeren), en vervolgens de goede ideeën doorpakken en uitwerken (convergeren). Vervolgens ben ik de research gaan ontleden, en hebben we op basis hiervan een persona en empathy map gemaakt.

De volgende stap in ons proces was een Adobe XD maken. Dit hebben we gedaan op basis van het vorige XD prototype dat al door vorige studenten was gemaakt. Op het prototype dat we hadden gemaakt, zijn we steeds verder op gaan itereren, tot dat het er mooi en professioneel uit zag. Dit hebben we later ook geverifieerd met gebruikerstesten en interviews. De laatste stap was het maken van de PWA, en het technische gedeelte zoals de database koppelen.

## Resultaat

Het resultaat is een mooie PWA die functioneert met een database als backend. De methodes die we hebben gebruikt zijn goed uitgepakt. Omdat we veel hebben gewerkt met design trends, konden we een mooie front-end neerzetten. De backend is gelukt door goed samen te werken tussen de databases en tussen de leden van Skatrixx – Group 1.

## Reflectie

Ik vind dat ik veel vooruitgang heb gemaakt deze opdracht, en ben tevreden met het eindproduct. Ik heb geleerd hoe ik zelfstandig een database opzet en link met een webapplicatie. Ook heb ik meer ervaring opgedaan in het HTML/CSS/Javascript gedeelte. Ik merk dat ik hier met elk project steeds vloeiender in word. Dit is zeer positief, aangezien ik dit kan toepassen in de volgende mediaproducten die ik ga maken.

Ik zal de volgende keer meer afspraken met het groepje en de samenwerking willen maken. De samenwerking in ons groepje vond ik teleurstellend. Afspraken werden soms niet nagekomen, en de communicatie was vaker minimaal. Echter, vind ik wel dat we het hebben opgepakt en een mooi eindproduct hebben neergezet.

# Ruben Hollanders

## Situatie

Momenteel zit ik in semester 4 – Smart Mobile. Urban Sports Performance Center kwam met een opdracht bij ons. Wij hebben de design thinking methode gebruikt voor ons project en hebben samengewerkt aan een prototype genaamd Skatrixx. Op dit moment hebben zij een een skateboard met enkele sensors die data kunnen uitlezen. Wij moesten hier een tof concept bij bedenken.

## Taak

Maak iets (kan app zijn of iets anders), dat gebruik maakt van de data die binnenkomt. Of dit iets wordt dat je leert skaten of gamificatie toevoegt ligt bij ons. Ik wilde graag een vooral tof en uniek concept bedenken wat mensen ook echt willen gebruiken.

## Actie

Het begon bij het concept, wat wil ik en wij als groep? Wij hebben dit gedaan door te brainstormen aan de hand van de eerste fase van de Double Diamond method. Veel ideeën bedenken, en vervolgens kijken naar welke ideeën het beste zijn en hier dieper op in gaan. Aan de hand hiervan heb ik naar bestaand onderzoek gekeken en eventueel nieuw onderzoek gedaan.

Toen wij eenmaal het concept op papier hadden staan zijn wij doorgegaan naar het prototype maken in Adobe XD. Er was al een prototype dat aan de hand van onderzoek gemaakt was, wij hebben dit onderzoek overgenomen en een nieuwe versie gemaakt aan de hand van dit onderzoek en onderzoek wat wij zelf gehouden hebben. Vervolgens toen wij goedkeuring hadden van Raymund en de doelgroep zijn wij begonnen met het maken van de PWA die gekoppeld is aan de database.

## Resultaat

Het resultaat is een werkende PWA met een koppeling naar de database waar hij random tricks uithaalt en laat zien. Omdat wij veel hebben gekeken naar trends hebben wij een modern en tof uitziend design. Hierdoor hebben wij een goede basis kunnen maken voor onze PWA en fonts kunnen toepassen aan de app. De app functioneert zoals hij hoor te functioneren.

## Reflectie

Ik vind dat wij als groep een tof en goed prototype gemaakt hebben, ik ben dan ook tevreden met het eindresultaat. Persoonlijk heb ik meer bijgeleerd van wat je allemaal met een array kan doen en hoe je dit kan toepassen voor een BattleRoyal. Ook heb ik veel met Javascript, html en CSS gewerkt. Ik merk door hier meer mee te werken dat ik hier steeds vloeiender in word. Ik heb handige dingen geleerd die ik in de toekomst zeker nog kan gebruiken.

Soms waren de afspraken onderling niet helemaal duidelijk en liep het soms wat stroever. Echter hebben wij wel dit goed opgepakt en toch samen een goed eindproduct neergezet.

# Dimitri van Iersel

## Situatie

Op het moment van schrijven zit ik in semester 4 op de Fontys Eindhoven FHICT en doe ik de specialisatie Smart-Mobile. We hebben als laatste opdracht van het semester een opdrachtgever genaamd Urban Sports Performance Center (USPC). De opdracht die USPC ons heeft gegeven heeft betrekking op hun prototype skateboard genaamd Skatrixx. Dit prototype bevat een aantal sensoren, waarmee verschillende data zoals acceleratie en positie gemeten kunnen worden.

## Taak

De opdracht die we van USPC hebben meegekregen was het maken van een applicatie (vanwege de specialisatie Smart-Mobile) die samen met hun Skatrixx prototype skateboard werkte. Wat we er vervolgens mee zouden gaan maken zouden we zelf mogen invullen. Er werd wel een oud project meegegeven met wat onderzoek, designs en het skateboard prototype zelf. We mochten ook aan de hardware wijzigingen maken. Mijn doel was om iets te bedenken wat niet te veel voor de hand zou liggen gezien de op het eerste oog beperkte mogelijkheden die er lagen.

## Actie

We zijn als eerste in 2-tallen gaan brainstormen om met een idee te komen later zijn we met zijn allen bij elkaar gaan zitten om tot een eind idee te komen. Dit werd vervolgens ons battle Royal idee. We zijn toen aan de hand van een Trello-board gaan scrummen en de taken verdeeld. Ik ben als eerste aan de slag gegaan met research naar de skate cultuur en websites en heb ik de door USPC meegeleverde research documenten doorgenomen. Vervolgens is er een empathy map en persona opgesteld. Ik ben vervolgens gaan werken aan een logo en direct daarna aan een interactief prototype/design van de app in Adobe Xd. Dit design is uiteindelijk het design geworden dat we zijn gaan realiseren. In de tussentijd zijn er door mij meerdere interviews en usertests afgelegd en heb ik deze resultaten genoteerd en gebruikt in het verdere proces.

Vervolgens zijn we aan de slag gegaan met het programmeren van de app. We zorgde voor een goed gestructureerde Git omgeving, maakte een MoSCoW analyse, zodat we een goed overzicht hadden van de features die we wilde realiseren. Ik ben bezig geweest met een aantal schermen zoals de Homepage, veel tussen menu's zoals het lobby overzicht en nog wat meer andere schermen. Buiten Front-end, ben ik ook bezig geweest met de Backend, Denk dan voornamelijk aan het werken met de Firebase database. Als laatste kwam het opstellen van alle documenten die van ons werden verwacht, hier hebben we dan ook met zijn alle aan gewerkt.

## Resultaat

We hebben een vet resultaat kunnen neerzetten het front- end van de gerealiseerde app is ver af. Verder is er een heel mooi interactief prototype opgezet wat gevalideerd is en waar veel research, design principles en theory achter zit. Ook kan aan de hand van de documentatie de opdrachtgever goed vooruit met de app en al het andere meegeleverde werk.

## Reflectie

Ik heb tijdens dit project veel tijd gestoken in design. Dit was veruit de grootste uitdaging die ik in tijden heb gehad op het gebied van front-end en design. Aangezien de opdrachtgever best tevreden

was met hun eigen UI design hadden we besloten om er niet te veel van af te wijken, maar er moest toch wel veel aan gebeuren. Ik heb dus veel research gedaan en gevalideerd om tot een goed design te kunnen komen. Ik ben uiteindelijk wel trots op het resultaat en heb er veel van geleerd op front-end gebied. Verder merkte ik dat ik met het backend gedeelte een stuk behendiger ben geworden, als het aankomt op Javascript en het werken met databases. Ik heb dan ook mijn kennis en skills goed kunnen gebruiken en andere geholpen met het coderen.

Wat betreft de samenwerking ben ik minder enthousiast. Het was niet altijd duidelijk wie wat deed en er werd niet altijd goed gecommuniceerd. Maar aangezien we een mooi product hebben gemaakt en alles goed hebben kunnen afronden ben ik tevreden.

# Harun Sharif

## Situatie

USPC (Urban Sports Performance Center) is naar ons gekomen met een opdracht. Ze hebben een skateboard gemaakt die de bewegingen van een skater kan opmeten. Momenteel krijg je raw data van de skateboard en het is niet bepaald duidelijk wat de skater doet.

## Taak

USPC heeft ons gevraagd om een applicatie te ontwikkelen voor hun skateboard. Wat voor een applicatie het hebben ze aan ons overgelaten. Het is de bedoeling dat wij wel de data die zij hebben meegestuurd leesbaar maken voor de gebruiker.

## Actie

Bij het bedenken van een concept hebben wij de Double Diamond method toegepast. Wij zijn eerst begonnen met het verzamelen van inzichten. USPC had gelukkig al wat research gedaan dus wij hebben voornamelijk gebruik gemaakt van hun documenten. Op basis van research hebben wij een empathy map gemaakt en een persona zodat wij een beeld kregen van ons doelgroep. Wij hebben daarna alles bij elkaar gezet en zijn doorgegaan met brainstormen. Wij hebben de groep verdeeld in 2 tallen en namen 15 minuten de tijd om zoveel mogelijk ideeën te bedenken.

Na de brainstorm zijn wij tot een concept gekomen en hebben een concept document geschreven. Vervolgens zijn we doorgegaan met het uitwerken van een prototype in Adobe XD. Dit hebben wij uiteindelijk gepresenteerd aan Raymund en met zijn goedkeuring zijn wij verder gegaan met het ontwikkelen van een PWA.

## Resultaat

Het resultaat van de afgelopen 5 weken is een PWA met een functionerende database in de backend. Wij hebben gewerkt met design trends en hierdoor een front-end kunnen maken waar de opdrachtgever mee blij is. De database functioneert ook goed het is mogelijk om data te versturen en op te halen uit de database.

## Reflectie

Tijdens dit project heb ik veel tijd gestopt in design en een aantal nieuwe dingen geleerd over het opzetten van een database. De grootste uitdaging voor mij was het opzetten van een database met firebase en het ophalen van specifieke data. Mijn kennis over HTML/CSS/Javascript is het afgelopen semester ook meer geworden en het gaat steeds vloeiender.

De samenwerking over het algemeen was ook niet optimaal. Afspraken werden soms niet nagekomen en de communicatie liep niet soepel. Bij het volgende project zal ik wat beter moeten communiceren en een proactieve houding blijven houden.

# Christian

## Situatie

Op dit moment zit ik in smart mobiel semester 4. Urban sports kwam naar ons toe met een project die de performance van beginnende skaters zou verbeteren. Het project ‘Skatrixx’ is een gemoderniseerd skateboard die met behulp van een arduino hardware trucjes zou moeten kunnen herkennen en die naar de bijbehorende app zou sturen. Zo kan elk gebruiker zijn eigen statistieken inzien van hoe goed ze zijn en wat ze kunnen verbeteren.

## Taak

Een concept bedenken die veel binnen de doelgroep en ook die goed gebruik zou maken van hun prototype ‘skatrixx’.

## Actie

We begonnen eerst te brainstormen over een goed concept. Dit deden wij met 3 groepen van 2. Ieder kwam met verschillende concepten en uit die concepten kozen wij voor het ‘battle royal’ concept. We vonden dat een battle royal hedendaagse kinderen meer aanspraken, vooral omdat deze term voor kwam in moderne games.

Als groep hebben wij besloten dat Hazem en ik de hardware gedeelte gaan doen van ons concept. In de eerste dag heb ik onderzoek gedaan naar de onderdelen die ik nodig had voor de arduino. Deze onderdelen heb ik geleend voor de resterende weken van het project. Ook heb ik al de arduino en c/c++ extensie geïnstalleerd in VScode, zodat ik kan programmeren met C in VScode. Later was de bluetooth connectie met de arduino is gelukt, maar het is mij niet gelukt om via bluetooth de juiste data te verzenden of binnen te krijgen. Ik kreeg steeds “?” binnen in plaats van letters of cijfers. Gelukkig werkte het tenminste. Ik was met dit wel een stap verder. Ik vroeg een klasgenoot om hulp die hier meer verstand in had en hij had mij goed geholpen. Het lukte mij om data te verzenden en binnen te krijgen.

Ook hielp ik het team met het maken van de pwa. We deden ieder een pagina, en ik had de leaderboard pagina gemaakt. Later hadden wij alles samen gemerged en aangepast volgens het design van onze prototype.

## Resultaat

We hebben al onze must have kunnen afmaken en toepassen aan de pwa. Ons pwa is volledig werken met een realtime database verbinding. De arduino is niet ermee verbonden, maar wel werkend.

## Reflectie

Tijdens dit project heb ik veel tijd besteed aan de hardware. Het was heel lastig, maar uit eindelijk wel gelukt. Ik ben zeker gegroeid in C. Er waren dingen die ik nooit ieder gedaan had met arduino, maar nu dat ik meer ervaring mee heb zal dat anders gaan de volgende keer.

Werken met dit team vond ik leuk, maar het samenwerking was wat minder. Ik vind best wel dat we meer motivatie konden tonen en beter moesten communiceren. Er waren momenten dat niet duidelijk was wat er gedaan moest worden. Van mezelf vind ik dat ik het ook beter moest aanpakken. Ik zal meer gemotiveerd werken bij het volgende project.

# Hazem Altoumeh

## Situatie

I am now in semester 4 – smart mobile. We got an exercise from Urban Sports Performance Center. We had to work with a skateboard that is connected to arduino and other sensors. We got some research results, codes and prototypes and we had to use our design thinking method.

## Taak

Create something that could use the data that comes from the arduino and the sensors. This is an open exercise we can think different solutions in different directions (game, teaching, etc..) but we have to use the data we have and to work on the prototype we got, we do not have to invent anything new or to implement any new elements.

## Actie

The first step was to understand what we got, so we started to read all the research's we got from the client and to check all the prototypes. After that we started brainstorming, we created a lot of ideas, and we chose the best one. After that we wrote the concept clearly and we made a persona and empathy map.

After that we started to work on the hardware, the design, and the software.

We tried to find a solution for the Bluetooth connection and the recognizing of the data, we updated the prototype and made it fit our concept and we implemented some software functions. We did also a user test to check our results.

## Resultaat

Using HTML, CSS and JavaScript we built a PWA that contains and does some functions. The PWA is connected to a database, and you can receive and send real data.

The hardware part was a bit complicated, the organizing of the tricks and the data we got was not possible, so we tried to build a new arduino connection to send and receive new data.

## Reflectie

During this project I worked on different stuff, the basic task was to work on the hardware. It did not finish with useful results, but I have tried different ways and learned a lot about arduino, sensors and connections.

I worked on a code to implement a leaderboard for our PWA and at the end I worked on some documents.

I think that we got an interesting exercise, but as a group of 6 people found it a bit too much for such an exercise. The connection inside the group was not the best, and the finding of an internship did not allow us to be available always.

