

P O R

T F O

L I O

AKANKSHA SHAH

INDUSTRIAL DESIGN STUDENT



HI!

I AM AKANKSHA SHAH

A 4th year Industrial design student of Nirma University, working to expand my knowledge and vision in this field. I believe design is at the interaction of technology, engineering and art. My approach towards design is based on research, understanding the situation, the environment in which it exists and then following the design process strictly to provide tangible and real-world solutions. I believe design is a vehicle for positive change, be it a niche or something which impacts millions. I am a great team worker with a burning desire to learn. I'm often complimented for my management skills and out of the box thinking. I find myself versatile, adaptive, visionary, passionate and first mover advantage. Other than design, my hobbies include playing Chess, Basketball, reading and Skating.

I am a national player in chess as well as skating, a state winner in Karate. I have received various national and international awards for painting along with various trophies for my excellent academic performance. I have received awards and cash prizes from Ex-Chief minister of Gujarat, Mrs. Anandiben Patel, Education minister of Gujarat, Jitu Vaghani, Ex-Education minister of Gujarat, Bhupendra Chudasama and Mallika Sarabhai. Recently, I received a startup grant of Rs. 1,13,500/- from the Education minister of Gujarat, Jitu Vaghani, for my game named Alzy which is for Alzheimer patients.

CONTENT



01 Fertezy: Smart Compost Machine



02 Safelock



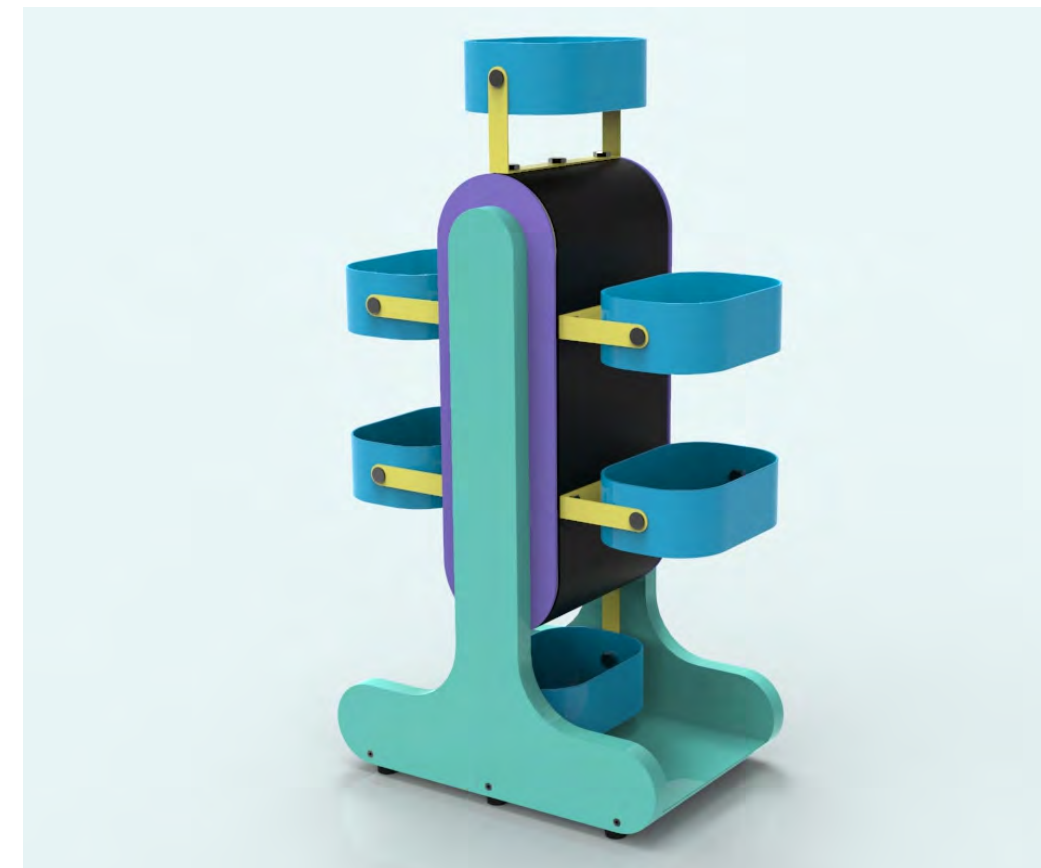
03 Exhibition Design



04 Fertezy: Smart Compost Machine



05 Internship 2021



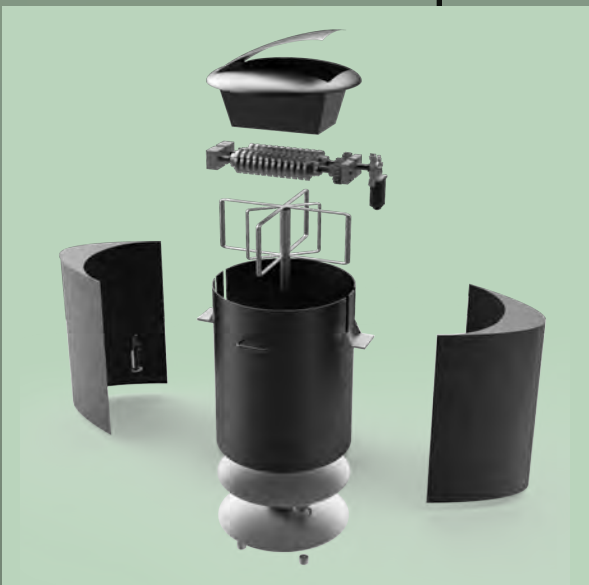
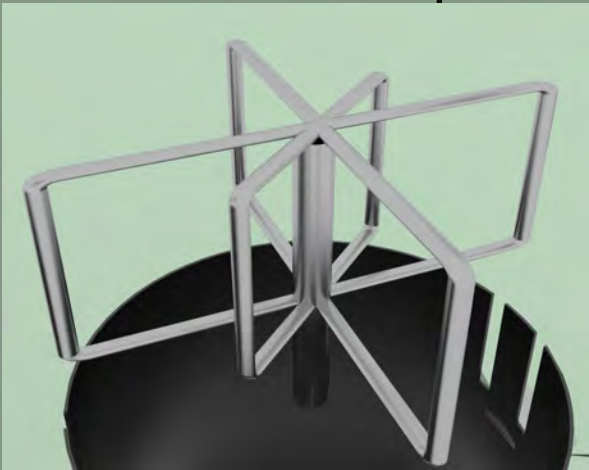
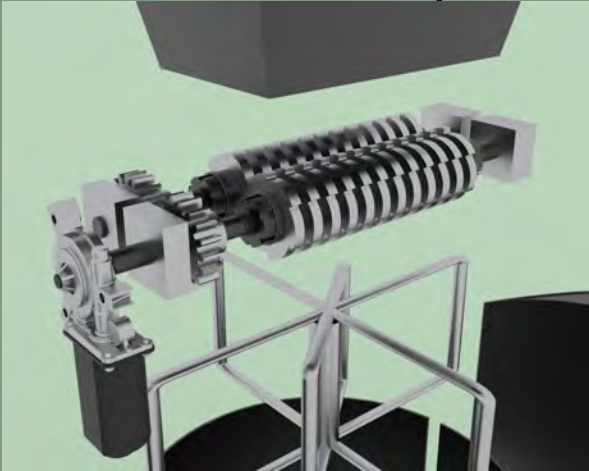
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08 Alzy - Game for Alzheimer patients



Exploded views



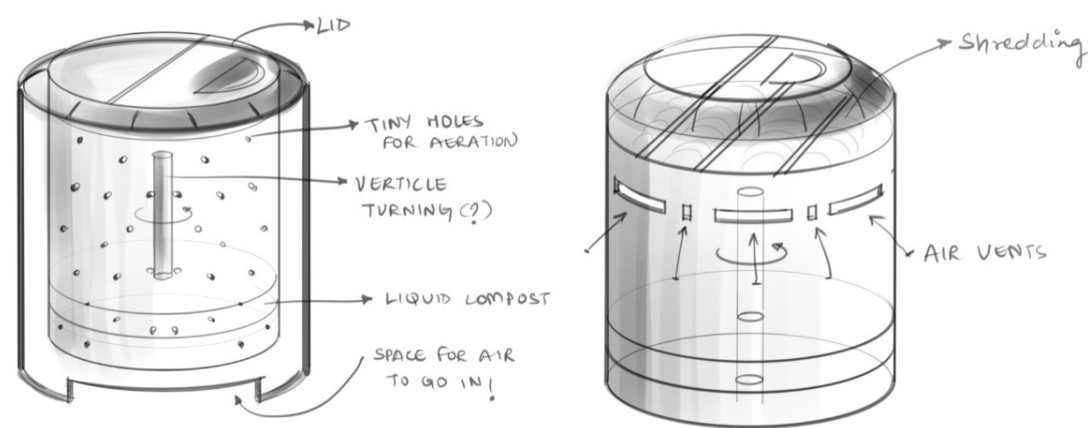
FERTEZY: SMART COMPOST MACHINE

A smart device to convert residual organic waste into mature compost, which nourishes the soil, through the process of aerobic decomposition, mainly for households. It can be operated through a mobile app which makes it interactive and automated. It makes the entire process time-saving, hassle-free and effortless,

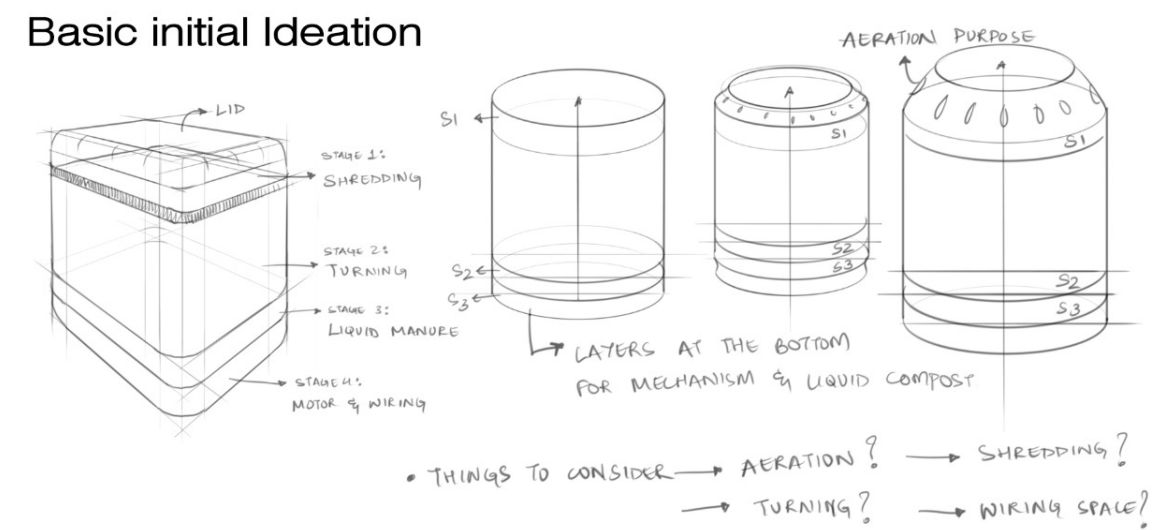


Mobile App

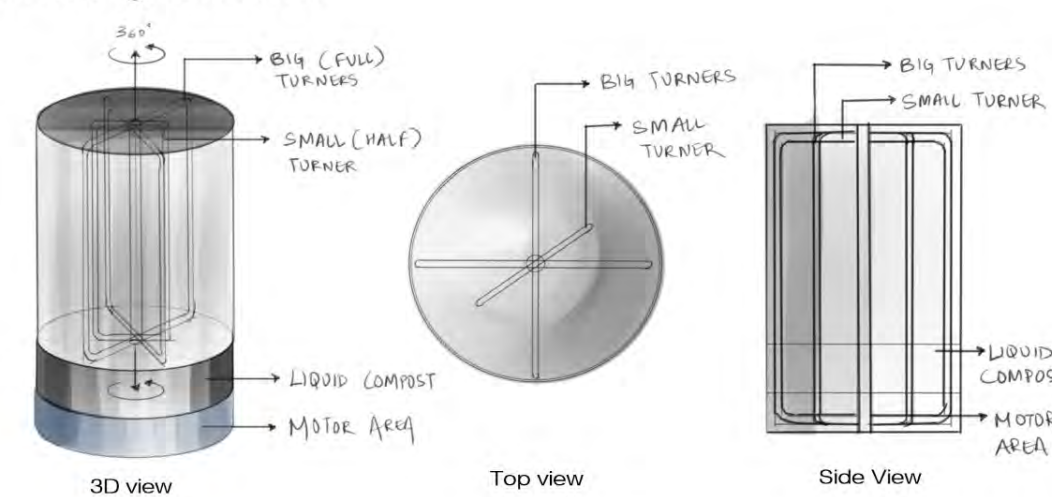
Aeration



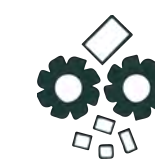
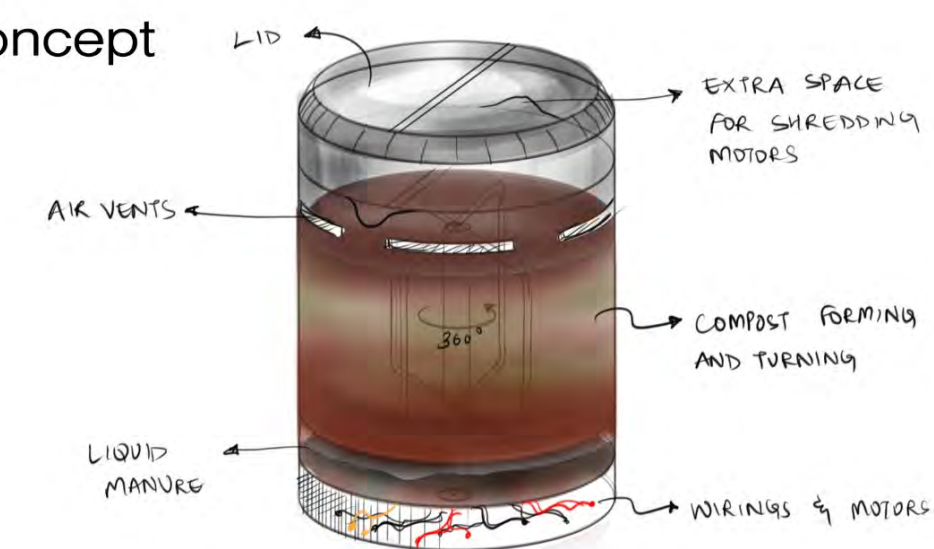
Basic initial Ideation



Turning ideation



Concept



The shredders can be controlled through the app and helps in breaking the organic waste into small chunks for further process.



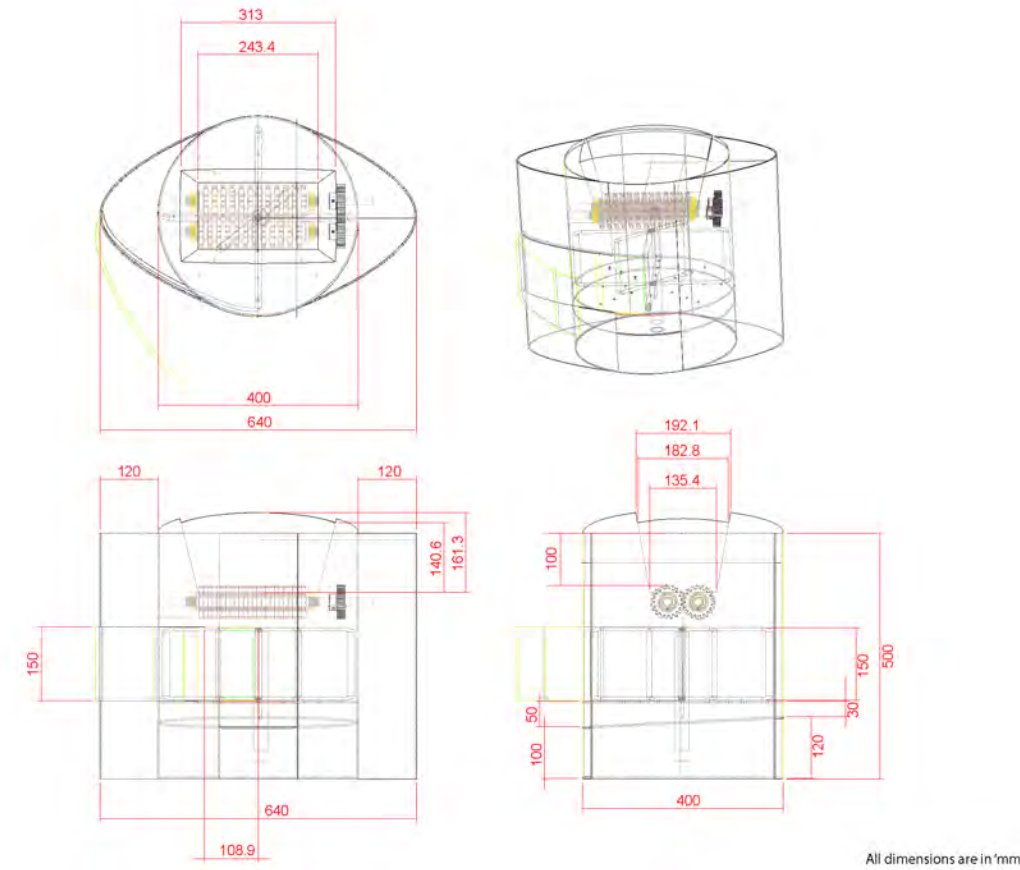
The turner which is self operated through the app with an in built notification system helps to continuously mix the shredded content to make the compost early, adjust the temperature and keep it healthy and aerated.



The buttermilk container pumps adequate amount of moisture into the mix and keeps it hydrated to form the perfect compost.



The app will notify the user about the completion of the process after 25 days.



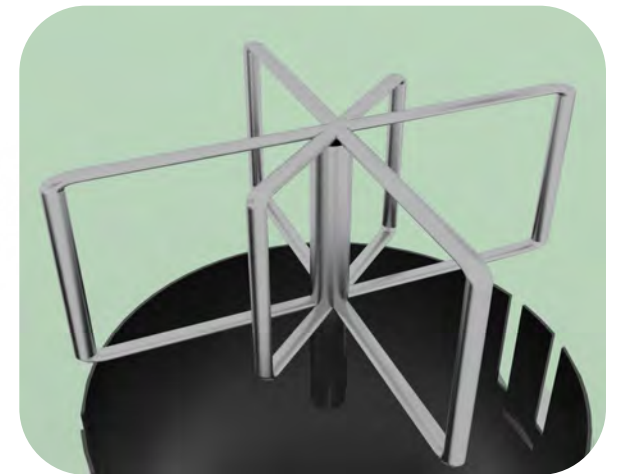
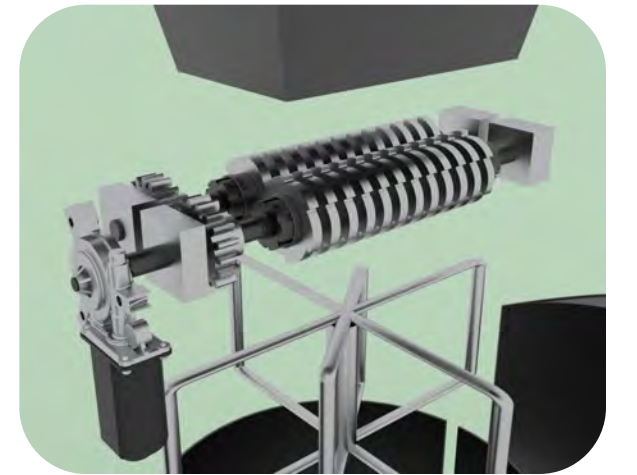
Technical drawing



Prototype



Exploded view



Close-up views

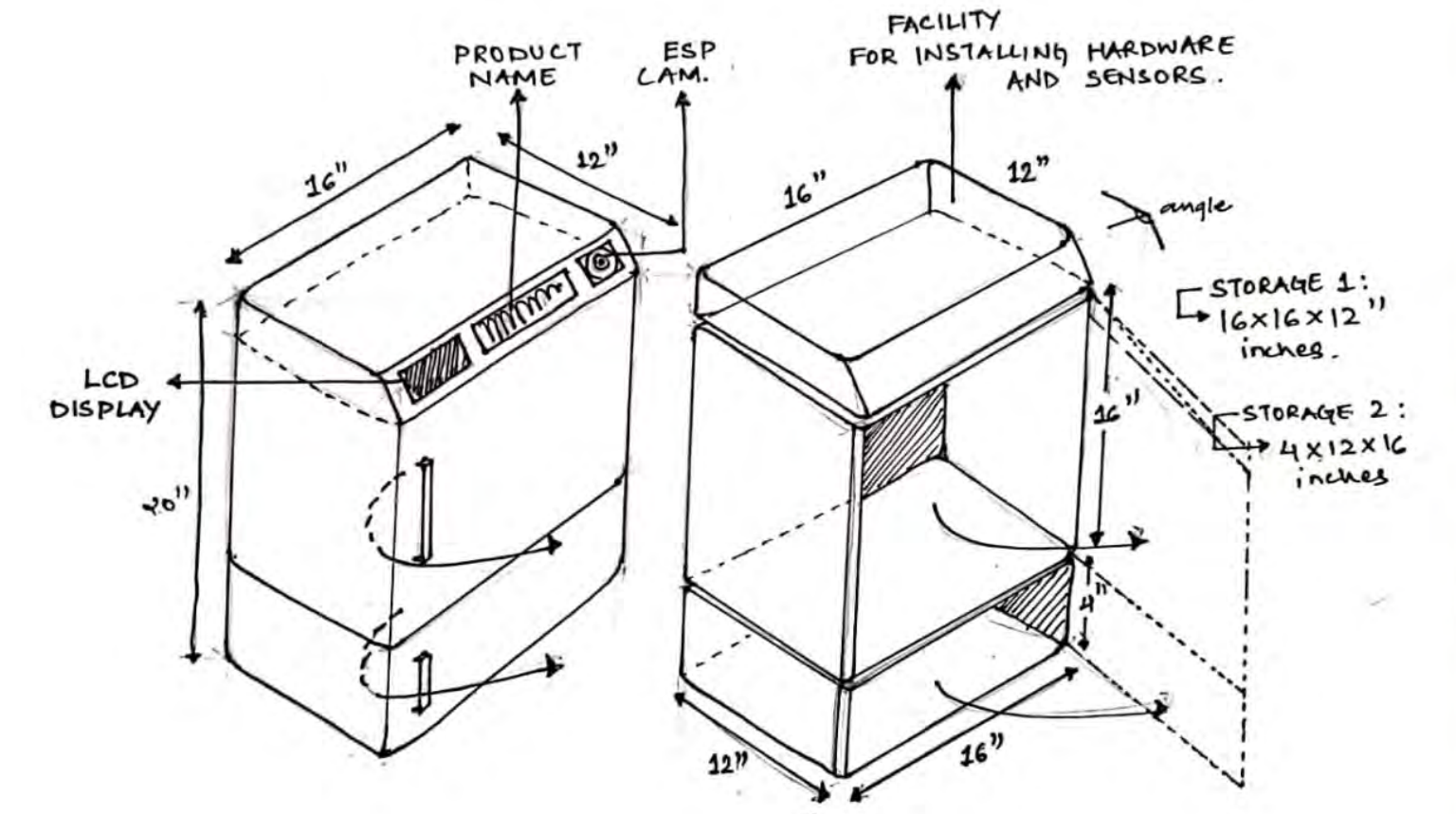
SAFELOCK: SMART STORAGE CONTAINER

A storage container which can be operated through a mobile app which has the following features:

- Safe lock that can be opened and closed, with the app, by the owner from anywhere.
- Camera to monitor the activities related to it.
- LCD display to interact or display important text.
- Relevant notifications to the owner.
- UV sterilization
- Notifications regarding the space inside the container.
- Log regarding the opening and closing of the box.

This smart storage container is very useful when there is nobody at home and one wants to get something delivered at their place or give away something.





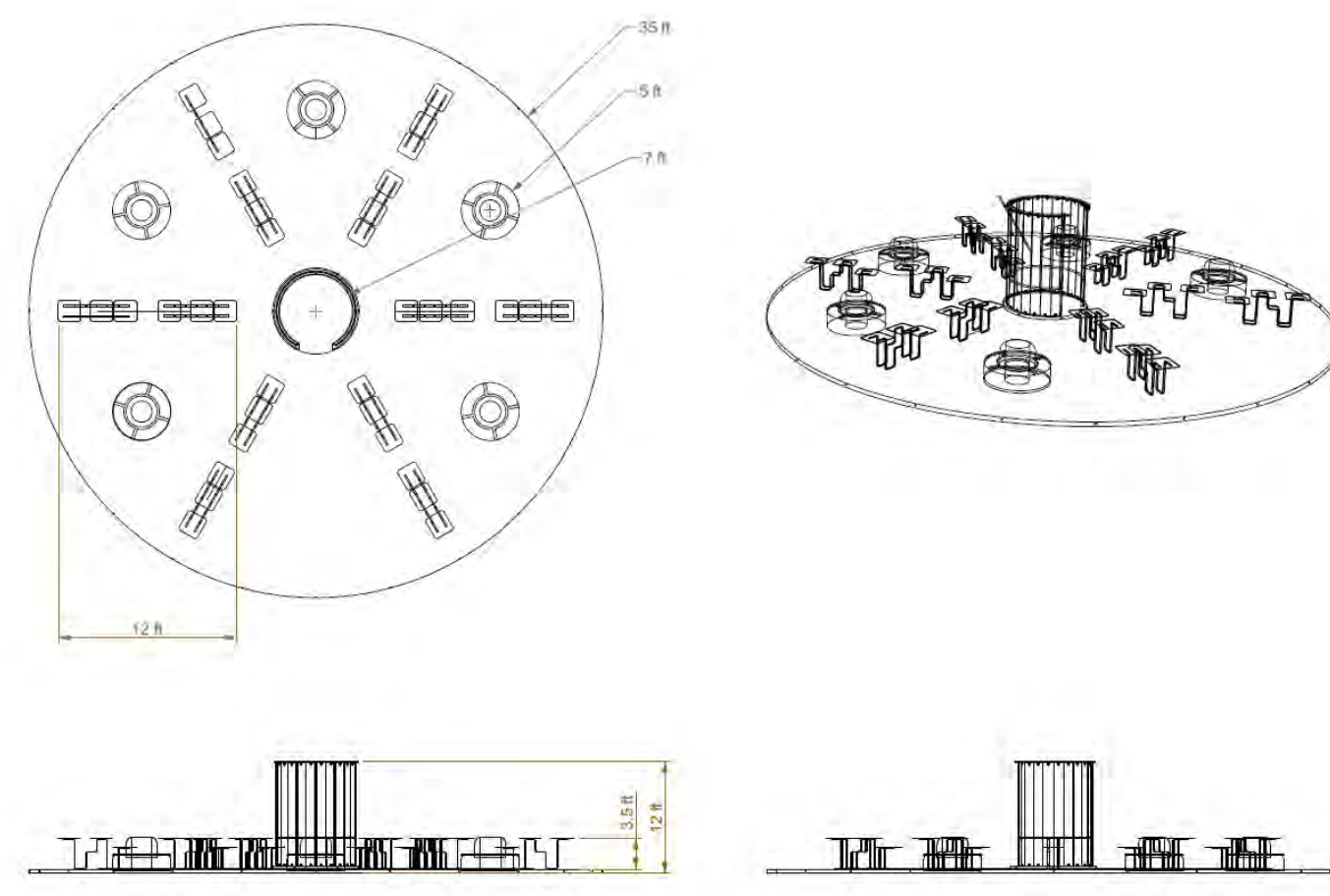
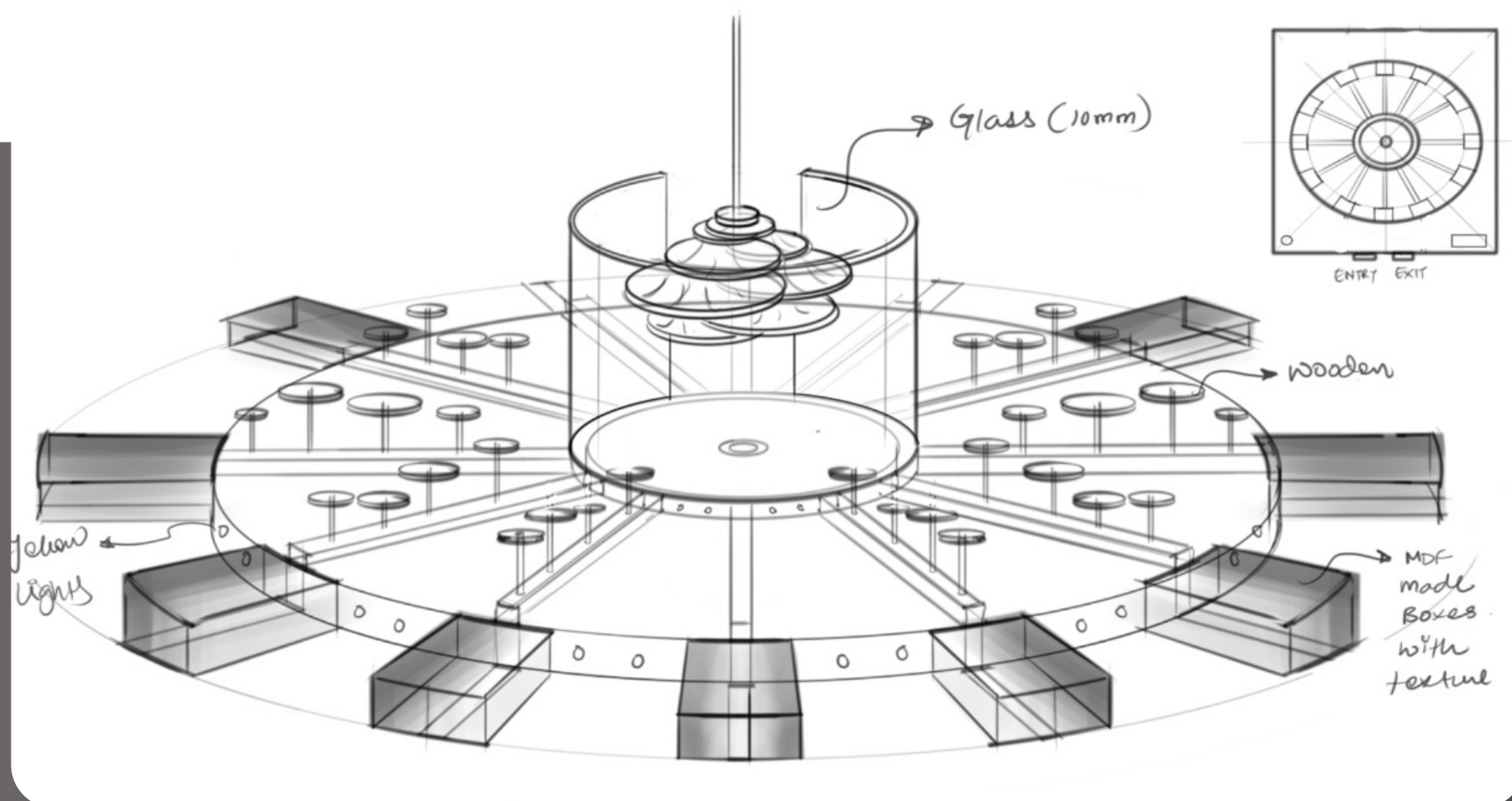
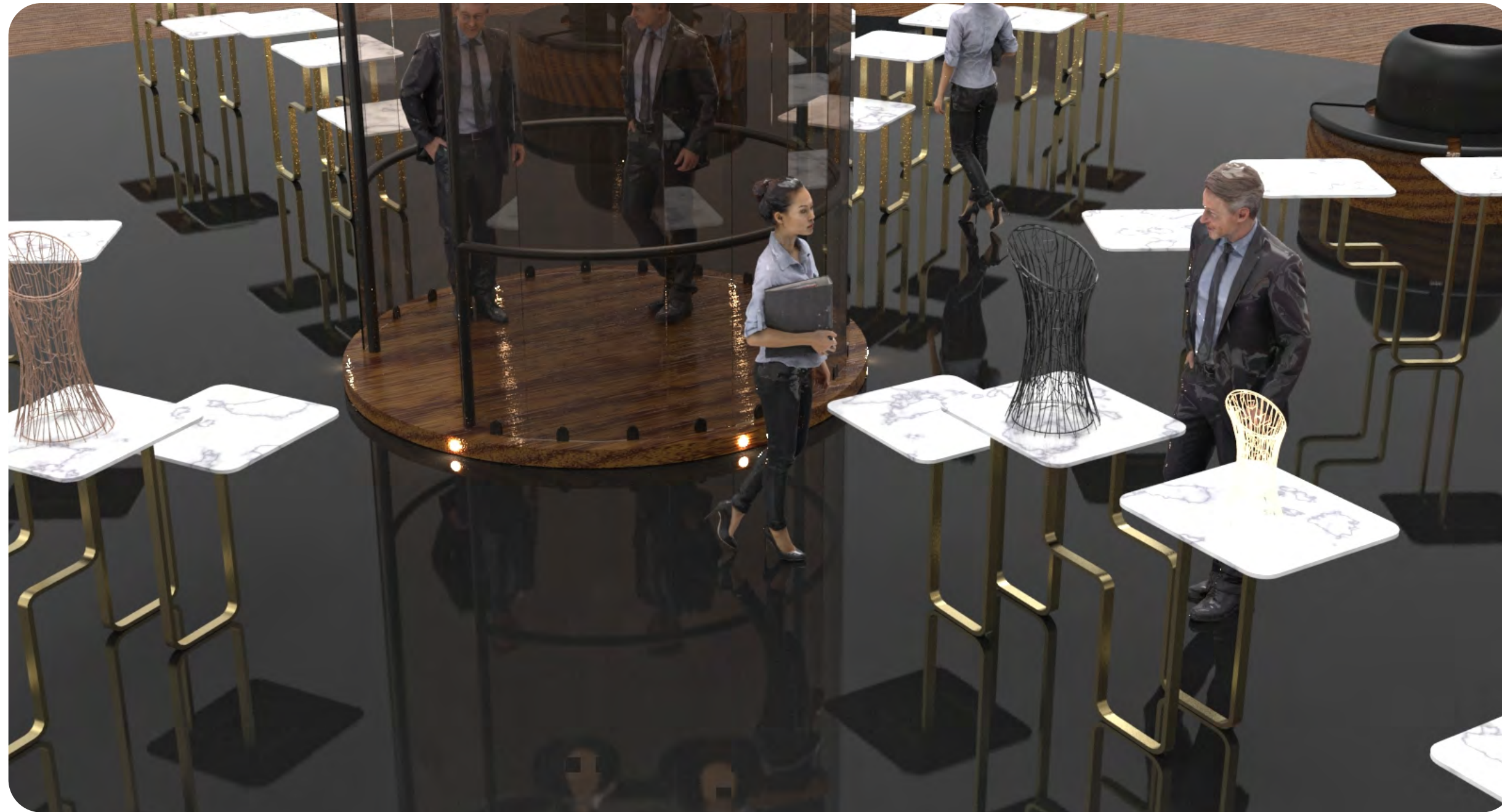
PROBLEM IDENTIFICATION

- Difficulty in receiving/collecting things ordered online in the absence of an individual.
- Difficulty in giving away any object in the absence of an individual.
- Non-sterilization of objects in Covid times.

DESIGN OF EXHIBITION AND DIPLAY STRUCTURE

For Home Decor Products

In this course, I designed space and display structures for home decor products, which were supposed to be displayed in an exhibition gallery. Starting with journey mapping, list of interactions, trend mapping to designing plan layouts and detailing different display structures including their joinaries, I covered everything in this project. The theme of my project is inspired from a wall clock and it has various structures for chandeliers, other decor products and seating.



- Research
- Ideations
- Technical drawings
- Computer Aided Designs and Renders
- Prototype -
Central structure (1:8)
Display structure (1:5)

SET OF THREE NESTING TABLES ■■■

I did a 2-month-long internship at Vintage Wood Crafts (V.W.C.) which is a furniture showroom in Ahmedabad, near Shivranjini. Here, I got the experience of working on a lot of projects of clients as well as designing a whole new set of furnitures for the showroom, thereby creating demand for the same.



Design



Design

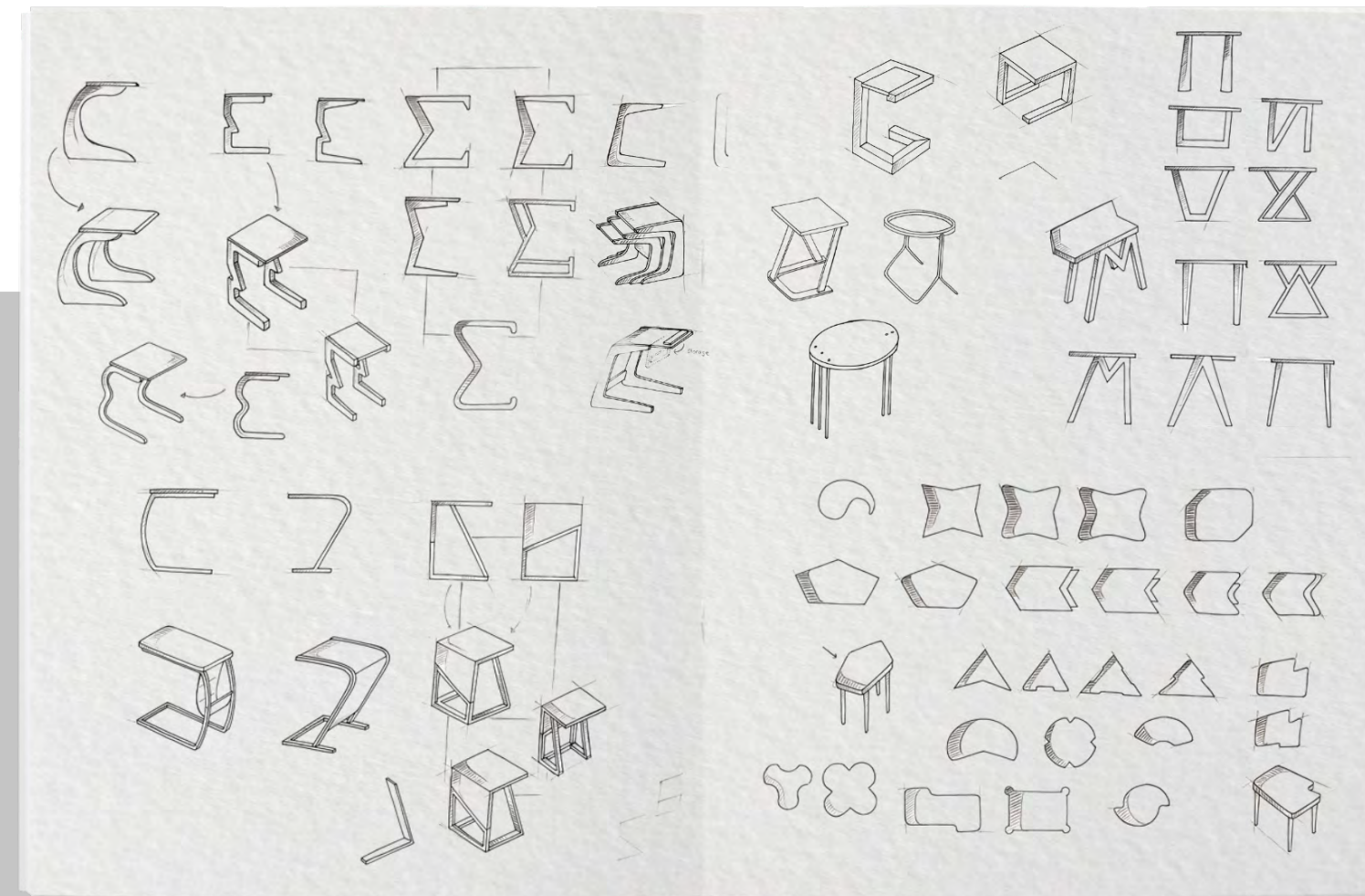
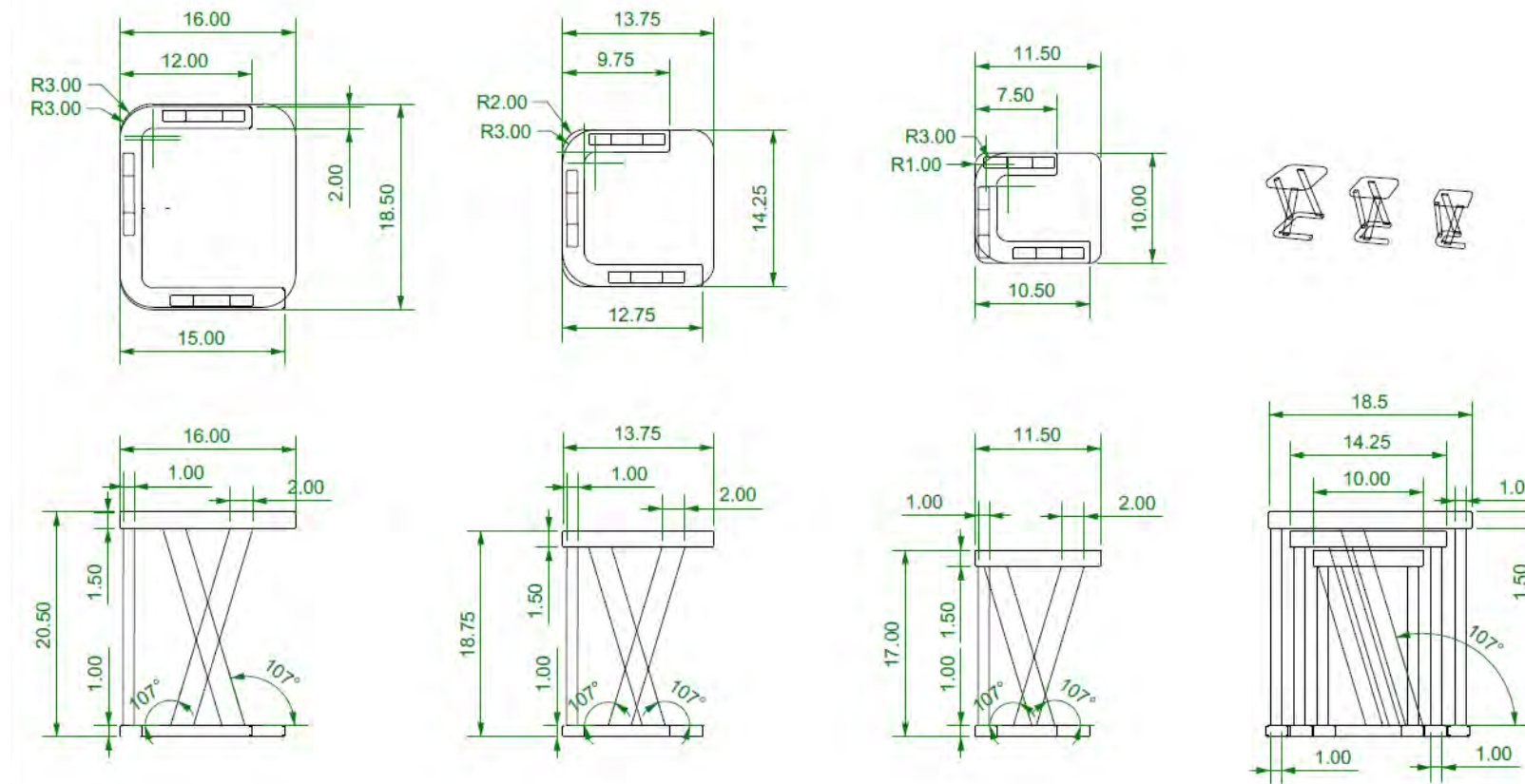
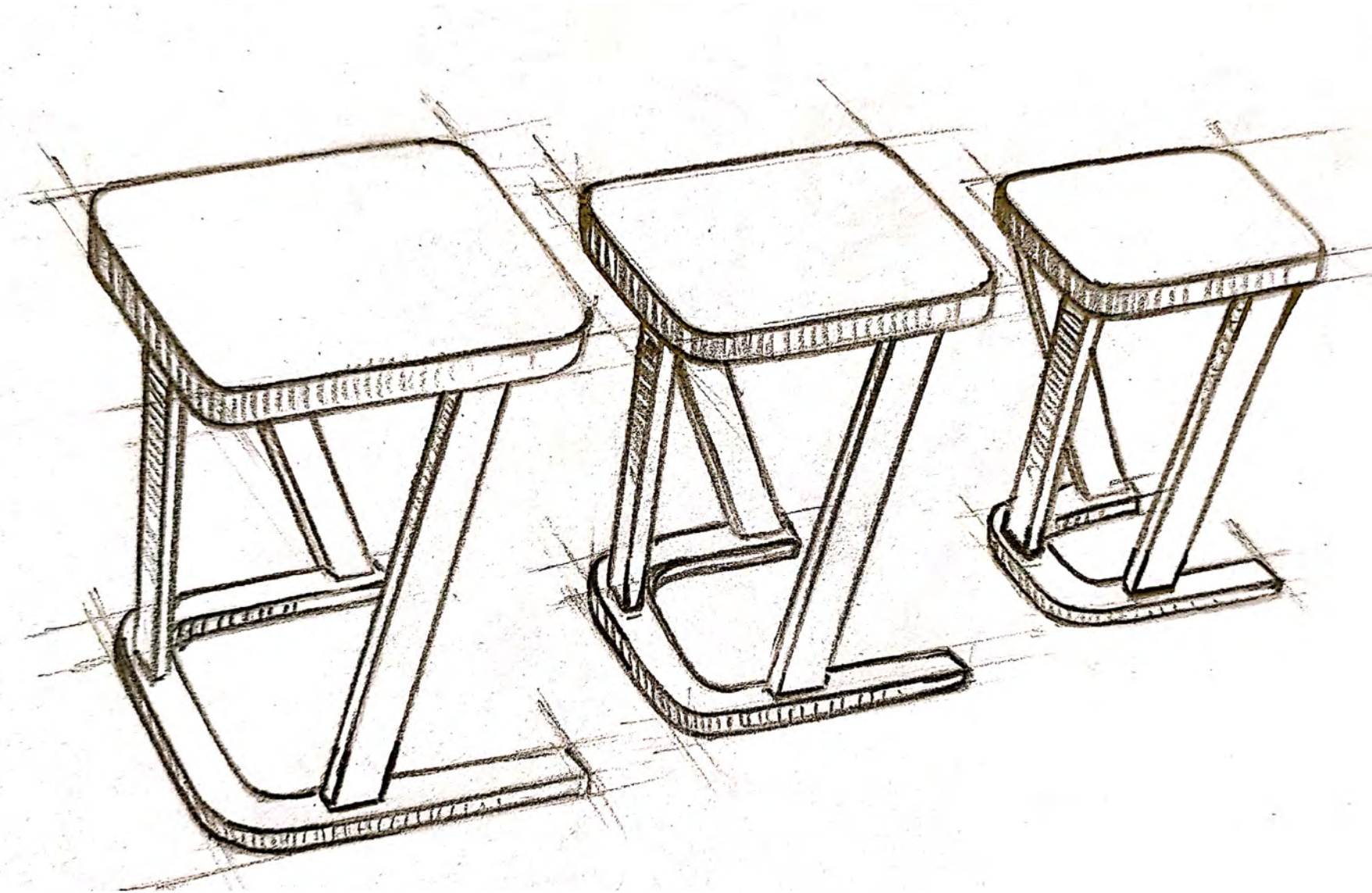


Design

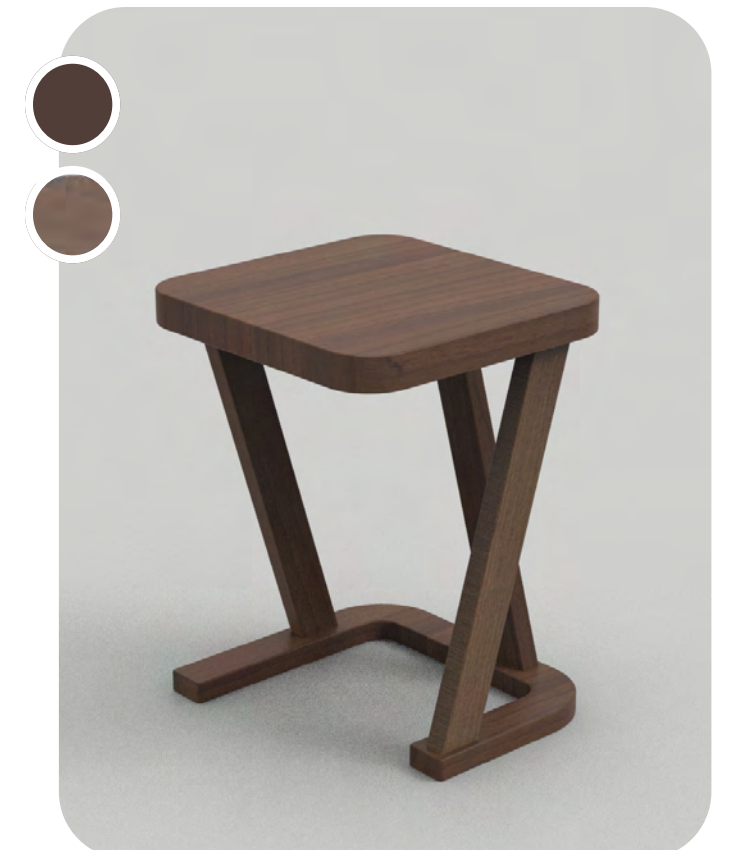
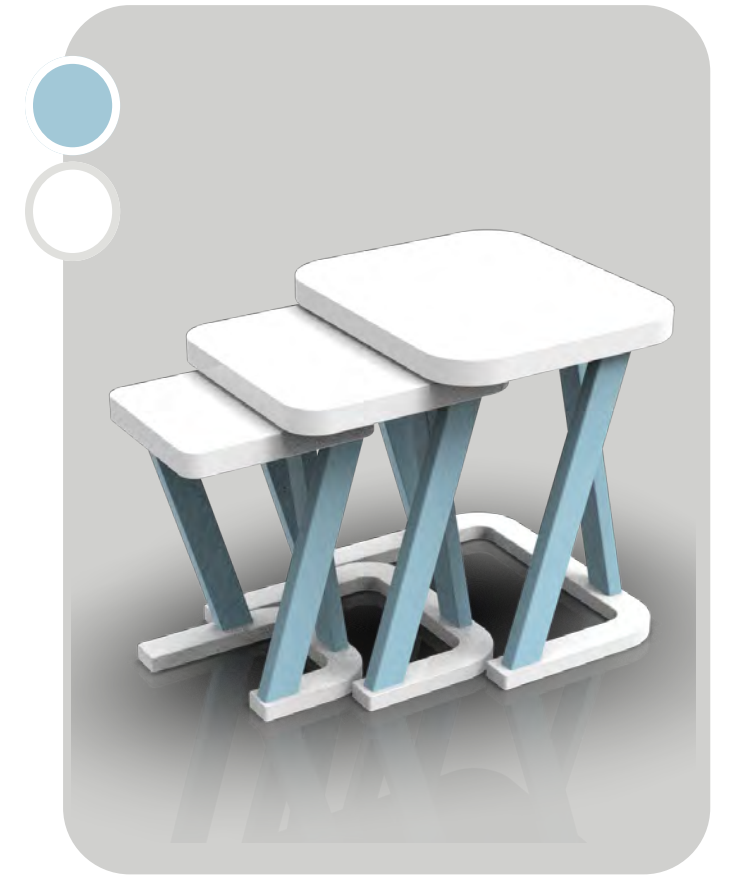


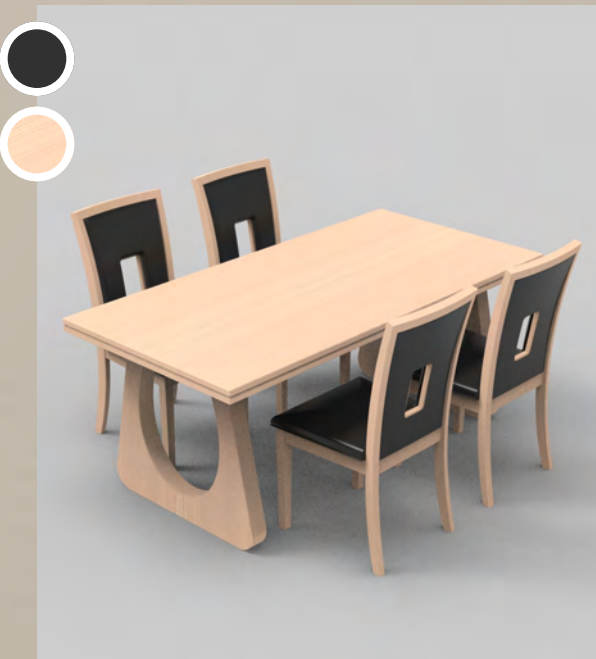
Brief

Design set of 3, nesting side or corner tables for customers.

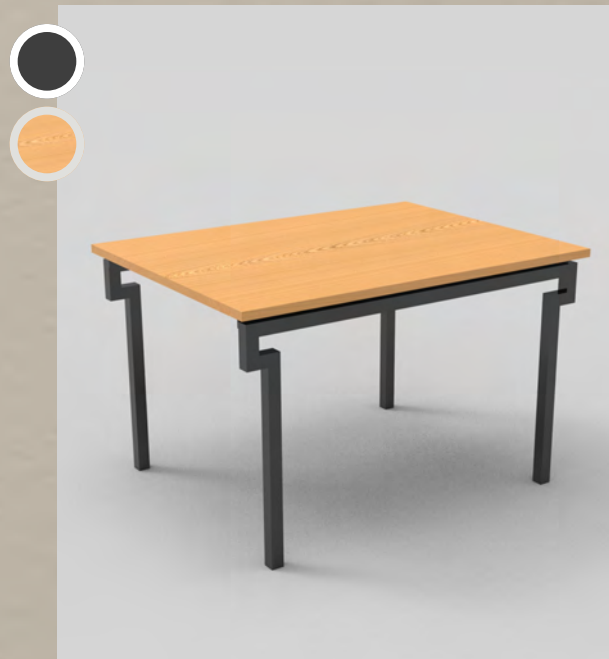


“ Insights: Customers prefer strong, sturdy and light weight side tables which are easy to clean and maintain and some of them even have a habit of sitting on those tables as well. ”





Design



Design



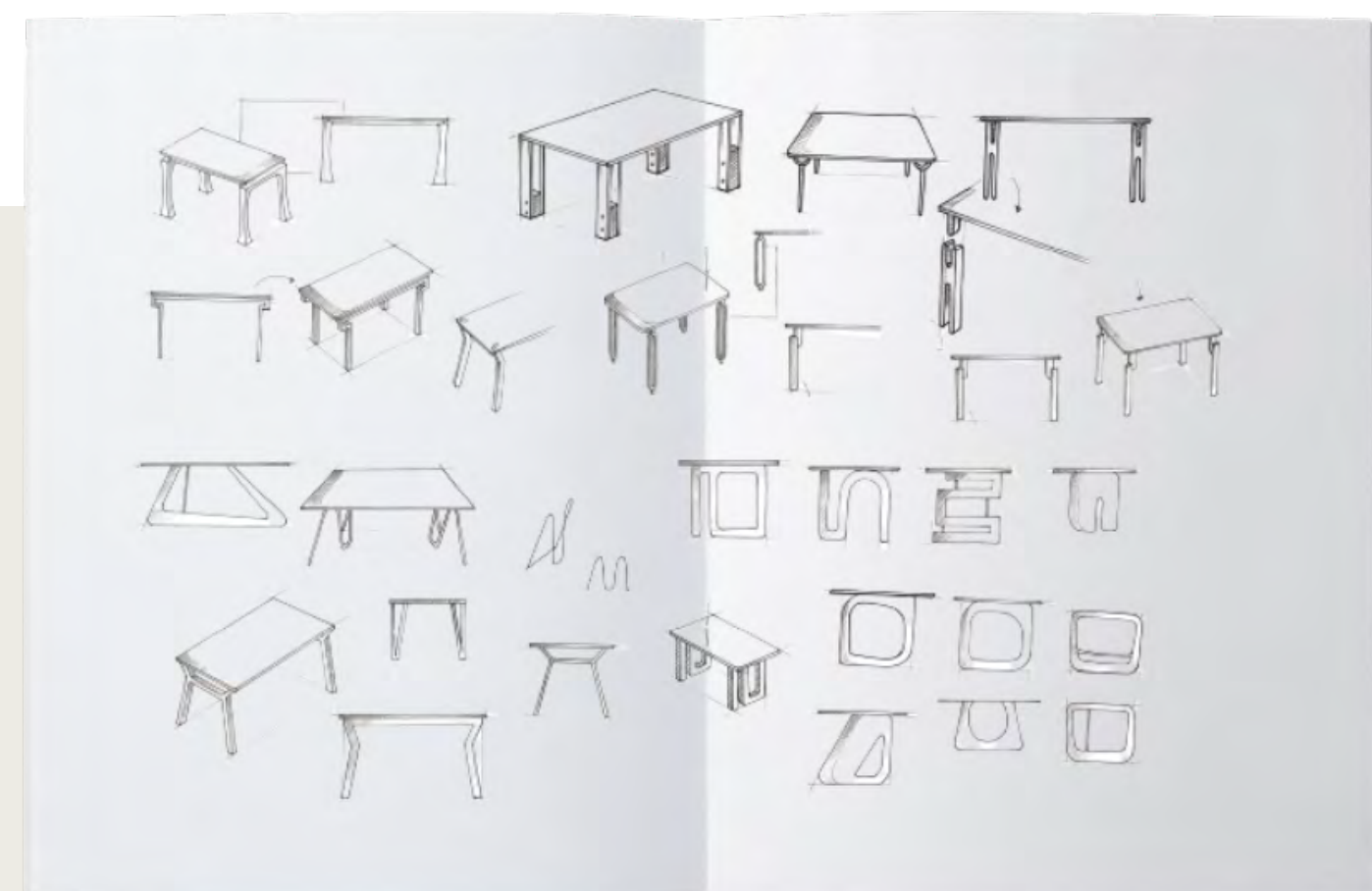
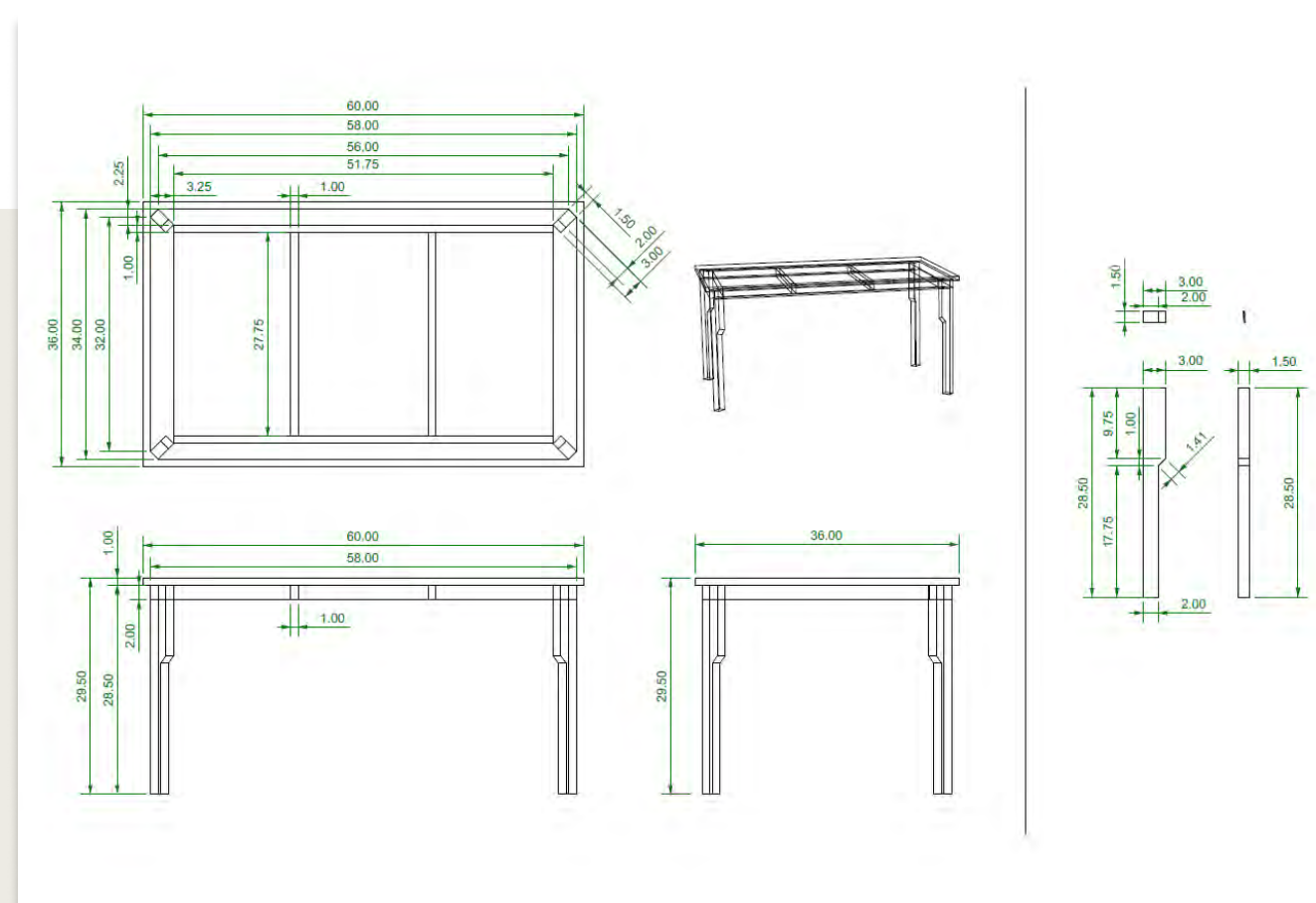
Design

DINING TABLES

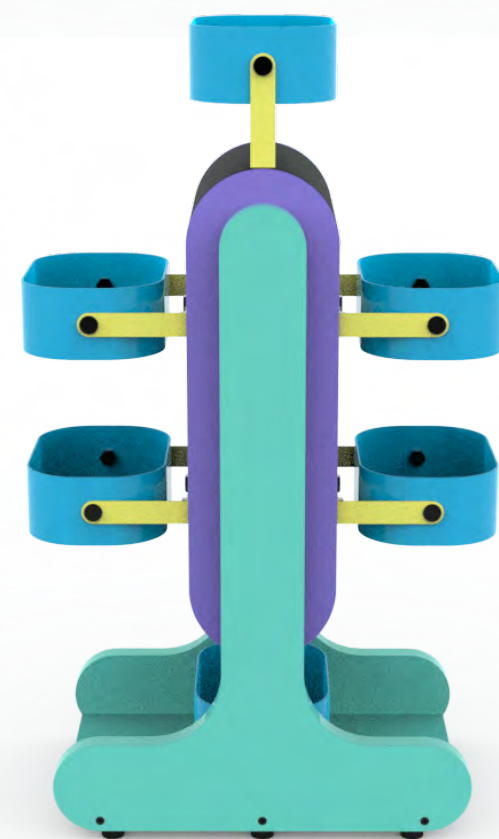
Internship 2021

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Design 4-seater dining tables followed by 6-seater which are easy to clean. The constraint received was that the 4-seater dining tables should have a 4-legged structural design.



Other views

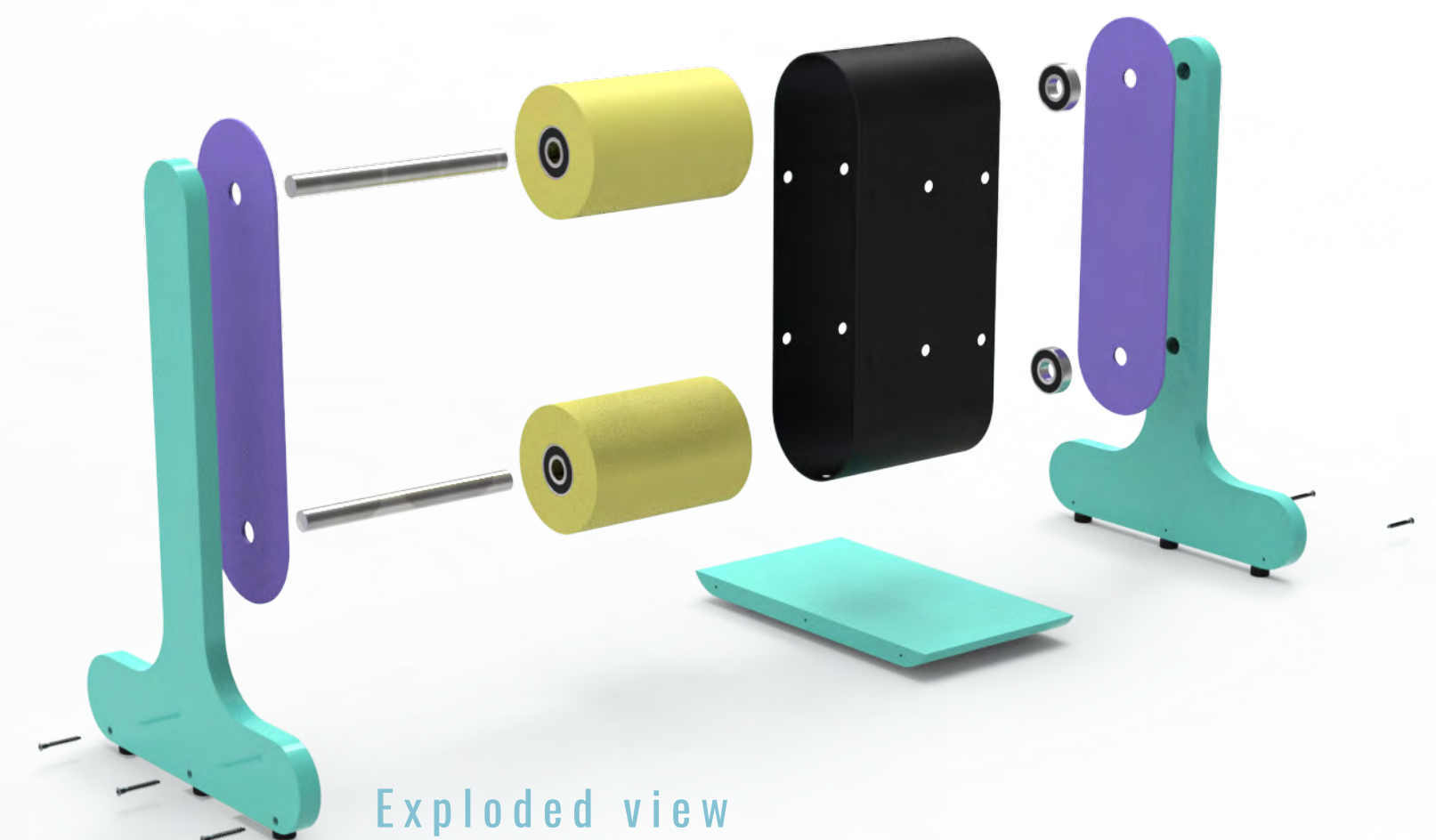


Rotate the baskets

SIMPLE MECHANICAL DEVICE

ROTATING STORAGE

I put my design skills to use to design a product that would help children (2 – 9-year-old) reach/access spaces or objects that are otherwise out of their reach (For example on top/higher shelves) because of their short height. The product is safe, convenient and playful.



Exploded view



Why such a product is needed?



- To access/reach toys, snacks, clothes, books, mirror, washbasin etc placed/located beyond their reach.
- Parents don't need to be constantly around the kid to help him.
- So that they do not climb on other objects like inverted buckets, books, stools, shelves that might be unsafe.

“

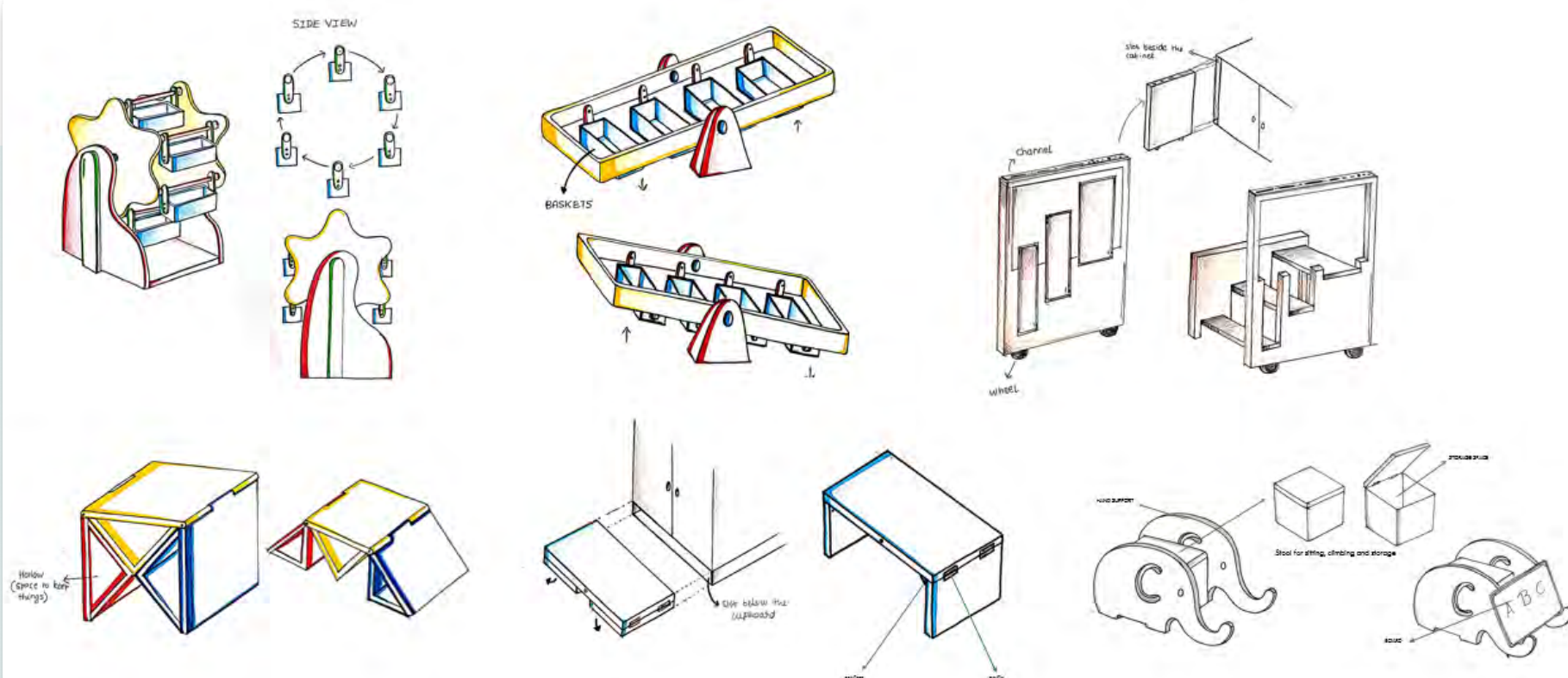
One can keep toys, snacks, clothes, books etc inside the baskets.

The kid just has to rotate it to access the things placed inside the basket. In this way he can even easily access things kept in the top baskets as it can come down when rotated.

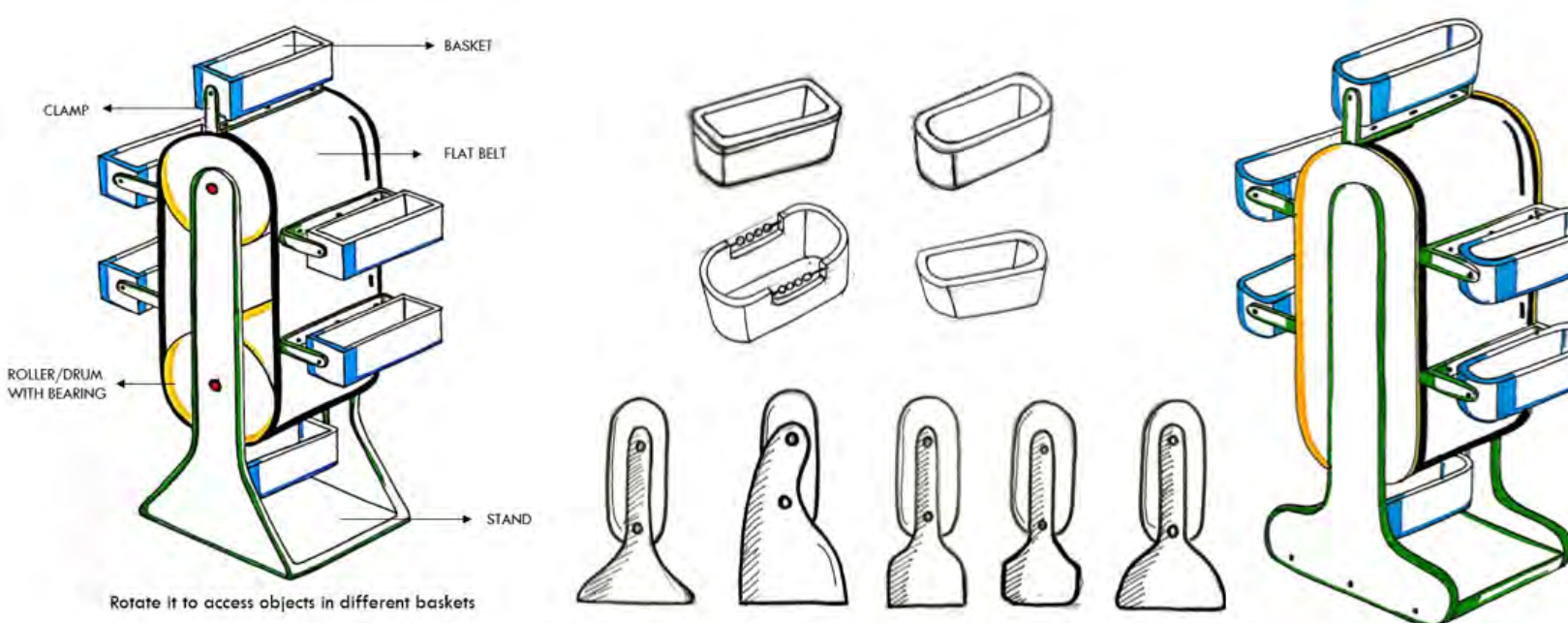
It ensures the safety of the child as he/she is no longer required to climb on different objects like stool to reach the things kept on higher shelves.

It is a very playful and colourful product and the child would enjoy using it and therefore he would also keep the objects (toys etc) back in the baskets.

”



Final form and form explorations

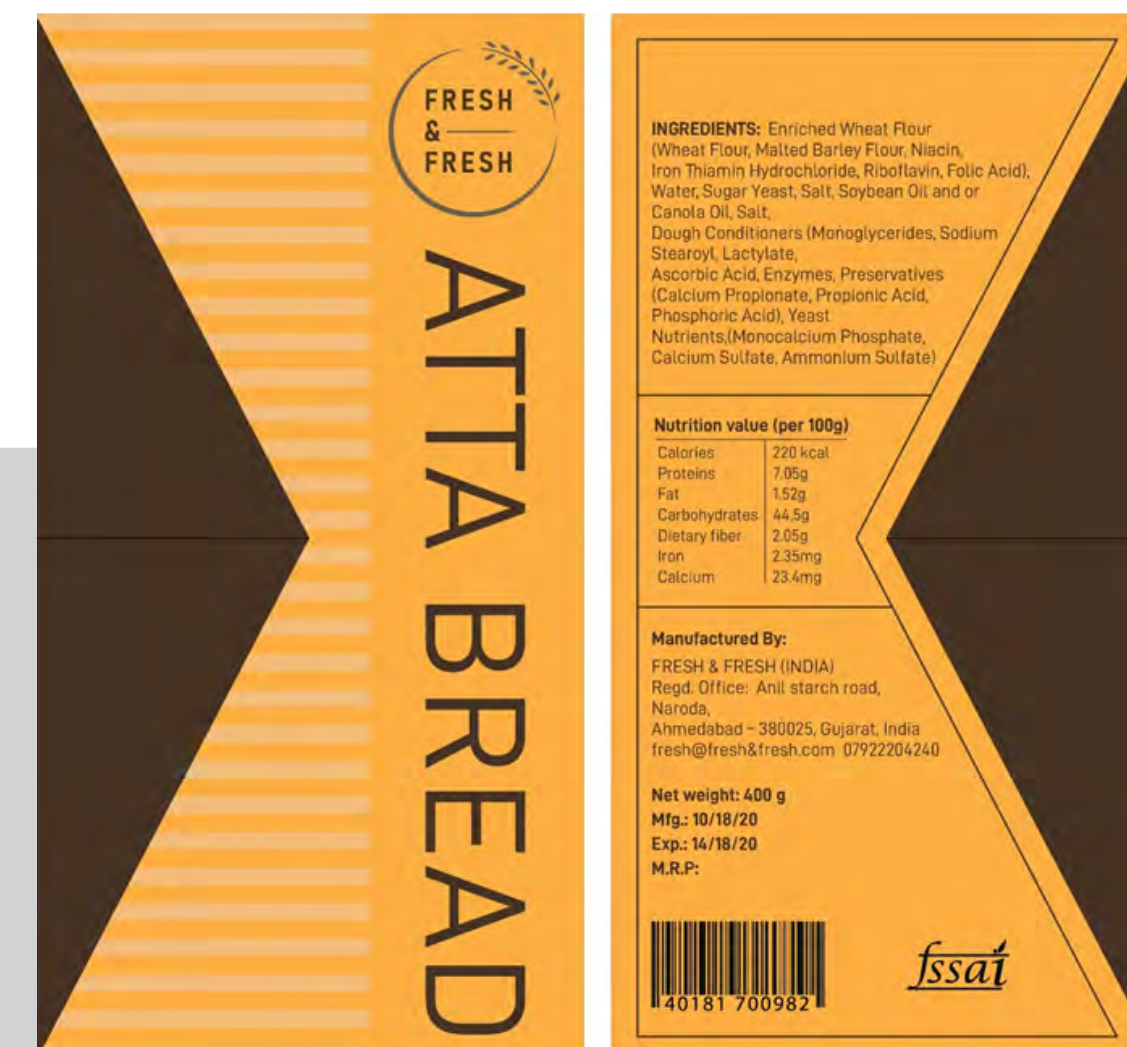




PACKAGING DESIGN: SLICED BREAD

Concept:1

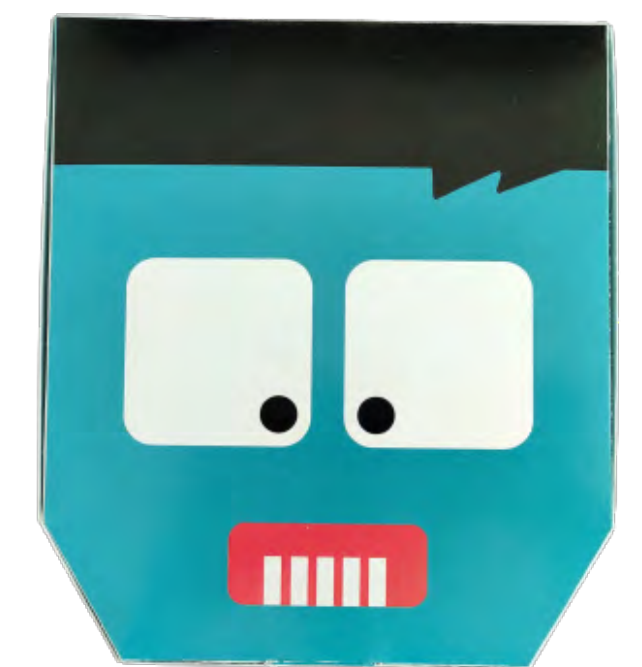
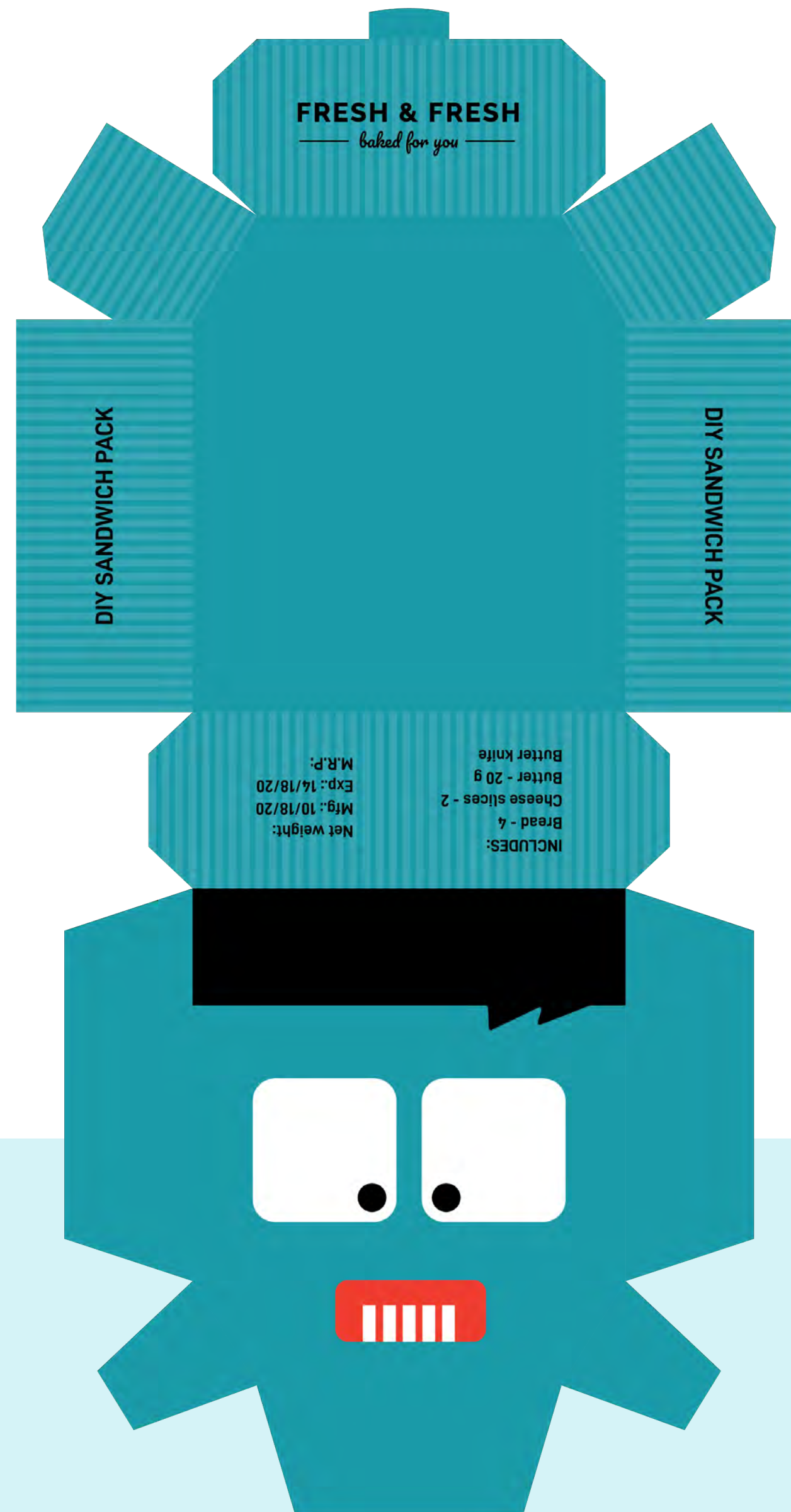
It is a premium bread packaging box which protects the bread from getting squashed. It has two compartments which slide to open. Inside each compartment are a slices of bread packed in plastic to maintain its freshness and shelf life. It has see through windows for the user to see the bread stored inside.



PACKAGING DESIGN: SLICED BREAD

Concept:2

It is a takeaway, DIY sandwich box which contains 4 slices of bread, 2 slices of cheese, 20 g butter and a butter knife. This box comes very handy during travelling, picnics or when the person is in hurry. The graphics is unique and has a nice color scheme which even kids would like and be attracted to.

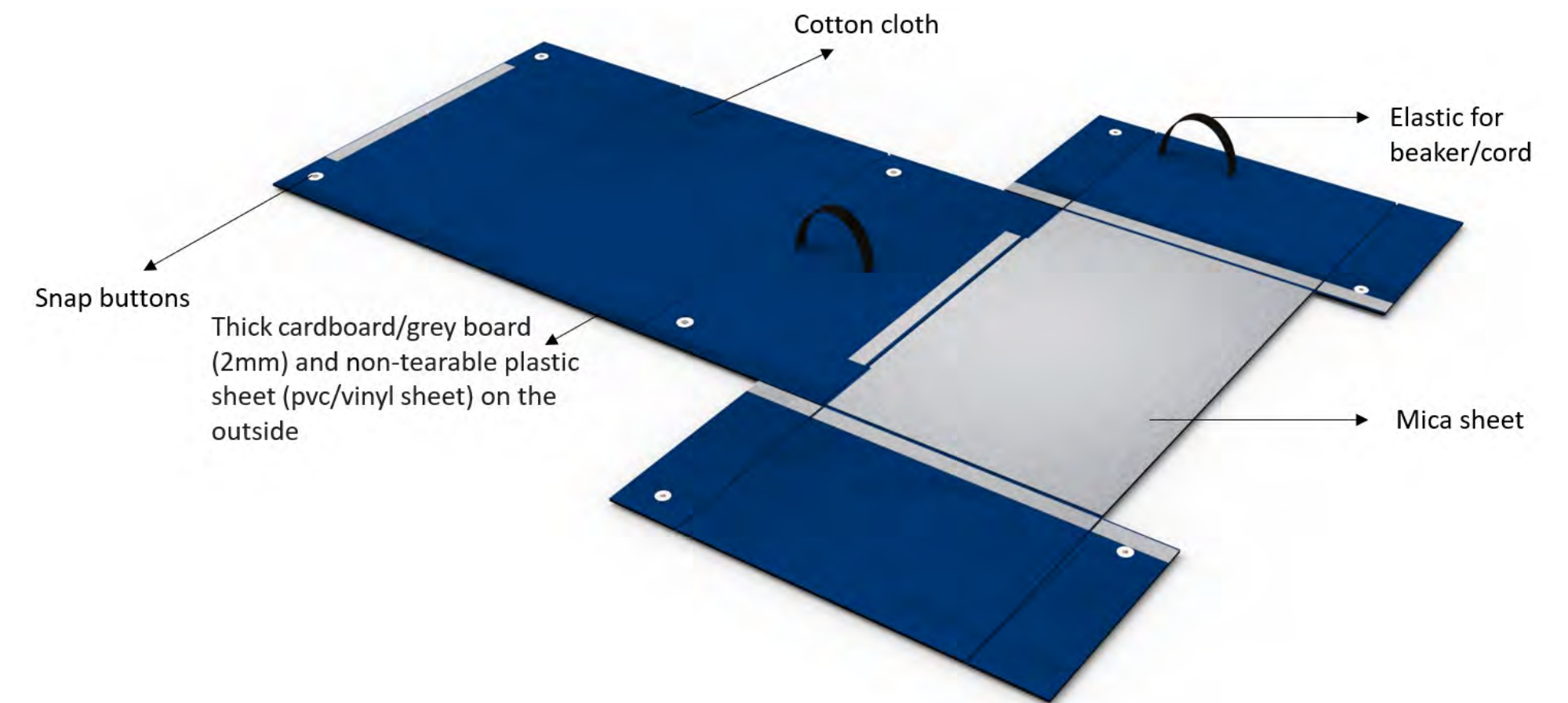


PACKAGING DESIGN: STEAM IRON

The unique feature of this iron packaging, apart from being much more durable than the regular, is its functionality which it serves beyond being just a box. The surfaces of this box fold out turning the box into a flat surface once the iron is taken out. The base is made up of a thin mica sheet, which serves as a heat resistant surface, this enables the packaging to be used as a dock for the hot iron while in use or after the use. The box can be reformed in a matter of minutes, touch buttons are installed for easy reassembly, elastics are attached inside the box for holding the water beaker and the power cord in place, safe from the hot iron plate.

DIMENSIONS OF THE BOX:

30.4 cm x 20.6 cm x 15.2



Prototype



3D Model



Graphics and Template

ALZY

6-IN-1 GAME FOR ALZHEIMER PATIENTS

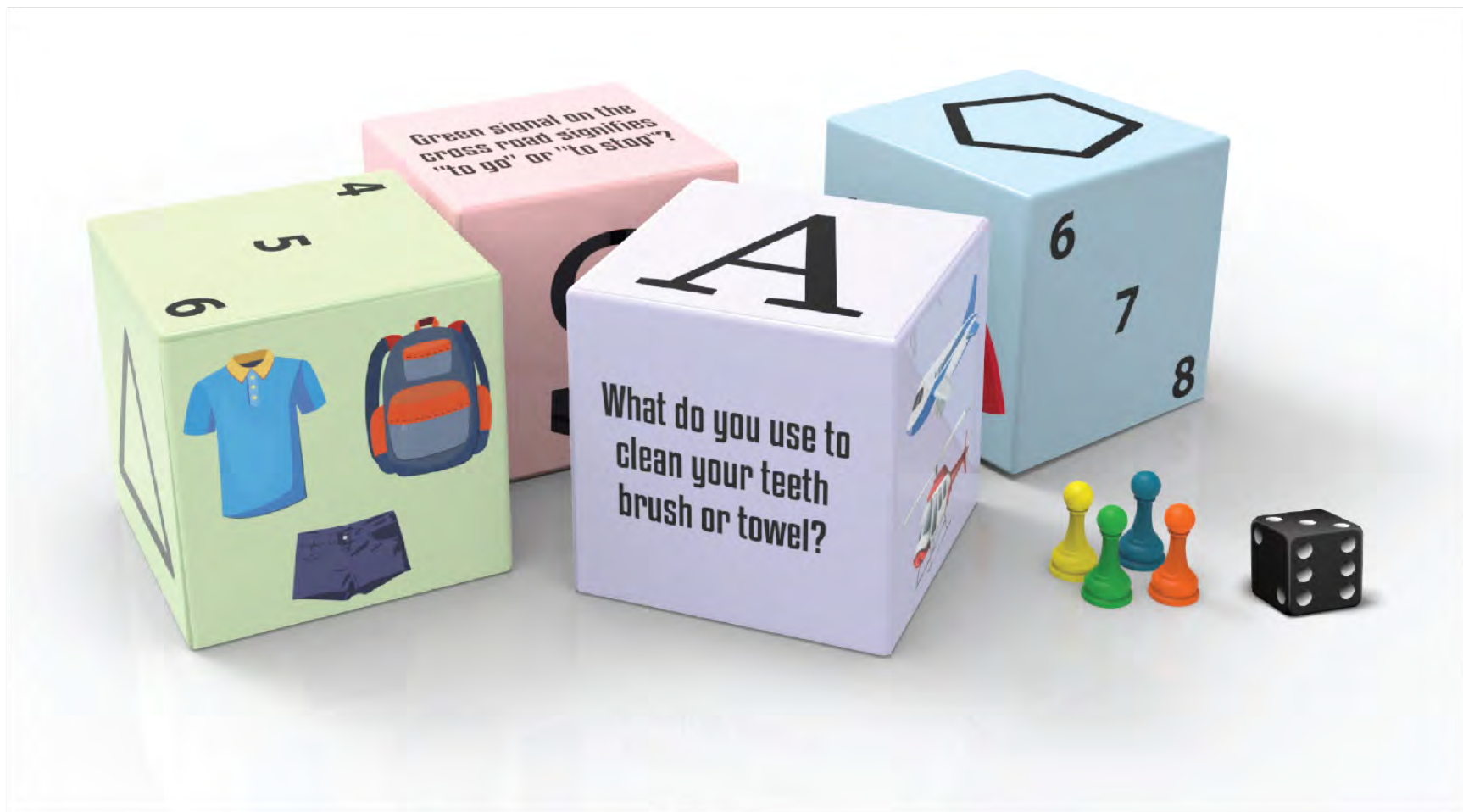
AIM:

To design a game for Alzheimer patients (60+ age), who have problems with memory, identification, visio-special orientation(visualization), judgement, problem-solving and decision making, sentence formation and calculation and numbers, which helps to slow down the progression of their disease, improves memory, thinking, judgement, problem solving or visualization. The game can involve activities like identification, linking, matching, solving, sorting, category grouping or classification, sequencing, arranging, memorizing and then replicating, solving, placing, matching the memorized thing etc. Along with this, the game would also provide fun and enjoyment and uplift their mood, morale and confidence. The game should be simple enough for them to understand and play.

1ST GAME - QUESTIONS

- This game is a multi-player game which consists of simple questions (to test their memory, judgement and decision making) where in the user has to answer quickly.
- First they have to arrange the cubes as shown below. Each player will have a coloured pawn to mark their position.
- All will start from home. One has to roll the dice to move forward. For example, a player gets three on the dice then he has to answer the question which is on the third step/cube from his current cube position.
- Player needs to answer quickly. For every correct answer the player gets to stay on the current cube. If the answer is incorrect the person has to move back a cube.
- The first one to reach home again, wins the game.

HOME	What do you use to clean your teeth brush or towel?	Which colour are you wearing today?	Is ice cream hot or cold?	Is strawberry red or yellow?
Which amongst this can fly - crow, dog or rabbit?				Does the sun rise in morning or at night?
In which city do you live in?				Do you write with pen or straw?
When is Christmas celebrated - in April or December?				Air conditioner gives cool air or hot air?
When you are ill do you visit a lawyer or a doctor?	Green signal on the cross road signifies "to go" or "to stop"?	Where do you keep your medicines?	Name any of your favourite movie or book?	Do you plant trees with water or oil?

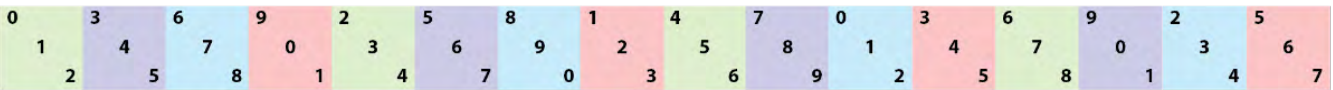


16 SUCH CUBES OF FOUR DIFFERENT COLOURS, ONE DICE AND FOUR COLOURED PAWNS.

There are 6 games or activities in this - questions, numbers, colours, shapes, items and sentence construction. Each surface of the cube is for a different activity. There will be a manual given for instructions and answers.

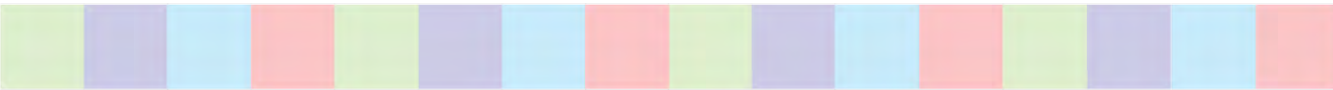
2ND GAME - NUMBERS

On one surface, all cubes will have numbers from 0 to 9. One needs to arrange the cubes in the correct sequence of numbers as shown below.



3RD GAME - COLOURS

One has to sort cubes according to colours or make a pattern as shown below.



4TH GAME - ITEMS

One has to group the items, seen on the surface of the cube, category wise (according to topic). There are four topics - bathroom, kitchen, clothes and transportation and there are four cubes for each topic.

1. KITCHEN



2. BATHROOM



3. CLOTHES

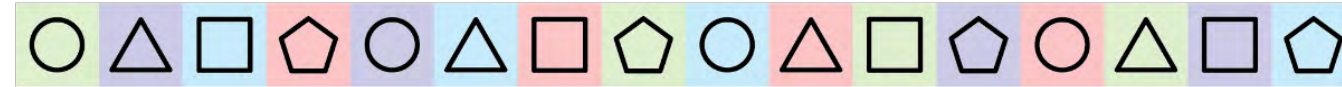


4. TRANSPORTATION



5TH GAME - SHAPES

One has to form the repeating pattern of shapes as shown below (Circle - Triangle - Square - Pentagon). This pattern is in the increasing order of sides.



6TH GAME - SENTENCE FORMATION

One has to form the sentence written below using the alphabets on the cubes.





Mask inspired from Maple leaf



Mask inspired from Peepal leaf

LEATHER MASKS

INTERNSHIP 2020

I did a 1.5 month long internship at Curio design studio. The firm specialises in making leather products. The main task assigned to me was developing leather masks inspired from leaves owing to covid times. While working with leather I developed a deeper understanding of the entire process involved in its making, its properties and types. I got to know about different kinds of tool, their function and how they are used. I also learnt different techniques of cutting and forming leather to get interesting designs and various kinds of stitching techniques.

I finally developed 2 masks inspired from maple and peepal leaf which were batch produced.

BRIEF DESIGN PROCESS:

Research
Studying different leaves
Ergonomic study
Ideation
Proof of concepts and prototyping
Final product development
User testing

RESEARCH PROPERTIES AND SOURCES OF LEATHER

The physical properties which make leather a unique and valuable material includes:

- High tensile strength
- Resistance to tear
- High resistance to flexing
- High resistance to puncture
- Mouldability (Elasticity and plasticity)
- Good heat insulation
- Thermosetting properties

Sources:

- Cow Skin
- Goat Skin
- Sheep Skin
- Pig Skin
- Deer skin
- Bison or Buffalo hide

• Seal Skin

• Shark skin

• Lizard

• Walrus

• Shagreen

• Yak

• Whale

• Otterich leather

• Kangaroo leather

• Bat skin

• Crocodile

• Horse

• Snake skin

• Cow hide

• Sheep skin

• Snake skin

GRADES OF LEATHER

Full-grain leather: It is the strongest and most durable leather. It has not been buffed or sanded at all.

Corrected-grain leather: This leather's surface has been altered in certain ways to give it a more appealing appearance.

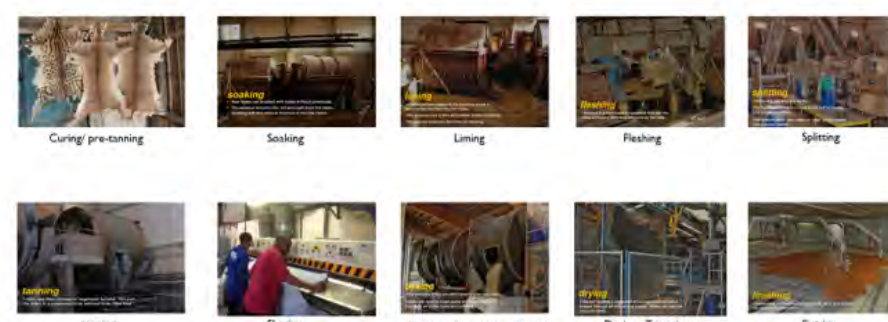
Nubuck leather: This leather has been sanded heavily on the grain side of the leather. This gives the leather a very velvety texture.

Suede leather: It is made from the inner layer of the animal hide. It is a less durable type of leather. It has a napped finish.

Patent leather: This type of leather has been given a high-gloss finish on its surface using chemical coats. It is also water resistant.

Bicast leather: This is a split type of leather with a polyurethane or polyvinyl coating applied to its surface.

PROCESS OF PRODUCING LEATHER



TOOLS USED FOR LEATHER WORKING



RESEARCH FOR LEATHER MASKS

Types Of Masks



Cloth Mask



Surgical Mask



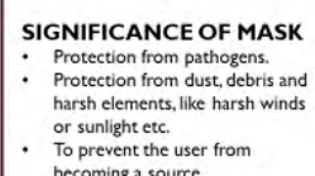
N95 Mask



Activated Carbon Mask



6-ply Mask



Leather Mask

SIGNIFICANCE OF MASK

- Protection from pathogens.
- Protection from dust, debris and harsh elements, like harsh winds or sunlight etc.
- To prevent the user from becoming a source.

WHY LEATHER?

- Feels Premium.
- Great Durability.
- Good Insulation.

Ergonomic details



MASK SIZE

Measure from bridge of nose under eyes, until just below the chin.

S = 10 cm
M = 11-12 cm
L = 13-14 cm
XL = 15 cm



SOFT TOYS

APPRENTICESHIP 2019

I did a month long summer apprenticeship at chhapak design studio. The firm specialises in making playful functional products out of wood, bamboo and soft toys. During this time, I developed two new products-a rabbit pen stand and a bird hanging, which are now being made and sold by the firm. I learnt how a design firm works and got an in-depth understanding of the design process. This experience refined my material handling skills, social skills as well as my soft skills through my interaction with the customers at an exhibition.



OTHER WORK

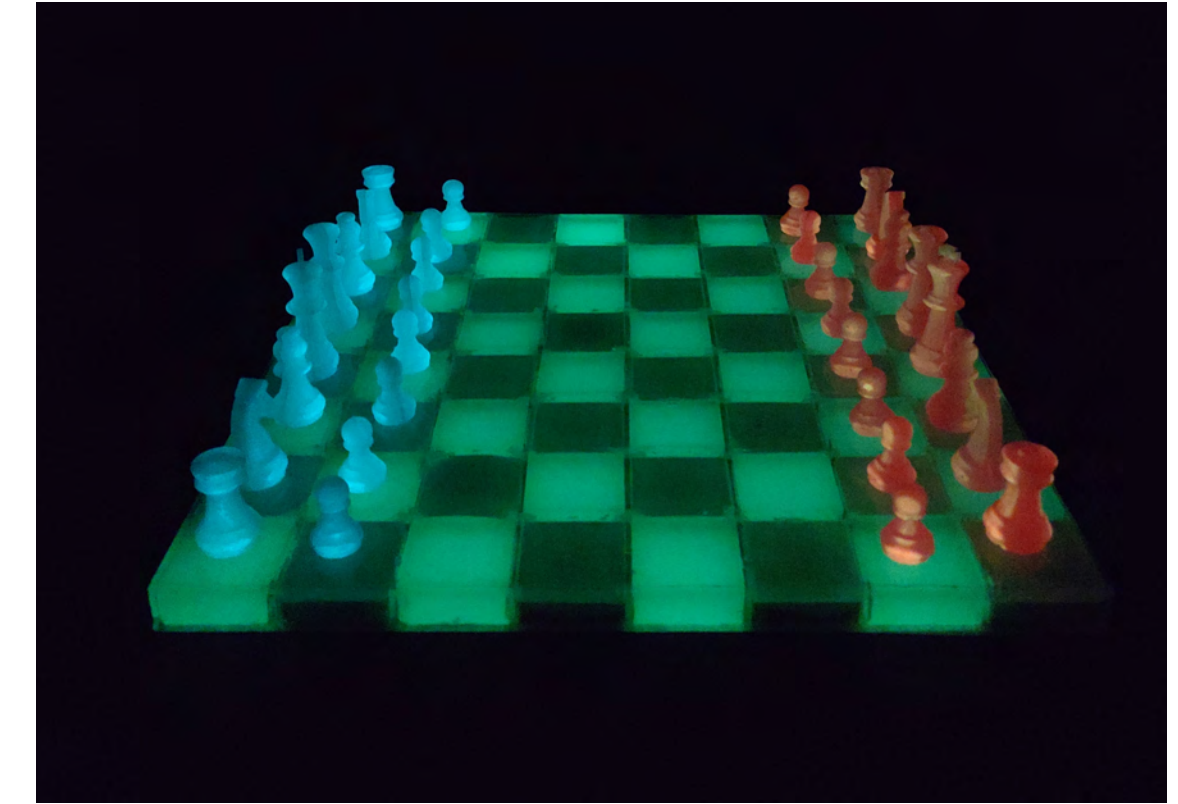
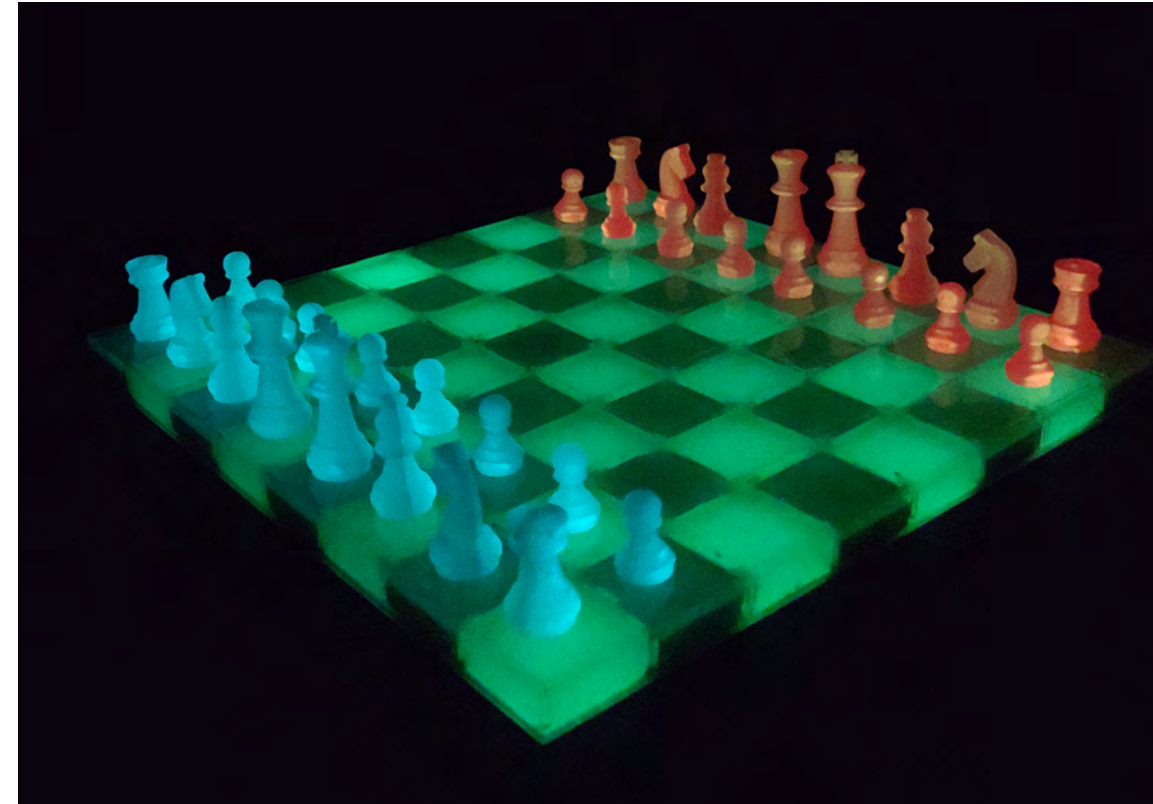
UPCYCLED SOLAR RECHARGEABLE LIGHT



The container has a solar panel, battery, mobile charging socket and LED panel all connected in a circuit. The light is switched on/off with a switch. This product doesn't require any external charging. It is very useful for roadside hawkers or vendors. They can charge the battery in the daytime and use it anytime. It can also be used as an emergency light during power failure. It can also charge your cellphone or any other device through USB port.

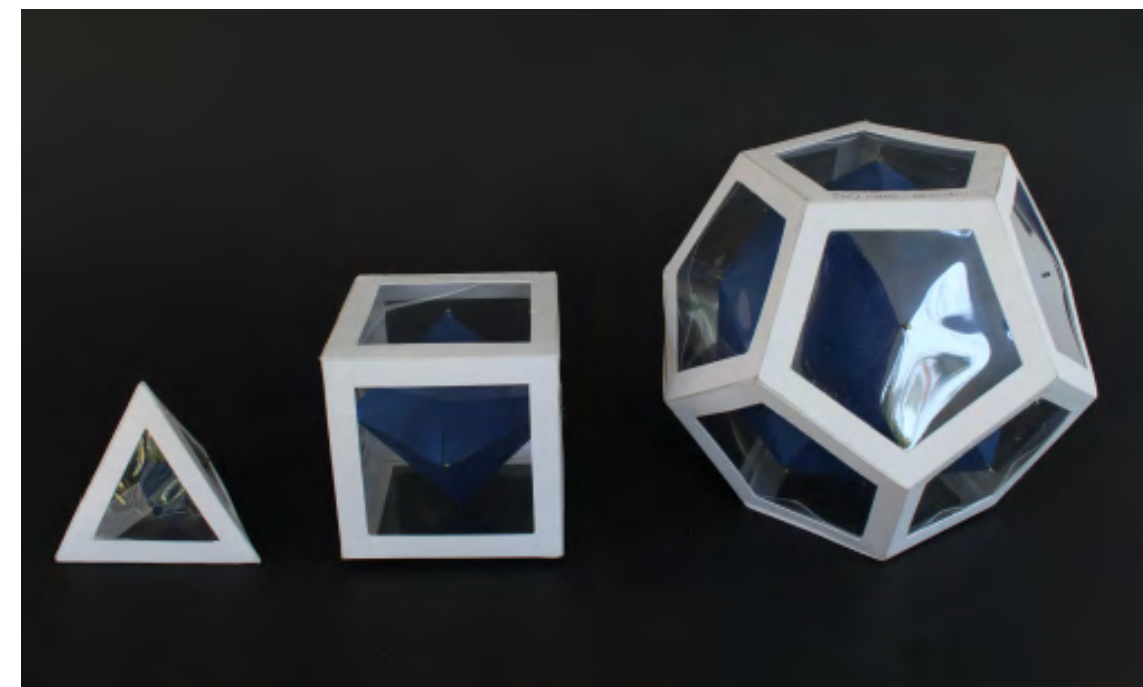


GLOW-IN-THE-DARK CHESS SET



The chess set is made of unconventional materials like cement, resin, acrylic and strontium aluminate

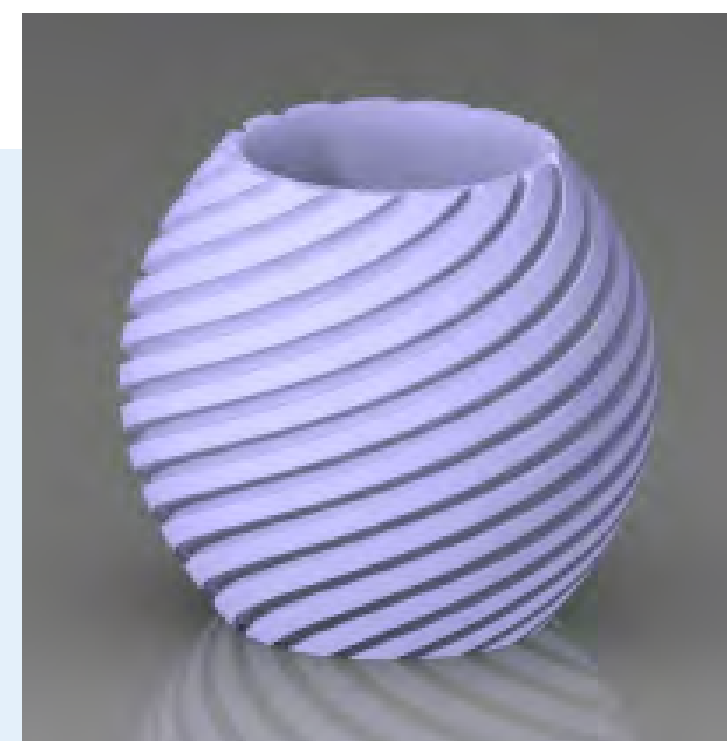
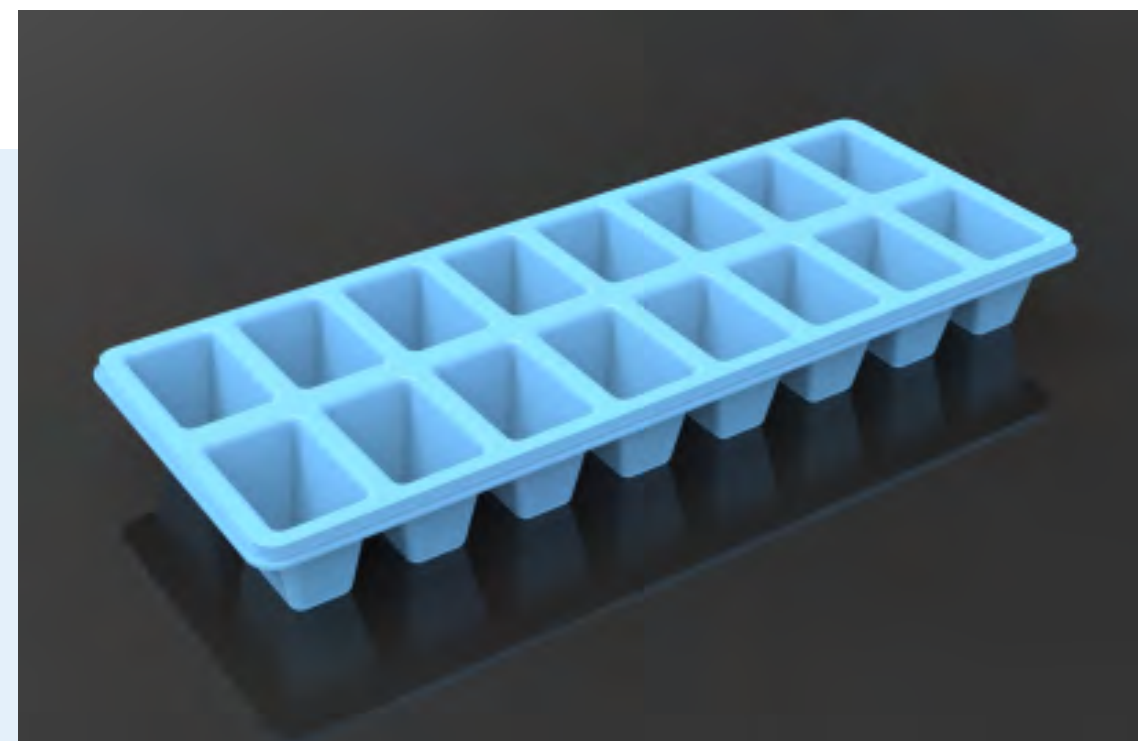
GEOMETRY AND THERMOCOL CUBE FORMS

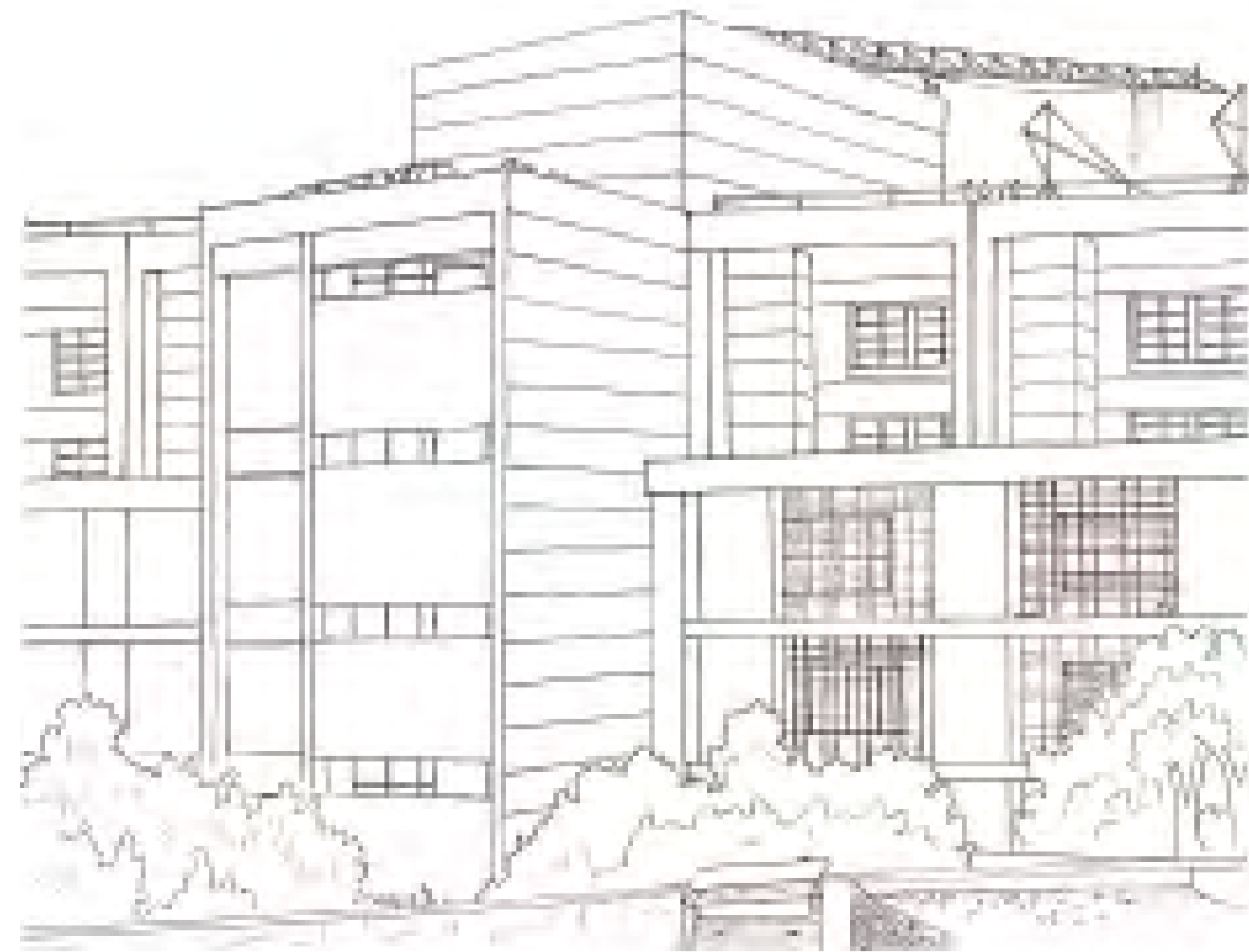
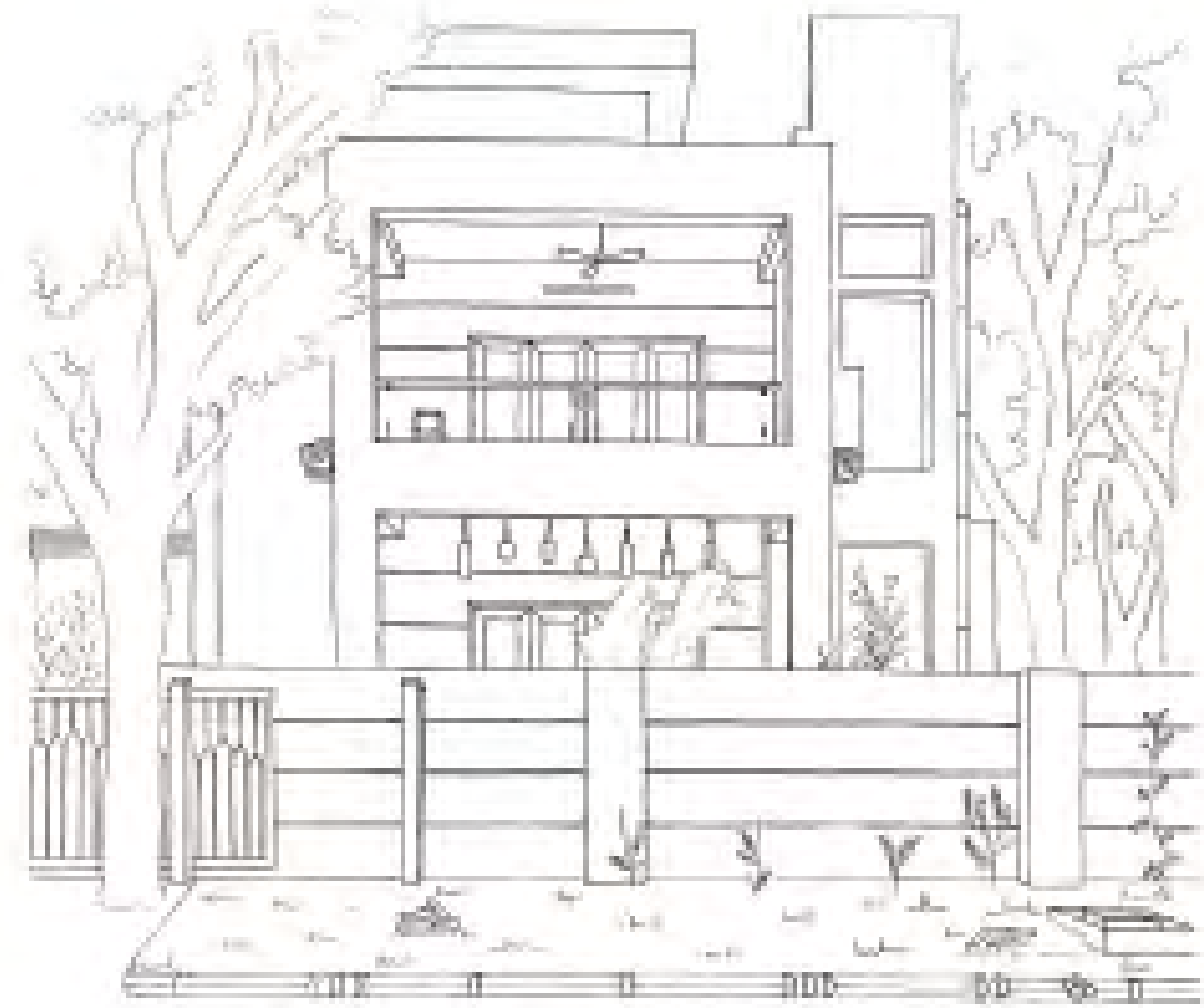




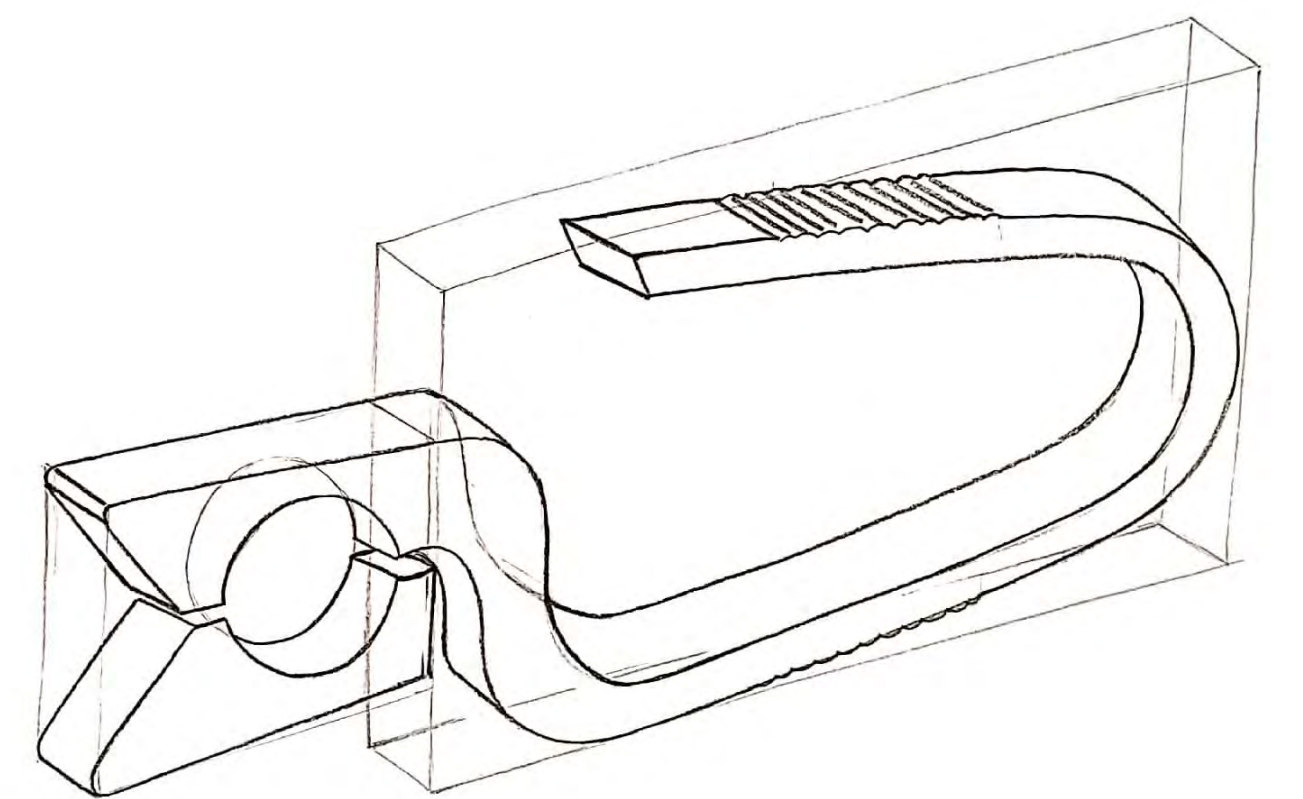
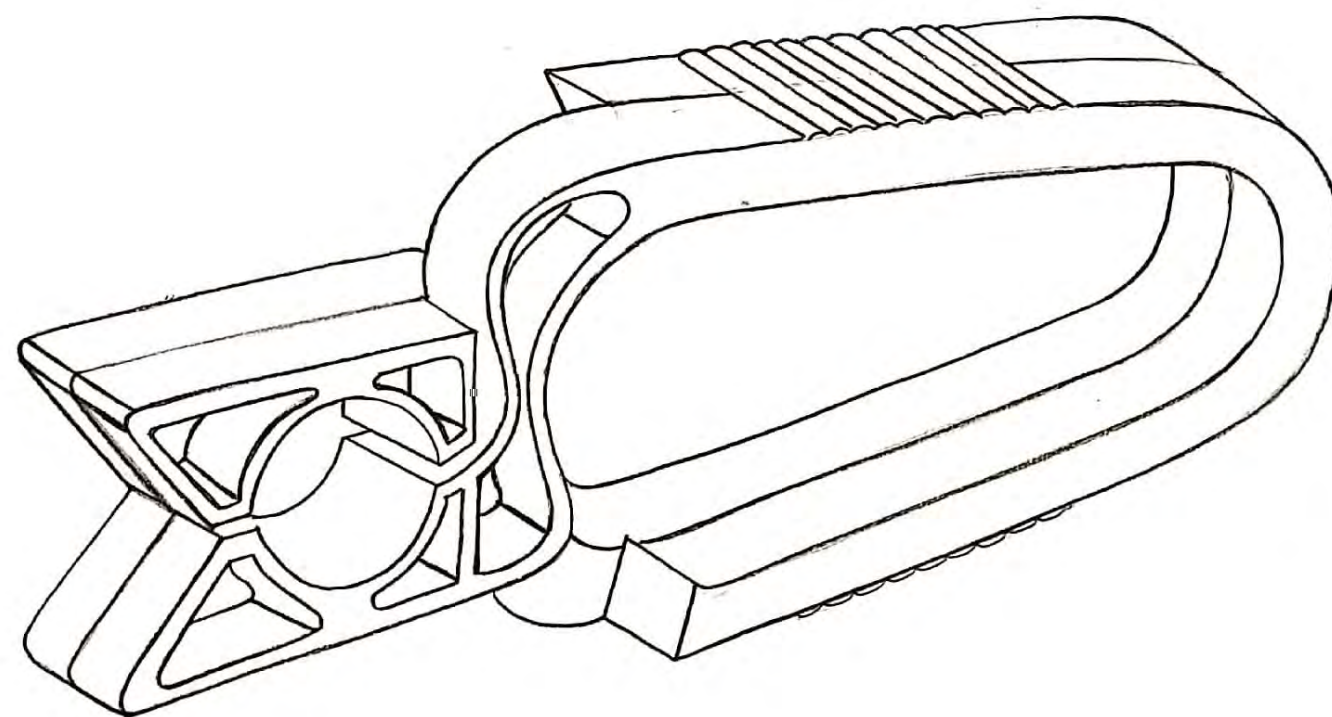
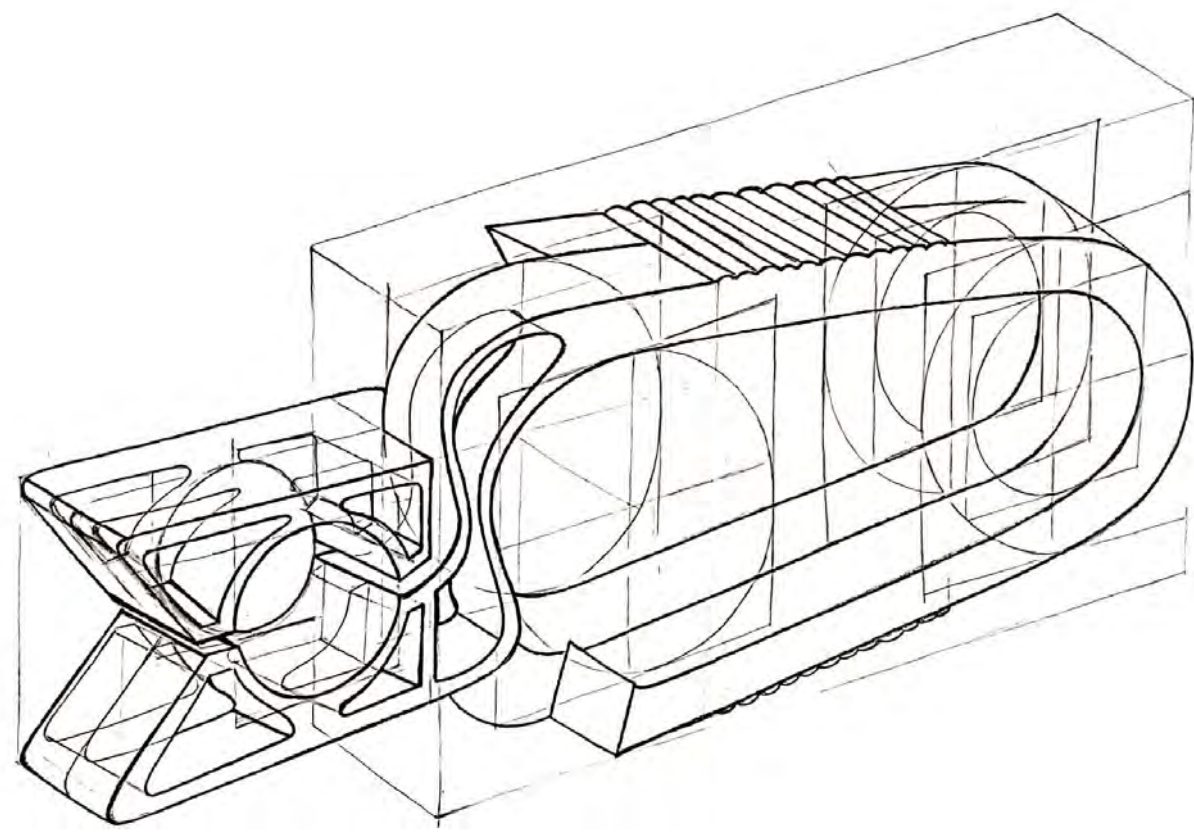
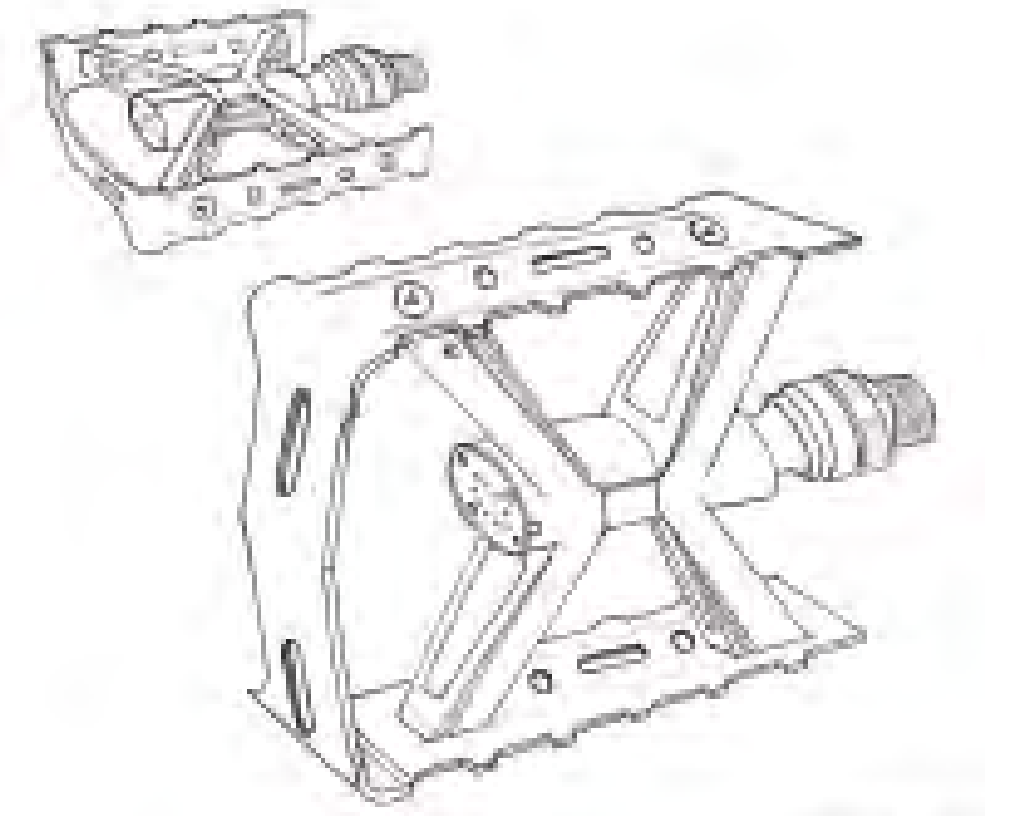
3D MODELING

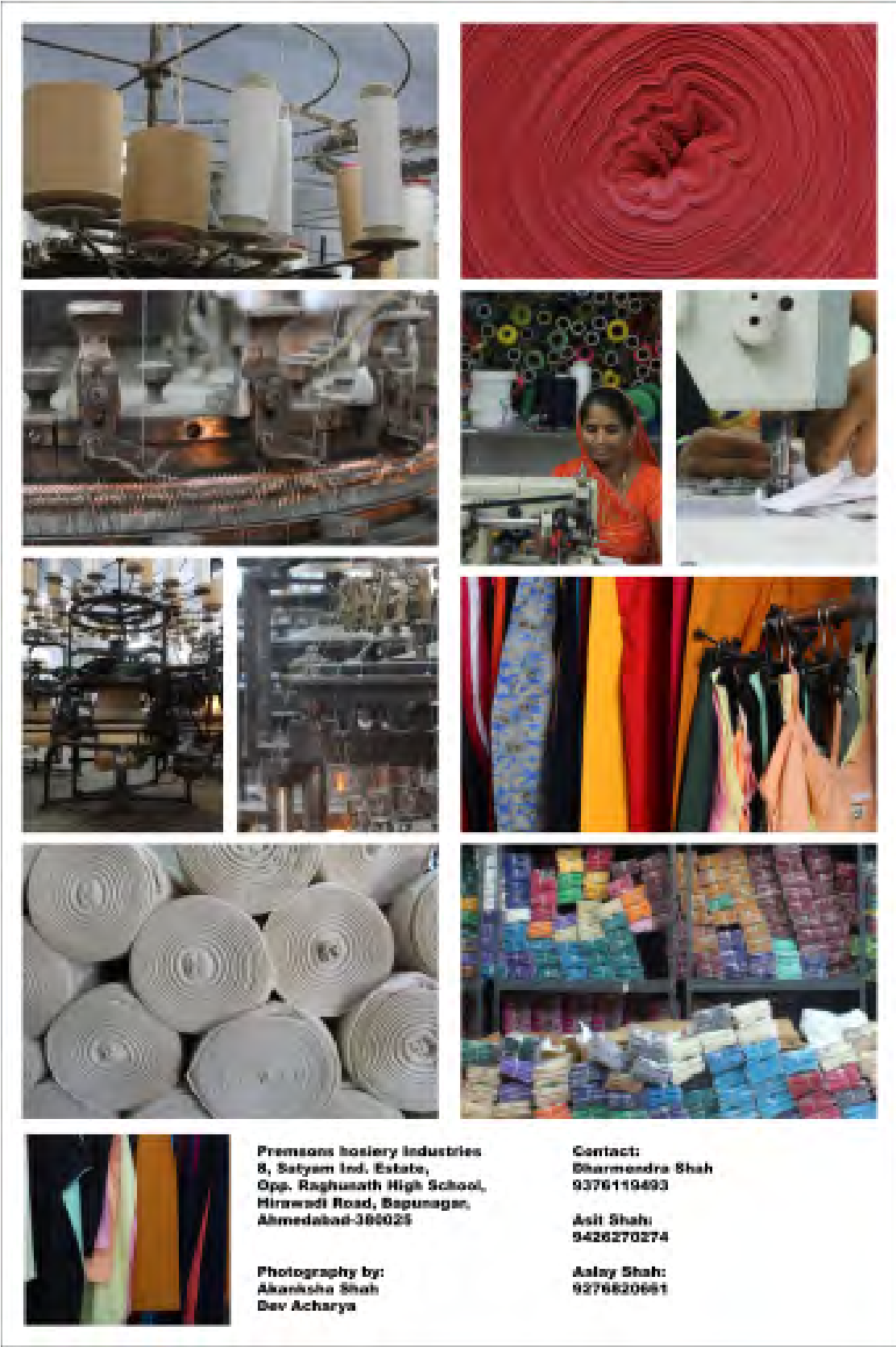
I learnt 3d modeling and other relevant skills in Solidworks, Rhino, Creo Parametric, Autocad (for technical drawing), and rendering as well as animation in keyshot. This helped me to visualise and present things better.





SKETCHING





PHOTOGRAPHY

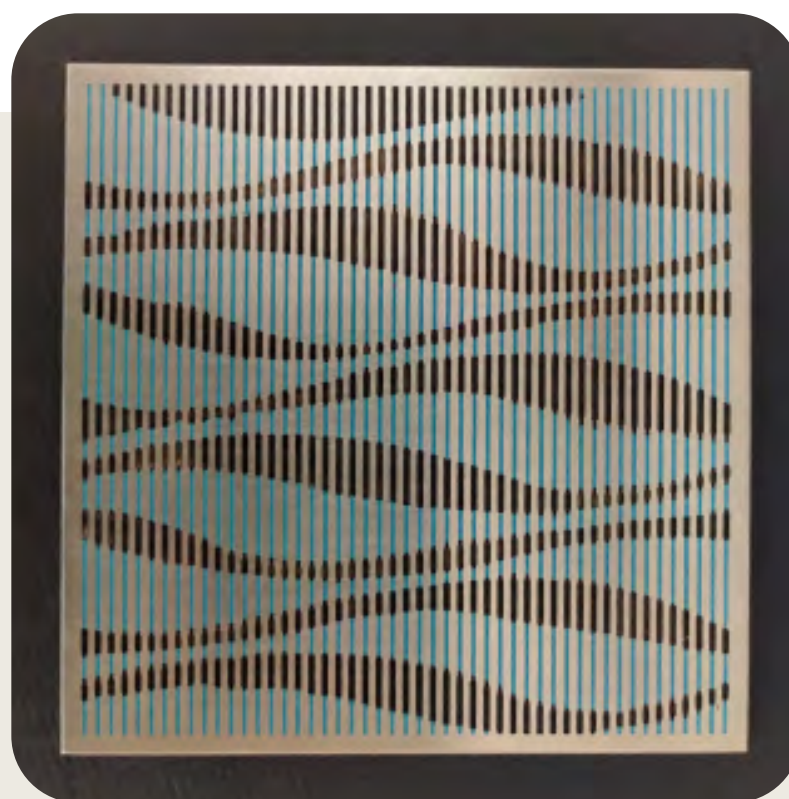
My album includes photos of nature, heritage sites, products and industries including various processes.





MATERIAL HANDLING

Explored materials like wood, plastics, metal, POP, clay, their properties and used different machines like lathe and other tools.



THANK YOU

GET IN TOUCH



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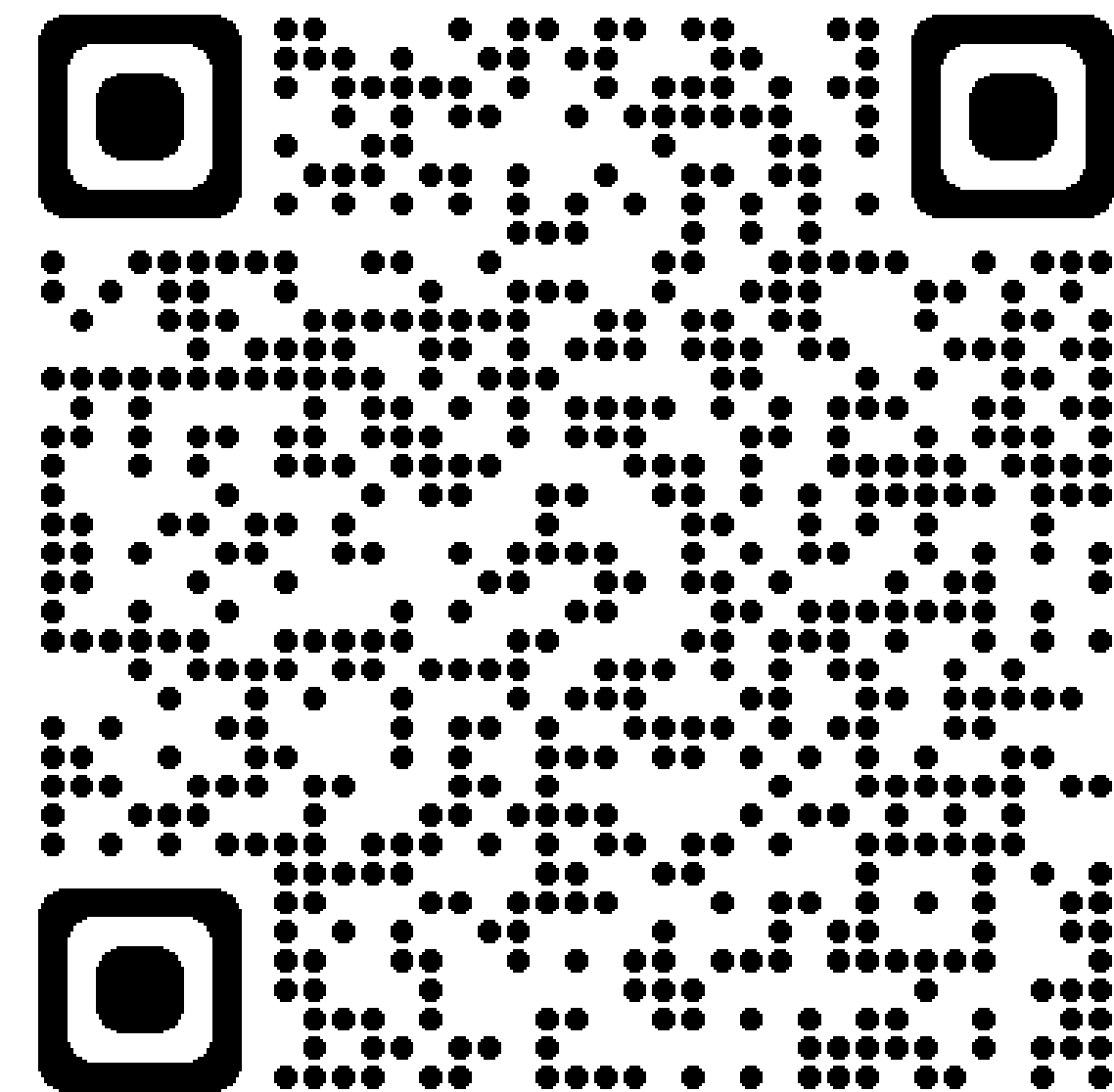
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