# **Project**

Advanced Frontend Development, Exam Project, Autumn 2020

### Course

Multimedia Design, Business Academy Aarhus

### Client

Aarhus Brætspilscafé

## Group

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# **Supervisors**

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### Website

https://danielberger1995.github.io/boardgamecafe/index.html

# **Prototype**

shorturl.at/nqry9

### Code

https://github.com/DanielBerger1995/boardgamecafe

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#### **INTRODUCTION (Oliver)**

Board games have somehow managed to stay alive in our increasingly digital world. It gives people a break from the fast-paced 21st century lifestyle that we have gotten so used to. Board games give you the ability to enter a world without smartphones and Zoom meetings, but instead filled with magic, good times and quirky creatures. In this project we hope to build a bridge between the digital and the analog, without taking away the charm.

#### PROBLEM STATEMENT (everyone)

How can Aarhus Brætspilscafé benefit from an improved digital solution?

- How can a digital solution increase the number of customers?
- How can a digital solution help people find relevant board games?
- How can a digital solution bring people together and create a community around board games?

#### **METHODOLOGY** (Piotr)

First and foremost, we want to state that we all contributed equally to the project, and that the person who wrote about a specific part didn't necessarily also create that entire part themselves. We chose to use scrum as our development method, which is an agile method, allowing us to get feedback and make the appropriate changes if needed. In order to divide the project into separate sprints, we set up Scrumwise, as suggested by our supervisors. We found it a bit confusing to use, so we adapted and decided to use clockify.me instead. This allowed us to organize our project better and manage our time and thereby the corresponding billable hours. Below you can see the total amount of time we spent.



According to the project description, we had to divide the billable hours into three categories of expertise. Rookie (50% / hourly wage), Intermediate (75% / hourly wage) and Expert (100% / hourly wage).

Obviously, we're not all in the same category for each part of the project, for example we each feel like experts working with HTML and CSS, but we have different expertise when it comes to e.g. Firebase. For that reason, we always commented the level of expertise when putting in our hours in Clockify, and it's divided like this: of the 260 hours spent, 77 of them we counted as Expert hours, 108 as Intermediate and 75 as Beginner. See the calculation below.

**Expert:** 77\*750 = 57,750 DKK

**Intermediate:** 108\*750\*0.75 = 60,750 DKK

**Rookie**: 75\*750\*0.5 = 28,125 DKK

**Total amount:** <u>146,625 DKK</u>

#### DESK RESEARCH

#### **Client Description (Oliver)**

Aarhus Brætspilscafé is a small, local chain of board game cafés, founded by Jesper Overgaard in 2015 (expanded in 2018). As the name implies, they are exclusive to Aarhus, where they have two locations: one in Vestergade and another in Fredensgade (Lokalavisen Aarhus. 2020.). The Fredensgade location is equipped with a wide selection of long-lasting, immersive games for the more "hardcore" players. The one in Vestergade has more of a laid back vibe, with people drinking beer and enjoying a casual game of Trivial Pursuit. But, in general, the two locations are very similar, and are visited by a mix of first timers and regulars, therefore we won't be distinguishing between the two locations in this report (Aarhus Brætspilscafé).

When arriving at the Aarhus Brætspilscafé, you are required to buy a "game rental"-ticket, which essentially acts as an entry fee. Upon doing so, you are allowed to stay for as long as you wish and play all the games you want. If you fall in love with a particular game, they will even sell it to you. Apart from board games, they also make money off of snacks and drinks (Aarhus Brætspilscafé).

#### **Board Game Research (Oliver)**

Having picked our client, we immediately felt the need to know more about the subject. Naturally, we already had some idea of what a good solution could look like, but in reality, we knew little to nothing about the who, what and why of board games. It is very important to us that the focus of our project is somewhat topical, and so we were especially interested in whether board games are still relevant in our increasingly digital world. This is where desk research comes in handy. We have read through articles, looked at online forums and searched for other relevant information.

To our surprise, we learned that board games are actually more popular right now than ever before. In a world filled with never-ending newsfeeds and about a million bingeable Netflix series, board game sales have only increased. Hasbro, who most people know from games such as Monopoly and Jenga, has sold 20% more board games in the third quarter of this year, compared to last year. The company behind UNO, Mattel, has also had a great 2020. So far, they have reported an impressive 48% increase in game sales (Today. 2020.). And it is not only the colourful, fun family games which have been making a comeback. At the beginning of 2020, chess.com saw 700,000 new players within a mere 3 weeks (Edge Hill University 2020).

Apart from the actual games, board game cafés are also doing incredibly well. In the U.S, more than 5,000 board game cafés were opened in 2016 alone (https://www.globenewswire.com/news-release/2018/08/07/1548201/0/en/12-Billion-Board-Ga

<u>mes-Market-Global-Outlook-and-Forecast-2018-2023.html</u>). In short, we had certainly stumbled upon a very topical subject, and were keen to create a solution that would be relevant right now.

#### **Client Website Analysis (Piotr)**

Before moving forward, we thought it best to take a step back and analysis how our client represented themselves digitally. The first impression we got was that the website itself was pretty in design and didn't represent the feeling and look that we personally associate with board games. Although their website was a very simple and easy to use in terms of navigation, but It doesn't create a lot of value for their users. It is extremely text heavy, without any use of visual elements or call to action buttons, this causes a lack of visual hierarchy making it difficult for users to orientate on the page.

One element that we found particularly "bad" was their Board Game search function. It doesn't have any filters or images therefore the user needs to know exactly what he's looking for in order to make use of it.

#### **Competitive Analysis (Dan)**

With our client website successfully analyzed we moved on to examining their competitors, to see how they differentiated, what they did better, worse or if they had any additional features. Overall, most Board game cafés websites had very similar layouts and subpages, sometimes including SEO friendly pages, such as FAQS, news and communities.

http://www.therookandpawn.com/fags

https://giga-bitescafe.com/groups

https://gamepointcafe.com/news/

Design wise was where a lot of them differed to our client, using bright colors and whitespace to appear more inviting and cheerful. Some competitors also made great use of illustrations and board game stylistic references throughout their website, giving it more life and personality, allowing users to know exactly what website they are on from start to finish.

Although a lot of the websites were unique in their own way, we saw that almost all of them fell short in terms of filtering and searching for board games. Either offering the users a search bar or an extremely long Excel sheet.

After analyzing their direct competitors, we needed to dive a bit deeper into general board game society to get a better understanding of how the actual players categorize the games. What we found out was that each website had a different way of categorizing and that there was no "right" way.

For example BoardGameGeek, a large community website, BoardGameOracle and UltraBoardGames share over 50 extremely specific categories. In order to make it easier on our users we wanted to reduce the number of categories.

https://www.boardgameoracle.com/boardgame/category

https://boardgamegeek.com/browse/boardgamecategory

https://www.ultraboardgames.com/category/

#### FIELD RESEARCH

#### **Client Interview (Oliver)**

Now that we, through desk research, had got an overview of the subject, it was time to get more a bit more specific. We wanted to focus a bit more on our actual client and learn about their strengths and challenges. We reached out to founder and owner, Jesper Overgaard, and he kindly suggested to send him an email with any questions we might have, and so we did:

# Q: Does Aarhus Brætspilscafé have any challenges that you feel could be solved with a digital solution?

A: You could easily make a way better search function, where you could have games suggested based on our selection, the number of players you are and even what interests you.

#### Q: What is the primary reason that people visit Aarhus Brætspilscafé?

A: People come for the "hygge". It's cosy and relaxing being here and playing some games while drinking coffee or beer.

#### Q: Have you noticed an increased interest in board games in recent times?

A: People are definitely playing more, but during the pandemic it has obviously been more at home than here. Like everyone else, we have had a tough year, but we're sure it will go back to normal in the new year.

#### **Customer Interviews (Oliver)**

As previously mentioned, neither I, Piotr or Dan are new to board games. We all play every once in a while, but we don't, by any means, consider ourselves part of the "board game community". In order to create a better solution, it was absolutely necessary that we got a good idea of what kind of people are going to be using it. With utmost respect for corona restrictions, we carefully approached and interviewed 5 people visiting the board game café: one couple and a group of 3 friends. The couple had been there a few times before, while the friend group usually visited several times a month. The main goal was to hear about everyone's reason for visiting, and if a digital solution did or could have played a significant role in this. The following is a summary of what we learned. First and foremost, all participants mentioned that they come to socialize and for the *hygge*. This was not surprising to us, as we also associate board games with good times in the company of family and friends. Some participants were also quick to mention that although a game of Monopoly *can* get heated, it's really just friendly competition in the end.

Both groups of participants had booked a table, using the booking service on Aarhus Brætspilscafé's website. We asked about this process, and learned that it was pretty straightforward, and no one had any issues with it. The group of 3 had quite an interesting point to add. They wanted to play Codenames, and like most co-op board games, you need an equal number of players to form fair teams. They had originally planned to go with more people, like they usually do, but the rest had cancelled. These guys would have loved to somehow invite others stuck in the same situation and all play together. We asked if they couldn't just approach someone when they got to the café, but, understandably, they didn't want to intrude and disturb people in the middle of a game. According to them, it would have to be planned out before going there. They also mentioned how they prefer to play the same games as they usually do, so being able to have a set number of players is really useful, in case someone should cancel another time.

The couple weren't too into board games and had ended up just going for Trivial Pursuit. It was the only game that they immediately recognized, because they had the same one at home. They seemed kind of disappointed with their decision, and so we quickly thought to dig a bit further into this. They explained how they had actually planned to expand their board game horizon and finally try something new – that didn't work out. Instead, when they arrived, they were overwhelmed by the literal wall of board games. We asked if they noticed the website had a

search function, where they could have seen what board games were available. They had indeed noticed it, but it wasn't very helpful. As they put it: "well, we don't really know any games, so how would we know what to search for?". We thought this was a great point, and it corresponds to the owner mentioning the lack of a filtering option. It also suggests that this is not the first time, that someone has mentioned this.

#### Card Sorting (Dan)

As previously mentioned we would have to drastically reduce the number of board game categories. To do this we decided it best to include the users in our decision making via card sorting. We set up a Trello document, with a list of 30 board games. For the first round we conducted open card sorting, allowing the participants to name the categories themselves and give us an unbiased answer. See below:

Overall the open card sorting proved extremely helpful as we were able to get a diluted group of categories that resonate with testers. With that information we then were able to pinpoint the recurring categories and use them in our closed card sorting. "Family", "Party", "Strategy" and "Fantasy".

Closed card sorting validated our chosen categories as we saw that our testers had no problem at all sorting the games into their designated category.

Another big takeaway from this process was that we were able to see that the participants often left some board games uncategorized, suggesting that users don't necessarily know a large variety of board games and that subsequently shows using categories is not enough information for the average user.

#### **TARGET GROUP**

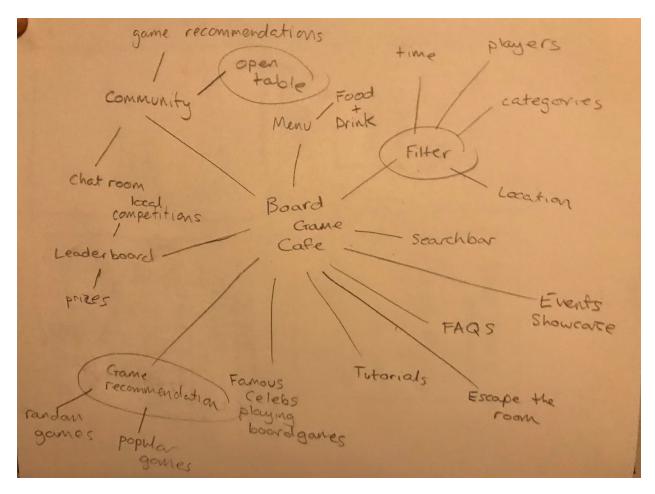
#### Personas (Piotr)

For us it was really important to make our solution help solve real issues that are bothering our users. To sympathize with them we created two personas that we can easily relate to. Personas are a good reassurance that everything that you are creating is for sure something that the users needs. Based on our interviews and findings we made two personas Sarah and Jens. Sarah is representing a younger part of our target audience, she works a lot and usually is busy with her life. Jens otherwise is a less outgoing and social person. He prefers to stay at home and play video games but he is eager to try something new. (see appendix 1)

#### Brainstorm (Dan)

We learnt from the client and users that the board game browsing system needed a rework, but we didn't want to limit ourselves to just that and so we brainstormed on other possible reworks or additions to our clients website.

As a team we then went through all the possible ideas and discussed them thoroughly. We then



circled the ideas we thought would create the most value for our client and users.

Interviews gave us a clear indication that users were limited in what games they can play because of a lack of players. Our idea of creating open tables would allow users to be able to open or join other groups of players, allowing them to play games they wouldn't be able to otherwise, while meeting new people and thus creating a close knit community around Aarhus Brætspilscafé.

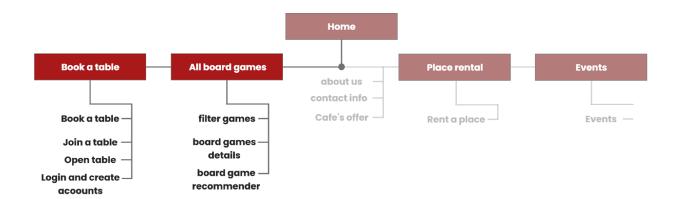
The other main concept we took away from our brainstorm was the idea of giving players a board game recommendation. As we learned through our testing, most users have a very limited knowledge of board games, therefore restricting their choices. To solve this, we would provide them with suggestions based upon other interests they might have. This could be anything, for example sports, movies or video games.

For this project, we chose to base the suggestions on video games, as most of the people we tested on shared this interest, and moreover video games have a lot of the same dynamics as board games. In order to figure out what video games would correlate with what board games, we once again asked the users. We decided on the most popular video game categories and then asked users to sort the board games accordingly.

Most of the participants sorted the board games similarly, as well as how we had expected.

#### Sitemap (Piotr)

We did not want to do the whole website for our client just the parts that needed to be fixed the most. As previously mentioned, we browsed through our clients real website and we found that some of the parts were just not working well and those are exactly which ones we decided to do in this project. Sitemap itself helped us visualize the structure of the whole website, later on being helpful while linking the sections we did to those that already exist.

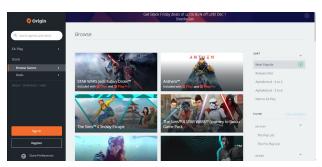


#### DESIGN

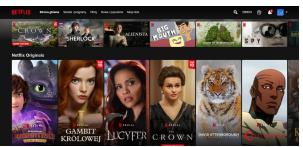
#### **Inspiration (Dan)**

Before moving on to designing, we first went searching from inspiration. We looked at various different websites, apps and platforms to get motivated in terms of layout, design and color.





We liked the filter functionality here



Netflix layout - internationally known

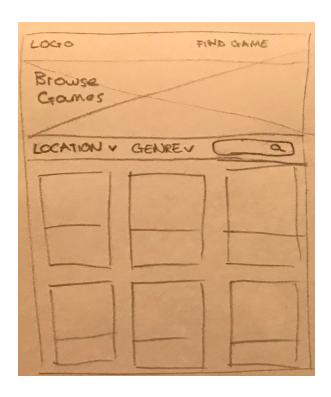


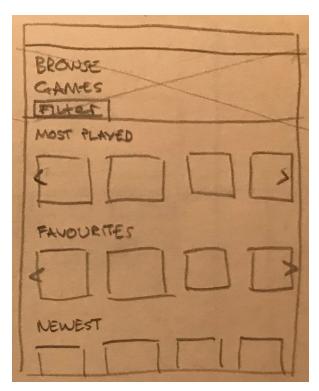


#### Sketches (Dan)

For the filter we had multiple different versions, all of which executed the same function. We wanted to be able to filter first by location, since there are 2 separate locations displayed on the same website. We thought it most important to allow users that option first. We then decided on following it up with our newly adapted genres, amount of players and game duration.

We felt like the first version was a bit too basic and didn't offer much user experience. Therefore we decided on adapting a similar design as Netflix has. We felt that the design layout of Netflix is international and common in most households and therefore would improve the website in terms of usability.

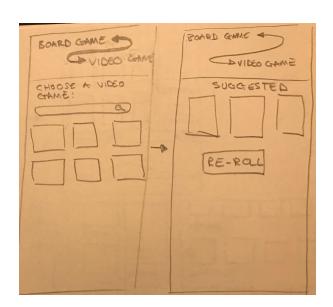


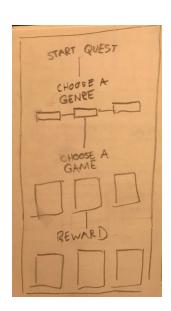


When it comes to the "Game recommendation" or "Game Finder" concept we were split on two designs. The first option was a simple solution to the problem, we would just create a list of

video games, with images. The user would then be able to search for and choose any video game they were comfortable with and be recommended a similar board game.

Although we felt this solution completed the task of our concept we also felt it was a bit lacking in terms of engagement. The second idea we sketched out was more of a journey. Taking the user down a rabbit hole of questions using animations alongside to make his experience memorable. We felt this method would stand out and give us a chance to portray our clients personality in an unique and interactive way. Thinking further in this topic we were able to notice potential links to generating SEO for Aarhus Brætspilscafé as our research showed an increase of both board gamers and video gamers.

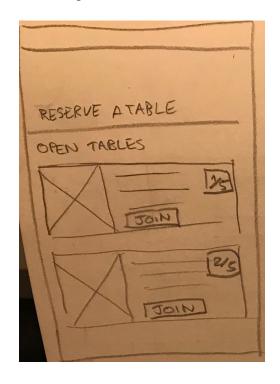


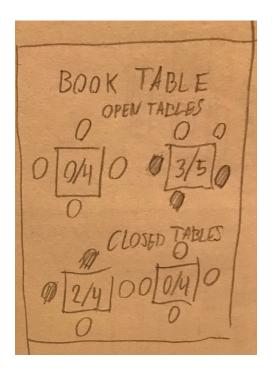


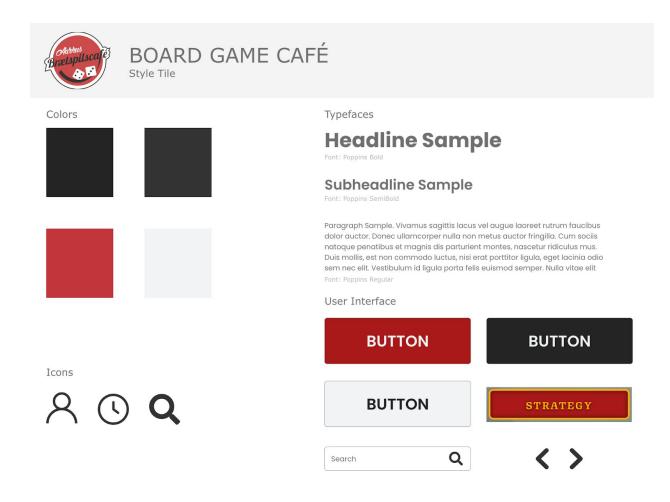
The final concept we sketched out was the "Open Tables" page. At first we came to a unanimous decision to include an indoor map of the location and have users be able to reserve or join other gamers from there. Although it would be an interesting concept we put the idea aside as it had a

few too many holes in it. Since users are able to reserve tables on previous days, we would have a hard time being able to display all the corresponding data.

For that reason we moved on to our second idea, which was more or less a page where "Open tables" or "Public tables" are represented as posts. Discussing functionality of the coded version, we thought it best that when a user clicks to reserve or join a table, he will be prompted to create an account and therefore the data would be then saved to his user ID not allowing him to re-join a table multiple times.







#### **Style Tile (Piotr)**

For colors we decided to use our clients primary colors of our client as we felt they represented the cosy fireplace atmosphere really well using the dark gray (60%) and light grey (30%) colors in the background to create a dusky mood, while using the red (10%) as our highlight color to create a feeling of warmth.

For Fonts we wanted to keep it simple, friendly and inviting. Therefore we decided to use Poppins throughout our website as we felt it ticked off all the categories. We used Bold for headers, Semi-bold for sub headers and regular for the text.

For the buttons we played around with every possibility of our colors for both the standard and hover effect. We in the end decided to use our highlight color, to bring attention to our call to action buttons.

When it came to the "Game Finder" page we decided our style tile did not exactly match the impression we were trying to create. For that reason we allowed ourselves to use a different font, one that resonated better with old-school medieval games as well as implementing the highlight color of gold to brighten up the experience.

#### Mock Ups (Dan)

With the style tile in place, making the mock up was pretty straight forward. By adding images and colors we were able to bring our final solution to life. During the mock ups we were also able to focus into the nitty gritty details, such as designing the login page and the actual board game descriptions, what information should be shown and how.

Once completed we connected or mockup and were ready for usability testing. (see appendix 2)

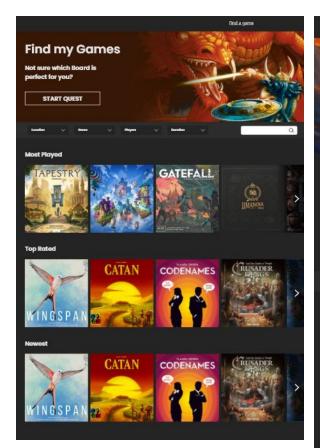
#### **Usability Testing (Dan)**

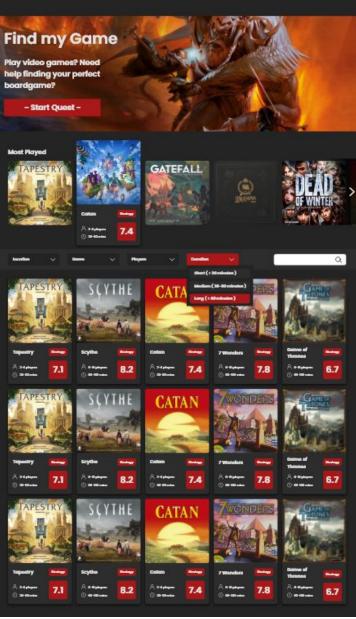
Overall the feedback we received was extremely positive. Our testers regarded our concepts highly and expressed their utmost interests. Although it was mostly positive there were a few drawbacks.

On the board game page users found it difficult to navigate on the page with the filter being positioned at the top and have to scroll down and scroll side to side as well. Although the page as a whole was not as user friendly as we had imagined, the testers did say they really liked the layout and mentioned how important it was to be actually recommended options, as to not be overloaded with too much choice.

To solve this problem we decided to check the top section the same as previously, displaying the most popular games being played, thereby giving new users an easy selection. We then moved

the filter down to the following section that would include all board games. We kept the elements half screen size so that the next section would always be visible to the users.





They also noticed the use of yellow on the "Open Table" page and commented on the design consistency of the pages. Although they understood why our "Game finder" page had taken on a

different font and styling. For that reason we decided to take yellow off the "Open Table" page to thereby keep the design consistent.

Another thing that was commented on was our color of red. Our testers agreed it was a bit too cold of a color and did not incite warmth in them. For that reason we implemented a darker, warmer shade of red to bring more of the cosy, fireplace atmosphere we wanted to create.

#### **DEVELOPMENT**

#### Appending games / open tables (Dan)

As for appending the board games to our main page we used code that we learnt from Rasmus at our lectures. This particular part of code is closely connected with the search bar. The way it works is essentially the search bar is pushing the result of search to an array and after that the above function appends all the results to the board game-all container using Es6 backtick string. We combined js and html inside one function.

Almost the same function is used to append open tables from their collection the only difference there is, is that in second function we added a conditional that checks if the used checked the checkbox and agreed to open his table.

#### **Table Booking (Piotr)**

We wanted to give our users the opportunity to book their own table through the website. For that we needed something to store all of the data in some database, we decided to use firebase since we had it already set up for appending the board games.

The problem was that we need to be able to differentiate the tables so that the person creating it won't be able to join. For that we used firebase authentication. We gave our users option to log via their emails because it's one of the easiest ways of communicating without sharing somebody's vulnerable data.

```
function userNotAuthenticated() {
 // Firebase UI configuration
 const uiConfig = {
   credentialHelper: firebaseui.auth.CredentialHelper.NONE,
   signInOptions: [
     firebase.auth.EmailAuthProvider.PROVIDER_ID,
   ],
   signInFlow: 'popup',
   callbacks: {
     signInSuccessWithAuthResult: function (authResult, redirectUrl) {
       hideLogin();
       return false;
   },
 // Init Firebase UI Authentication
 if (!_firebaseUI) {
   _firebaseUI = new firebaseui.auth.AuthUI(firebase.auth());
 _firebaseUI.start('#firebaseui-auth-container', uiConfig);
```

We used firebase auth UI for it and appended it to our authentication container.

The code responsible for sending the data to firebase with the new booked tables details is when the second form is submitted we take the whole data and append it to a new document inside table opening collection sending the value of options and checkbox along side with the user id. Unfortunately because of lack of time we didn't make this part 100% done but the core parts are done and works perfectly.

```
_tableBooking.add({
    cafe: tableCafe,
    date: tableDate,
    genre_title: "undefined",
    hours: tableTime,
    open: tableOpen,
    seats: tableSeats,
    host: table_host,
})
    .then(function (docRef) {
        console.log("Document written with ID: ", docRef.id);
      })
      .catch(function (error) {
        console.error("Error adding document: ", error);
      });
}
```

#### **Select and option filter (Piotr)**

Because our database had a lot of data (board games) we needed to give our users possibly the easiest way to filter through all of them therefore we decided that select and option are perfect for us, mainly because we can easily capture the value of the selected option.

Unfortunately it brought us more pain then we actually gained from this struggling too much with making it work and styling it we did as much as we could sadly not making it work fully. Even though it was working in our booking table section it didn't fulfill it's purpose in filters so we needed to delete them.

#### Filtering onclick (Dan)

We were able to filter the array to each specific value using the code below. This allowed us to have an onclick function on each of the dropdown bars. Thereby filtering the array correctly.

Unfortunately we were not able to have each filter work simultaneously with one another, as each function would not add to the last but instead cancel it out.

```
function Fredensgade() {
   _boardGameRef.where("place", "array-contains", "Fredensgade").onSnapshot(function (snapshotData) {
       _boardGames = [];
       snapshotData.forEach(function (doc) {
          let boardGame = doc.data();
          boardGame.id = doc.id;
            _boardGames.push(boardGame);
       appendBoardGamesAll(_boardGames);
function oneplayer() {
 _boardGameRef.where("playersmin", "<=", 1).onSnapshot(function (snapshotData) {
       _boardGames = [];
        snapshotData.forEach(function (doc) {
         let boardGame = doc.data();
           boardGame.id = doc.id;
           _boardGames.push(boardGame);
       appendBoardGamesAll(_boardGames);
```

#### **GSAP** (Oliver)

For the animations we used GSAP which is a green sock animation platform that makes sure that your animations look the same in all of the browsers. In our case we also used a scroll trigger that allowed us to trigger lines drawing itself by changing the transformY of the container. The way gsap project works is that you basically select the element that you need like in querySelector and using object properties manipulate different aspects of the animation.

```
gsap.from(".circle-one", {
    scrollTrigger: {
        trigger: "#aBtns",
        start: "top center",
        end: "center center",
        toggleActions: "restart pause reverse pause",
        markers: false,
        scrub: true
    },
    scaleY: 0,
    duration: 5,
    transformOrigin: "top left",
    ease: "none"
});
```

#### **Individual Reflections (Piotr)**

For me this project was a really interesting experience at the end of my 3rd semester at BAAA. Initially struggling with finding our client and lack of time going with that at the end of the project might help me in my internship period when I would be working under more pressure and will not be able to make everything 100% done. What I really wanted to learn in this project was working with firebase and I guess I achieved that goal. Now I don't think the firebase is a big challenge for me and I can do much stuff that I wasn't before like creating users and manipulating the data that we can get from the collections and users.

#### **Individual Reflections (Dan)**

This project was definitely eye opening, as I was able to clearly see how much I have improved in such a short time. Being able to mostly use Firebase without problems was a big take away. But as always it was interesting for me to tackle a new project with a whole new identity and client base.

#### **Individual Reflections (Oliver)**

For me, I have really had the chance to dive deeper into the frontend development part of being a multimedia designer. Especially working with Firebase has been very interesting, and it sparks a lot of joy to create a solution that actually works, with real data rather than dummy data. I also got to work with GSAP, which is a super easy way to create engaging animations, without having to write a whole lot of code.

#### **Future improvements (Dan)**

During this project we faced many obstacles on our way, essentially nothing went how we planned. In the future if we would have more time we would make many things work 100%. Firstly we would like to properly test what we have created over the time of our project.

We would like to also make the open tables section working 100% so you can join the table as It should work. Also the filters on the main page should be fixed but we didn't have much time for that over such a short period of time.

#### **Conclusion (Piotr)**

Our solution will increase the number of customers by offering SEO friendly content like board game recommender and converting people from video gamers to board game players. Also by making all of the website more user friendly ensure the prosperity of the business. Our solution also makes sure that the users always find a board game that they want to play either by board game recommender or simply by filter. We can also create a community around the cafe where people can meet not only with their friends but also meet new people at open tables.

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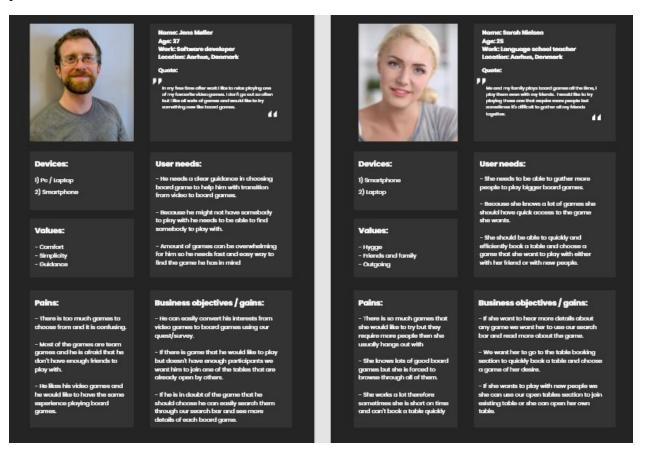
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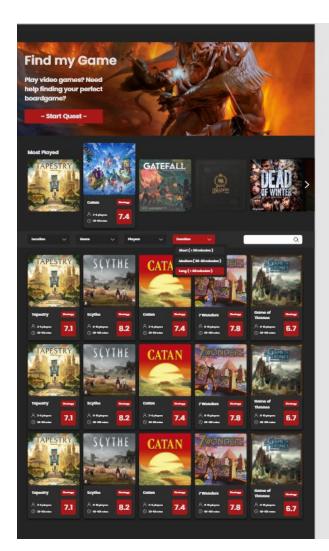
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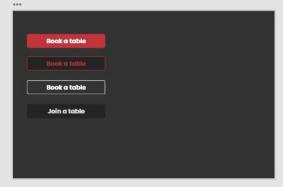
#### Appendix

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