Made By

Nikoleta Dimitrova
Yordan Doykov

Email

n.dimitrova@student.fontys.nl
y.doykov@student.fontys.nl

Android Duo Report

Time Period from 13 Feb 2023 to 15 Mar 2023

Contents

ABOUT

In the first four weeks, we were supposed to create an Android App using Kotlin. We got case number 5 from the wheel of fortune - efficient remote working.

As remote work offers freedom and flexibility, working from home becomes a reality for many individuals and an increasing number of people are transitioning to this form of work.

PROBLEM

Remote workers face serious difficulties while trying to get to know their colleagues. As they are working from home, they tend to feel isolated and alone.

Another problem they face is struggling to build and maintain relationships with colleagues due to the lack of face-to-face interactions.

Furthermore, because their workstation is not the same as their colleagues, they miss out on the team building activities and feel like there are not enough virtual activities to help them bond more with each other.

SOLUTION

The app that we created aims to help remote workers connect and bond through different virtual activities.

Our goal is to reduce feelings of isolation and loneliness by providing a platform for socializing and connecting with co-workers. This can promote a sense of community and belonging, which can positively impact mental health and well-being.

Also, the app has a goal to facilitate communication and collaboration between remote workers and foster a sense of teamwork and shared purpose. This can increase productivity and better outcomes, as remote workers can work together more effectively and efficiently.

TARGET GROUP

- Remote workers
- Working with colleagues and in teams with others
- Introverts and extroverts
- Want to find ways to be bonded with their colleagues
- Lack team building activities
- Feels like virtual activities can get teams together

OVERVIEW

We focused our target group on workers and more specifically remote workers. As we are still not part of this group, we had to hear about their needs and painpoints, emphasize with them and create something that they find meaningful.

The people from our target group work from home and experience problems communicating with their colleagues which leads to them feeling like outsiders. They feel like there is a gap in the communication aspect and want to feel more included and bonded with their colleagues.

DESIGN PROCESS

We used the Design Thinking Methodology because it puts the users at the center of the problem-solving process which ensures that solutions aim to meet their needs and expectations. This approach can result in more effective ideas that are more likely to be accepted by the users. Also, this process is non-linear and you can go back to certain steps when you need. This makes it very flexible and iterative.

We started the design thinking process by identifying the target audience and researching their needs and wishes when it comes to remote work. The best way to be aware of what others think and want from a certain product is through emphasizing. We also did library research where we dig deeper into the topic of remote work and find out what things are currently there on the market that promotes remote teamwork collaboration.

With the data we collected, we started our define stage process. Based on the research, we created a persona, empathy map, storyboard, affinity map, and day in the life. The way we created them was mainly from the feedback gathered during the research and they helped us generate different ideas to shape our concept.

Then we continued with the ideation phase where we started with sketches and brainstorming ideas about the design. We used the Benchmark creation method to get inspiration from other websites and see what features they offer. The next step was the designing phase with the high-fidelity prototype and the coded app. To finish up the process we conducted some user testing and analyzed the results from it based on the feedback.

Empathize   Define   Ideate   Prototype   Test
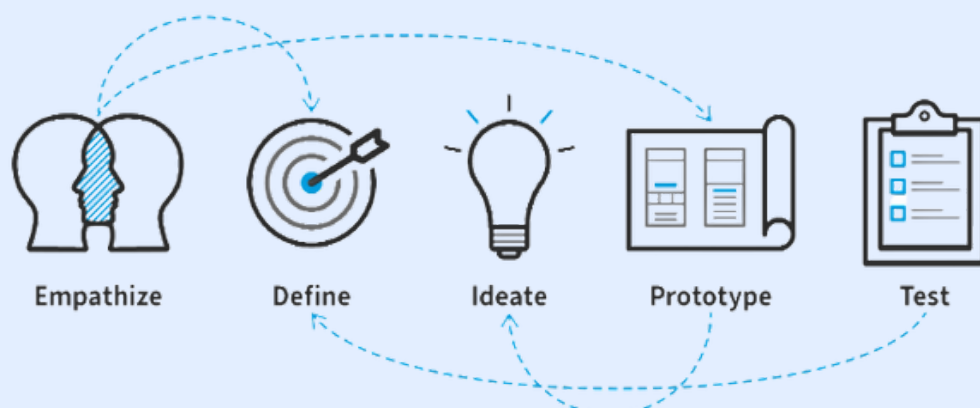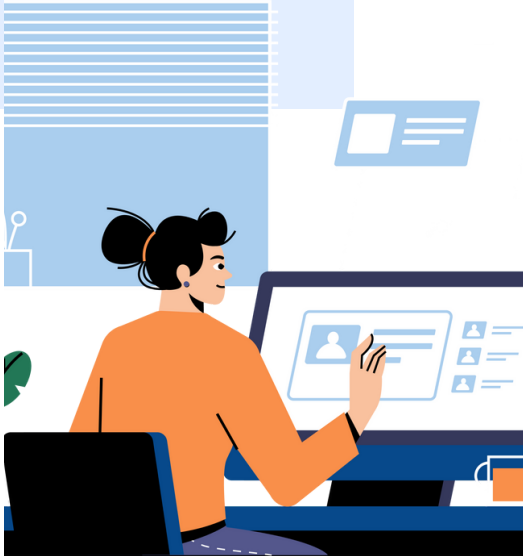
EMPHASISE

SECONDARY RESEARCH

The aim of the secondary research was to highlight different statistics and answer these research questions:

- What are the cons and pros of working from home?
- Is there an emotional impact of working from home?
- Can gamification keep employees more engaged in working?
- Are there positive aspects of games during working hours?
- Are there apps that encourage employees to work together in a more flexible way?

During this research, we focused on finding out the pros and cons of remote work and how it affects the workers. We also wanted to focus on the gamification part as it was one of our requirements and make research about game motivations and approaches because we wanted to apply the most suitable ones in our app that users find interesting and useful.

We found out that more and more people prefer working from home but experience severe difficulties while trying to communicate with their colleagues. While working remotely has its pros, it certainly comes with plenty of drawbacks that most people suffer from. Employees that work remotely tend to have a hard time dealing with loneliness and team building, stating that they feel distant from their work environment and have fewer opportunities to talk to their colleagues.

Social Interactions also typically suffer, since one is alone at home during the time that they would normally be surrounded by their colleagues and work environment. Meeting new people becomes harder and for extroverts, this can generally be considered a dealbreaker, since they enjoy social games and activities.

Games using different approaches such as points, competitions, and awards are a great way to keep colleagues motivated and engaged. We also looked into different competitors and found out there are not enough apps that promote team work collaboration.

Read the whole
report - **here**

EMPHASISE

COMPETITOR ANALYSIS

The goal of the competitor analysis was to find out what is currently on the market when it comes to remote working. Most of the apps we saw were mainly for time management and assigning tasks.

We looked into 4 tools more in-depth because they seemed more reliable and used a lot by the people from our target group. There was only one tool called "Trivia Huddle" which promotes teamwork collaboration and uses gamification as a way to help remote workers get closer together. The problem with it was that is still not an app and people cannot download it and use it whenever they want to.

Furthermore, from the research we conducted, we found out that points and prizes can be a great motivation for users and this one does not support rewards, so the questions can become easily boring and they won't feel engaged in the whole experience.

The other tools we looked into were "Todoist Karma", "Classcraft" and "Trello". The first one is mainly oriented towards self-monitoring rather than team collaboration. The second one is dedicated to schools and not businesses, but it is a great app that uses gamification to motivate students to make their tasks on time. And the last tool is mainly for task management and organizing work within companies, but the social aspect is missing as people do not get the chance to track their progress and get to know better their colleagues.

The competitor analysis
can be found in **Appendix A**

EMPHASISE

SURVEY

Link to survey: https://forms.office.com/e/UUeetLyEXD

The unmoderated survey conducted aimed to investigate the users' opinions when it comes to remote working, working with colleagues and staying connected with them.

Also we wanted to find out more about our target group, hear their pain points and become more aware of the problems they face as people working from home. We also wanted to read more about their experience and the pros and cons they think working from home has.

The survey was made in Microsoft Forms and disributed among people from various backgrounds. It was part of the quantitative research.

GENERAL INFORMATION

We received 20 answers that helped us understand our target group better. We were able to get a better view of their experience and hear about the setbacks they have stumbled upon as remote workers working with others.

The survey is divided into three sections. They are the following:
- **Introductory:** Getting to know our target audience, where they come from, their occupation, and their age. We wanted to know more about their current occupation and work schedule
- **Main questions:** The benefits and challenges they have faced while working remotely, if they prefer working alone or with a team, their experience with colleagues and communication, and if they have participated in bonding activities that can help them get closer
- **Final questions:** Find out if they want help with getting to know their colleagues better, hear their opinion on increasing interaction between co-workers
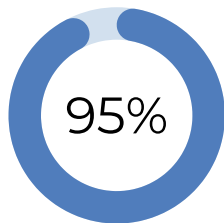
Survey questions
in **Appendix B**

SURVEY ANALYSIS

85%
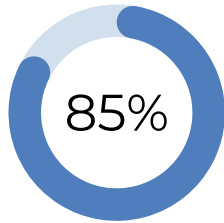
**Age group
18-30**

When it comes to our target group an astonishing 17 (85%) of the participants are from 18 to 30 years old. Only 3 (15%) are 31-45. This means the survey is mainly done by young adults.

95%

Working

9 (45%) of them are part-time workers (leading), 8 (40%) are working full time (second place) and only 2 have a side job. This helped us a lot because our goal was to see how many of them have a working occupation and busy schedules.

**Hybrid
47.4%**

**Fully remote
52.6%**

**Alone
5.3%**

**With collegues
94.7%**
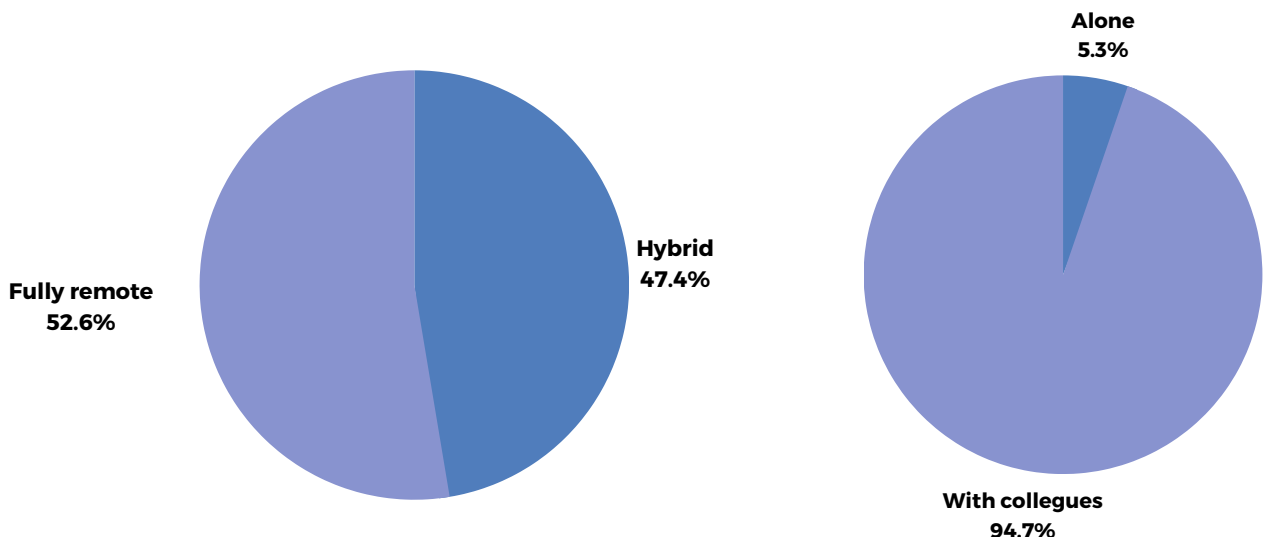
From the pie charts above it can be seen that about half of the participants are fully remote and the other half are doing hybrid work, which means that they are all susceptible to the drawbacks of working from home. What's more is that nearly all off the respondents are required to work with their colleagues, which indicates that there is a possible issue with communication/collaboration at hand,

SURVEY ANALYSIS

■ People

15

10

5

0

Time saving

Freedom and flexibility

Cost saving

Peace and quiet

When asked about the benefits of working from home, 13 people like the freedom it comes with as they can be more flexible and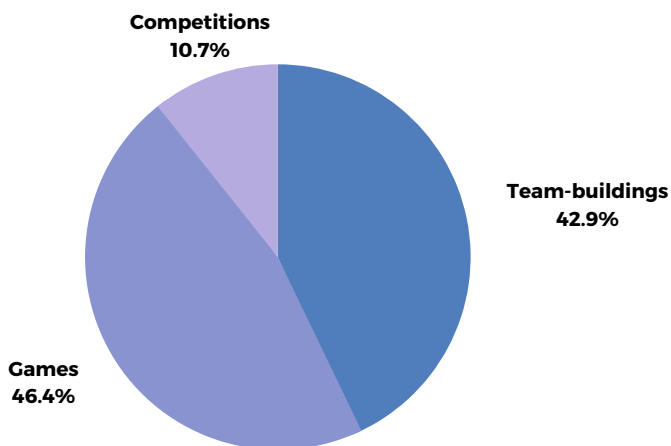 manage their time better. They also like the peace and convenience their home has to offer. Along with this, 9 people save more time like this because they do not have to spend time travelling.

Competitions
10.7%

Team-buildings
42.9%

Games
46.4%

Our participants stated that the best way to increase interaction between collegues is through different games. The second choice were team-buildings but most of the people who are remote cannot attend these activities from home.
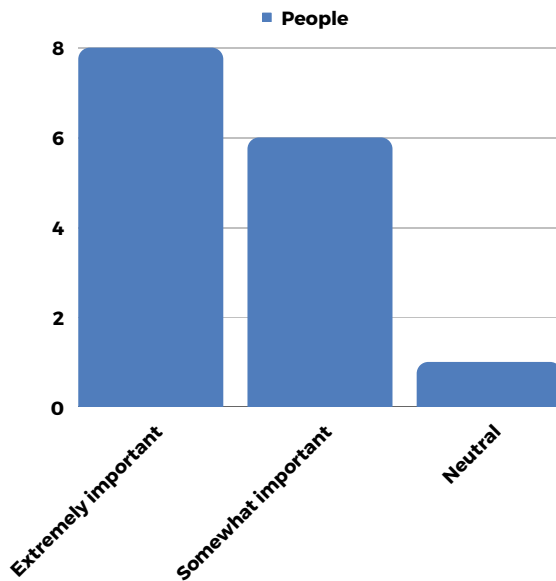
★★☆☆☆

Relations with collegues.
Average rating 2.33 out of 5

We asked our participants to rate how well they know their colleagues. The rating indicates that the majority of individuals who work remotely have little to no familiarity with their colleagues and have restricted communication with them.

EMPHASISE
SURVEY ANALYSIS

■ People

The graph depicts that 8 people (53%) of the participants think that it is extremely important to have a good relationship with colleagues which shows that there should be more activities organized to make this happen.

Yes because I see them twice a month and I don't know who I'm working with most of the time

Yes, because I don't get to see them that often and sometimes I feel like there is not enough bonding between us

I think it's hard to maintain a team without good understanding of each other

When we were in place, things were kind of good, though from the point when we got full online, communication has begun to deteriorate and to diminish and the workflow was affected really bad.

When I'm at home it's hard to keep the conversation going

The collaboration is difficult

Opinions on gap between communication with collegues

Conclusion

Based on the survey we found out there is an underlying issue when it comes to working remotely, namely interacting with your colleagues. Most of the participants indicate that for them it is important to form strong bonds with their colleagues in order to communicate and collaborate better, which in turn increases the quality of work. However, it is hard to do so when working either hybrid or remotely, since there are no actual physical interactions between workers and they do not engage in any teambuilding activities. This leads to the participants in the survey feeling lonely and oppressed, since employees are not forced to engage with each other in any way.

INTERVIEWS

Link to interview 1: https://youtu.be/73inYO2DePM
Link to interview 2: https://youtu.be/XNBeOKNcAeM

Introduction

We conducted 2 interviews with people from our target group. They are studying and working at the same time. The conversations were recorded and the participants were asked questions about their daily life as a remote workers, the benefits and challenges this work comes with.

We wanted to know more about his current relationship with his colleagues and hear how they think working from home can be improved in order to make them feel more engaged in the working environment.

Information Participants

Joan Krastanov

- 21 years old
- Working remotely (part time)
- His workstation is in a different city
- International student
- Prefers working from home
- Finds it difficult to socialise with his collegues

Tony

- 22 years old
- IT intern
- International
- Working from home
- Extroverted, likes to spend time with people
- Likes collaboration and communication
- Feels bored when home

Interview questions
in **Appendix C**

INTERVIEWS ANALYSIS

Joan prefers working from home because it gives him more freedom and flexibility. However, he faces some challenges "I find it difficult to concentrate and socialize with my colleagues because I only see them only through a computer screen because I'm in a different city from the office". When it comes to his relationship with his colleagues, he noted: "we talk mostly by Teams and we also use email and a WhatsApp group but it's mainly online". He sometimes feels like an outsider because he does not get the chance to interact with the other workers. He feels like there is no focus to bring remote people together and notes "I would really like to socialize more with my colleagues even in a virtual way, to know them a bit better". To achieve this he thinks that the best way is through including everyone in certain activities, to interact more online."

Tony works from home and finds it challenging to spend the entire day at home and not interact with his colleagues. As he notes "even on the internet. I don't think that people interact with each other". This proves to be problematic for Tony because his colleagues do not like to socialize and he feels left out. Even though he has the freedom to relax at home, for an extroverted person like him it is "more minuses than pluses". The way he remedies this is by communicating with his friends. As far as the company is concerned, they do not push employees to interact with each other. The participant noted that it is possible to increase team collaboration and communication by having an app that involves the work environment in a gamified way - "If there is something that would make them more extroverted and want to communicate, I would be down to try it.".

CONCLUSION

Both interviewees are working from home and face challenges when it comes to communication with their colleagues. Whether they just want to have social interactions or want to be able to strengthen their collaboration.

Forming a tight-knit community between employees is beneficial for both the mental health and quality of work since everything would be more organized with better collaboration and the quality of the work done would increase greatly.

Both of the participants came to the conclusion that it would be great for all of the company's employees to interact and collaborate more through any means.

EMPHASISE

DAY IN LIFE

Introduction

We asked two participants who work part-time in the IT sphere to take notes throughout the day on how they feel, what they are doing and what their plans are. One of the participants works on-site, and the other one is fully remote. This way we can get a better understanding on both of the spectrums and weigh the benefits and drawbacks of both styles of work.

Information Participants

Sali

- 20 years old
- Part-time work
- IT sphere
- On-site work
- Introverted, likes spending time by himself

George

- 23 years old
- Works part-time
- IT sphere
- Fully remote
- Working from home

Analysis

We can see from the different work days of the participants below that working from home plays out quite different than working on-site. The participant who works in the office has a lot more social interactions, albeit introverted. He enjoys the company of his colleagues and has daily stand ups and team bonding such as social lunch. Overall, working on-site involves quite a lot of social activities and interactions that strengthen the bond between colleagues.

In contrast, the participant who works from home does not meet any of his colleagues physically and gets to just talk to them online. There are not any meaningful opportunities to break the ice between them and strengthen their collaboration. Online interactions are a lot weaker that physical team-bonding activities and this leaves the participant to feel isolated and upset that he does not know his colleagues very well. When something goes wrong he does not feel like he knows anyone well enough in order to express his concert about the situation.

PERSONA

Based on our research and analysis we created our persona to better understand the users' needs and develop a more human-centered and empathetic approach toward them. The aim was to build a detailed understanding of the target audience's needs, goals, preferences, and pain points.

By putting the user at the center of the decision-making process, it is easier to guide the development of the product and create something based on their needs and expectations. It was important for us to build a persona that represents the people from our target group - remote workers.

Our persona is a person who struggles with communication with his colleagues and tries to find ways to bond with them no matter that he is working from home. The persona was built mainly from the answers gathered from the interviews and survey.

Josh Keymer

Occupation
Working Remotely

Age
22

Location
Austria

Status
Single

Personality traits

Self-motivation

Time management

Communication

Biography

Josh is currently working remotely for a company outside of his city. He likes the freedom it gives him and the flexible hours but misses the bonding with his collegues. He likes communicating and collaborating with others, but does not get the chance to do this that often as a remote worker. He is searching for ways to stay connected with his co-workers.

Needs

- To find ways to interact more with his colleagues digitally
- To feel more included in the working environment despite the fact he is working from home
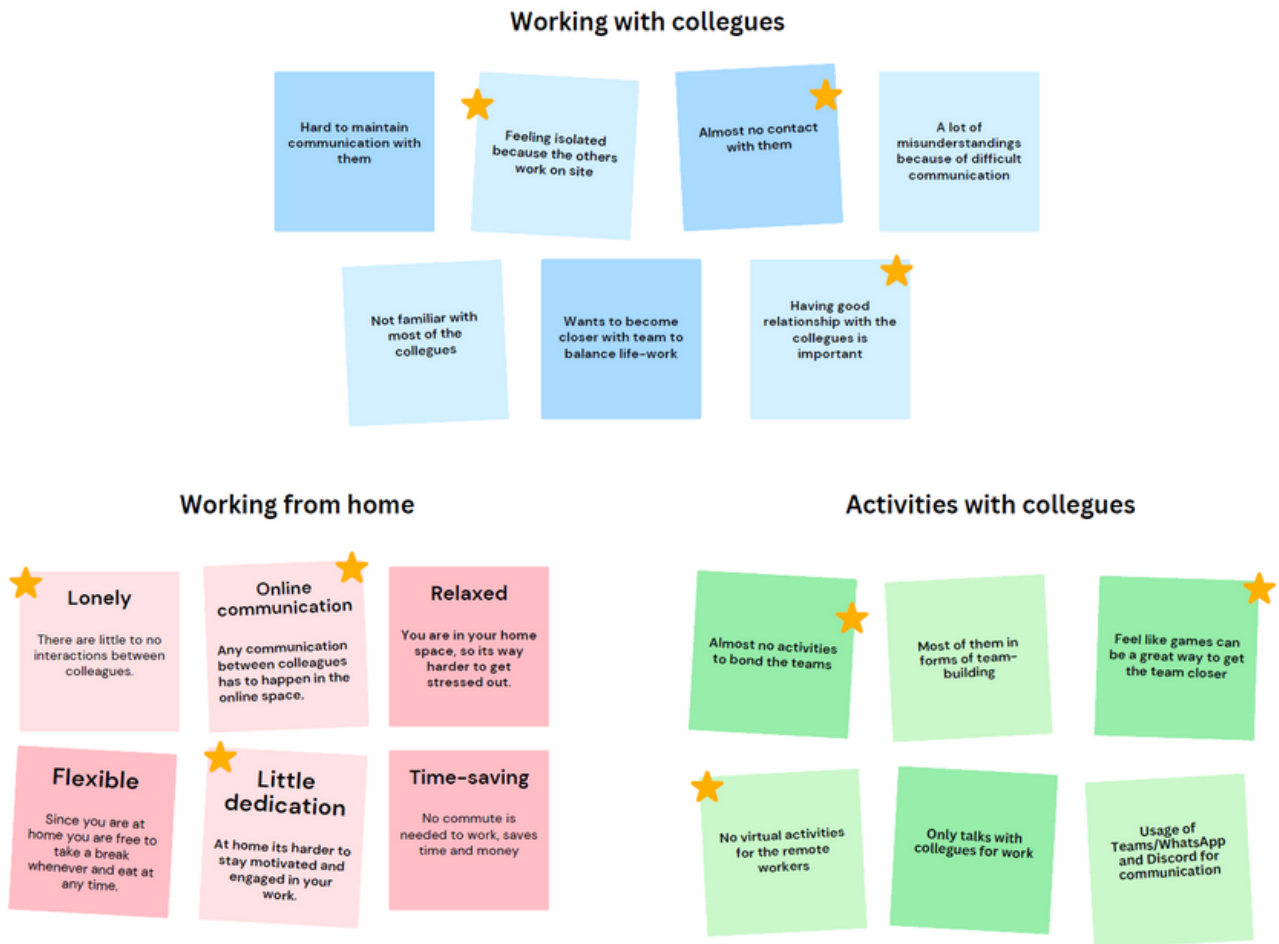- Have something to push employees become more closer

Pain point

As a remote worker, he finds it difficult to communicate with others and feels left out and alone sometimes. He feels like there is no focus on bringing remote workers together. As he only gets the change to interact with digitally, he still wants to be included and find ways to stay connected with them.

"Colaboration is a key to success."

AFFINITY MAP

Working with collegues

Hard to maintain communication with them

Feeling isolated because the others work on site

Almost no contact with them

A lot of misunderstandings because of difficult communication

Not familiar with most of the collegues

Wants to become closer with team to balance life–work

Having good relationship with the collegues is important

Working from home

Lonely
There are little to no interactions between colleagues.

Online communication
Any communication between colleagues has to happen in the online space.

Relaxed
You are in your home space, so its way harder to get stressed out.

Flexible
Since you are at home you are free to take a break whenever and eat at any time.

Little dedication
At home its harder to stay motivated and engaged in your work.

Time-saving
No commute is needed to work, saves time and money

Activities with collegues

Almost no activities to bond the teams

Most of them in forms of team-building

Feel like games can be a great way to get the team closer

No virtual activities for the remote workers

Only talks with colleagues for work

Usage of Teams/WhatsApp and Discord for communication

Based on the interviews, survey and observations, we wanted to gather similar answers we got and set priorities for us to follow. It was important to find out the core of the problem with remote working and find a suitable solution that will help our target group the most.
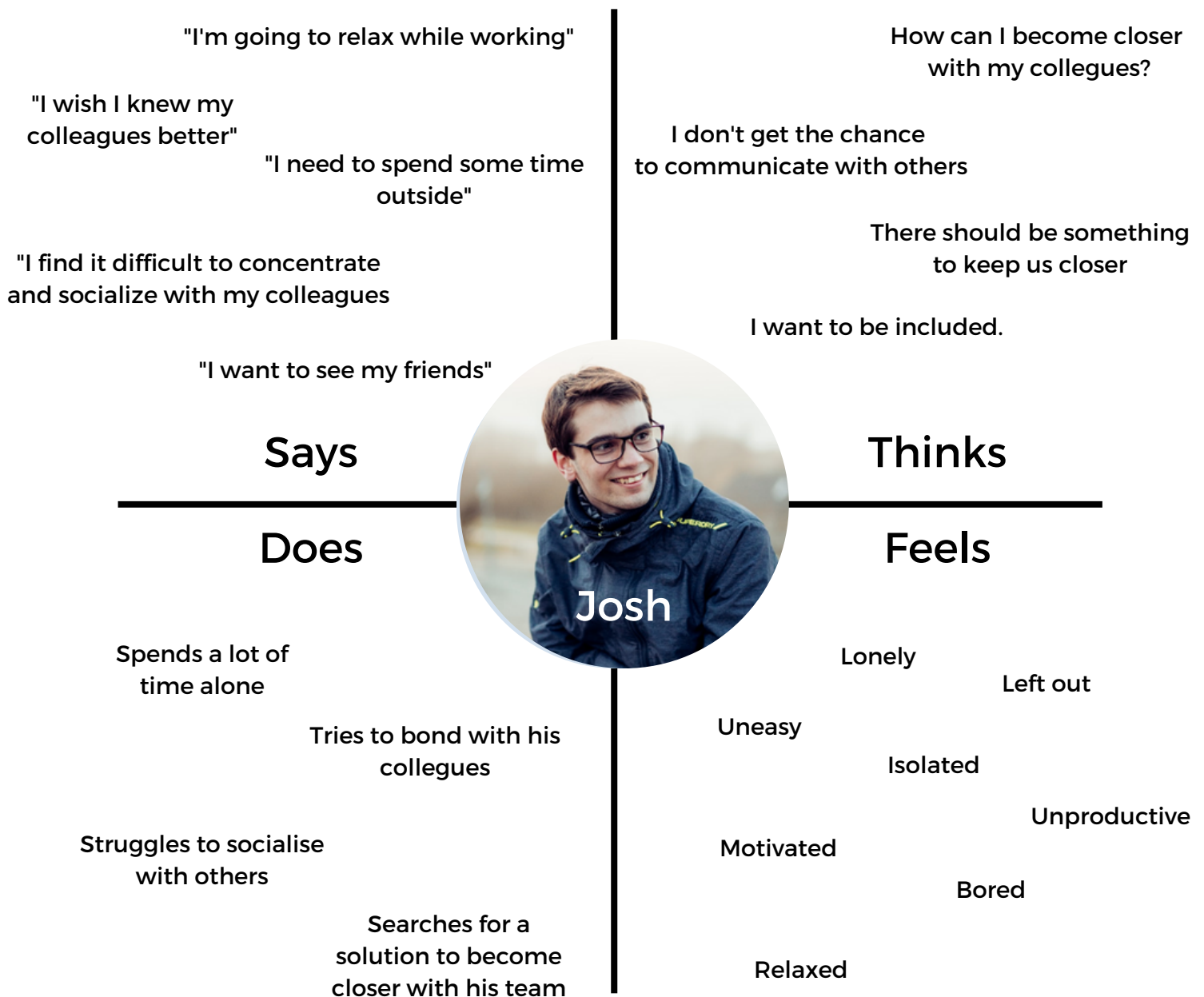
Based on this we formed our user requirements:

- **Communication:** The app should enable team members to communicate with each other in real-time using chat, video, or voice calls. It should also allow the sharing of files and other data.
- **Collaboration**: The app should enable team members to collaborate on projects and tasks in real-time.
- **Fun aspect, leisure gamified app**
- **Showing information about the game** (description, points, people playing)

EMPATHY MAP

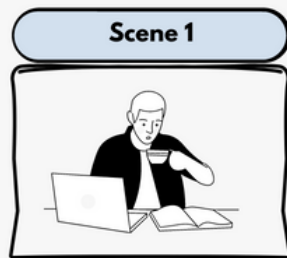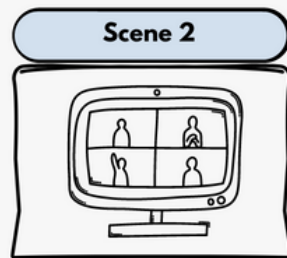## Empathy Map (remote worker)

Says

"I'm going to relax while working"

"I wish I knew my colleagues better"

"I need to spend some time outside"

"I find it difficult to concentrate and socialize with my colleagues

"I want to see my friends"

Thinks

How can I become closer with my collegues?

I don't get the chance to communicate with others

There should be something to keep us closer

I want to be included.

Josh

Does

Spends a lot of time alone

Tries to bond with his collegues

Struggles to socialise with others

Searches for a solution to become closer with his team

Feels

Lonely

Left out

Uneasy

Isolated

Unproductive

Motivated

Bored

Relaxed

STORYBOARD

REMOTE WORKING EXPERIENCE

Scene 1

Josh is new in a company and he is working remotely from home

Scene 2

He goes to a meeting with his colleagues and hears them chatting but he doesn't know how to join in the conversation
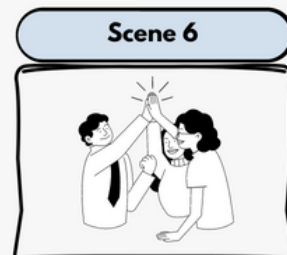
Scene 3
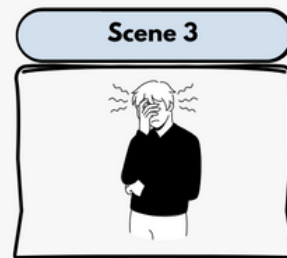
He feels a sense of isolation and begins to doubt his ability to fit in within the team.

Scene 4

He is longing for social interaction and wants to become closer with his team

Scene 5
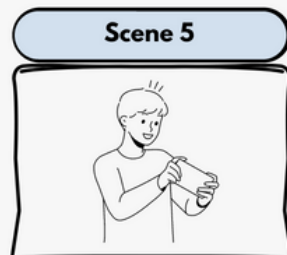
Finds out that the company has a virtual game which can help teams bond more and decides to try it

Scene 6

Instantly feels better and included and returns to his work feeling more connected to his team

We made a storyboard that shows the emotions and experiences of a remote worker. The story starts with him being at home and follows his journey based on the information we gathered from our user study. He feels alone at times and wants to collaborate with his team more.

When he finds the company has a virtual game that is going to help him stay connected with his colleagues, he immediately tries it and feels included and more connected with his team.

POV & HMW

Remote workers experience difficulties while trying to get to know their collegues and socialise with them. They tend to feel alone and isolated from the others when working from home and want to find ways to engage with their collegues better through different virtual activities

How might we create something for virtual social interactions among remote team members?
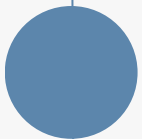
How might we encourage remote team members to build stronger connections?
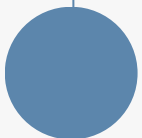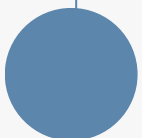
How might we ease virtual team building activities that are engaging and effective in building relationships?

How might we help remote workers feel more included even though at home?

How might we encourage virtual social interactions among remote team members?

How might we reward remote team members' accomplishments in a meaningful way that gives a sense of belonging to the team?

IDEATE

BRAINSTORMING

After we were done collecting information and analyzing it, we continued coming up with the solution and brainstorming interesting ideas to meet the needs of our target audience.

We spent some time thinking about the different features we can implement. The main focus was to gamify it because games are considered calming for our target audience and they think that playing games help them socialize and get to know each other more.

We also thought of the different ways we can motivate co-workers to bond by using points, and adding a competition aspect and leaderboard. This will create a safe space for remote co-workers to come together and have fun while getting to know each other.

The features we came up with:

- **Leaderboard** - allows players to see where they stand in relation to other players and can provide a sense of community and social interaction around the game.
- **Bingo** - is often played in groups, which can provide a fun and social activity for co-workers to enjoy together. This can be especially valuable for those who may be isolated, as it provides an opportunity to connect with others. It can be a low-stress and enjoyable activity, which can help to reduce stress and promote relaxation.
- **BeReal** (taking pictures) - this new app on the market is very interesting and a great way to connect with your friends through sending pictures to each other at a certain time during the day
- **Trivia** - asking questions to get colleagues closer
- **Point system** - provide players with a clear goal to work towards, which can be a powerful motivator to keep playing the game and improving their performance. Also, points provide a way for players to track their progress in the game, and to see how they are improving over time.

CONCEPT

Based on all of the information we gathered from our research, we decided that our concept is going to revolve around team collaboration. We found out that remote team workers feel disconnected from their colleagues and lack virtual activities to keep them closer. They all think that having good relationships with their colleagues is important so we focused the idea of our product there.

The concept behind the "SyncUp" app is to help remote workers get to know their colleagues and build stronger connections with them. Having this as our first priority, we also found out that people like playing games because they help them with releasing stress so we also implemented gamification.

The app includes games like "Bingo" and "Trivia" that are designed to encourage communication, collaboration, and creativity among remote workers. Also, people can create their own games where they can invite colleagues to join and play together. This feature can foster a sense of community among remote workers who may otherwise feel isolated.

Additionally, the app includes a leaderboard that tracks users' progress and achievements, providing motivation for them to continue engaging with the app and building their relationships with their co-workers.

BINGO GAME

The bingo will consist of several tasks and when a user wants to complete them they will have to take a picture doing the task. They will get points for each task completed and see the submissions of their co-workers as well.

LEADERBOARD

The users will be able to see a leaderboard with their colleagues and their position there. They will only be allowed to see one person ahead of them and two beneath them to avoid being demotivated if the same people are top players. It also depends on the position you are currently at.

IDEATE
WWWWWH

___

What is the purpose of the app?

The purpose of the app is to help remote workers get to know their colleagues better, bond with them, and not feel left out while working from home.

Who is the target audience for the app?

The target audience of the app is remote workers who are experiencing difficulties while trying to connect with their colleagues.

What is our end goal?

The end goal is to facilitate more remote team events, help co-workers get to know one another on a personal level, and encourage them to communicate more.

Why is building stronger connections important for remote workers?

When remote workers have strong connections with each other, they are more likely to communicate effectively, trust each other more and feel included. This can lead to greater collaboration and more successful outcomes, having a more positive and productive work environment.

When are they going to use it?

They are going to use it when they want to engage themselves in activities with their colleagues, participate in team building and communicate with their co-workers outside of the work environment.

How does the app help with interaction among remote workers?

The whole concept of the app is done through gamification which is a great way to engage more people to use it as gaming is considered a great tool for socializing and relieving stress while working. The interaction between them is going to be in the games where they can get to know their colleagues better.

BRAND IDENTITY

1

LOGO AND NAME

The name consists of the words "Sync" and "Up". It refers to the process of synchronizing or aligning two or more things together. The logo looks like people standing right next to each other interconnected or overlapping, symbolizing the idea of connection and teamwork.

SyncUp

2

COLORS

The colour palette mainly consists of blue colours as they are considered calming colors that can promote trust and stability, which are important for building strong working relationships. Pale pink is the second colour used which is believed to have a soothing effect on emotions and can promote feelings of safety and security.

#9DBDD6   #8193A2   #E2C5BA   #FBFBFB   #1E1E1C
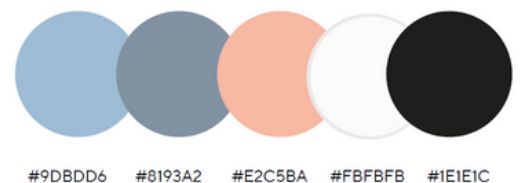
3

TYPOGRAPHY

Aa

LOGO FONT

Futura Bold

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

Aa

FONT APP

Roboto

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

DESIGN

PROTOTYPE

After we were ready with the concept, the users' requirements and the features that need to be implemented, we used the Benchmark creation method to get inspiration and look at products that are somehow related to our design goal and solve the same problem. The goal was to see their strategy and find out how to make our app more unique.

We started off with sketches of the different pages and based on them we made the prototype using Figma. Sketches can be found in Appendix D.
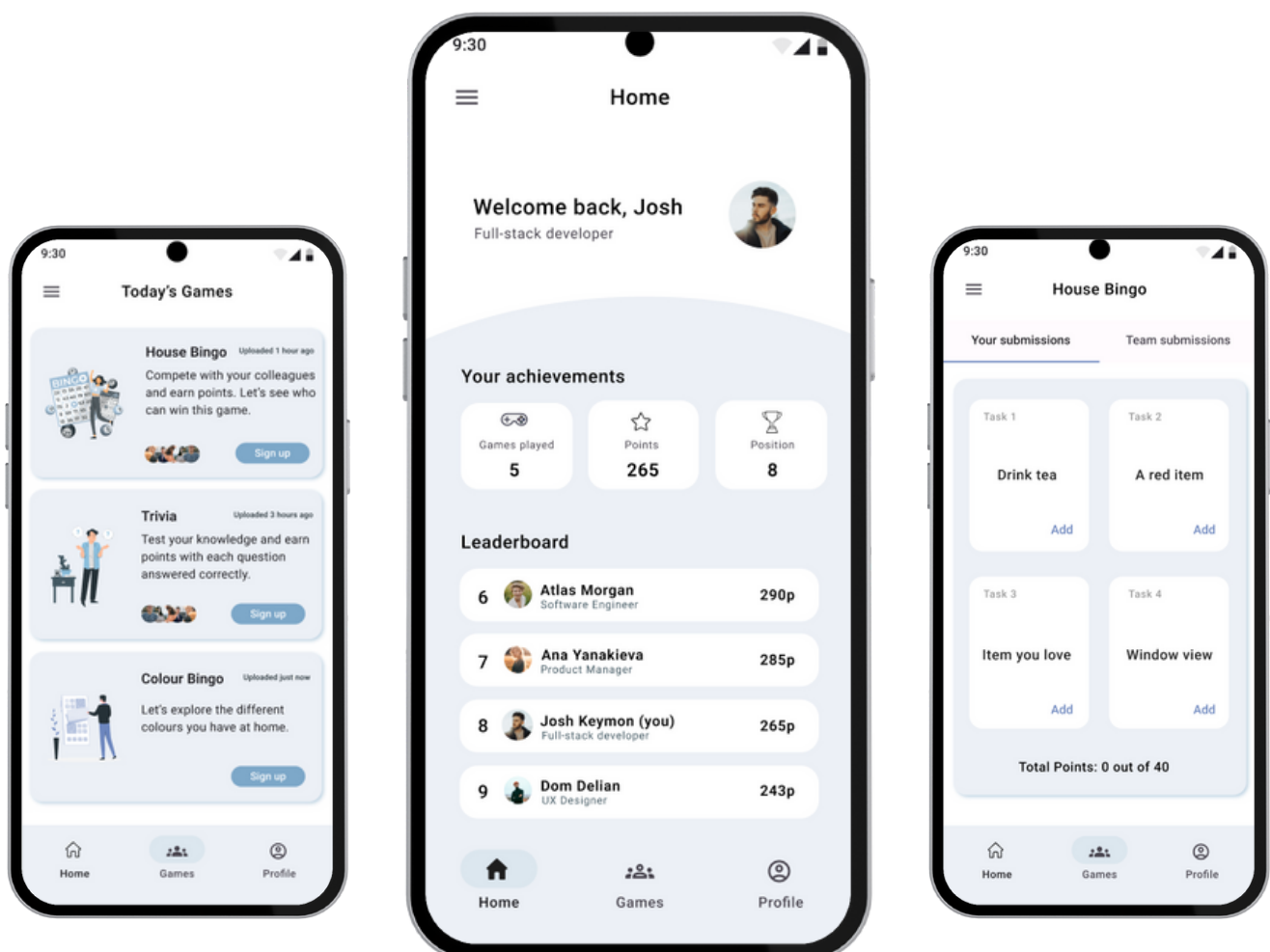
TESTING

USER TESTING

We conducted remote unmoderated usability testing with 4 people from our target group. The sessions were recorded so we could look at them and analyze everything afterward. The tests lasted from 2 to 8 minutes depending on how well the participants were doing. Testing procedure and questions in **Appendix E.**

ANALYSIS AND CHANGES

Two of the participants guessed correctly the purpose of the app by only looking at the prototype during the 5-second testing. They all noted that it is something connected with games because of the leaderboard and the points.

All of the participants succeeded in completing the tasks we gave them. It took them a maximum of 20 seconds to find exactly what they were asked to do and to manage to finish the task. They noted that everything is pretty straightforward and easy to navigate and understand. Two of the participants shared they really liked the "Create your own game" option because in that way they can come up with a lot of creative ideas.

During the think-aloud walkthrough, they noted that the app has a very clean design, the bingo was perceived as interesting, the team submissions as a great way to get to know each other better and not limit yourself and taking pictures to complete the tasks as something different and catchy. Two of the participants really liked the leaderboard option because it gives them a sense of competition but in a good way.

They described this product as: fun, playful, simplistic, innovative, interesting

Based on their feedback we changed:
- The home page: two of the participants mistook the page for a profile page because of the large picture.
- Added a function to be able to export the pictures you take from the bingo
- Having details of the pictures you have in your profile (ex: the game they come from, how many points they are)
- Removing the "View more" option from the profile page and changing it into a carousel to avoid a lot of redirections in the app

IMPLEMENTATION

HARDWARE AND SOFTWARE

Here we included a comprehensive architectural overview of the system, using several different views to depict different aspects of it. It is intended to capture and convey the significant architectural decisions which have been made to implement the software solution and easily grasp the software's modules and components, without digging into the code.

System Context - C1
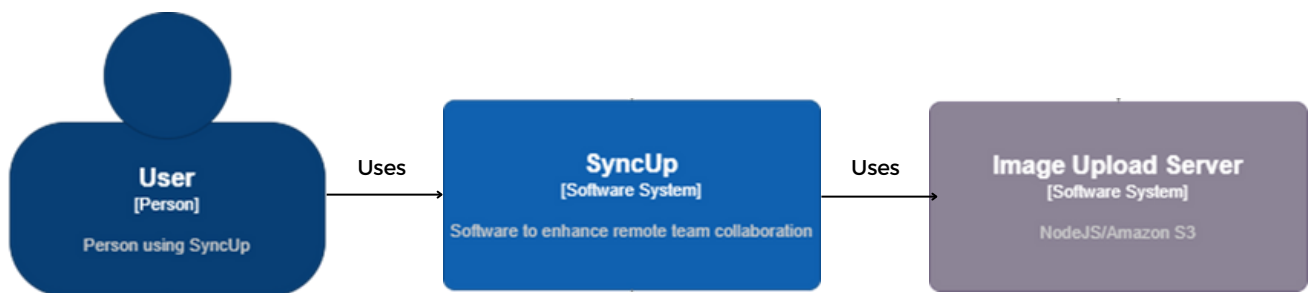
From the system context diagram it can be seen that the software is going to make use of an external image server, which will be used for uploading all of the images to a remote Amazon S3 bucket. This way such a concern is completely separate from the system and it requires no integration.

Containers and technology - C2
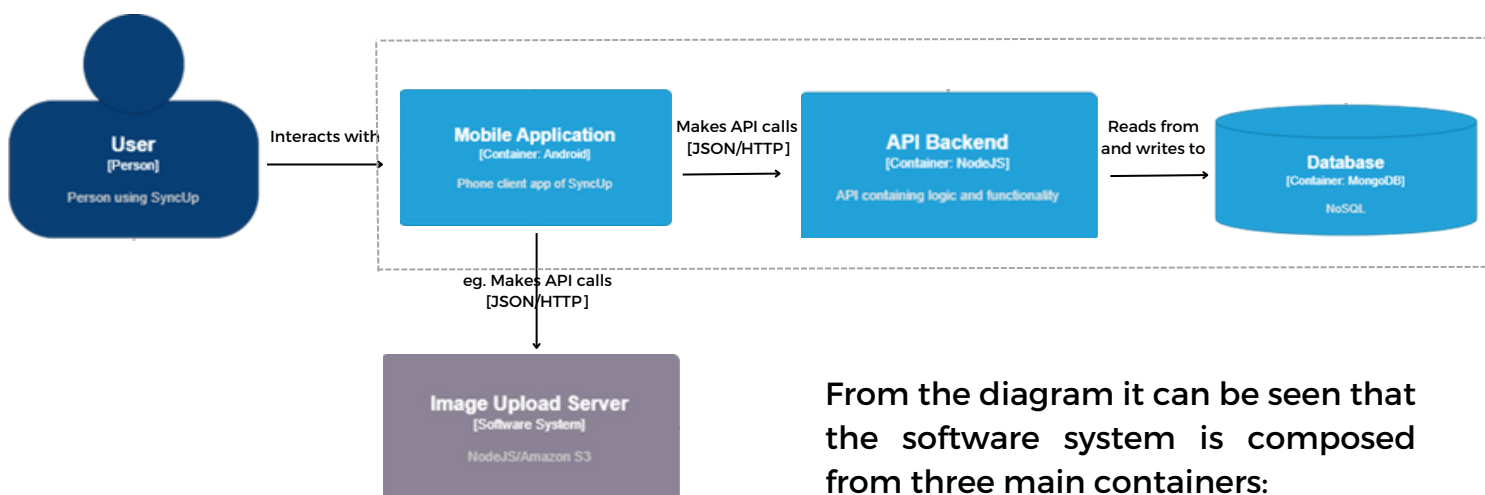
From the diagram it can be seen that the software system is composed from three main containers:
- Android application using Jetpack Compose
- REST API using NodeJS
- NoSQL MongoDB database

IMPLEMENTATION

Separation of concerns

With the three main containers divided in this way it is ensured that the different divisions of the software are properly separated. The android application takes care of all of the UI and does not deal with any business logic. The REST API is where all the business logic resides and is essentially the brain of operations. It provides all the functionality of the software solution and passes data from the database to the client. The final block of the system is the database where all the information persists.

Why Jetpack Compose

Moving on from the old way to design android applications with XML, Jetpack Compose is the new recommended way by Google to create android applications. With Jetpack Compose the UI is written in code, along with all of the UI-related logic. This way the switch from writing code to designing the UI is seamless, which allows for faster and more organized development. The application uses Material 3, which is the newest design toolbox from Google to ensure the application looks fresh and up-to-date with the modern standards.

Why NodeJS

NodeJS is an incredibly light framework to quick start a server. It enables running JavaScript code outside from the browser and is very intuitive and easy to learn. This way development time on the back-end can be cut down as much as possible, which leaves more time to focus on the android application, which is the aim for this semester. Compared to Java and Spring Boot for example, the same business logic can be written with twice as less code, which is ideal for the purposes of this small assignment that does not need to be overcomplicated.

Why MongoDB

MongoDB is a lightweight non-relational database that is very widely used and supported. It is the preferred type of database to use for very rapidly growing applications that need to store large amounts of data (mobile applications). Speed-wise it is also faster than SQL competitors when datasets are big and allows for the storage of different types of documents. It also very nicely pairs up with NodeJS with native support, and it is very fast to set up and get going, SQL is preferred in environments where consistency is key like accounting applications and online sales.

IMPLEMENTATION
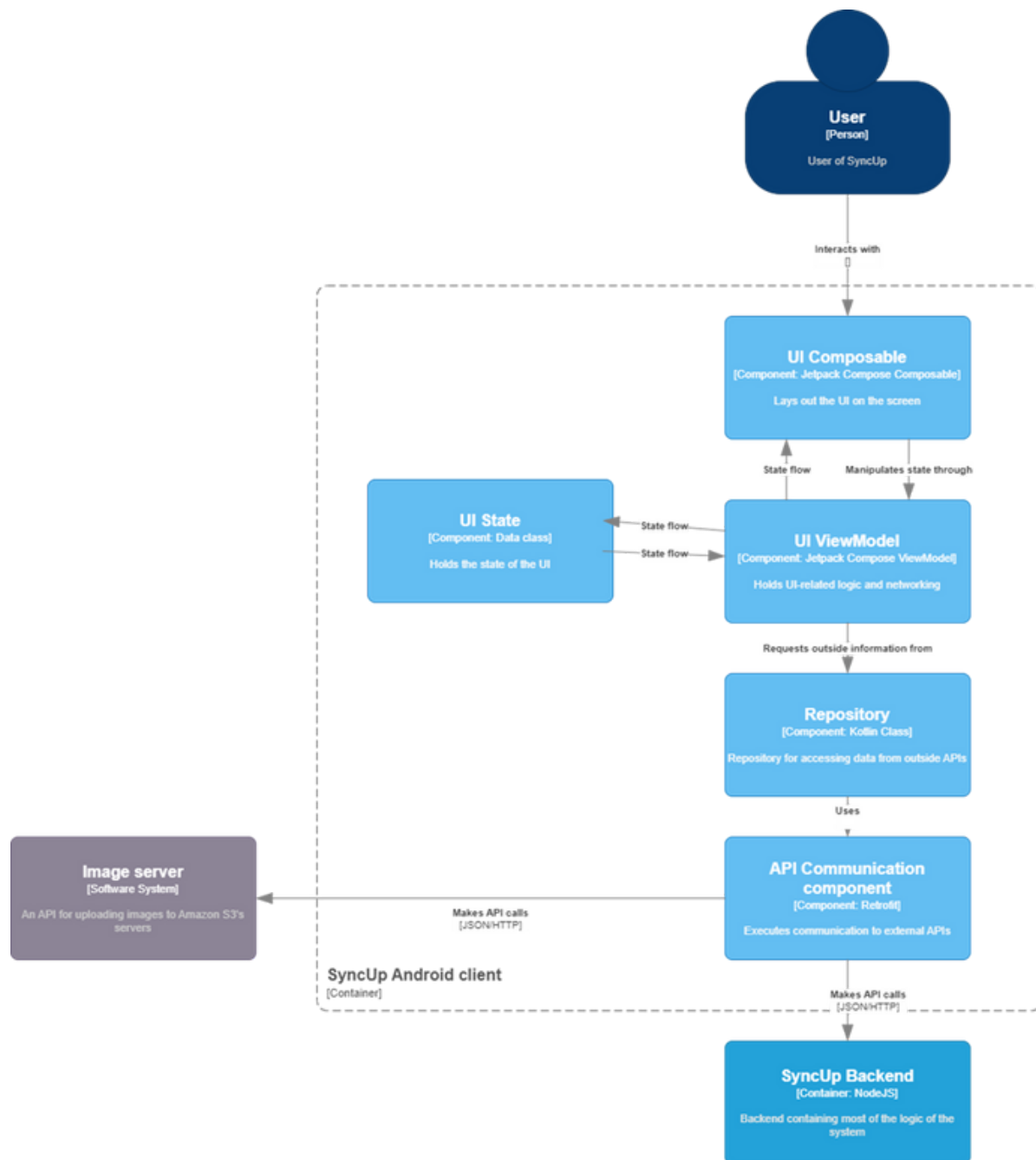
From the component diagram it can be seen in more detail how the android client app is structured. The user interacts with the UI, which is written in composables. The UI draws information from the UI state, which is controlled by its respective ViewModel. When information needs to be loaded from the database, the ViewModel accesses the repositories, which send requests to the backend through the Retrofit communication API. The information is then given back to the ViewModel, which updates the state and the UI.

APPENDICES

APPENDIX A

Comeptitor Analysis

TODOIST KARMA

A free app both for iOS and Android. Rating 4.9/5. An app for adding tasks and reminders. Progressively unlock new levels. Everyone starts as a beginner and with gaining points they can advance through eight different Karma levels, ending at Enlightened.

Pros	Cons
• Customize to-do lists with filters, labels, priorities, and more.	• Sometimes gives overdue tasks
• Personal productivity recommendations based on unique traits and strengths.	• Sometimes there are no reminders sent to the users
• Setting daily goals and earning points when completed	• Collaboration not included
	• No competing with others

Conclusion: the app is a powerful tool for remote working. It helps people with managing time and tasks quickly. The gamification is not oriented towards team-building but rather self-monitoring

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CLASSCRAFT

A gamified learning platform that allows educators to turn their lessons into an adventure game for students. Creates personal avatars for students, track progress and play together with classmates

Pros	Cons
• Track the progress of students	• Mostly oriented for students
• Learn in the form of a game	• Works only with schools and not companies
• Teach the students that collaboration is better than competition	• Paid

Conclusion: Students immediately feel motivated and engaged, with opportunities to collaborate on teams, and develop custom avatars they relate to, all while sharing and getting feedback from their peers and teachers. It is not oriented towards businesses and engaging employees to socialize more.

TRELLO

Project management tool. Great for collaboration and dividing tasks. Empowers teams to manage any type of project, workflow, or task tracking. The tasks are divided into boards and people can add tasks by priority. Suitable for schools, businesses, self-time management.

Pros
- Adding members is straightforward, easy collaboration
- Customise UI
- Free to use

Cons
- Cannot access it when there is no data access
- Can get overload with tasks
- No rewarding system to keep the users engaged

Conclusion: the idea behind the app is good and people can easily collaborate with each other. The downside is that the social aspect is missing. People do not get the chance to track their progress and get to know better their colleagues. The team building aspect is missing.

TRIVIA HUDDLE

Team-building questions. It encourages collaboration and helps employees adapt better.

Pros
- Encourages collaboration
- Increases communication
- Provides a break from work

Cons
- No app available
- There are no rewards when an answer is correct

Conclusion: Trivia Huddle is a great tool for trivia questions but there is not app that employees can download. They do not get rewards, so the questions can become easily boring and they won't feel engaged in the whole experience.

APPENDIX B

Survey questions

Section 1: Getting to know you
- How old are you?
- Where are you from?
- What is your working occupation?
- What is your work schedule?
- To what extent are you familiar with remote working?

Section 2: Lets talk about remote work
- What do you think are the benefits of working from home?
- Have you faced any challenges? If yes, please specify
- Do you work alone or with others?
- How well do you know your colleagues?
- Do you think there is a gap in the communication between colleagues? If yes, why?
- Do you know any virtual activities or events that help you stay connected with your colleagues? If yes, please specify
- How important it is to have a good relationship with your colleagues?
- What do you think would be the most effective way to increase interaction between remote team members?
- How interested would you be in a fun gamified application, as a part of your workflow in order to strengthen the bond between colleagues?

APPENDIX C

Interview questions

CONSENT FORM
Hello, my name is... First of all, do I have your consent to record this conversation for university purposes? Your response will be used for our research and your participation is voluntary, so if you want to withdraw from this at any time, you are allowed to. Also, you have the right to request from us not to upload your responses. Is that all right with you?

QUESTIONS
Getting to know you questions
- Can you please introduce yourself?
- What does your typical day look like?
- Do you have a job or work occupation?
- Have you ever worked from home?

General questions
- What do you think are the benefits of working from home? And what about the challenges?
- How do you stay productive and motivated when working from home?
- What is your current relationship with your colleagues like?
- How do you handle communication with them?
- What do you think can be improved in terms of collaboration between remote workers?
- Have you found any virtual activities or events that have helped you stay connected with your collegues?
- Do you feel that your company provides enough support and resources to keep you closer with them?
- Would you like to have more opportunities for virtual or in-person socialization with your colleagues?
- What do you think would be the most effective way to increase interaction and strengthen relationships between remote team members?

Day in life - Sali

6:30-7:30 Morning routine, mindfulness, breakfast, no phone. Get's my mood from tired to ready and enthusiastic for the day.

8:00-9:30 Commute to the office (By train). Check my goals for the day, think of some social plans for after work, start working.

9:30-10:00 Daily standup with the team

10:00-13:00 Work. Still eager and willing. Get my first coffee now.

13:00-13:45 Company social lunch. Very positive and inspiring atmosphere. Special coffee now prepared by the colleagues. Has long and complicated prep process

14:00-17:00 14:00 - ~16:00 Work. Starting to get exhausted. Check on social plans

18:00-19:30 Commute back home. Catch up with mundane tasks or finish up some work. More chill as already exhausted and in a pretty dark mood.

19:30-21:00 Workout with friends. Energy levels are high again and the mood is elevated.

21:00-23:00 Catch up with my buddies or enjoy solitude. Have dinner.

23:00-24:00 Pre-bed (almost) routine. Having a hard time going to sleep.

Day in life - Georgi

7:300-8:30
Wake up feeling extremely tired, drink coffee to get some energy. Make breakfast and eat

8:30-9:00
Get ready for work Check emails, Check user stories and todo to create a plan of action for the day

9:00-10:00
Online Meetings. Update my team on what is happening with my work but I don't get a chance to talk to them about other things unfortunately

10:00-12:00
Work remotely from home While working I listen to music, read additional articles, sometimes I feel kind of lonely because there is no one to talk to and no one to complain to when something goes wrong

12:00-13:00
Lunch Mostly I eat lunch by myself at home since I don not have time to go somewhere else and eat and my colleagues are at the office.

13:00-17:00
More work, code reviews, documentation By this time in the day I feel extremely tired and lacking of energy because I have not had any interactions with others today

17:00-19:00
Go out to meet some friends After work I cannot wait to go outside and meet with some people since I have not talked properly to anyone today

19:00-21:00
Prepare and eat dinner

21:00-23:00
Watch Netflix. After a long and exhausting day I want to wind down and relax since I know tomorrow will be just as busy and occupying

23:00-24:00
Go to sleep. I try to get at least 8 hours of sleep every day so that I feel as energized as possible in the morning

APPENDIX E

Testing procedure and questions

1

5-SECOND TESTING (Qualitative data)

- What do you remember? (ex: color, shapes)
- What do you think this page was about?
- What's your first impression about the app?

2

TASK-BASED TESTING (Quatitative data)

- log in into your account
- find the games and create one youself
- start the game you just created
- make the first task from your game

3

THINK- ALOUD WALKTHROUGH (Qualitative data)

- ask for feedback from all of the pages

4

CONCLUSION QUESTIONS

- What grabbed your attention?
- What things can be added or removed?
- Do you think an app like this is useful?
- From scale of 1 to 5 how likely are you to use this app and why?
- If you have to describe this product in 3 words, what would they be?