Industrial Design

PORTFOLIO

PATRICK BAUKE

Hi, I am

Patrick Bauke

For me, good design is solving problems through the interplay of aesthetics, functionality and sustainability. With my work, I strive to make people's everyday lives a little better every single day.
Through projects and business collaborations with renowned companies, I gained a wide range of experience at the University of Wuppertal.

CONTACT

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INTERESTS

Graphic and Design
Sports
Traveling
Music
Video Editing
Animation

LANGUAGES

German (native)

English (fluent)

SKILLS

Research
User Analysis
Sketching
Concept Development
Design Development
Digital Modeling
Prototyping

SolidWorks
Rhino 3D
Keyshot
Davinci Resolve
Miro
Figma
Unity

Affinity Designer
Affinity Photo
Affinity Publisher
Adobe Photoshop
Adobe Illustrator
Adobe Indesign
Microsoft 365 Suites

EDUCATION

University of Wuppertal
Class of 2025 | Industrial Design, Bachelor of Arts (BA) | Wuppertal, Germany

St. Angela Gymnasium
Class of 2019 | Graduate: „Abitur" | Wipperfürth, Germany

WORK EXPERIENCE

Kurz Kurz Design
Solingen | 2023-2024 | 6 months internship
First insights into working in an Industrial Design office. Working on projects in the areas of interior design, lifestyle and technology from research to realisation.

KETTLER Home and Garden
Wuppertal | 2023 | KETTLER Home and Garden university cooperation
First Industrial Design project for a brand. Design of a furniture system for KETTLER Home and garden. Research, conception and design with focus on mobility.

Project ZEIT
Wuppertal | 2022-2023 | Project ZEIT university cooperation
Research, conception and design of a system to strengthen social connectedness between different generations using VR as part of the research project ZEIT.

Klartext Jahn GmbH
Hückeswagen | 2019-2020 | 4 months internship and freelance work
First insights into working in a design office for graphic design, marketing, printing, foiling and ad technology. Working for different brands and private customers.

Northcomp GmbH
Hückeswagen | 2016 | 1 month internship
First insights into working in a marketing department with focus on photography as well as product and brand presentation.

PORTFOLIO OVERVIEW

Design Projects

01

FURNITURE SYSTEM

02

SOCIAL CONNECTEDNESS

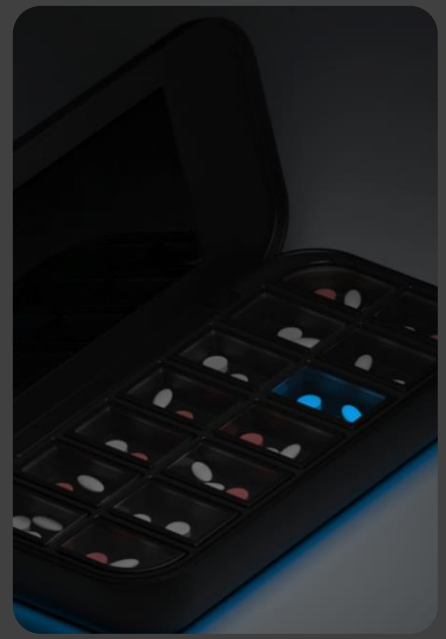
03

AUTOMATIC SEPARATION

04

SPARKLING WATER MAKER

05



MEDICATION SYSTEM

01

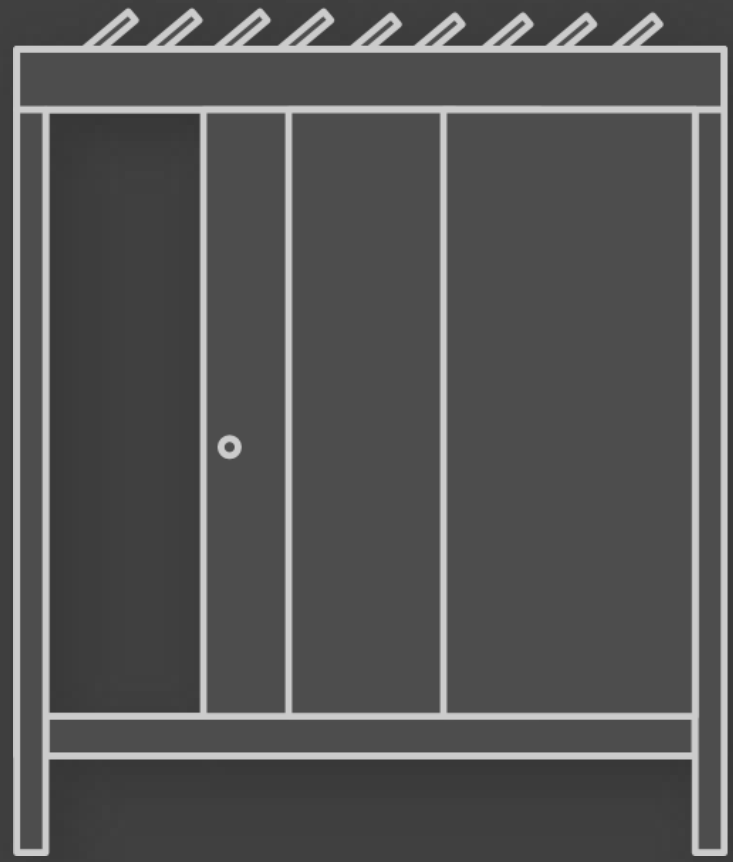
FURNITURE SYSTEM

6. SEMESTER

Concept development of a furniture system with focus on different aspects of mobilty.

This project was developed in cooperation with KETTLER Home and Garden.

Duration: 4 months



Research Study

Our course prepared a Research Presentation on the area of **Garden Furniture** with **a focus on differents aspects of mobility**.

It contained a wide market overview with **results of a user survey** and different potentials for **possible extensions to the portfolio** in fields like:

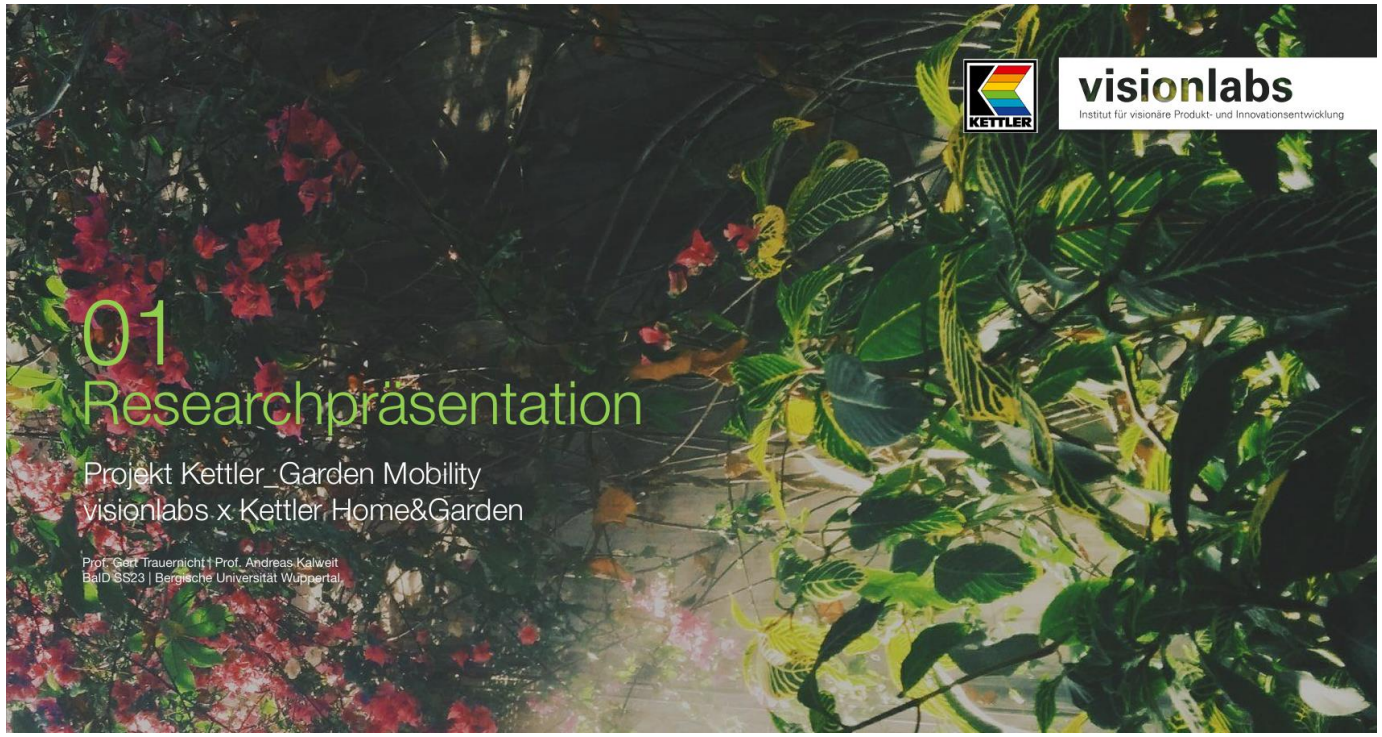
Usability & Ergonomics

Furniture Trends

Safety Requirements

Sustainability

Packaging & Storage



In the broadest sense, the project Kettler_Garden Mobility is about developing innovative furniture solutions for the garden under the broad aspect of mobility

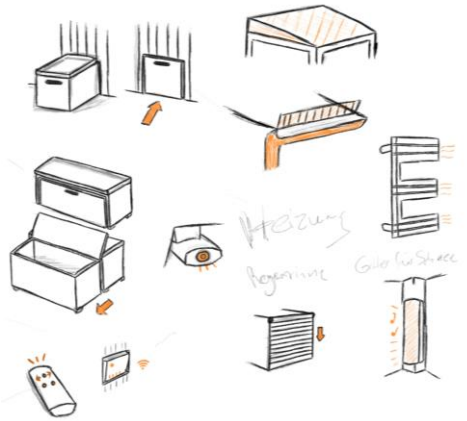
- Analogy research
- Not only chairs and tables
- Looking beyond the garden
- Understanding mobility

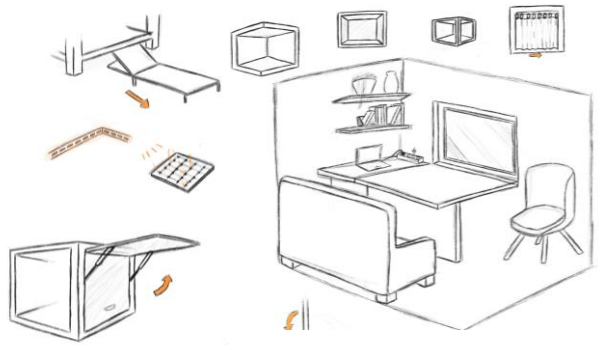
Conception

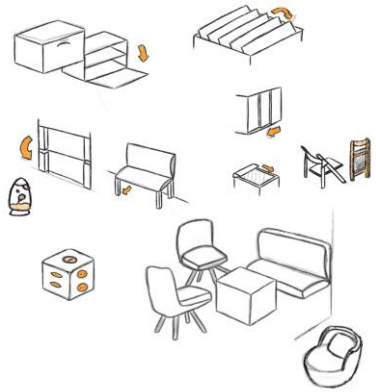
To turn our potentials into conceptual ideas, we learned to work with **Midjourney as an assistant** for our early visualisations.

My chosen concept was a furniture system designed to **provide a comfortable place to work and relax** in the garden. Thanks to various features, the system **can be adapted to weather conditions** and the **user's needs**.

Prompt: A furniture system inside an open cube in the garden







Design Development

Sketching of ideas and details for features based on the technical results of my extended research.

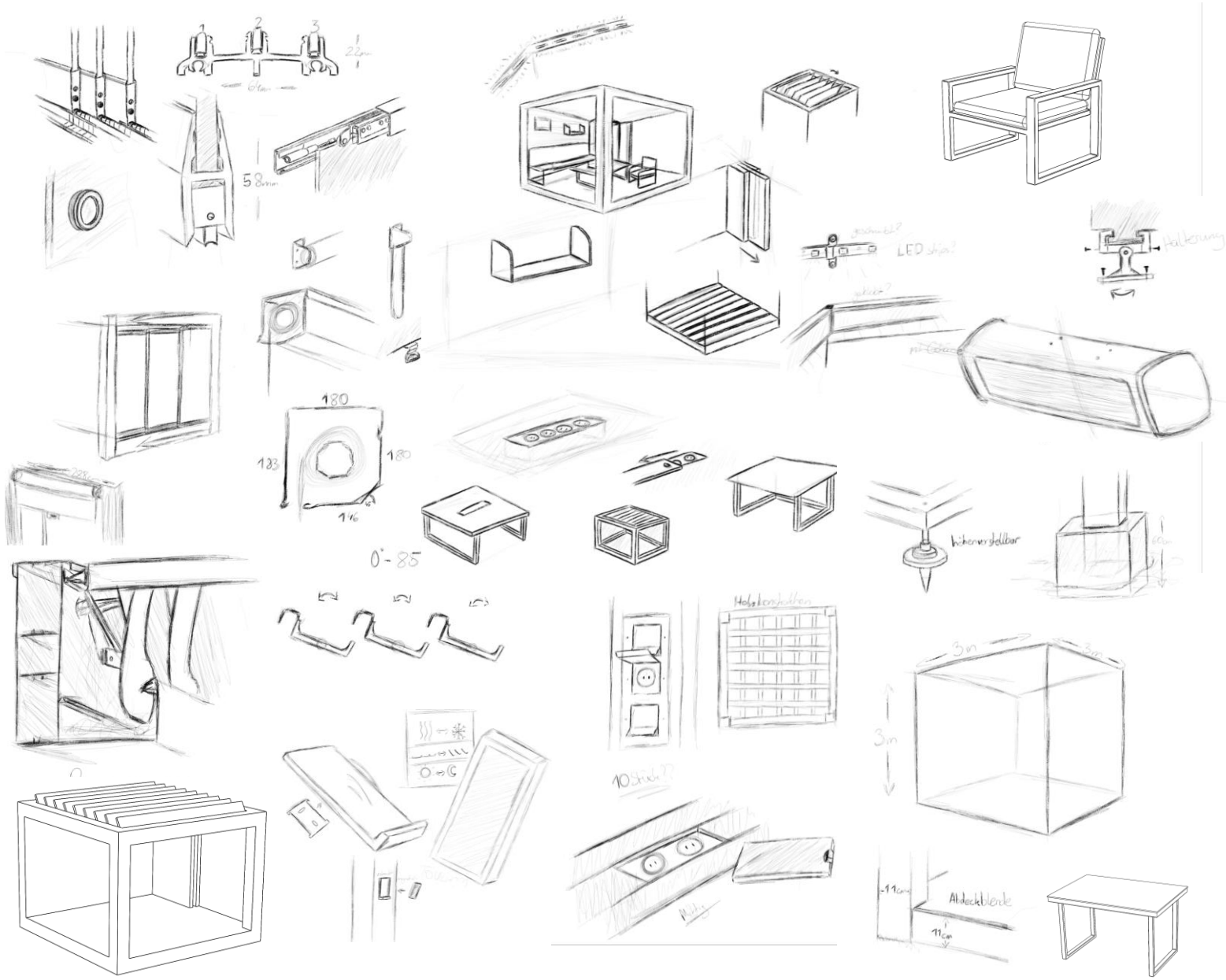
Floor and Frame Construction

Sliding Walls

Heating and Lighting

Ceiling Coverage

Power Supply & Control



Technical Structure

With over 500 components, I build the technical structure of this project to the last detail in SolidWorks.

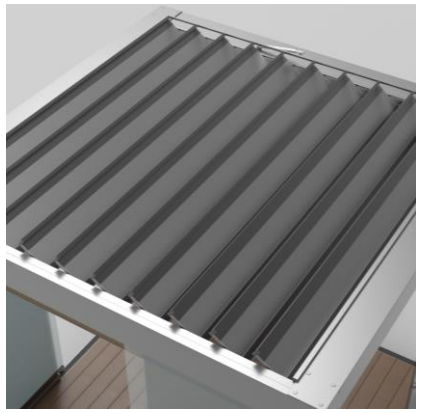
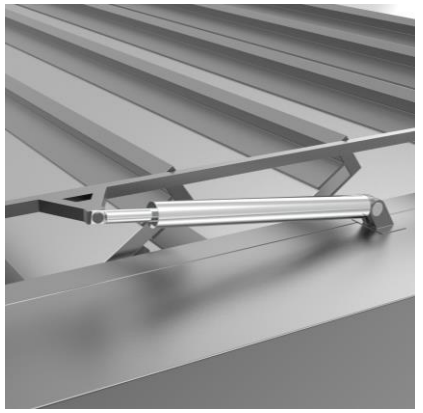
Height adjustable floor construction

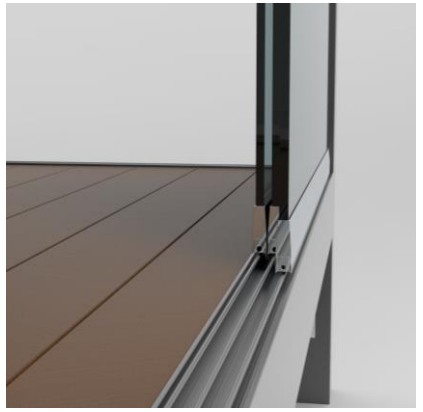
High quality aluminum frame

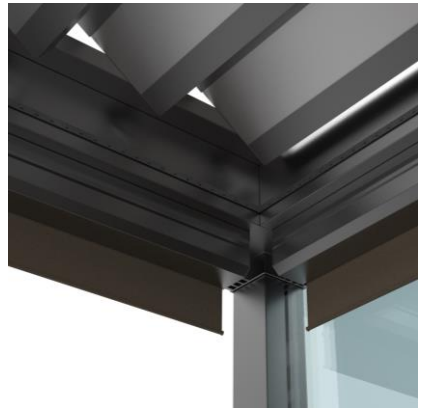
Sliding walls against wind conditions

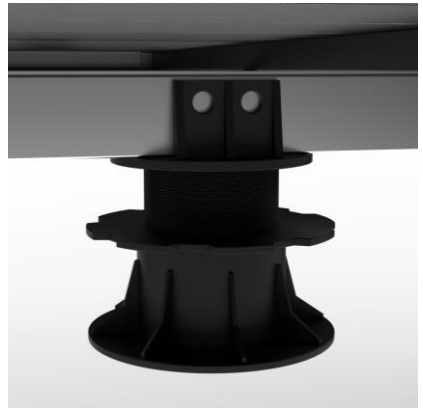
Louvred roof against precipitation

LED Lighting and infrared heaters for usage at any time of the day





KETTLER

OASIS

02

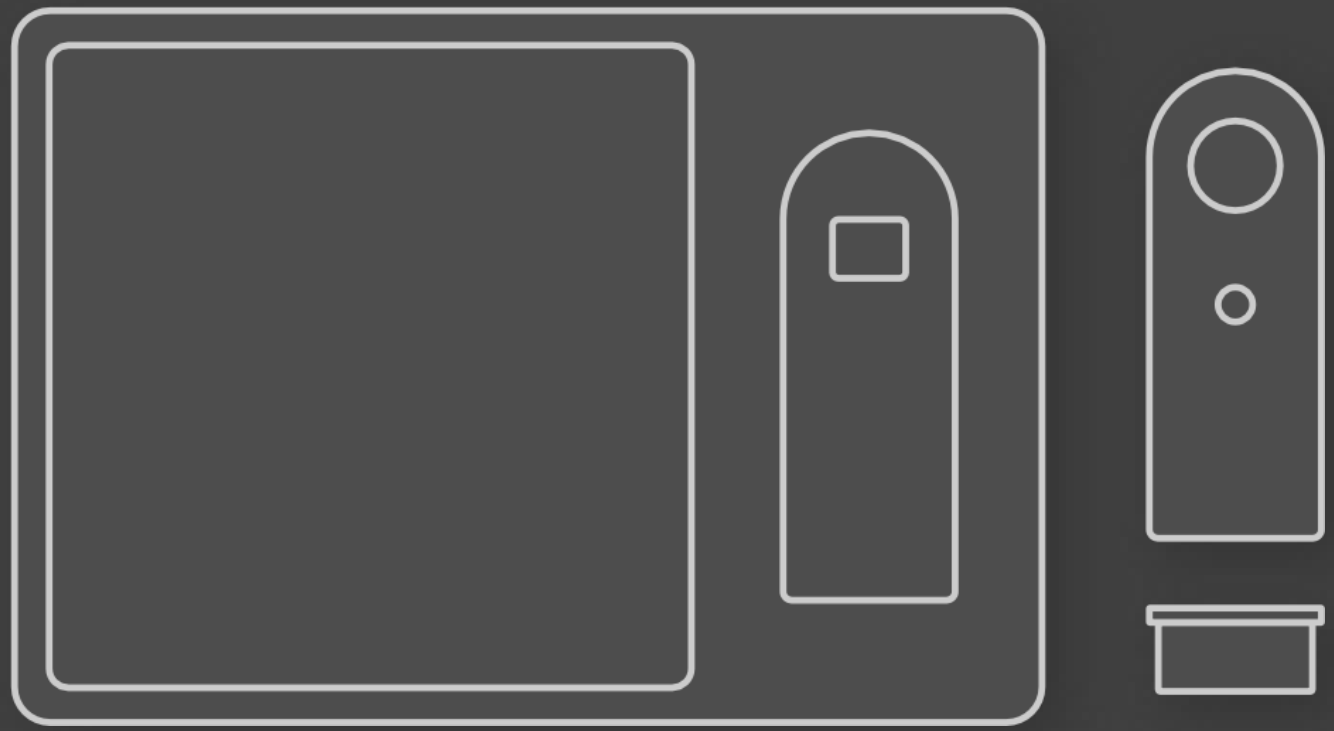
SOCIAL CONNECTEDNESS

5. SEMESTER

Design of a VR-System through which seniors can strengthen their social connectedness with younger generations in a playful way.

This project was developed in cooperation with research project ZEIT.

Duration: 5 months



Research and User Analysis

"How can immersive tactile stimuli in a VR environment be used to communicate interpersonal emotions over a distance?"

Initially, the first potentials were gathered through **interviews with the target group**. Many problems and desires came up that were further analyzed in a broad group research.

ZEIT

"We already tried it with Zoom Calls but failed because of bad internet and bad camera."

Marie, 76

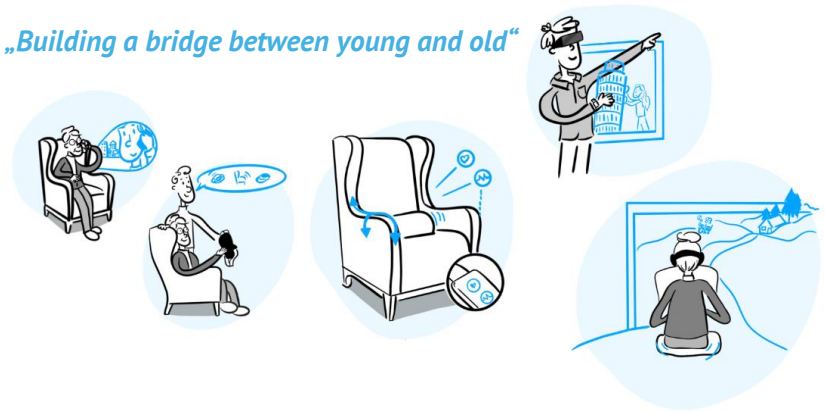
"My grandparents are not very interested in technology, they have lived all their life without it."

Jonas, 16

"I dont know which of my children and grandchildren I've never played with before."

Anne, 72

„Building a bridge between young and old"



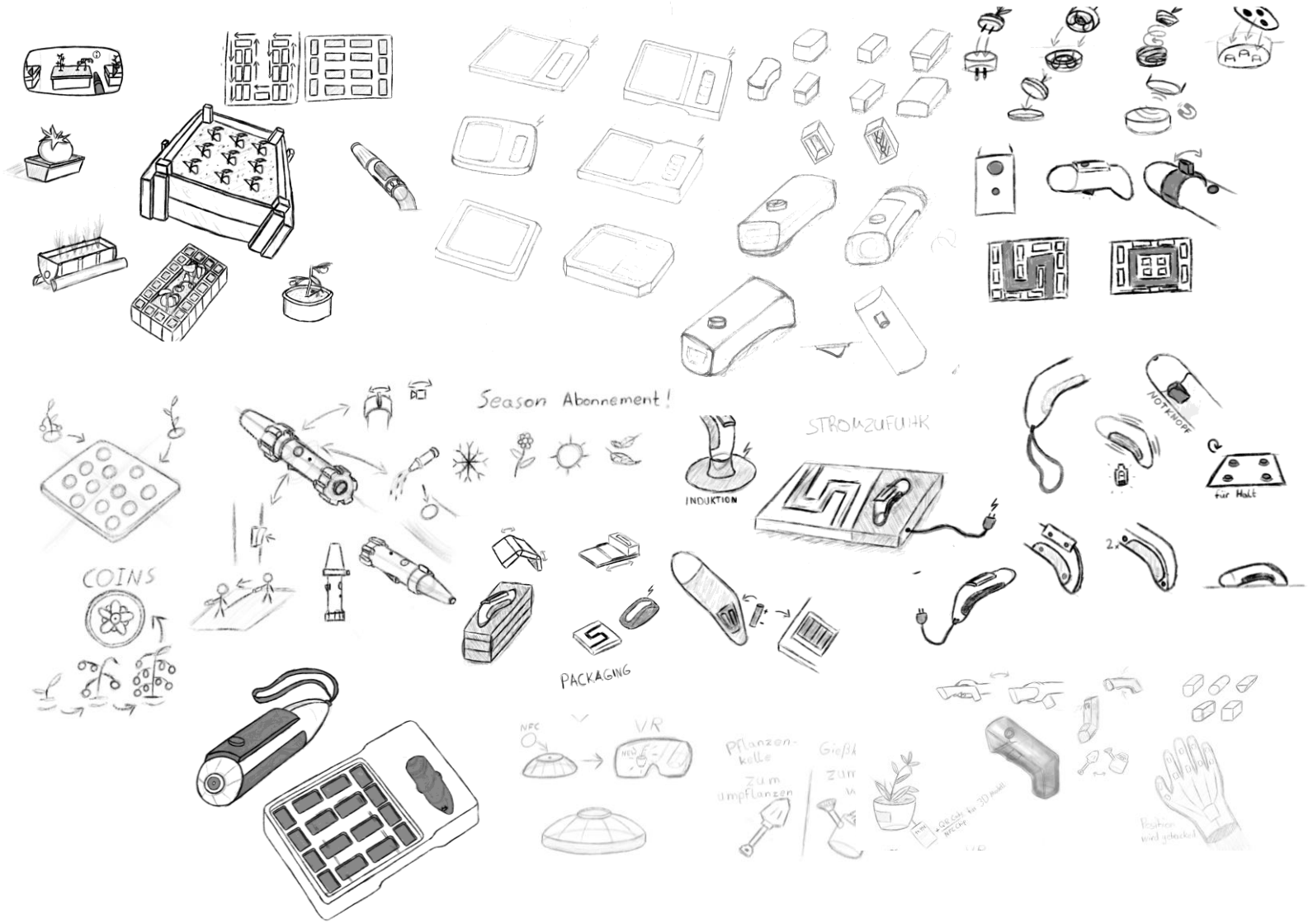
Storyboard

Concept Development

A common interest, that **most of the target group share**, has been implemented in the form of a **visual garden** that can be **designed and maintained together**.

Accessible technology using physical building blocks on a board

Further navigation via a remote controller with two buttons

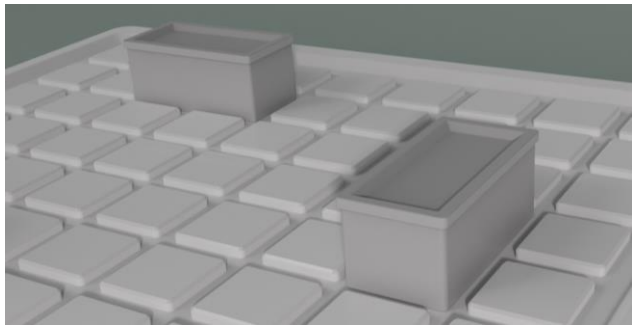


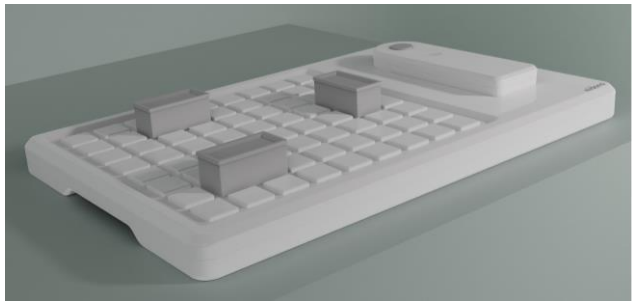
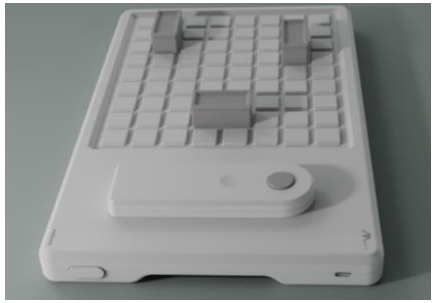
Prototyping and Modeling

I continued the design process in solidworks and keyshot.

Afterwards I **build a prototype** of the final product in a workshop. Each component was 3D printed or milled and then **carefully sanded and painted**.




Video Shoot

We set up an environment for a voluntary actress to **test our products** while also shooting a video.

I **directed, cut and edited** the video afterwards while also **making product photos** with my model.

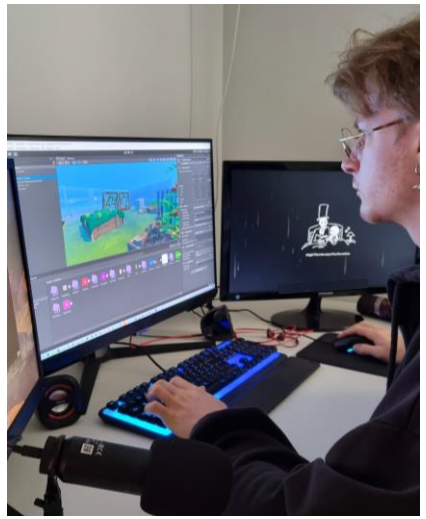


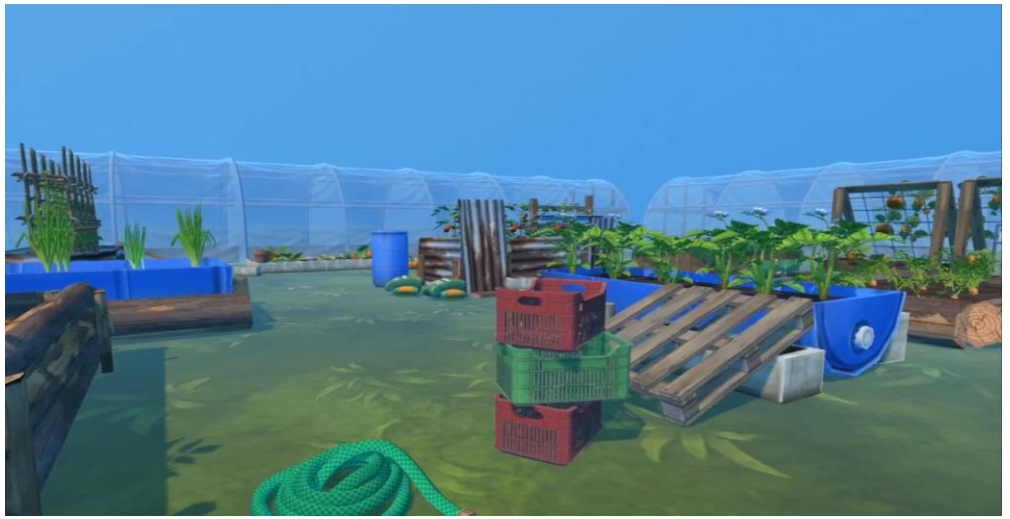



Building a VR Space

I started to design a functional prototype and **programmed a movable character in a digital** using the Unity Engine**.**

Seven voluntary seniors were ready to **test my project** and gave me **great insight** into what went well and where there was still potential.





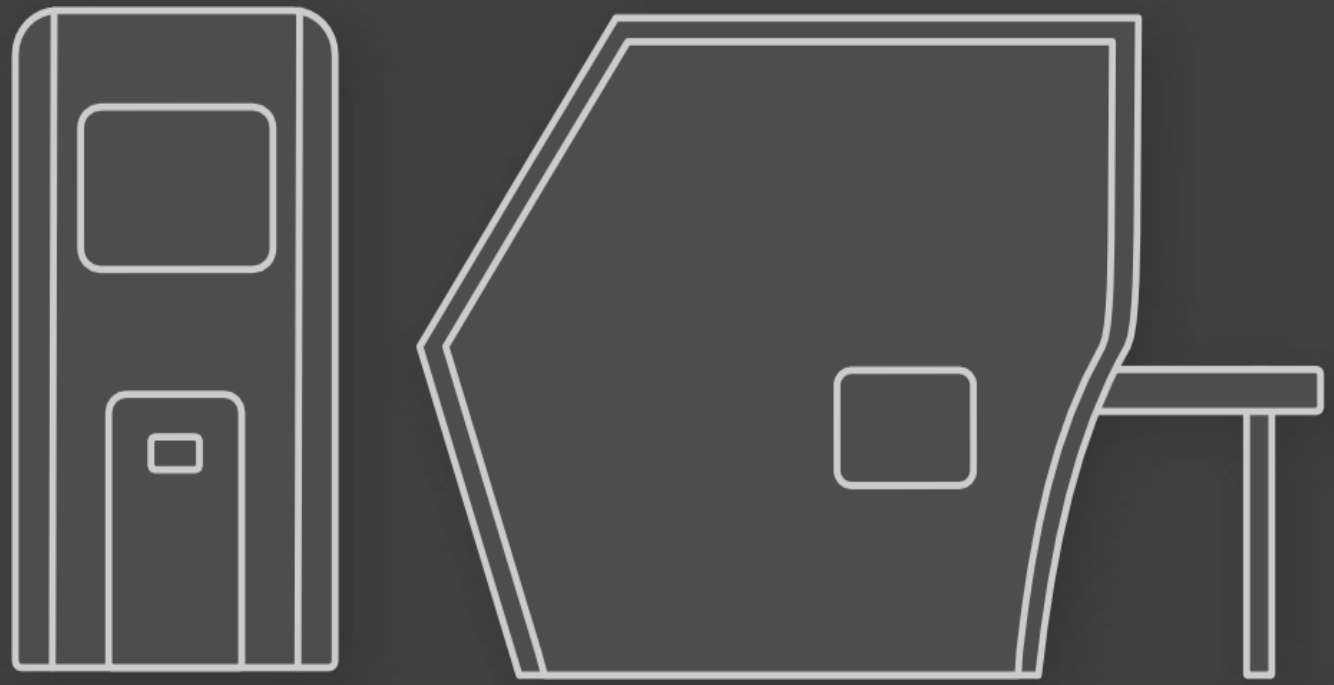

midono
ZEIT

03 AUTOMATIC SEPARATION

3. SEMESTER

Creating a prototype for an automatic table tennis ball separating machine.

Duration: 4 weeks



“Kachelcross“ Competition

As part of the yearly “**id_kachelcross**“ competition, groups of eight students are tasked to **design and build a fully functioning prototype** for an automatic machine within the span of a month.

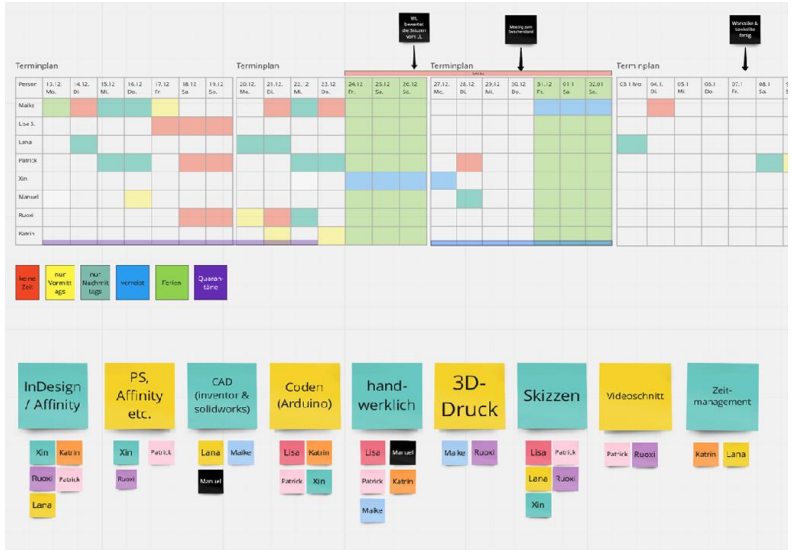
With **only the press of a button**, the machine has to complete its task automatically and as fast as possible.

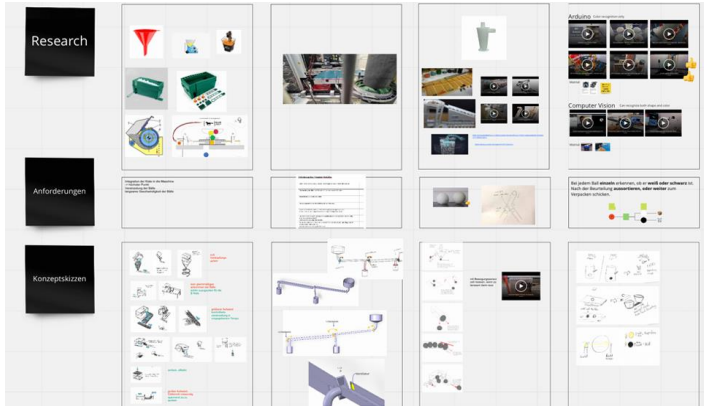
Research and Conception

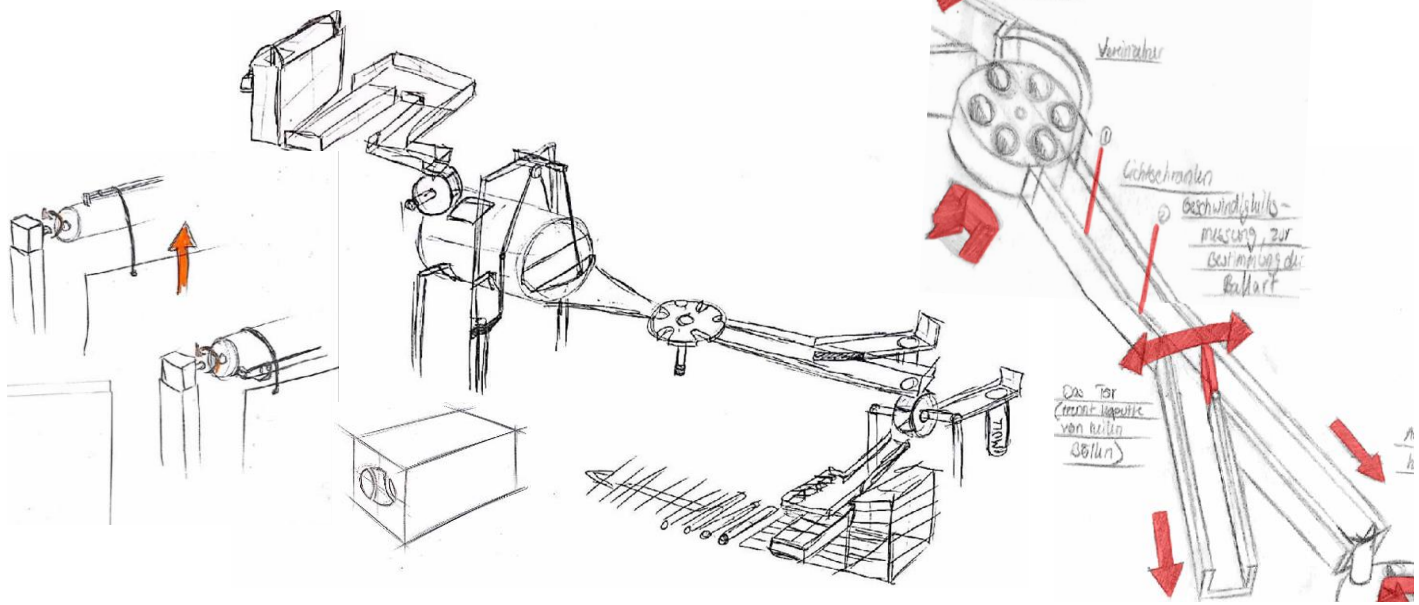
In the middle of the pandemic, the Miro Board App was a promising tool to **coordinate and distribute task** within the group.

Potentials, ideas and solutions were sketched on the board and **evaluated with sticky notes.**

Important:
As this project is a group projects, the tasks in the different areas were divided equally among the students.
I took active part in the research, the conception and the construction as well as the programming of the machine. Other areas were worked on by other team members but are nevertheless presented on the following slides.







The prototype

The required mechanical parts and tracks were **crafted in a little workshop** over the span of the first two weeks. Those were later **put together** in the university, where certain motors, sensors etc. had to be **coded aswell**.

01 200 balls roll on a little track until they get **isolated through a funnel**.

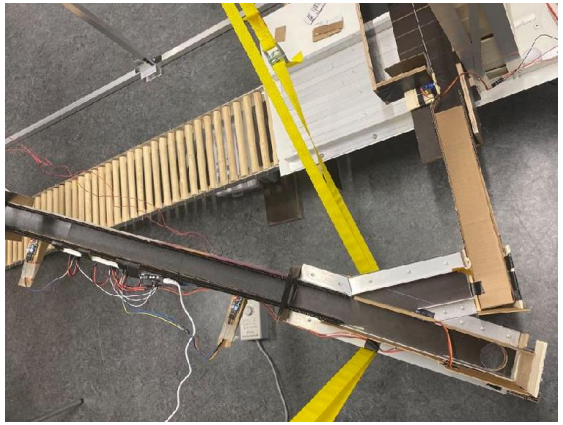
02 A servo motor system **rotates defective balls** with their dents on the ground.

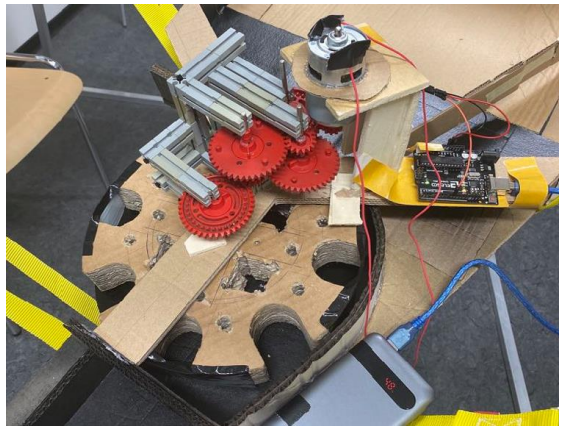
03 Their **velocity gets tracked** by sensors on a straight, black painted path.

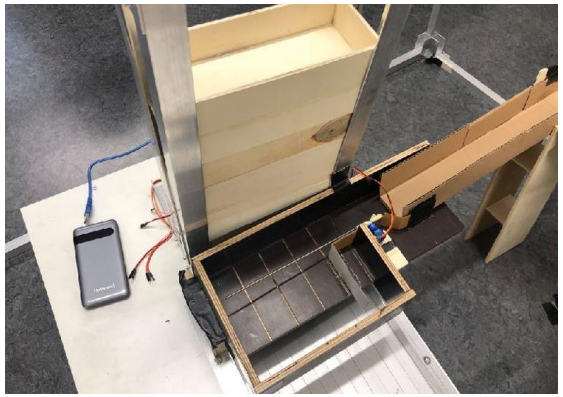
04 Unscathed balls with enough speed get **send through an opening** to the packaging department.

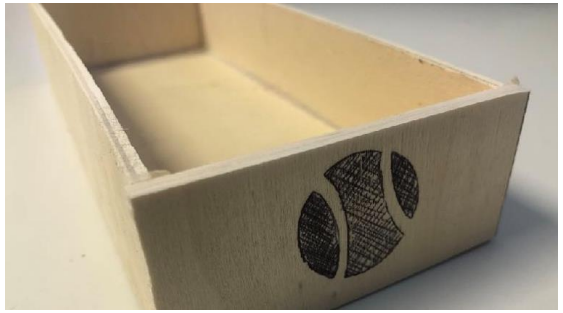
05 The dented ones roll **too slow** and get dropped out while the colored balls **don‘t get detected** at all.

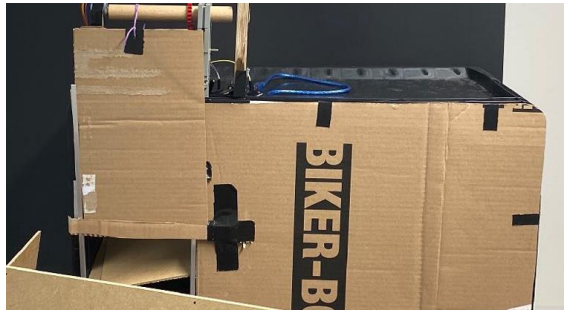
06 The Incoming balls get **distributed via a “walking floor“,** normally used in conveyor and vehicle technology, which **transports the packaging boxes at a calculated speed**.







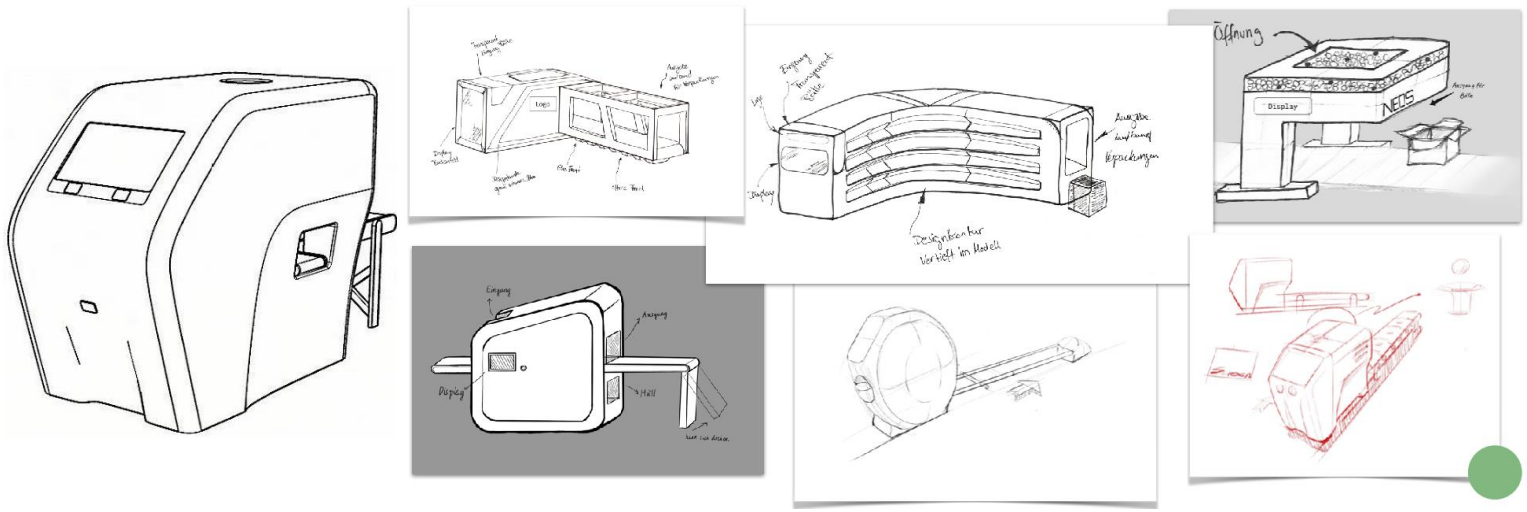




Lookslike

While building the prototype, the team worked on **different formal concepts** for the visualization of the machine.

ROBUST DYNAMIC TECHNICAL



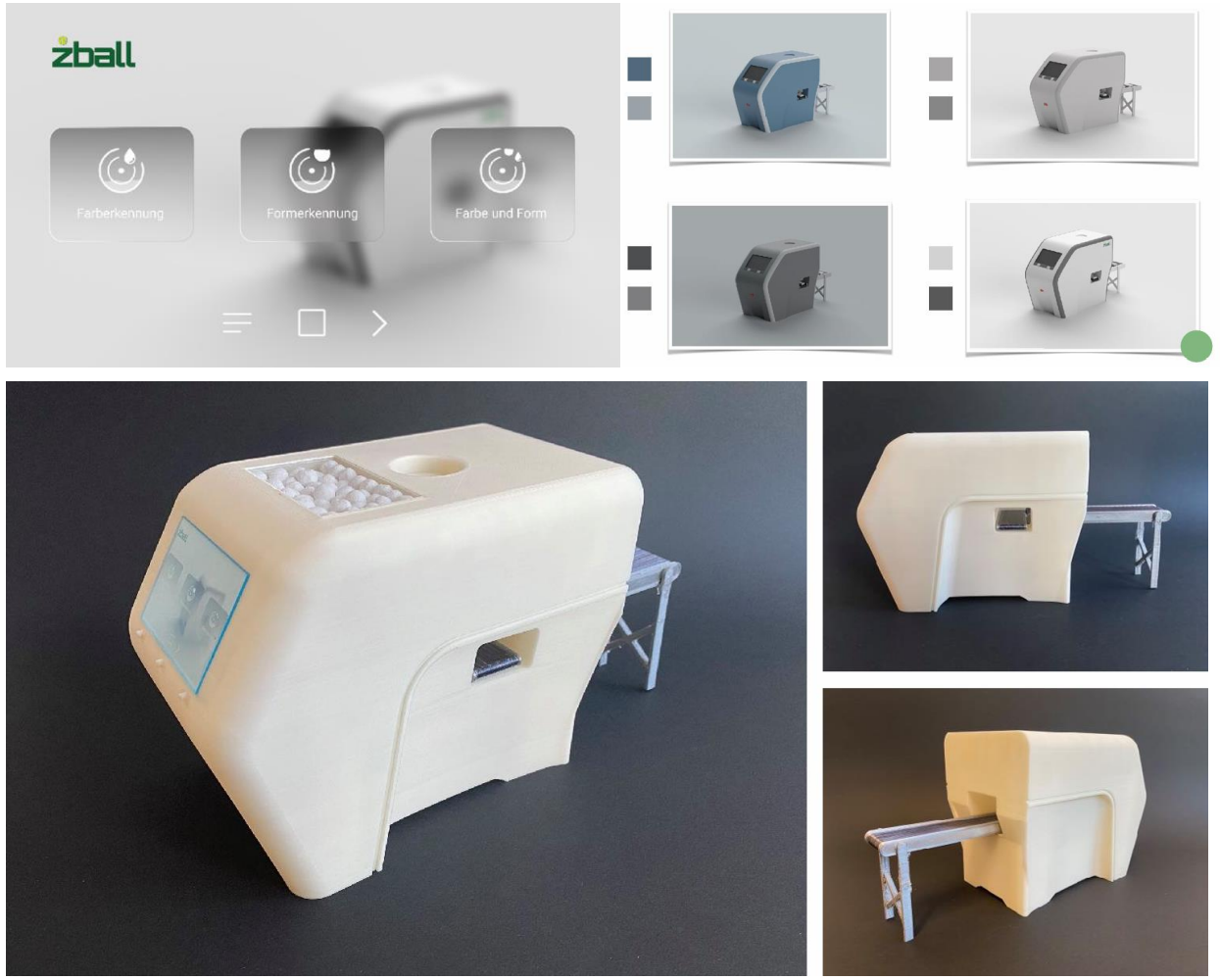
Detailing & Branding

After the final dimensions have been grasped, the team **printed a 3D model** and worked on a potential **user interface** as well as different color palettes.

The name “żball“ was chosen, as in maltese it translates to “error“. Adding a tennis ball as the dot to complete the logo.

żball

(maltese „error“)



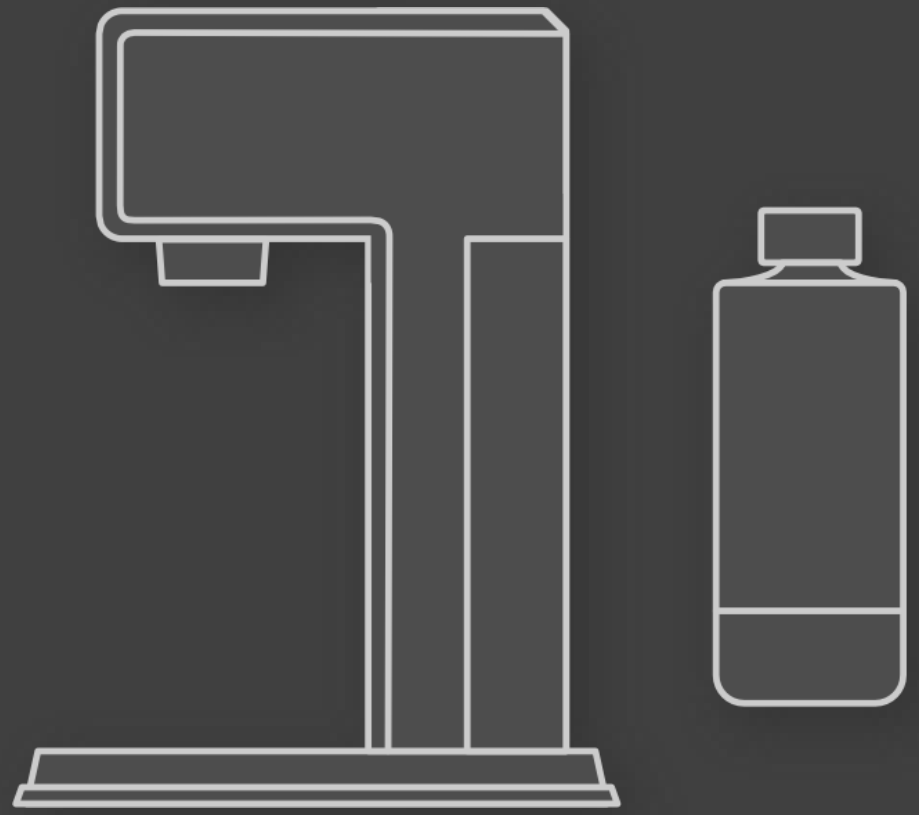
zball

04 SPARKLING WATER MAKER

7. SEMESTER

Design study sprint of a household device to easily make sparkling water at home.

Duration: 4 weeks



Research and Analysis

The market analysis granted insights into **different aspects** of sparkling water makers as well as water bottles like **material usage, shapes, colors, and user interface**.

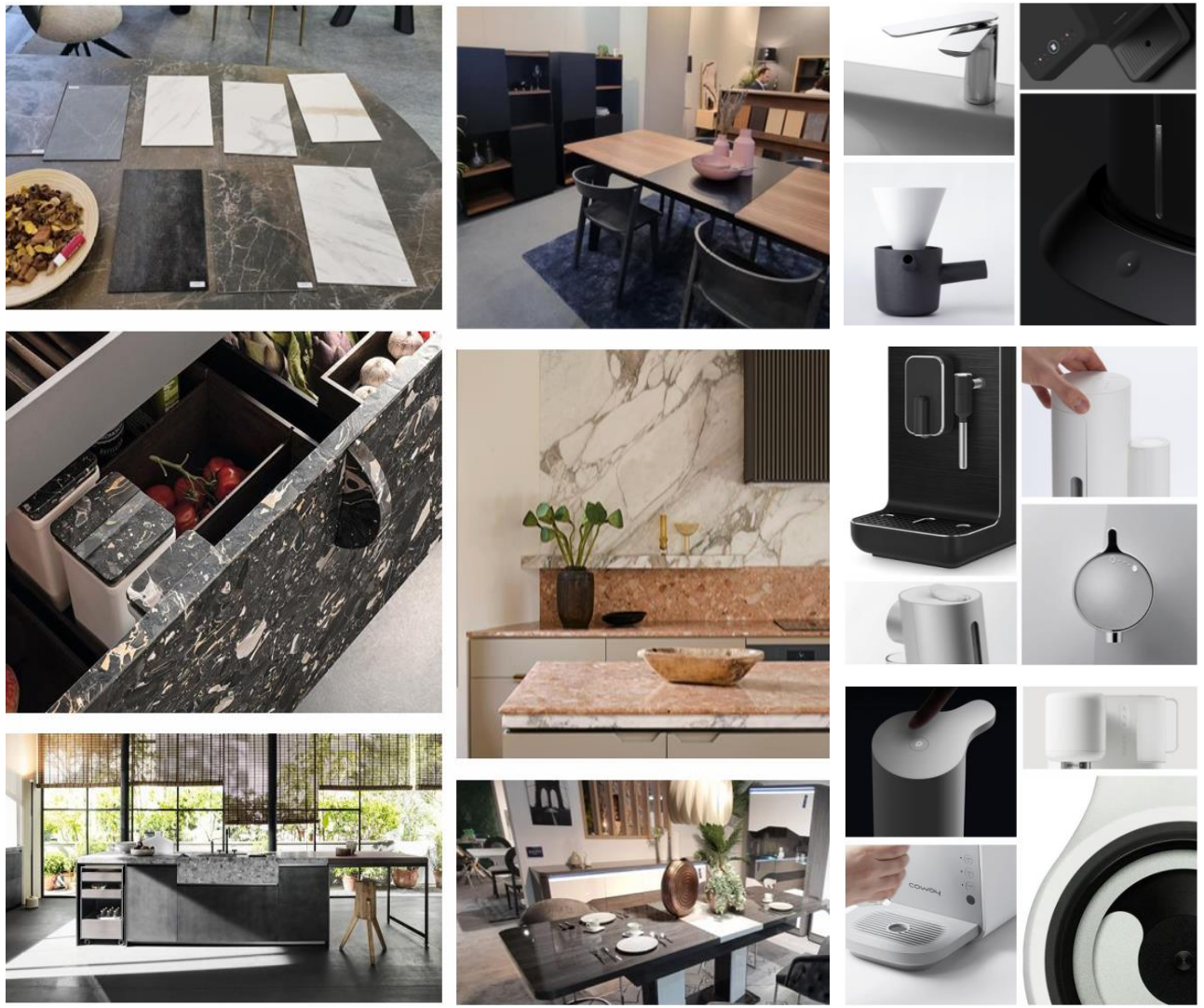
I also gathered information about **brands on the market**, purchase scenarios **online and offline** and **safety requirements**.

Kitchen Trends

A good product should **fit inside its environment.** The sparkling water maker usually has it‘s place **in the kitchen**.

So to get a better grasp at modern kitchen trends for this and for other projects, I **visited the imm cologne 2024** and started some formal studies.

- Broad spectrum of colors and materials
- Basic shapes with rounding and bevelled edges
- Surfaces are often patterned or broken up by changes in color or material
- Interactable surfaces often contain indentations or elevations
- Slightly prominent components indicate functions that are otherwise subtly build in



In-Use Analysis

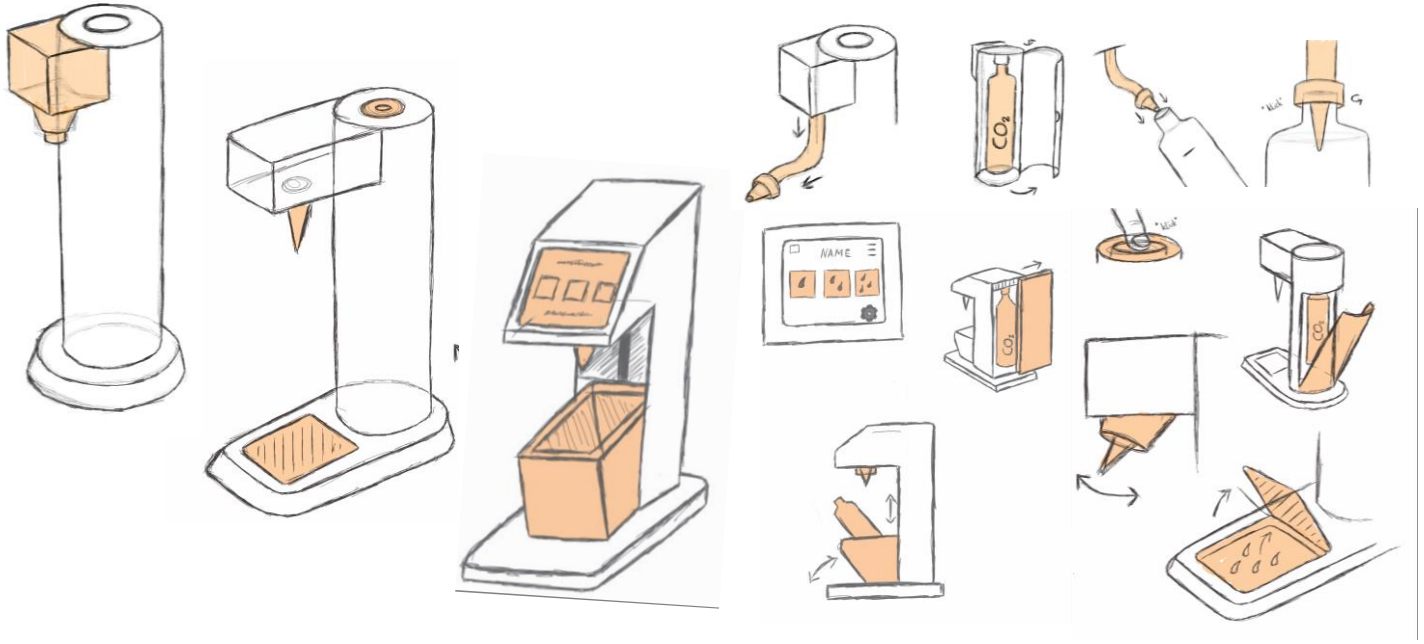
The in-use analysis on a test product granted **some flaws and potentials** that were worth expanding on.

To conclude the analysis, a **requirement catalogue** has been created.

Conception

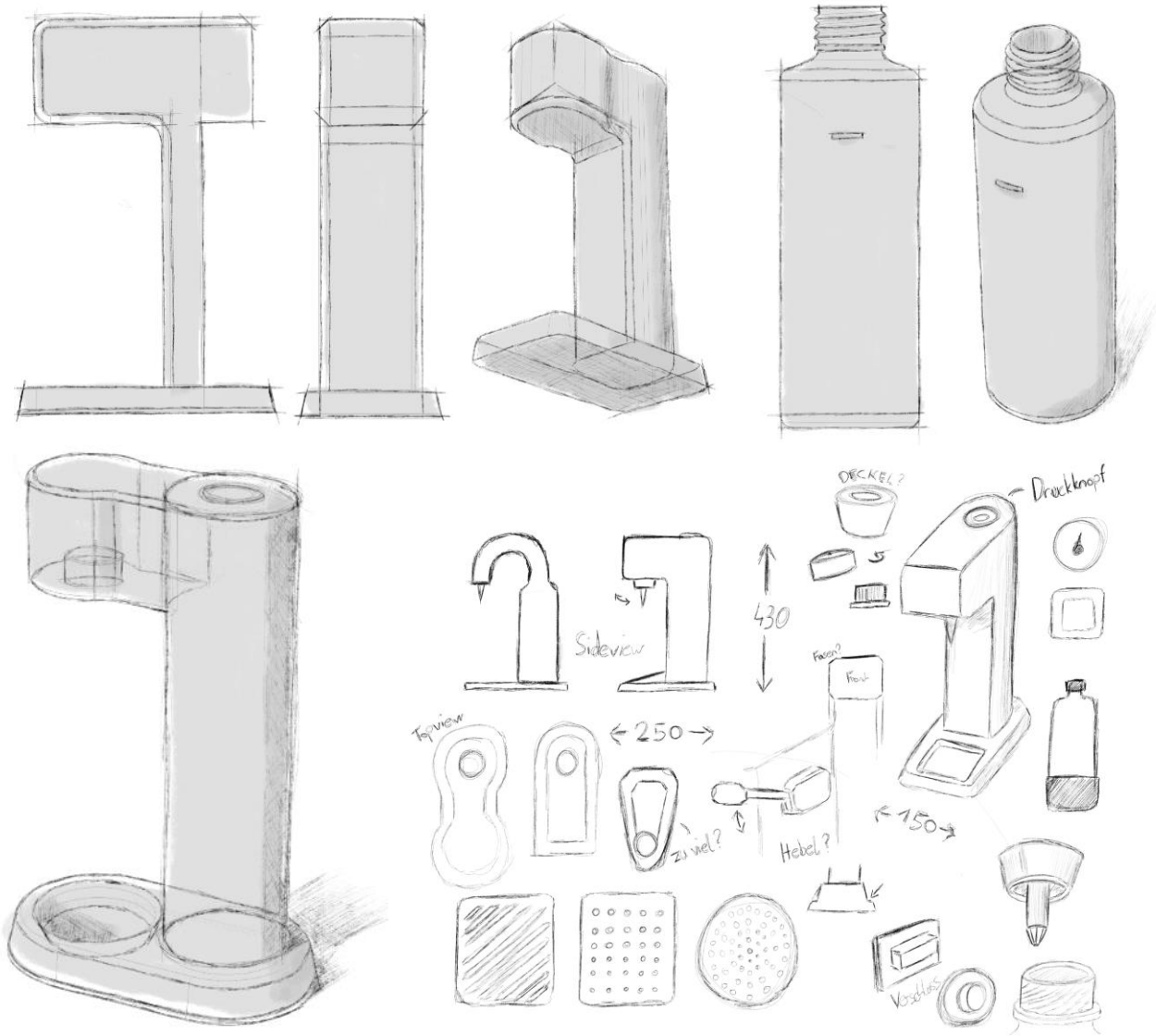
All gathered potentials from the requirement catalogue were split up into **five conecpt fields**. With those in mind, I created quick first conceptual ideas.

User Interaction	CO2 Management	Durability	Bottle Handling	Safety and Protection
Commissioning	Supply	Stand	Material	Hygiene
Operation	Storage	Weight	Placement	Cover
Dosing	Exchange	Housing	Locking	Locking
Feedback	Security	Material	Bottle Protection	Maintenance



Design Sketches

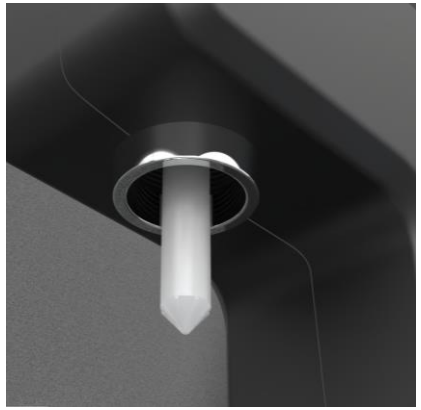
Initially, the first design approaches for sizes, shapes and other solutions were created and collected in the form of sketches and simple Rhino 3D models.

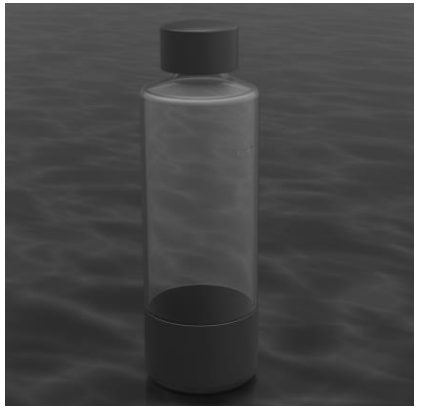


Design Detailling

Individual parts were then constructed in SolidWorks to be able to evaluate the initial design approaches in 3-dimensional space. During this process, I repeatedly switched between 3D and 2D.

- Automatic dosing at the touch of a button
- Swiveling connection for immediate insertion
- Grid base for easy cleaning
- Outer shell made out of a wood biocomposite
- PET bottle with a stainless-steel base





CarbonOne

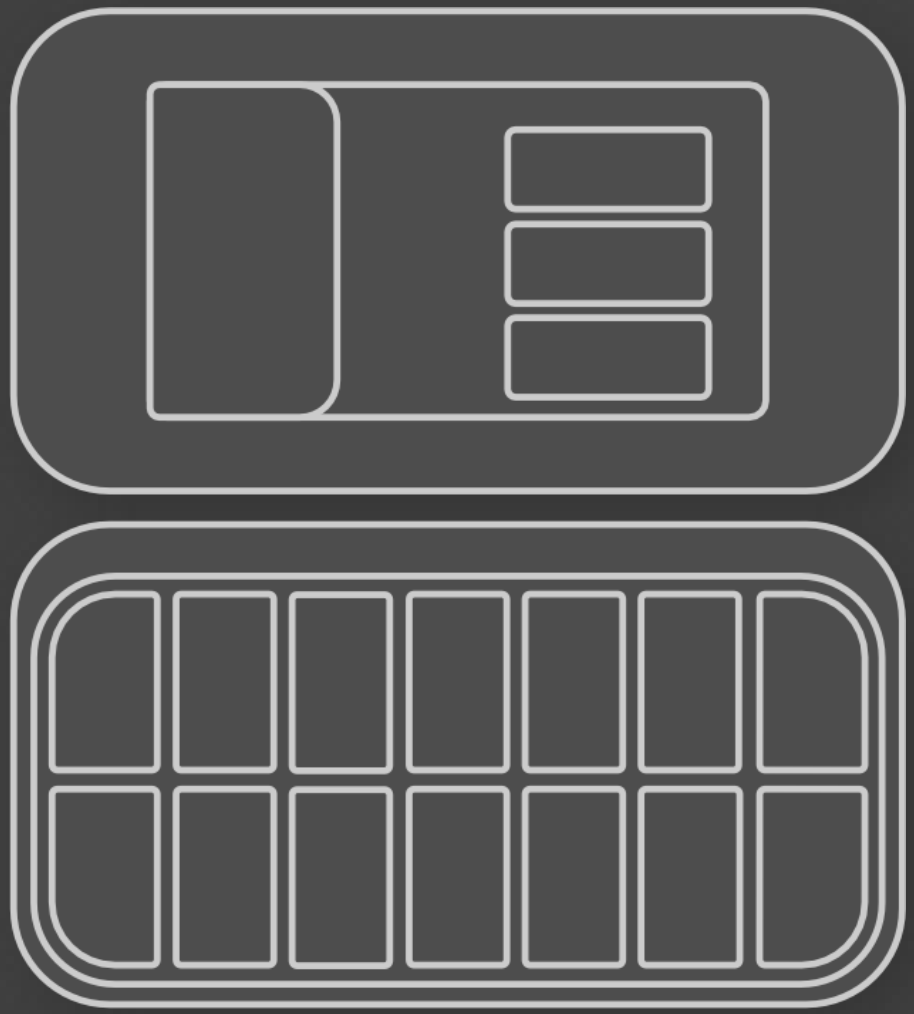
05

MEDICATION SYSTEM

BACHELOR THESIS

Development of a system for the storage and regulated dispensing of medicines for private individuals.

Duration: 5 months

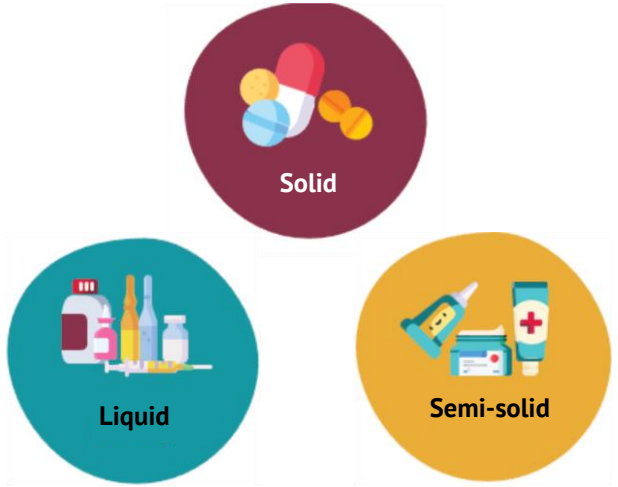


Research

I started with a basic research on different kinds of medicines, their history, and also their **required conditions for storage and ingestion**.

Going through **studies**, looking at user groups as well as **doing surveys and interviews** also helped to identify problems.

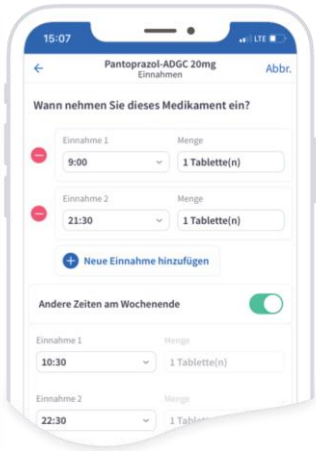
- Ingestion of medicines is often forgotten
- A regular ingestion is hard to monitor
- Medicines have to be stored safely
- Its difficult to plan medication when travelling
- Dealing with your own illness can be frustrating

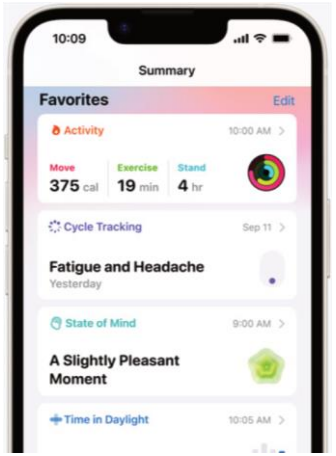


Market Analysis

I compared various storage, and ingestion aids available on the market to **identify the pros and cons** of the individual products.

The analysis provided even more gaps and problems, which could then be **formed to potentials** for the concept development.





There is no all-in-one solution on the market

Analog and digital products don‘t interact directly

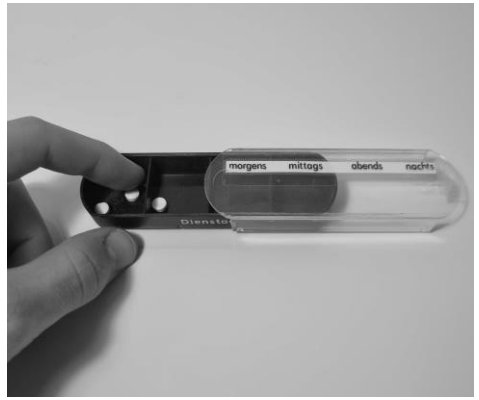
Many products on the market are outdated

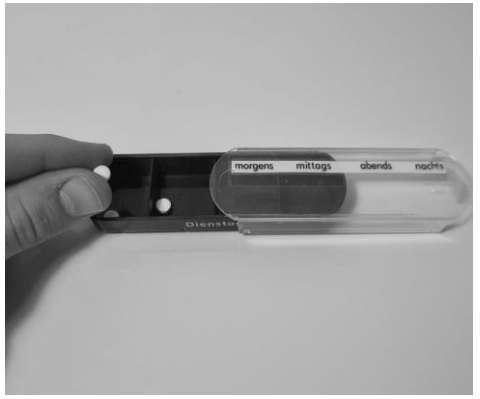
Analization of modern apps grants a few helpful potentials

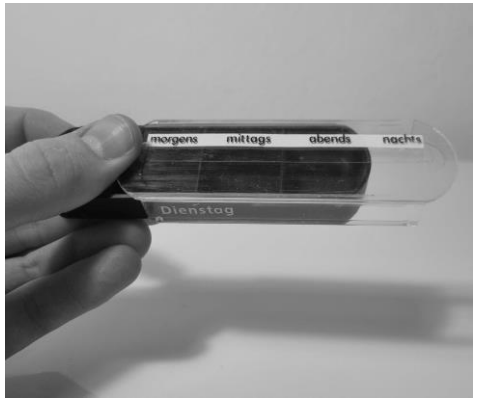
In-Use Analysis

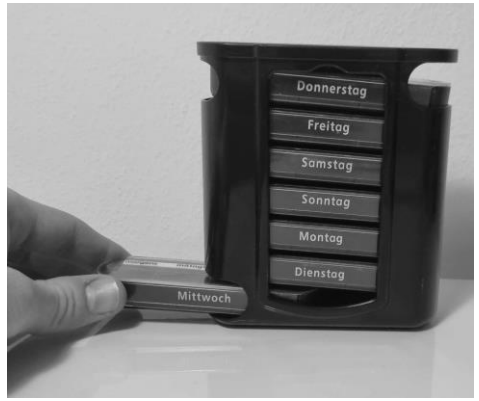
To gain a better insight into the various problems involved in **removing medicines from their boxes**, an in-use analysis of a commonly used medicine box was carried out.

- Small pills are hard to take out of little boxes
- Past ingestions can be checked if the contents are always visible
- A modular system grants flexibility while traveling
- Many analog products lack a function that reminds the user to take their medication



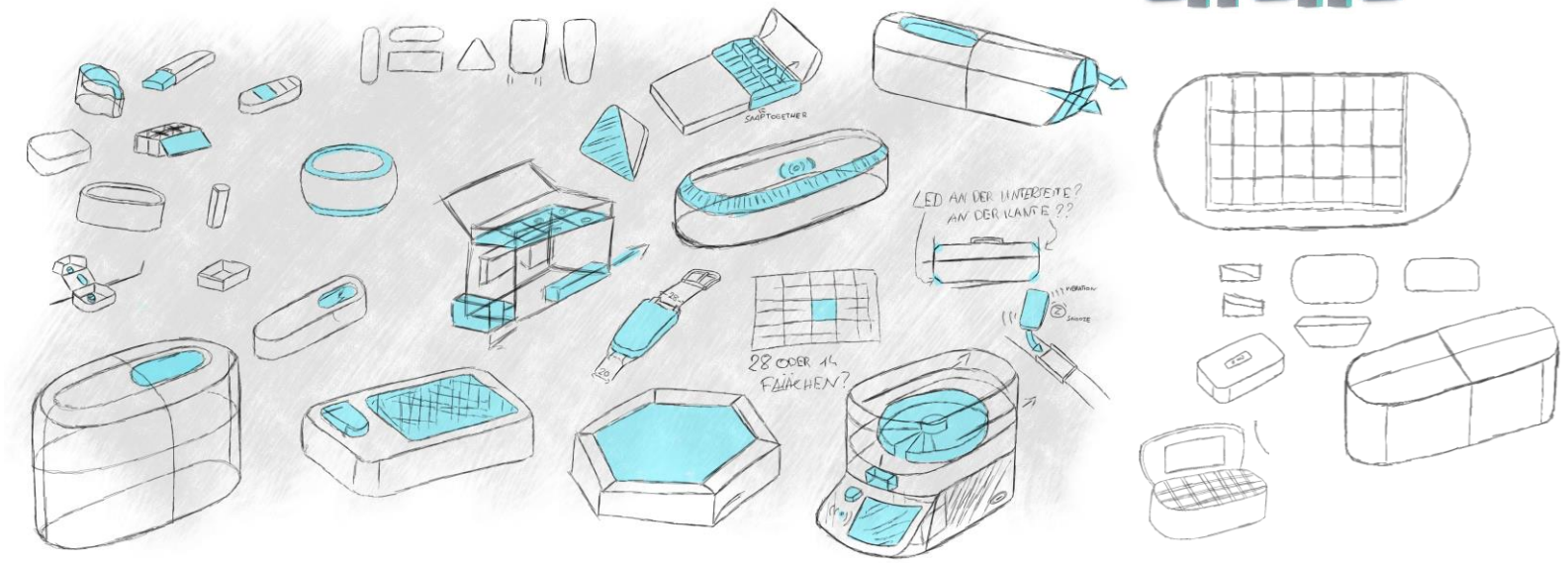






Conceptual Solutions

The collected potentials were divided into **five concept fields**. Initial conceptual solutions were then **outlined and subsequently consolidated**.



- Handling
- Storage
- Dispensing and Ingestion
- Planning and Control
- E-Health Usability

Prototyping

Each concept has been **pursued with prototypes** using the 3D printing process in combination with simple cardboard or paper constructions to **grasp the necessary dimensions** and **rate their effectiveness**.

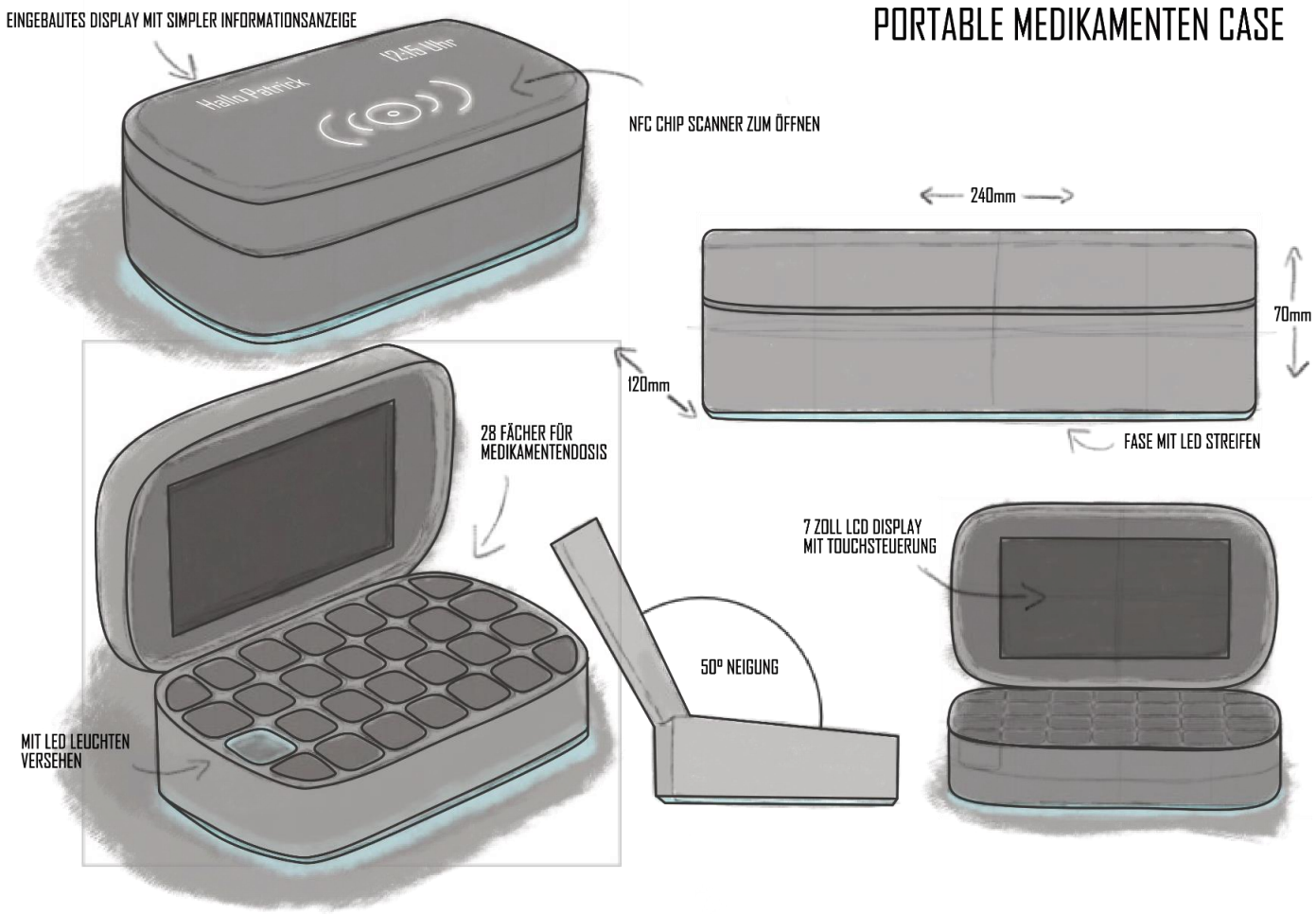




The Final Concept

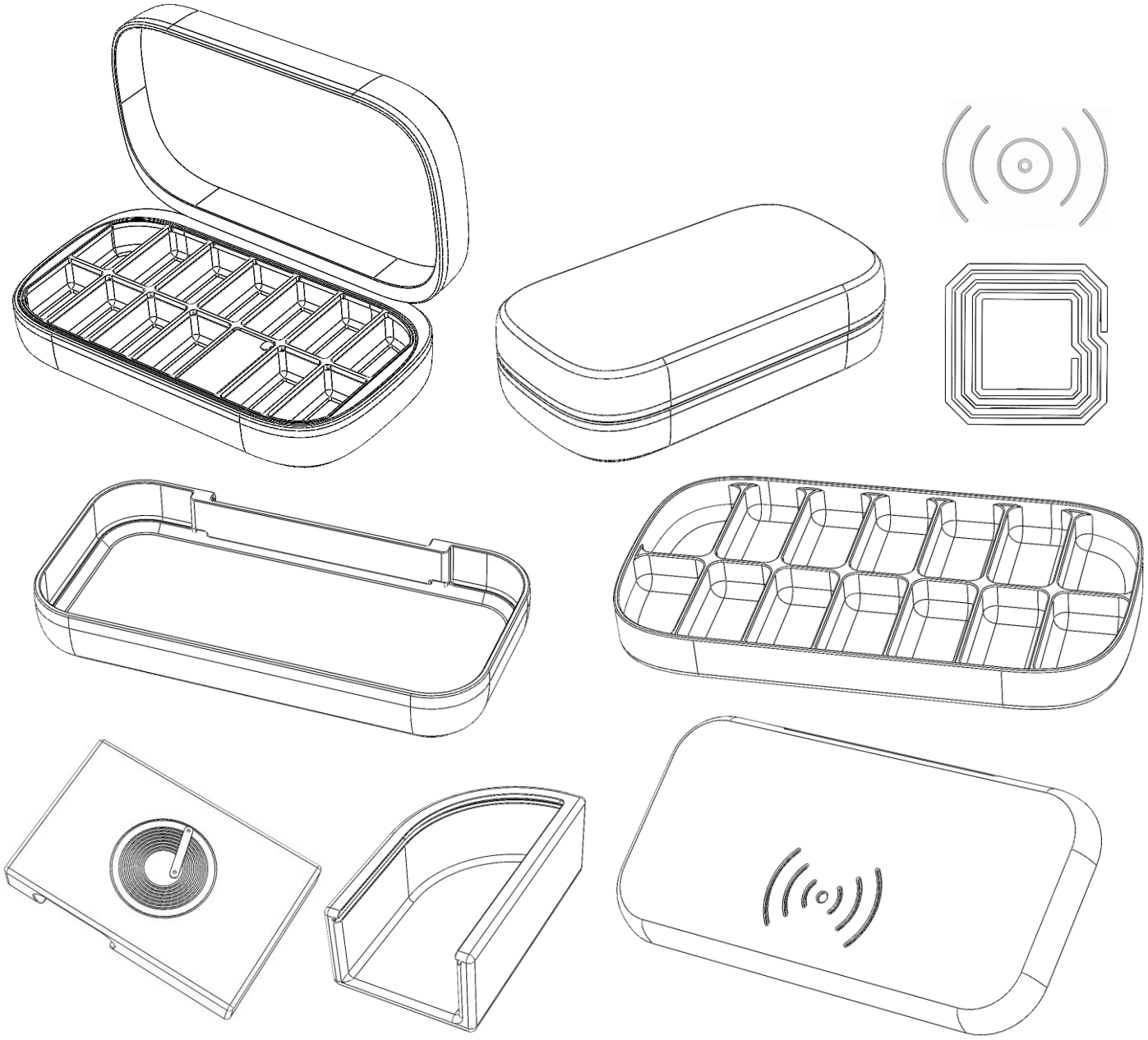
The concept offers **safe storage** for medication that can be opened by **scanning a chip** while **a program reminds** the user to take their pills.

The contents of the case and previous intake times can be **checked via a display**, which runs a program that assists the user in **creating a medication plan.**



Design and Detailling

Many details like the **final dimensions for improved ergonomics**, the needed number of compartments for **ideal medication planning**, or other technical solutions are developed and finalized in CAD.



Model Making

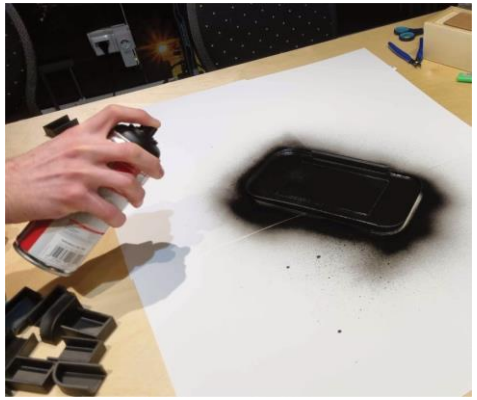
After the design, a 1:1 Model has been created using the 3D printing process. After all parts were glued together, all surfaces have been carefully sanded and painted to resemble the final product.









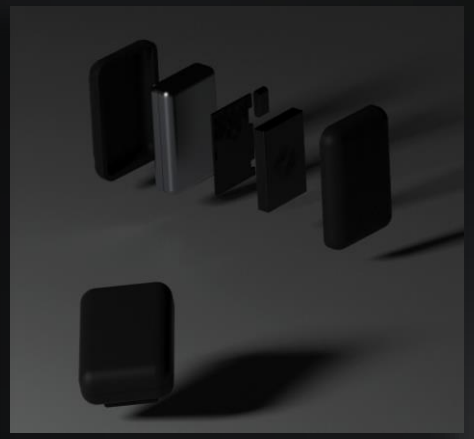


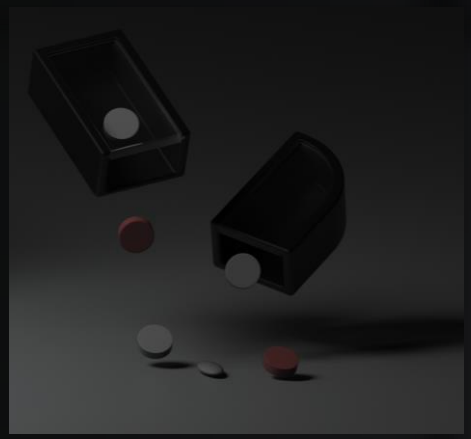
Logo and Branding

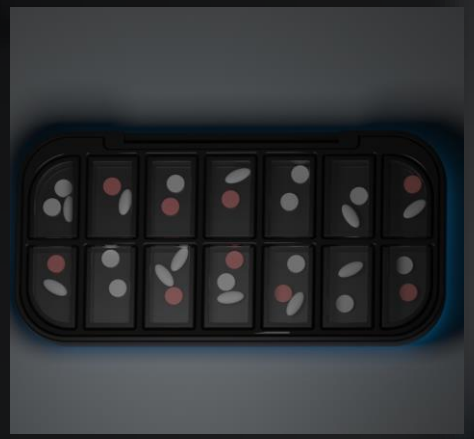
The name is a combination of the words „Med“ for medicine and „Aura“ as the product **communicates with the user** and radiates a certain charisma, particularly through the LED light.

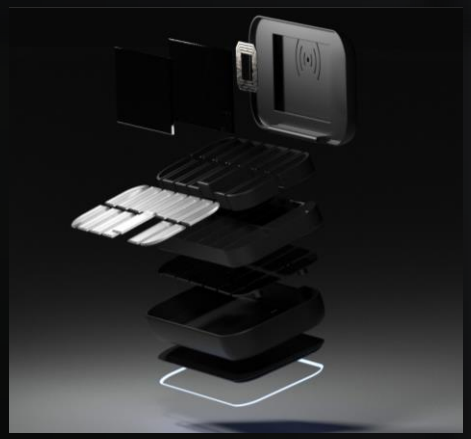
Accordingly, **a top view of the LED light** is integrated into the logo.

(Med + Aura)









medaura

A portable and safe storage device for medicines at home and when travelling

THANK YOU!

Let‘s get to know each other

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