



IDC School of Design
अभिकल्प विद्यालय

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IDC, IIT Bombay



What is a Bedside table?

A bedside table or a Nightstand is a bedroom furniture which is kept along side of the bed to keep things under reach when needed on the bed.





Use ?

Bedside tables are frequently used to hold goods that may be beneficial at night, such as a table lamp, alarm clock, reading material, mobile phone, eyeglasses, tissues, sex toys, a drink, or medication.



Who needs it?

As we grow older to maintain ourself we need to be dependent on more things to support our lifestyle, a young human can easily walk around the room multiple times to pick up certain things and return to bed, on the other hand for an elderly person it is hard for him/her to get out of the bed again and again to pick up essential things things



Human life cycle



Requirements of things to support our daily life

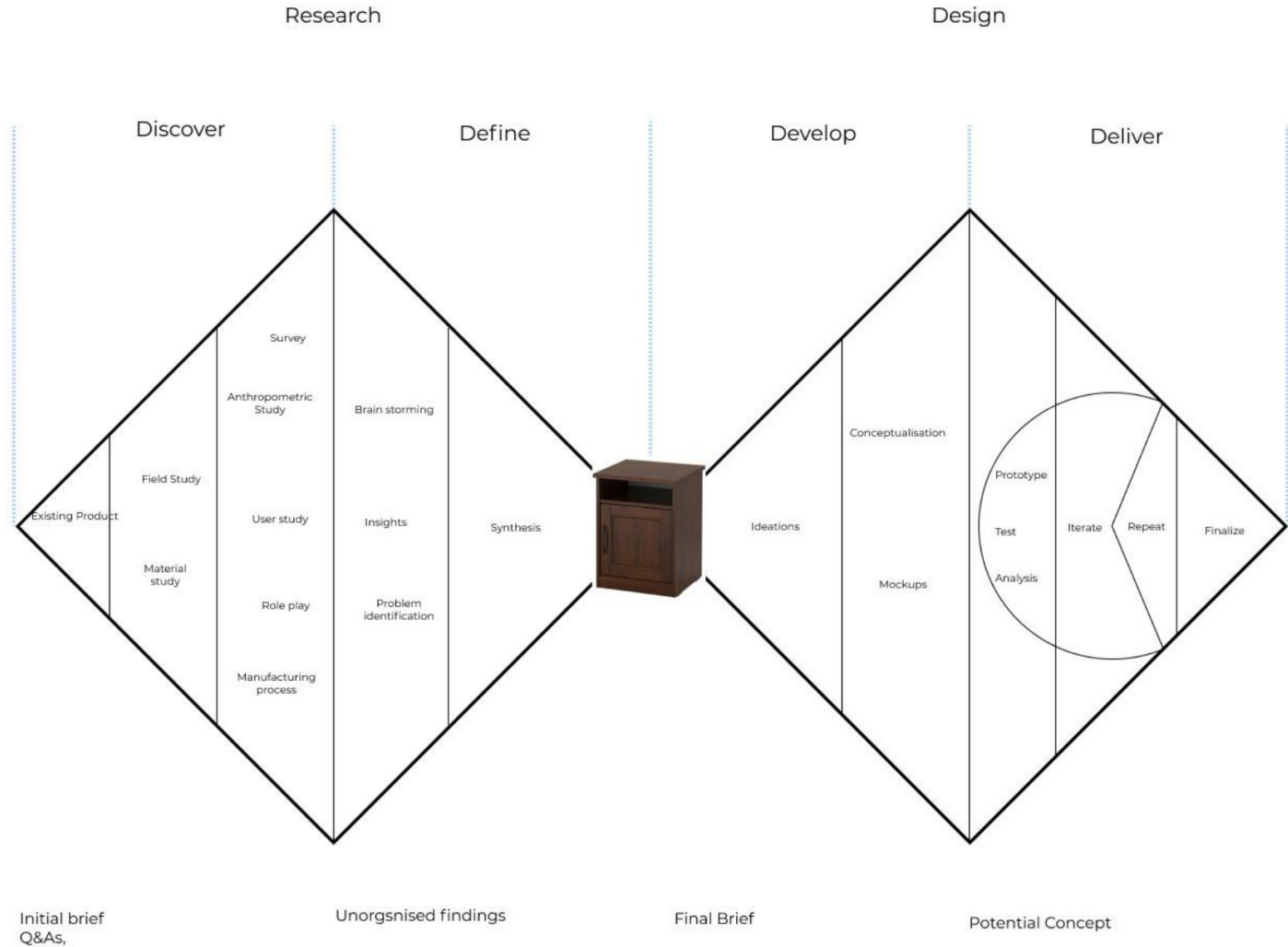
Objective

“To design a bedside table for elderly people.”



Methodology

Double diamond method has been used for this project to come up with final design



Research

Existing Products

The existing bedside table in [Grab your reader's attention with a great quote from the document or use this space to emphasize a key point. To place this text box anywhere on the page, just drag it.]
online market majorly consists of



Width: 35 cm (13 3/4 ")
Depth: 40 cm (15 3/4 ")
Height: 49 cm (19 1/4 ")
Material – Particle board with plastic edging



Width: 45 cm (17 3/4 ")
Depth: 40 cm (15 3/4 ")
Height: 53 cm (20 7/8 ")
Material – Particle board with plastic edging



Basic design



Open storage space,
minimal drawer handle



Height: 42 cm (16 1/2 ")
Diameter: 44 cm (17 3/8 ")
Material – Steel, Fiber Board



Width: 56 cm (22 ")
Depth: 41 cm (16 1/4 ")
Height: 43 cm (17 ")
Material – Polypropylene plastic, steel



Height including handle: 78 cm (30 3/4 ")
Diameter: 38 cm (15 ")
Material – Polyamide plastic, Steel



Unique cylindrical design,
Metal mesh,
Cut-out slot as handle



Stackable, Used as a stool



Handle to carry table,
Light weight,
Simple design



Width: 39.6 cm (15 5/8 ")
Height: 62.5 cm (24 5/8 ")
Depth: 35.5 cm (14 ")
Depth of drawer (inside): 28.3 cm (11 1/8 ")

Material – Polypropylene plastic, steel



Width: 35 cm
Depth: 54.9 cm
Height: 111.3 cm

Material – PLT (Parallel Laminated Timber)

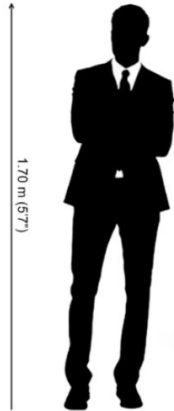


Width: 35 cm
Depth: 54.9 cm
Height: 111.3 cm

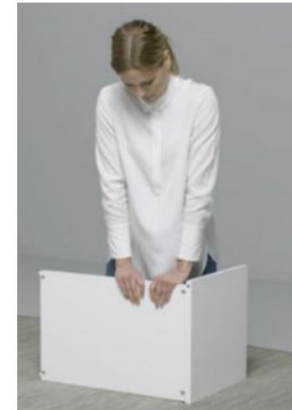
Material – Fiberboard, Particleboard, Honeycomb structure paper filling



Collar to stop items to falling, Generic design



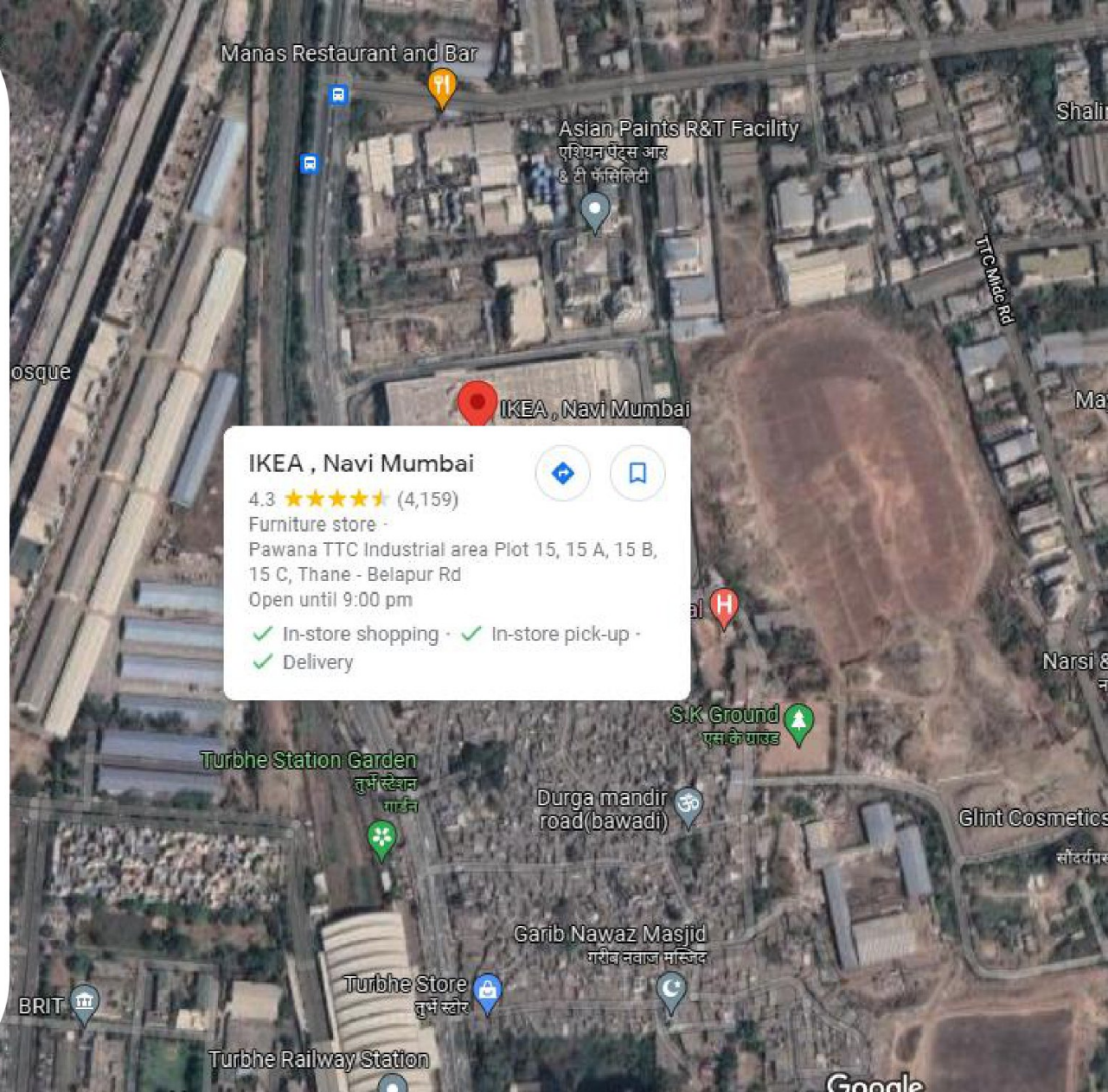
Extra vertical storage, Seating space.



Simple installation, Clean facade

Field study

I visited IKEA Mumbai for actual interaction with the bedside table which are in the stores and what novelty they are bringing in.



Aesthetics & simplification

In the store there was a huge range of bedside table they have very impressive aesthetics and simplified design, they are easy to dismantle and assemble without much of hustle.



Drawer Adapter



Channel Slider

Channel slider drawer system is a very fundamental drawer mechanism in which the drawer moves in and out along a grooved channel



Roller slider

These Drawers use a rolling wheel to draw out or in the drawer it is a more refined form of channel drawer

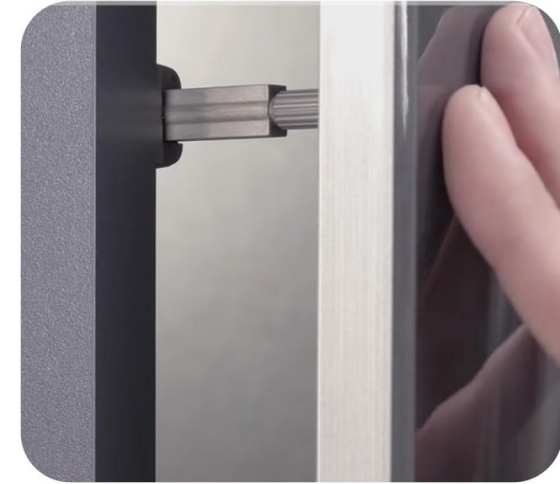


Soft closing adapter

There are many complex mechanism for drawer adapters available in the market which give a very smooth experience of opening and closing the drawer this is one of them.



Soft close drawer adapter



Push latch

There are many complex mechanism for drawer adapters available in the market which give a very smooth experience of opening and closing the drawer this is one of them.

Casters



Light weight Caster

There were huge number of casters used in different furniture most of them are made up of plastic which are used in light weight furniture.

Plastic caster have the advantage of strength with light weight, they can be mass manufactured easily and has long life



Industrial Caster

For furniture used on commercial level like in hotels and restaurants where they have to deal with rigorous activates on daily bases.

These are made up of sheet metals with robust mechanism the wheel is plastic but supported by metal axis

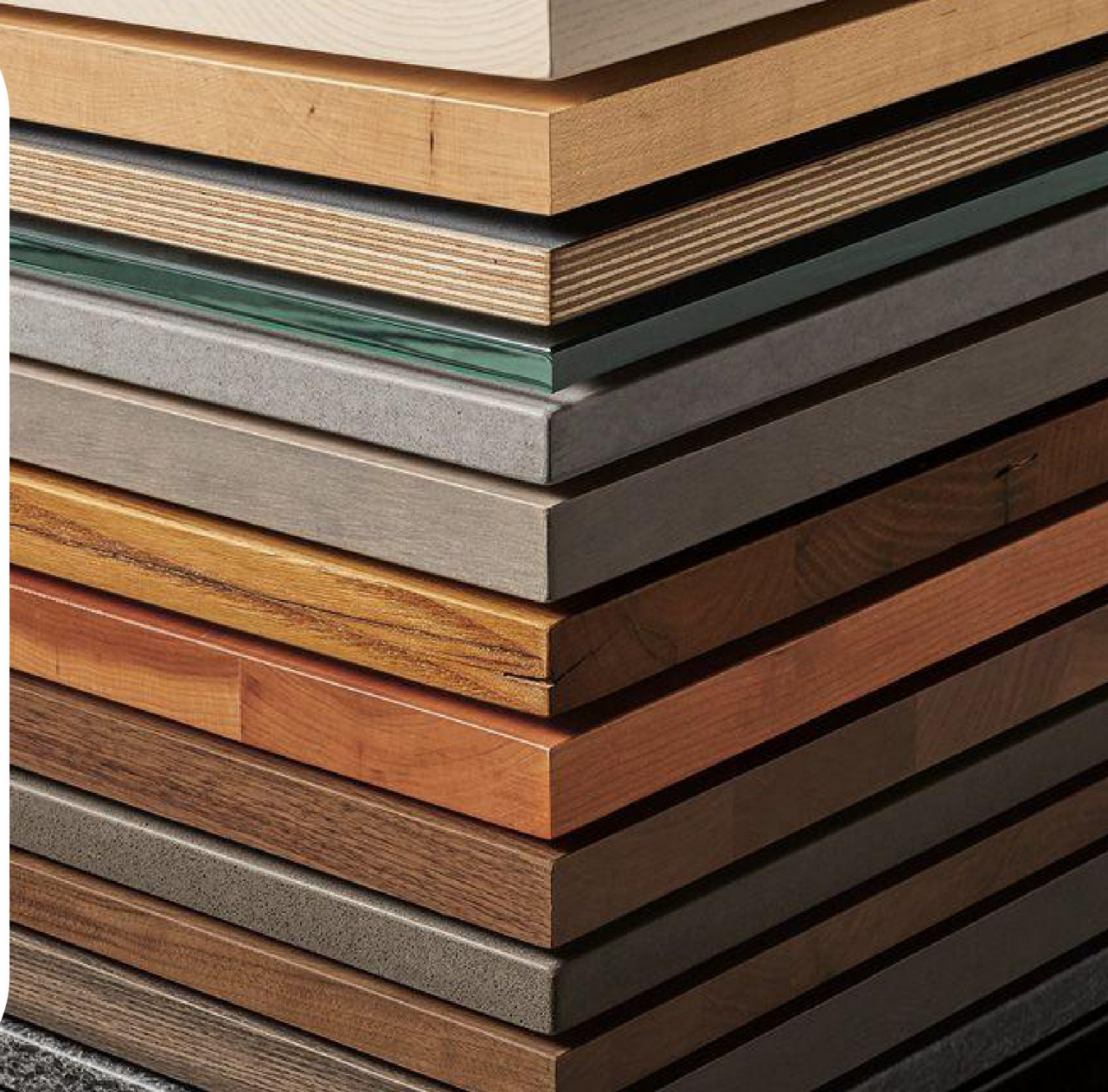


Legs & Caster

This was a different combination I saw in one of the table where the front legs have no caster but the back legs do have casters, this provide the user to lift the table and move easily but then need not to lock the wheels as the front legs will stop the motions once put down.

Material Study

For a desired furniture the selection of right material is very important, the material decides the quality & viability of the furniture.



Material study

Ash



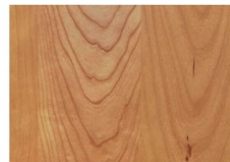
As a hardwood, Ashwood, which is most commonly found in a light texture, allows furniture to be bent and is quite flexible while yet keeping its position if necessary..

Beech



Beechwood is a hard, light-colored, robust, and heavy construction material that is used to make a variety of solid furniture, including beds and dining tables. It is also incredibly stress resistant, thus it will take a lot to harm furniture made of this wood

Cherry



This long-lasting wood type is commonly seen on antique furniture such as carved chairs and Shaker-style tables and cabinets. It has a luscious reddish brown natural tone and is readily moulded.



Mahogany

Mahogany is known as **popular premium** expensive hardwood material, of which comes in a dark brown-red tint.

Maple



A creamy-coloured hardwood, this material is heavy and durable. With added moisture resistance, this wood can withstand years of wear and tear – not falling to stains of many different variants.

Oak



Oakwood is one of the most popular types of wood currently used in furniture manufacturing. This grainy wood, of which is normally covered in many marks, shapes and lines is mostly known for its light brown blonde tint colouring.



Pine

Pine is an extremely cheap and lightweight wood that comes in a light yellowish and white-brown colour. This wood, unlike others, can be easily painted upon and is regularly used for **construction purposes** such as flooring.



Walnut

This chocolate-brown coloured wood material, which can differentiate from light to dark chocolatey brown is known for being one the top picks for the likes of crafting dining tables and mantels. Walnut is a **strong wood**, but in the same light – a costly wood, thanks to its stability and exquisite designs.



Metal

Metal is one of the most durable materials, and good metal will never exhibit signs of degradation against normal wear and tear unless placed under extreme pressure or in an environment that permits it to rust.



Polypropylene

Polypropylene is a relatively popular plastic that is utilised in a wide range of domestic and industrial applications, from furniture to food containers. This is a fairly robust and durable material with a greater melting point than many other plastics.



Polyvinyl Chloride

PVC is utilised in a variety of furniture applications, from synthetic rattans like the Terra Casual Sofa to a substitute to leather like the Morgan Childrens Table with Sophia Lilac Chairs. PVC in its plasticized form (as used in imitation leathers) is widely utilised in furniture.



Polycarbonate

Polycarbonate is one of the toughest polymers on the market, making it ideal for furniture. This implies that full pieces of furniture, including the legs, may be moulded from polycarbonate while yet retaining a respectable level of strength.



Nylon

Nylon is a rather robust material that has been employed in a variety of industrial applications. It can also be rendered clear, making it ideal for use in Smith for Alma's translucent Marlene Chair



Cane

It is made by simply peeling the skin of the rattan vine. To make a more beautiful piece of furniture, this material is wrapped in solid oak, steel, or aluminium frames. Cane, as a wicker material, emphasises the uneven coloration and pattern of rattan skin. Cane has the advantage of being less permeable.



Bamboo

Because of its high growth rate and other qualities, bamboo is a preferred eco-friendly material. Given its mild and delicate character, it's a remarkably sturdy and durable substance. It is, in fact, one of the toughest timbers, and it is also resistant to insects and dampness.

Options for wood



Mahogany



Walnut



Teak

Fairly Durable

Hardness 800-3,840
[janka scale]

Maintain more than teak

Suitable for indoor use

Highly expensive

Not as durable as teak

-

Needs regular maintenance

Better used indoors

Expensive but not as much as teak

Highly Durable

Hardness 800-3,840

Easy to maintain

Suitable for outdoor use

Expensive, but less than teak

Anthropometric study

Anthropometry is the measurement of body dimensions and comes into two categories:

Static anthropometry – is the measurement of the body when held in standard static postures. Measurements include stature, weight, centre of gravity, body breadths, depths, circumferences, height from body landmarks such as seated, standing, tip of hand to floor. This type of anthropometric data is used to design products that have a 'physical' fit

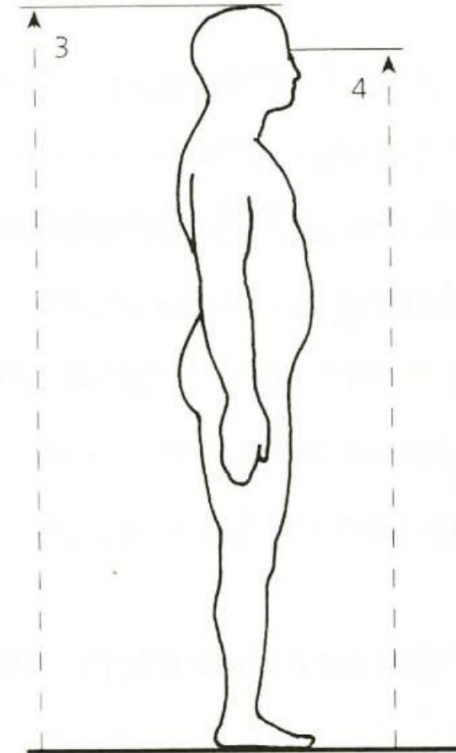
Functional anthropometry – is the measurement of the limit of the body such as the distance that can be reached in front and overhead.

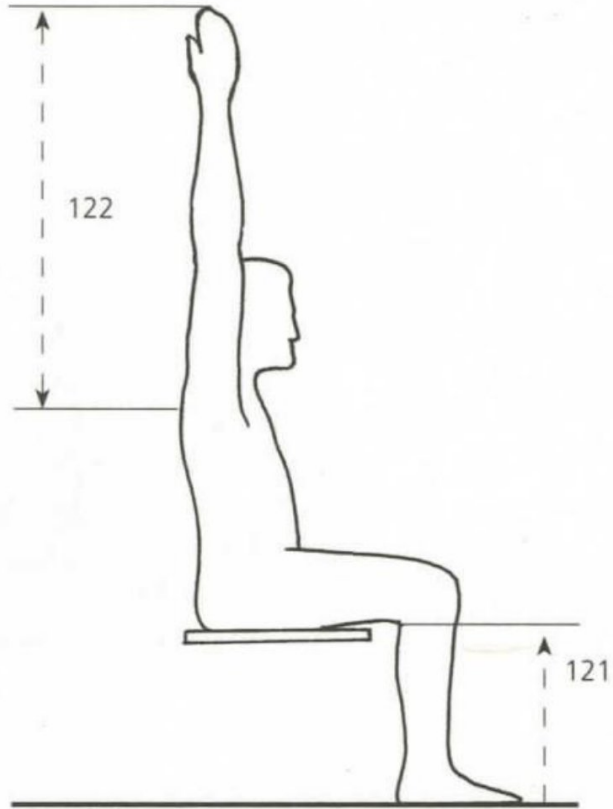
Static Anthropometry –

The average height of Indian population as mentioned in Indian Anthropometric dimensions by Deb Kumar Chakrabarti is mentioned below

According to which the combined mean height of the observed Indian population is 1614 mm.

		Max.	Mean
Stature	Male	1950	1650
	Female	1711	1523
	Combined	1950	1614



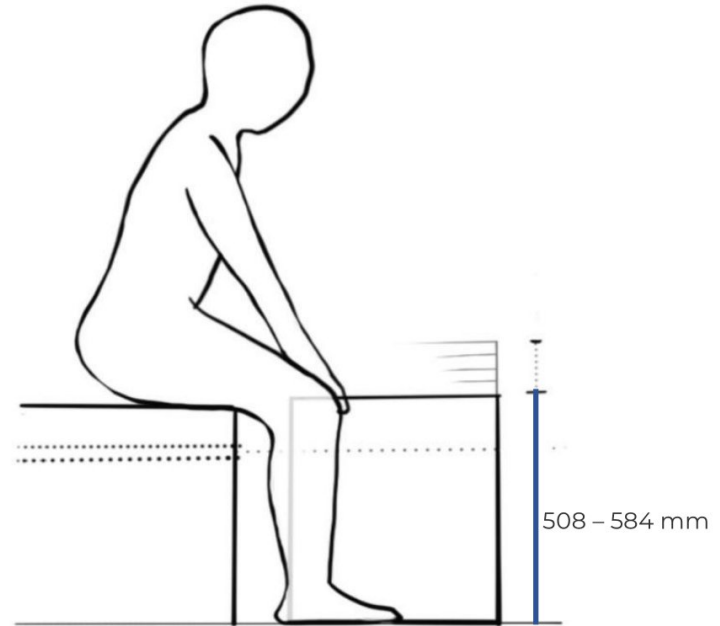


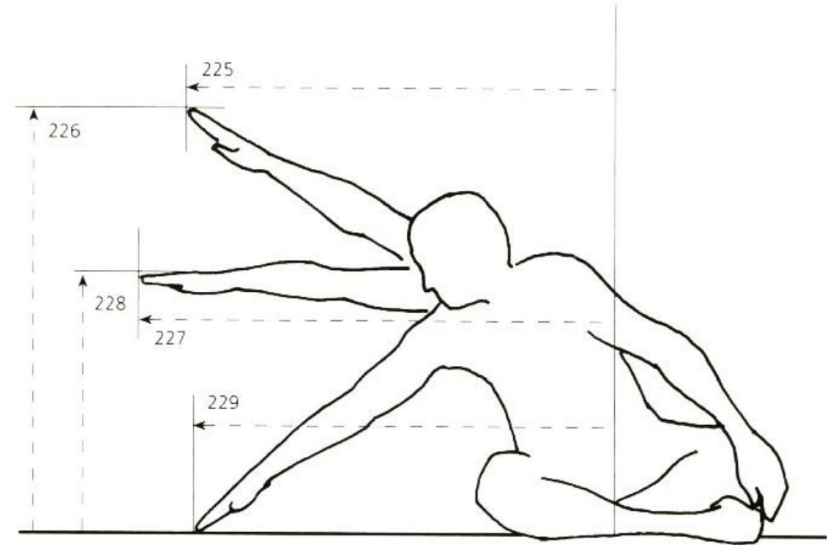
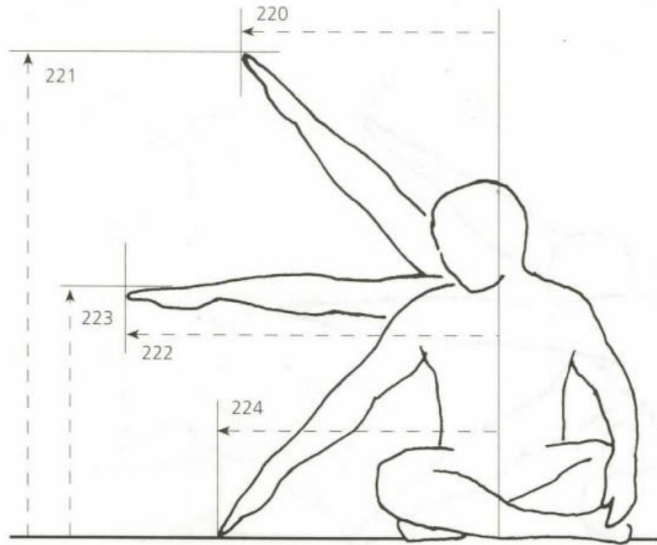
121 Popliteal

	Max.	Mean
Male	540	426
Female	455	399
Combined	540	420

According to the National Council on Aging, one in three people who live at home over the age of 65 suffers a fall each year, and this number increases to one in two by the age of 80. Fall-related injuries are often serious enough to result in hospitalization and even premature death

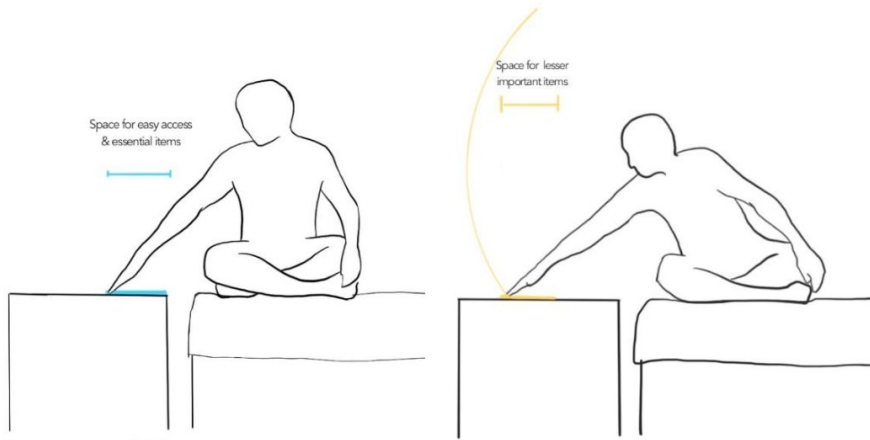
The Disability Rights Education and Defense Fund recommends beds should be 20 to 23 inches high from the floor to the top of the mattress.





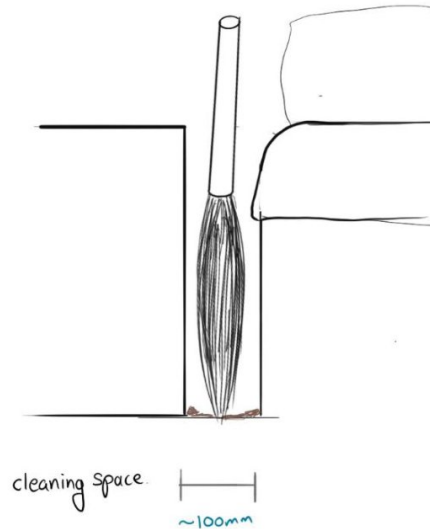
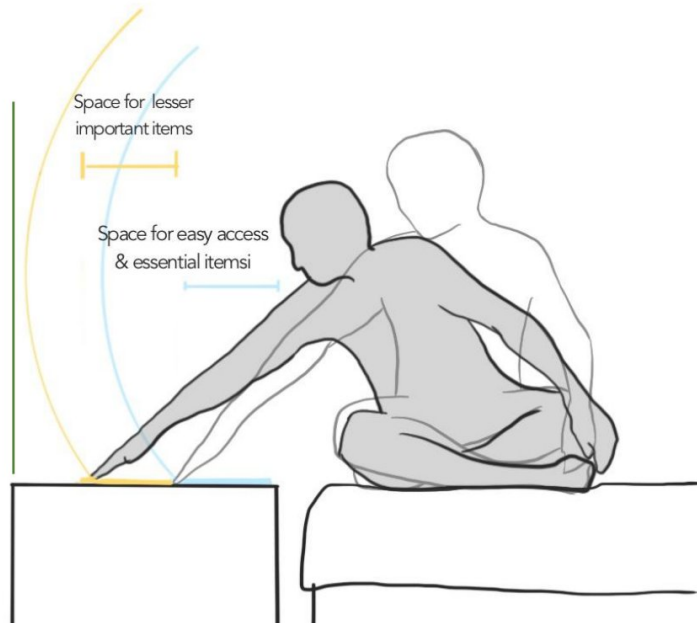
			Max.	Mean
220	Upper position length	Male	860	629
		Female	800	564
		Combined	860	613
222	Mid position length	Male	980	832
		Female	940	774
		Combined	980	817
224	Lower position length	Male	870	680
		Female	770	636
		Combined	870	669

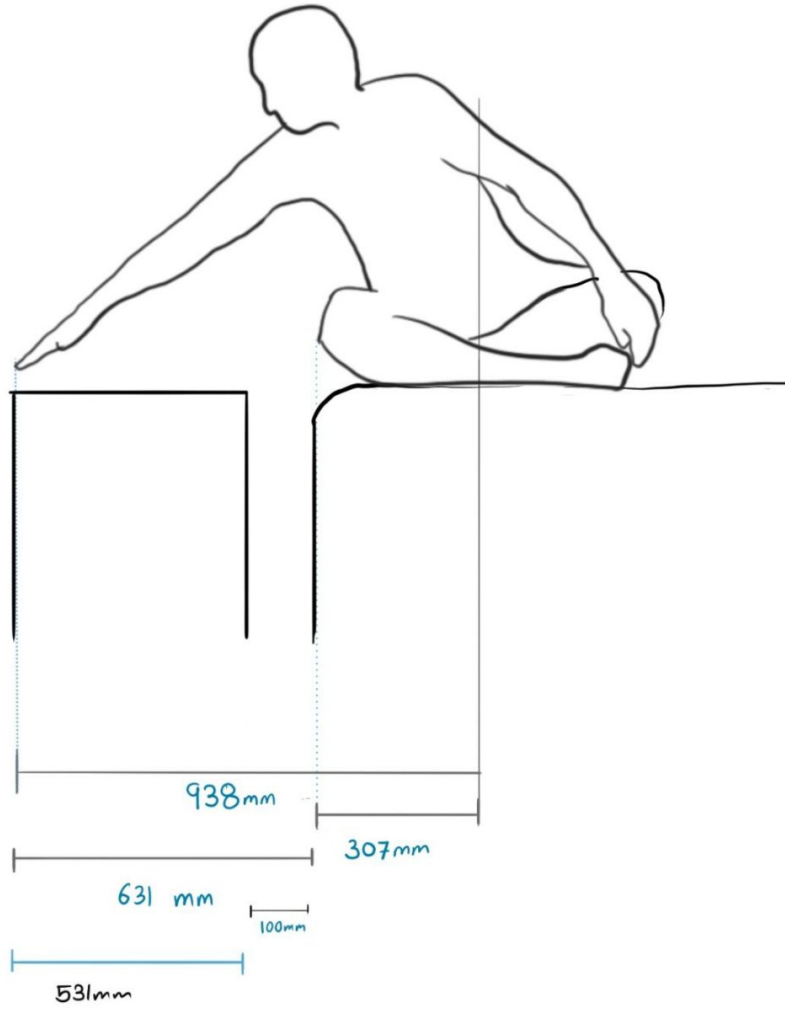
			Max.	Mean
225	Upper position length	Male	1210	814
		Female	1030	763
		Combined	1210	803
227	Mid position length	Male	1340	1009
		Female	1145	916
		Combined	1340	986
229	Lower position length (touching the floor)	Male	1230	965
		Female	1050	851
		Combined	1230	938



The above measurements helped me to come up to a reasonable dimension of a bedside table considering a standard anthropometric guide for Indian population.

Through this I am able to find out the comfortable measurements in which an Indian human body can access things on the top of the table



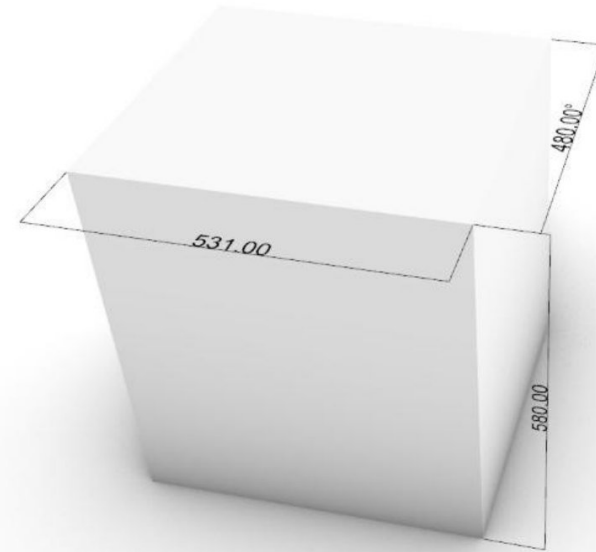


After doing basic calculation the minimum dimensions that I can justifiably work around are -

Length - 531 mm

Depth - 480 mm

Height - 580 mm

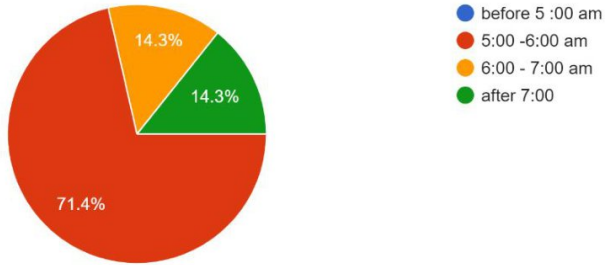


User Study

Survey

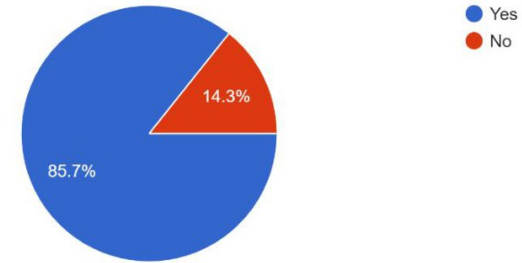
At What time does he/she wake up every morning?

7 responses



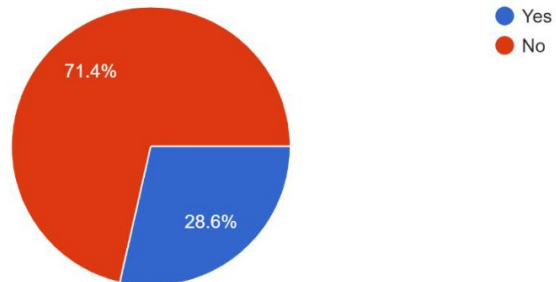
Does He/she wake up in between sleep? (midnight)

7 responses



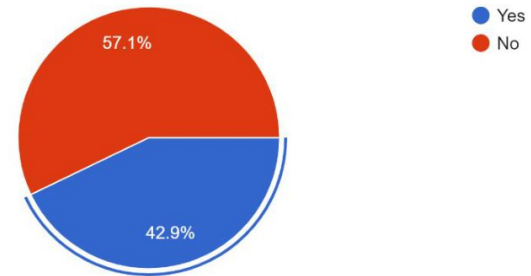
Is the light switch situated near his/her bed, within their reach?

7 responses



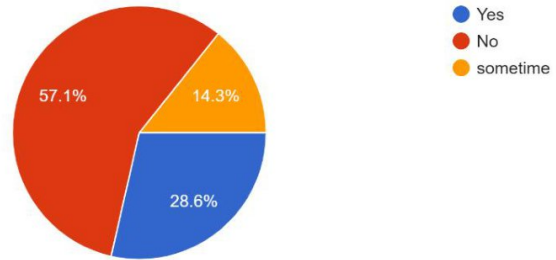
Does he/she prefer to keep any kind of light ON while sleeping?

7 responses



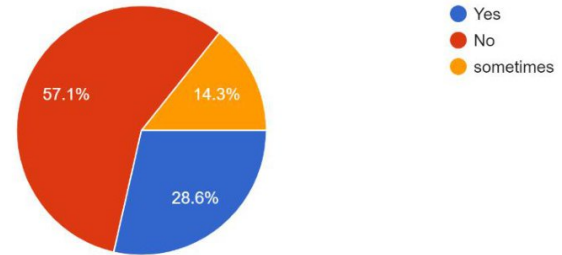
Does He/she use a walking stick ?

7 responses



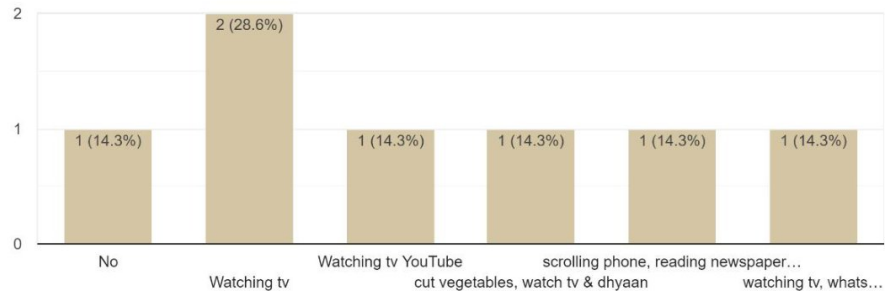
Does He/she require support to stand up and sit down?

7 responses



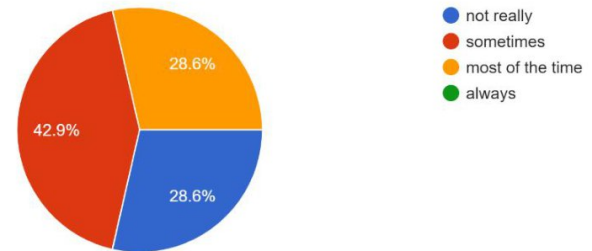
How does He/she spend most of their time on bed (knitting, watching TV, reading etc)

7 responses



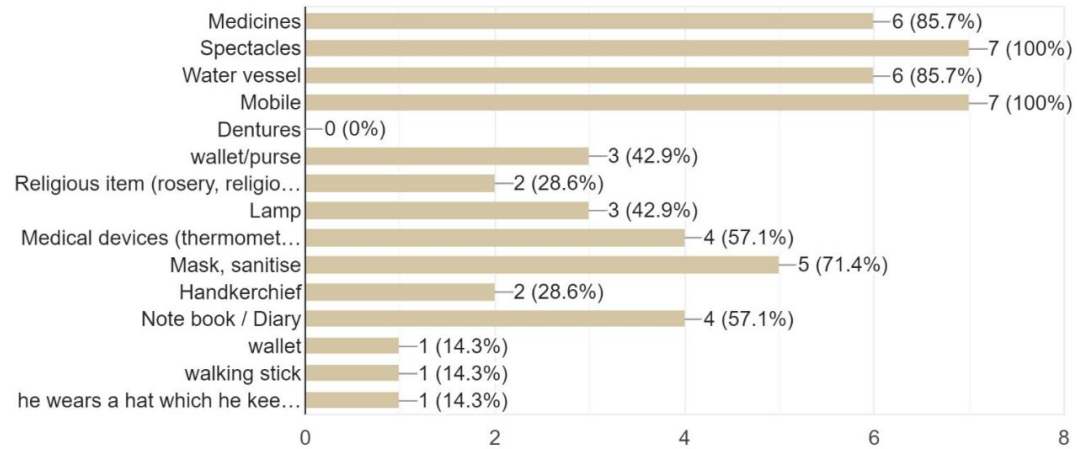
Does He/she likes to take meals on bed?

7 responses



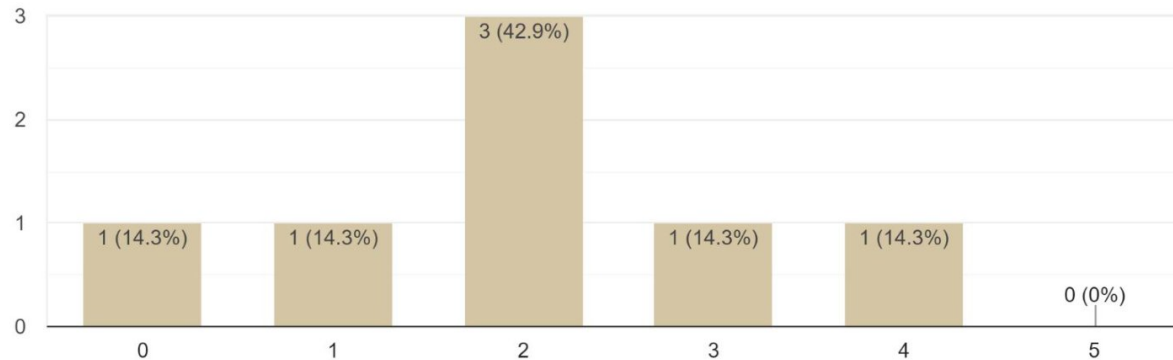
What things does He/she keep close while sleeping? write down anything you find missing.

7 responses



How good he/she is, with learning new tech

7 responses



Categorizing problems of elderly people

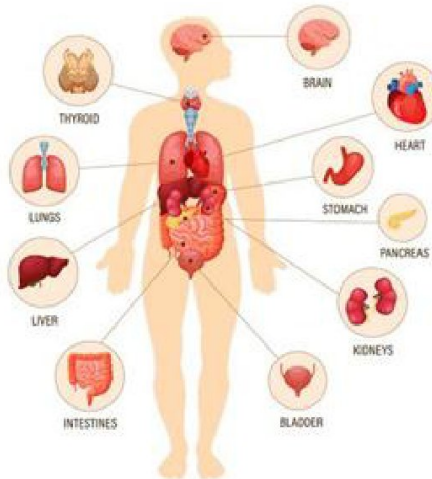
- Physiological
- Psychological
- Social
- Emotional
- Financial



Physiological

Old age is a period of depreciation. Even if one does not lose one's eyes, teeth, or everything straight immediately, one does begin to physically decelerate. Hereditary constitution, way of life, and environmental variables all have an impact on physical state.

Because of their delayed reaction to threats, the elderly are more accident prone, resulting in failing sense organs and decreasing mental capacities, and their capacity to labor declines. The eyes and ears are impacted.



Physiological

Psychotic depressions are more common among the elderly. Senile dementia (associated with cerebral loss and degeneration) and psychosis with cerebral arteria sclerosis are the two most common psychotic diseases in the elderly (associated with either blocking or ruptures in the cerebral arteries). It has been discovered that these two illnesses account for around 80% of psychotic disorders among older individuals in civilized nations.



Social

As people get older, they experience significant social losses. Their social life is hampered by job loss, the death of family, friends, and spouses, as well as poor health, which limits their involvement in social events. The house becomes the focal point of their social life, which is restricted to interpersonal relationships with family members. They are likely to feel lonely and alone as a result of the loss of most of the social roles they formerly played.



Emotional Problems

They become reliant due to a decline in mental abilities. They no longer believe in their own abilities or judgments, yet they still seek to exert control over the younger generation. They desire to be active in all family and commercial concerns. Because of the generation difference, the younger generation does not listen to their suggestions and recommendations. Instead of becoming empathetic to the elderly, they begin to demand their rights and power. This may give them the impression that they are being denied their dignity and value.



Financial

Retirement from service usually results in a loss of income, and the pensions that the elderly receive are usually insufficient to meet the rising cost of living. With a lower income, they are demoted from "chief breadwinner to mere dependence," despite the fact that they spend their provident fund on children's marriages, the acquisition of new property, children's schooling, and family upkeep. The diagnosis and treatment of their condition added to their financial difficulties in old life.



Understanding User

I talked to different people from this age group including my grand mother. They gave me very good insights about the issues they face with a bedside table scenario, some of them do not have a bedside table so they suggested what kind of bedside table they required



Interaction

I talked to my grandmother about her experience with the wooden chair she has been using it as a bedside table for a very long period she gave some good insights about the problems like

Visibility of things on the table top

Spillage of liquid

Putting plate after meal.

I asked my sister to click some pictures of my grand mother accessing things from bedside chair she uses



Item List

Here is the list of items which are generally used on bedside table by the elderly.

Medicines

Spectacles

Water vessel

Mobile

Walking stick

Dentures

wallet

Spiritual item (rosery, religious books)

Lamp

Medical devices (thermometer, bp monitor)

Mask, sanitise

Hanker chip

Note book



User Persona

Since our target user is the elderly user which fall under the age group of above 65 year-old.

To better understand the user, 2 personas are created.

Persona 1



Name – Annapurna Devi

Gender - Female

Age – 80

Home - lives with her son, his wife & 2 grandchildren

Location – Varanasi, U.P.

Financial status – belongs to a middle class, her son earns for her family.

- Annapurna Devi is Religious, active and quite social woman who wakes up
- early to visit nearby temple.
- She got married after 10th std of schooling
- She tries to spend time with her grandchildren but they are mostly busy with their studies
- She has some friends in locality with whom she occasionally spends her evenings.
- she is a bit stereotypical, superstitious & like to read religious books.
- she is not comfortable in adopting new tech but trying to get along with new generation.

Problem - weak eye sights, require walking stick, weak memory



Persona 2

Name – Nihal Singh

Gender – Male

Age – 78

Home - lives in joint family of 8 members including 2 sons & 3 grandchildren

Location – Chandigarh

Financial status – belongs to an upper middle class, his both sons earn for his family.

- Nihal Singh was a farmer, now his sons look after their farms
- He regularly visits his farm early morning & goes to bed early.
- He had his education till 12th std.
- He likes to socialize with his group of friends in the locality every evening
- He uses a smartphone to listen music, play games & communicate with others.

Problem - weak eye sight, back pain

Roleplay

Making Rig

To better understand the problem, I created a 1:1 rig of the Table and used it for a few days In the different light conditions and different timings of the day.



The rig is made up of sun board which is able to with stand some moderate weighting items like water bottle, glasses, medium sized books, & medicines combine. It has proved to be a good mockup to keep beside my bed for more than a week..

Acting elderly

empathize with the issues of an elderly person, I enacted an elderly every time I interacted with the bedside table rig. I tried to mimic a person with:

- Weak eye sight
- Difficulty in walking
- Weak motor skills



Image 1

- The issues faced by elderly with weak eyesight is, after waking up they look for glasses which is hard to locate when there are other things on the table. (Image 1)
- The walking stick also need to be placed near the bed and sometimes there is no proper place to keep it. (image2)
- While getting up even with the support of stick some elderly person require extra support to get on the legs, for that they take support of either bed or bedside table.

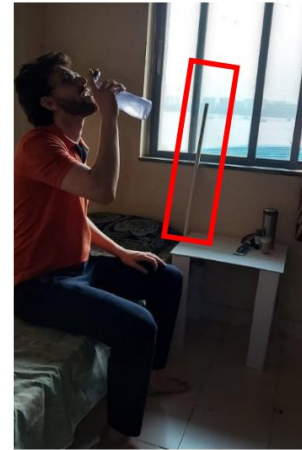


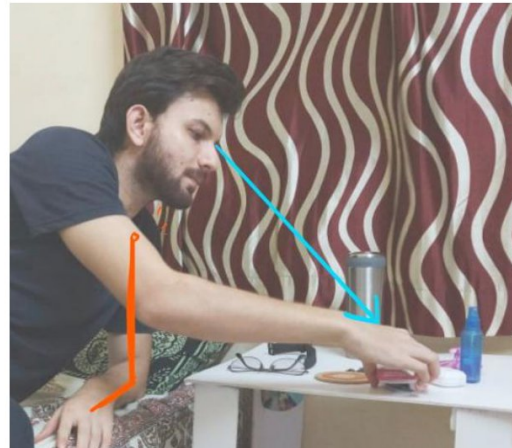
Image 2



Image 3

Problems in Dim Lighting

In the Dark the it is harder to locate things on the table top, even if there is a lamp one can get comfort of visibility in finding things on the top of the table but to look into drawers the person will have to sit and bend forward to find the things.

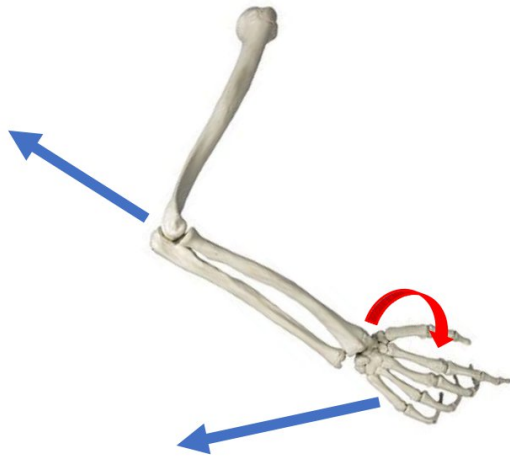


Navigation issue

Locating the required medicine while lying on the bed is an issue as one needs to get up putting the weight of the upper body on the left arm (shown in the image) to see which is the right medicine to take.

Drawer issue

The drawer with open out parallel to the user's body, the position in which the user has to hold the handle and pull out the drawer is not comfortable.



Improper hand posture while pulling out drawer while being on bed



Brainstorming

S no.	Problems	Viable solutions			
1	Weak eyesight, locating glasses is difficult	Glasses can be placed at elevated place on the table	Hanger for glasses	Light locating glasses	Dedicated slot on table
2	Walking stick slips, no proper place	Foldable holder for stick	Hanger for stick		
3	Clutter on the table top	Segmentation of table top	spacing by varying height	Extra small cabin	
4	Liquid Spill prevention or less afterwork	Boarder to the table top	Hydrophobic coating	Removable top to clean under tap	
5	Lighting at night (lamp)	Foldable lamp	Detachable chargeable lamp	Projecting light on wall for ambient light	
6	Phone charging	Wireless charging	USB ports		
7	Emergency situation	Emergency button	Smart band monitoring	Voice activated SOS service	
8	On bed meal & reading	Embedded overbed table	Detachable over bed table	Foldable over bed table	Plank for over bed use
9	Left or right hand side of bed?	Drawers that can be inserted from both the sides	Symmetrical form of BST	Easily convertible to LHS or RHS	
10	Mobility of BST	casters	Extreme light weight	2 caster legged	Lifting handle
11	Foot light	Automatic leaking light	Floor light at the bottom	Lamp as floor light	
12	Drawer opening issue	Push open drawers	Open storage		

Analysis

Glasses can be placed at elevated place on the table	Hanger for glasses	Light locating glasses	Dedicated slot on table
Foldable holder for stick	Hanger for stick		
Segmentation of table top	spacing by varying height	Extra small cabin	
Boarder to the table top	Hydrophobic coating	Removable top to clean under tap	
Foldable lamp	Detachable chargeable lamp	Projecting light on wall for ambient light	
Wireless charging	USB ports		
Emergency button	Smart band monitoring	Voice activated SOS service	
Embedded overbed table	Detachable over bed table	Foldable over bed table	Plank for over bed use
Drawers that can be inserted from both the sides	Symmetrical form of BST	Easily convertible to LHS or RHS	
casters	Extreme light weight	2 caster legged	Lifting handle
Automatic leaking light	Floor light at the bottom	Lamp as floor light	
Push open drawers	Open storage		

I came up with following features as an integration of viable solution within the bedside table. Which I categorized in 3 categories Contemporary novelty and futuristic.

Possible Contemporary features	Possible Futuristic features	Possible Novelty features
Foldable lamp	Vacuum robot - to clean	Medicine organiser
Spectacles slot	Humidifier/ Air purifier	Transparent drawer
Over top small cabinet	Water dispenser	Drawer lights
Over bed table	Wireless charging	Spectacles slot
Push open drawers	Smart assistant	Walking stick holder
casters	Automatic Foot light	
Dustbin space		
Emergency button		
Walking stick holder		

Keeping these features in mind I started making ideations

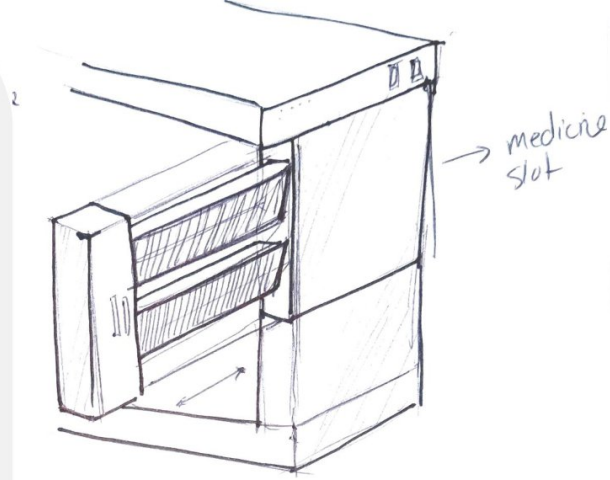
Brief

Designing a bedside table for elders (65+ year old) to provide th

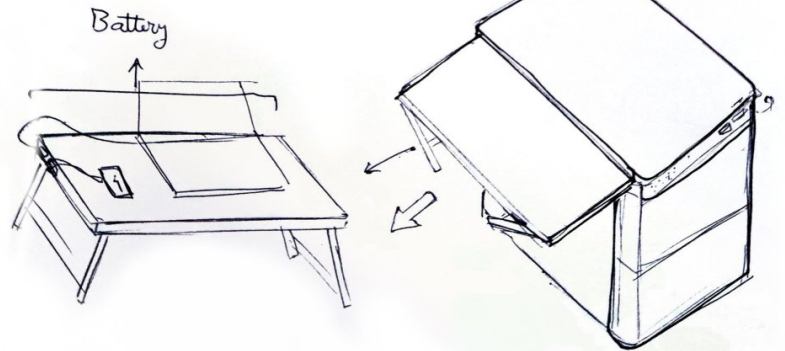
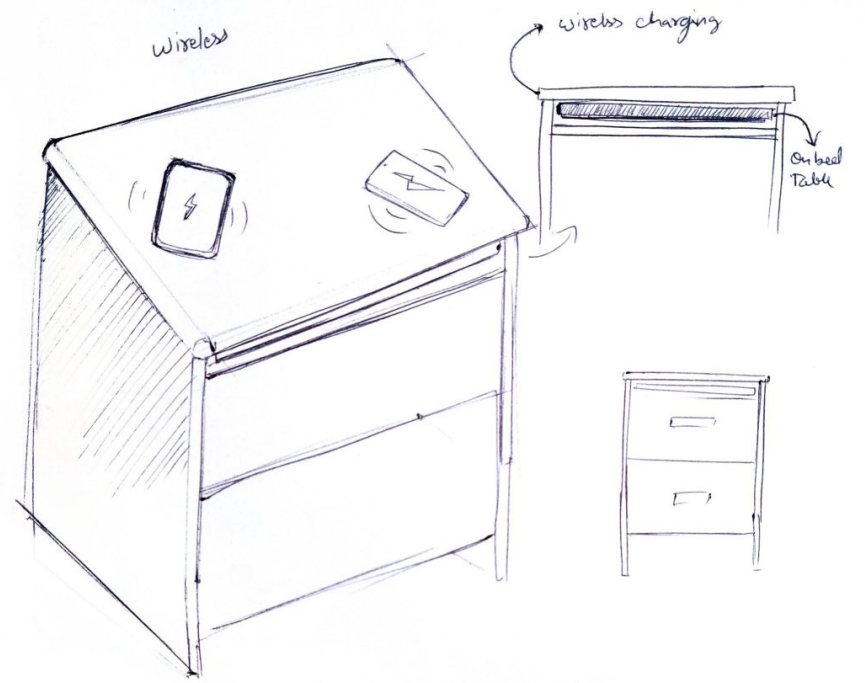
- Easier access to the essential things
- Easy cleaning, sufficient storage
- Better accessibility visibility in dark
- Better ergonomics.

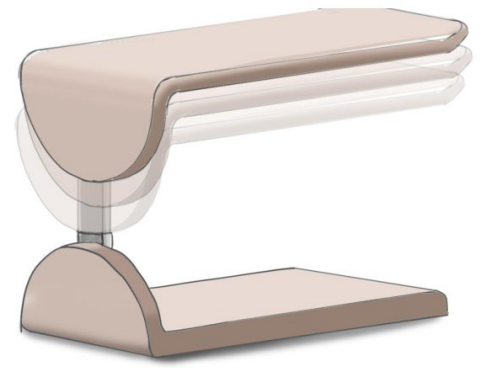
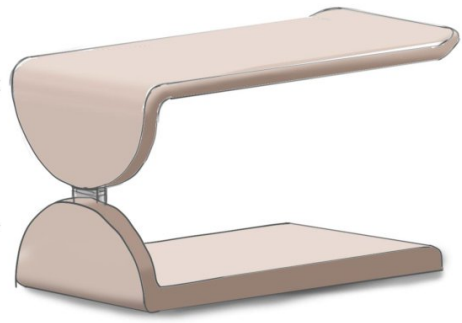
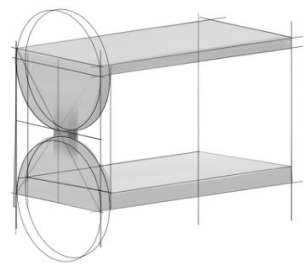
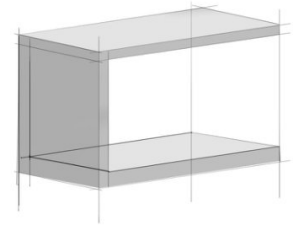
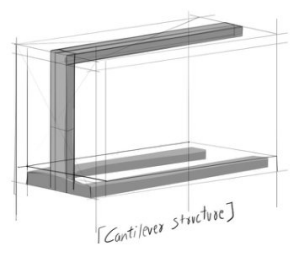


Ideations

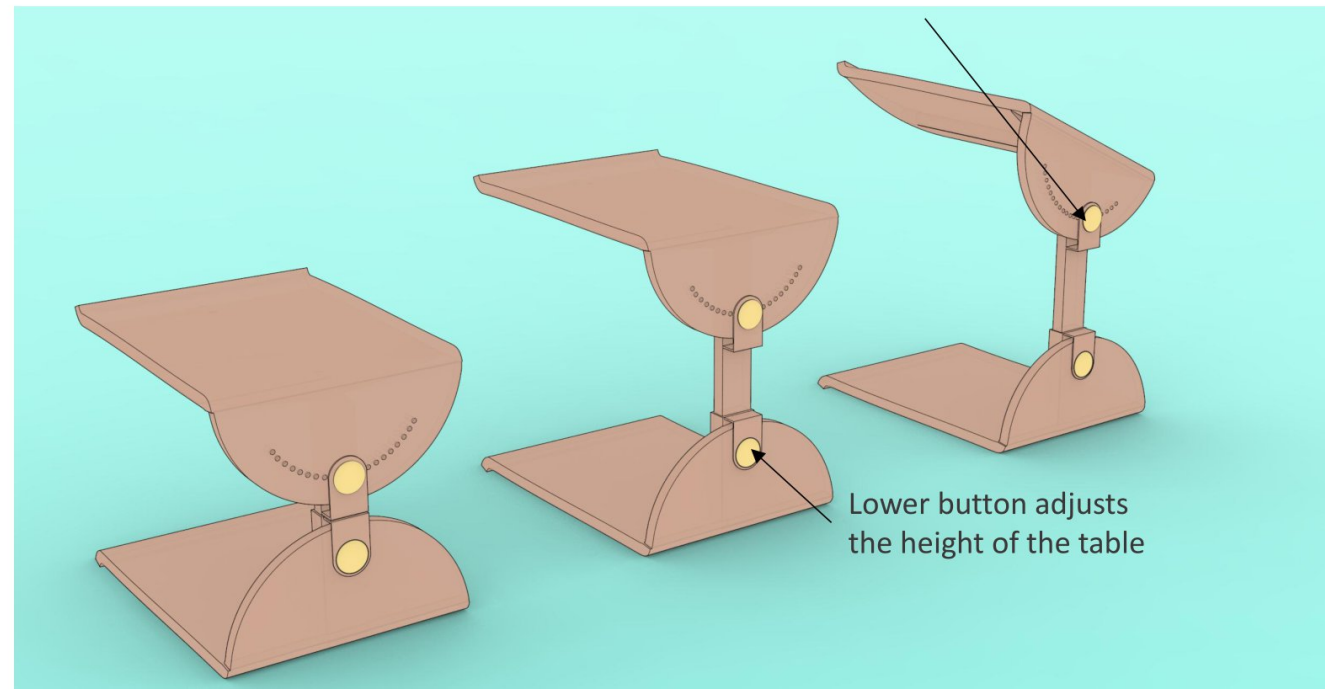
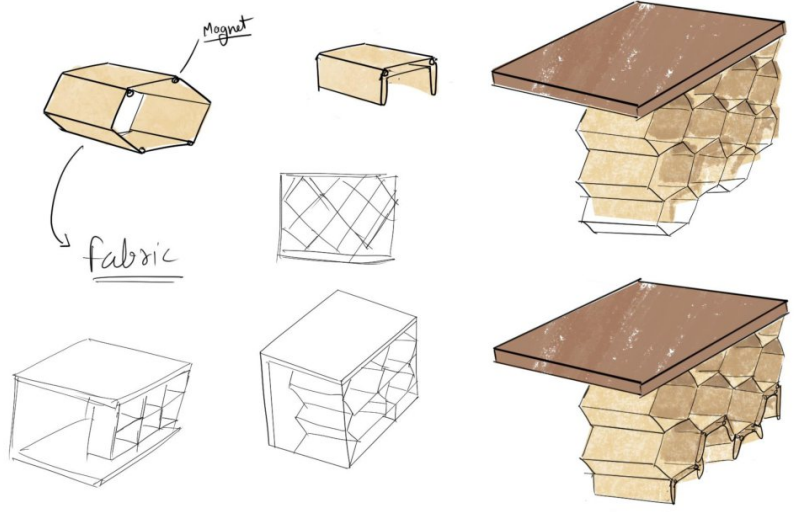


Person can easily access medicines without bending upward or leaning forward





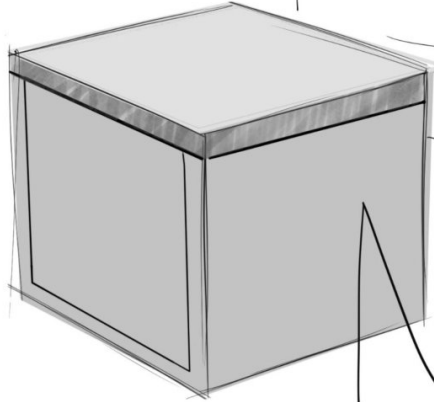
Upper button adjusts the angle of table top



S.O.S

Sos Activated

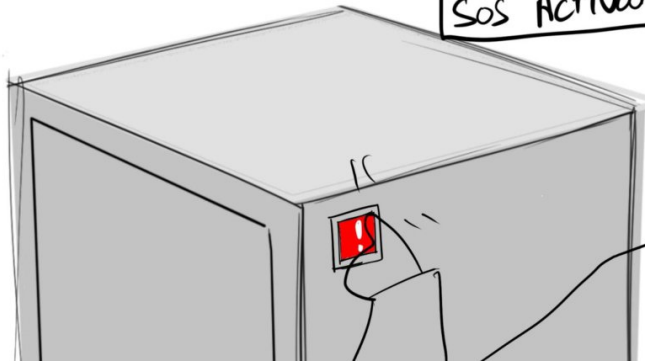
Help!
Help!



Please Stay calm
Help is on the way

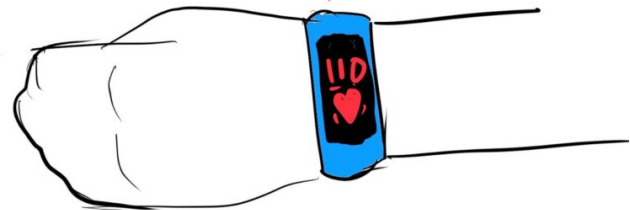
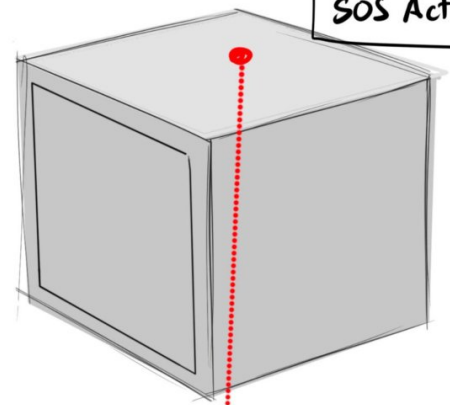
Voice
activated

Sos Activated

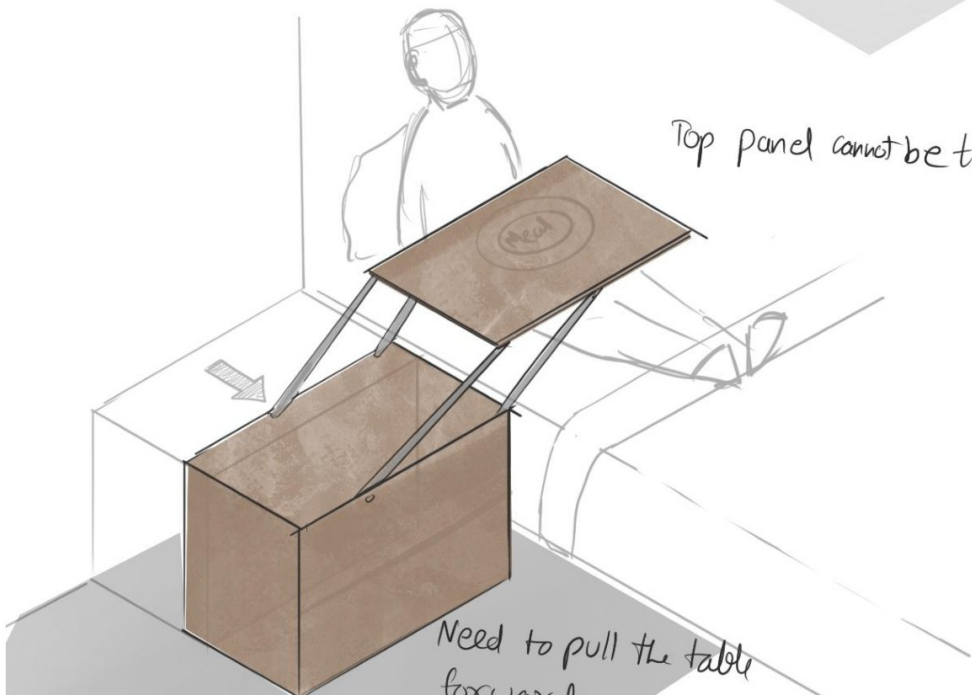
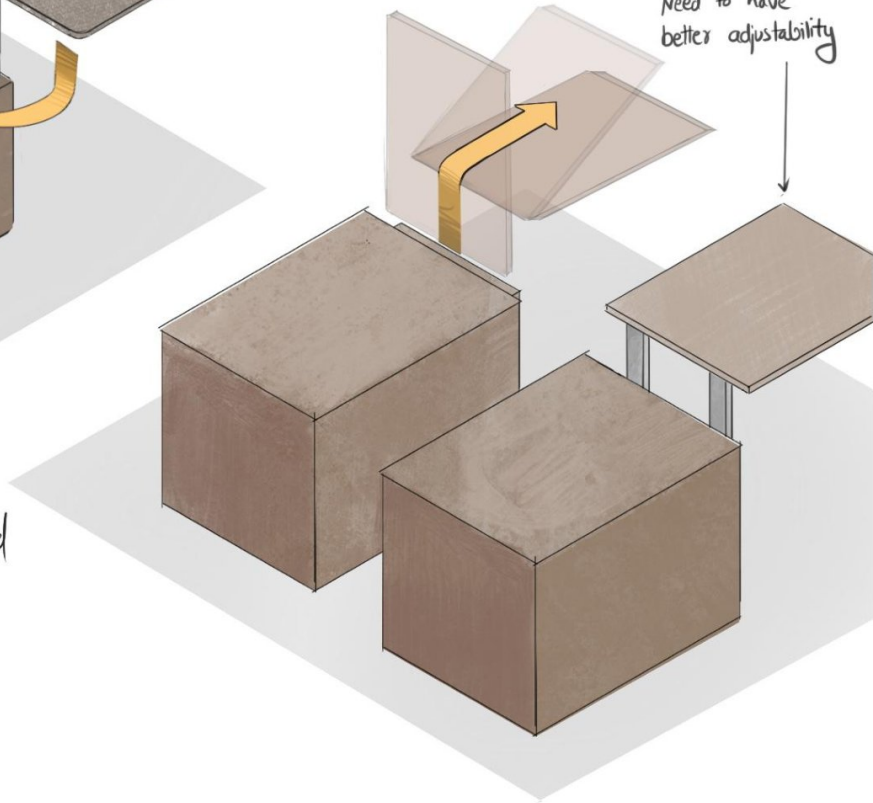
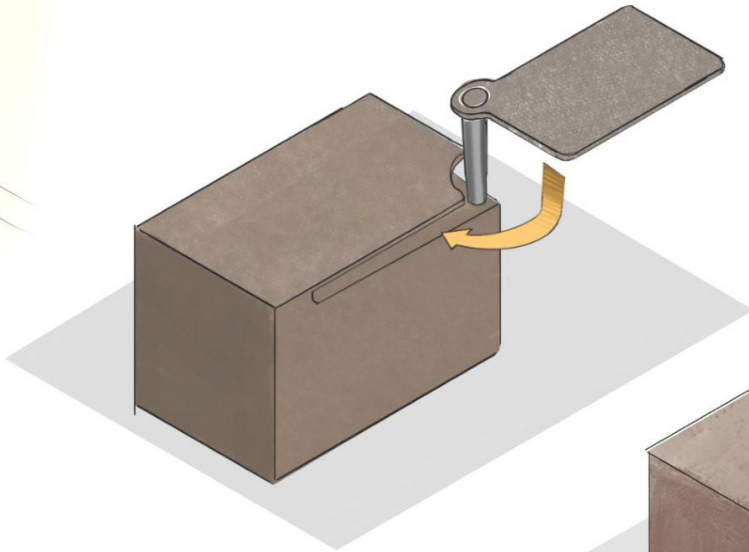
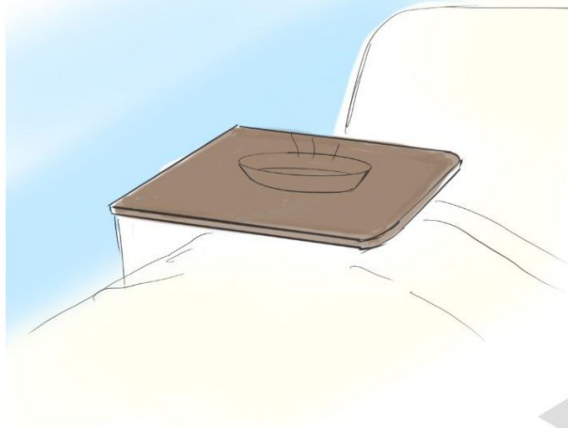


Sos button

SOS Activated



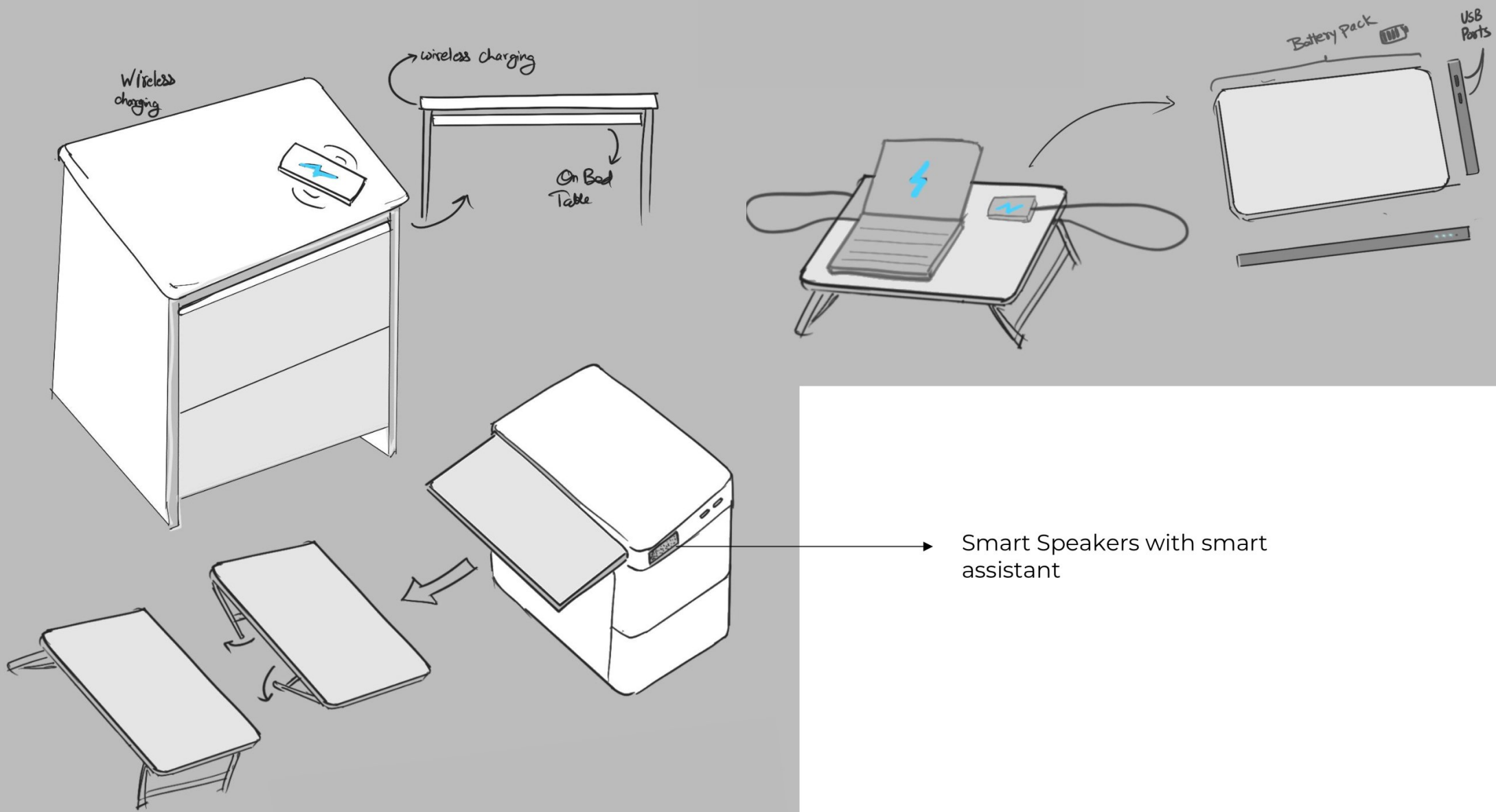
Smart band
Tracking



Top panel cannot be tilted

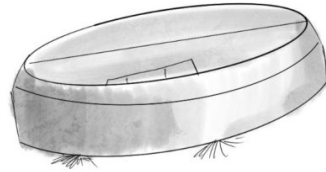
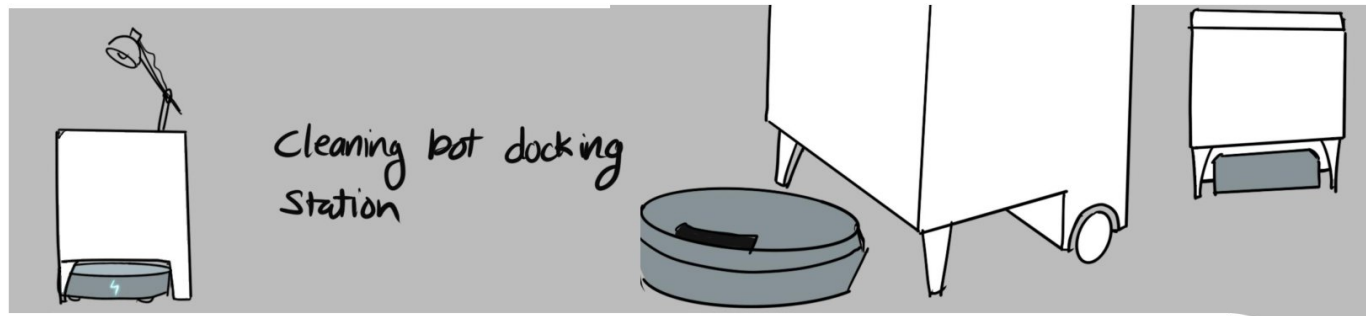
Need to pull the table forward

Need to have better adjustability

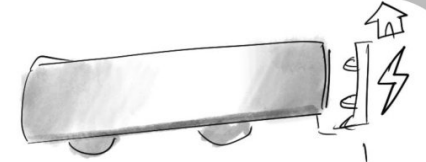


Cleaning bot

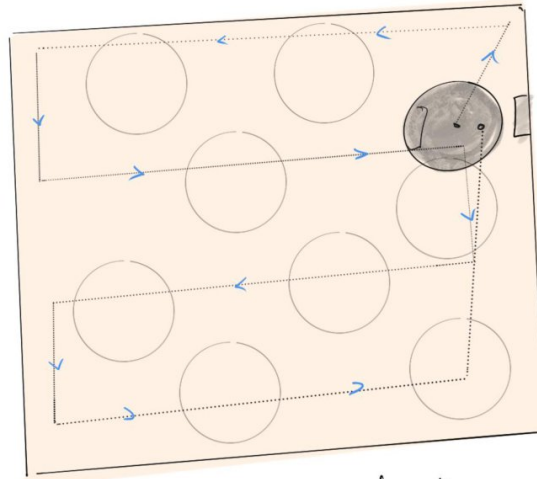
To make the process of cleaning easier an automatic cleaning bot which readily available in the market can be integrated in the table itself



— cleaning robot —

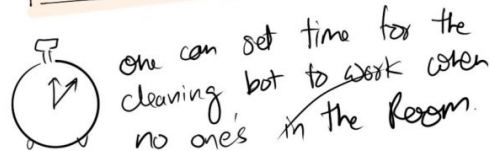
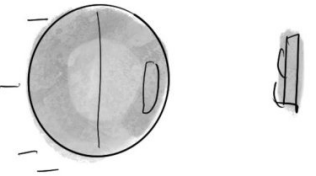


A permanent charging dock is fixed in table

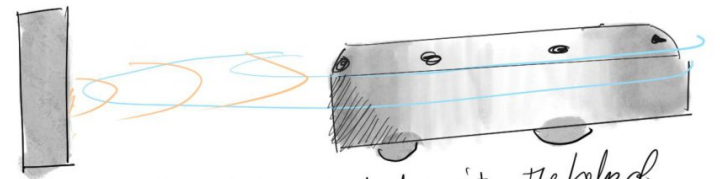


It automatically moves in the room & covers all the area

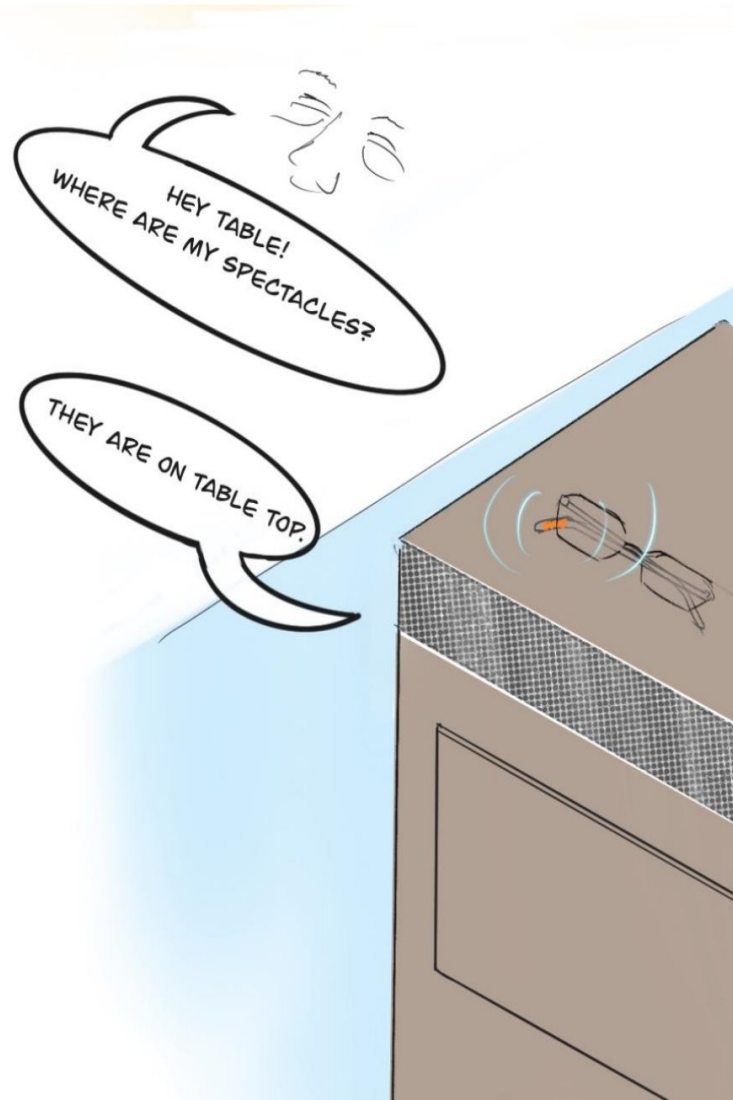
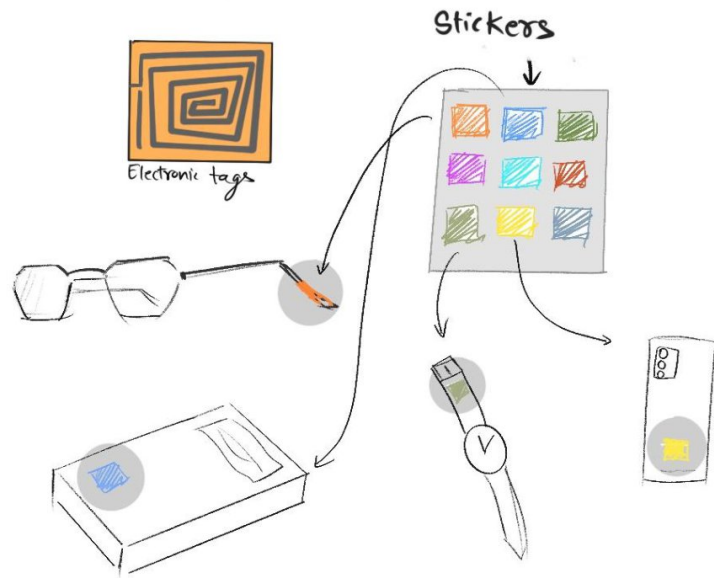
gets back for charging



one can set time for the cleaning bot to work when no one's in the room.



It detects obstacles with the help of sensors

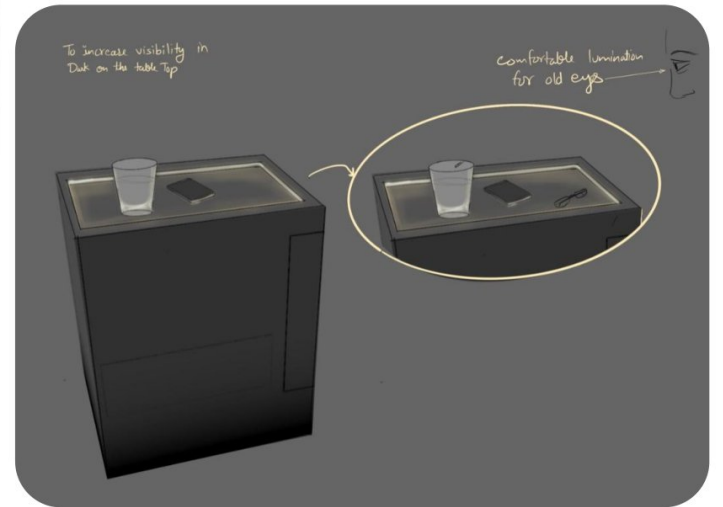
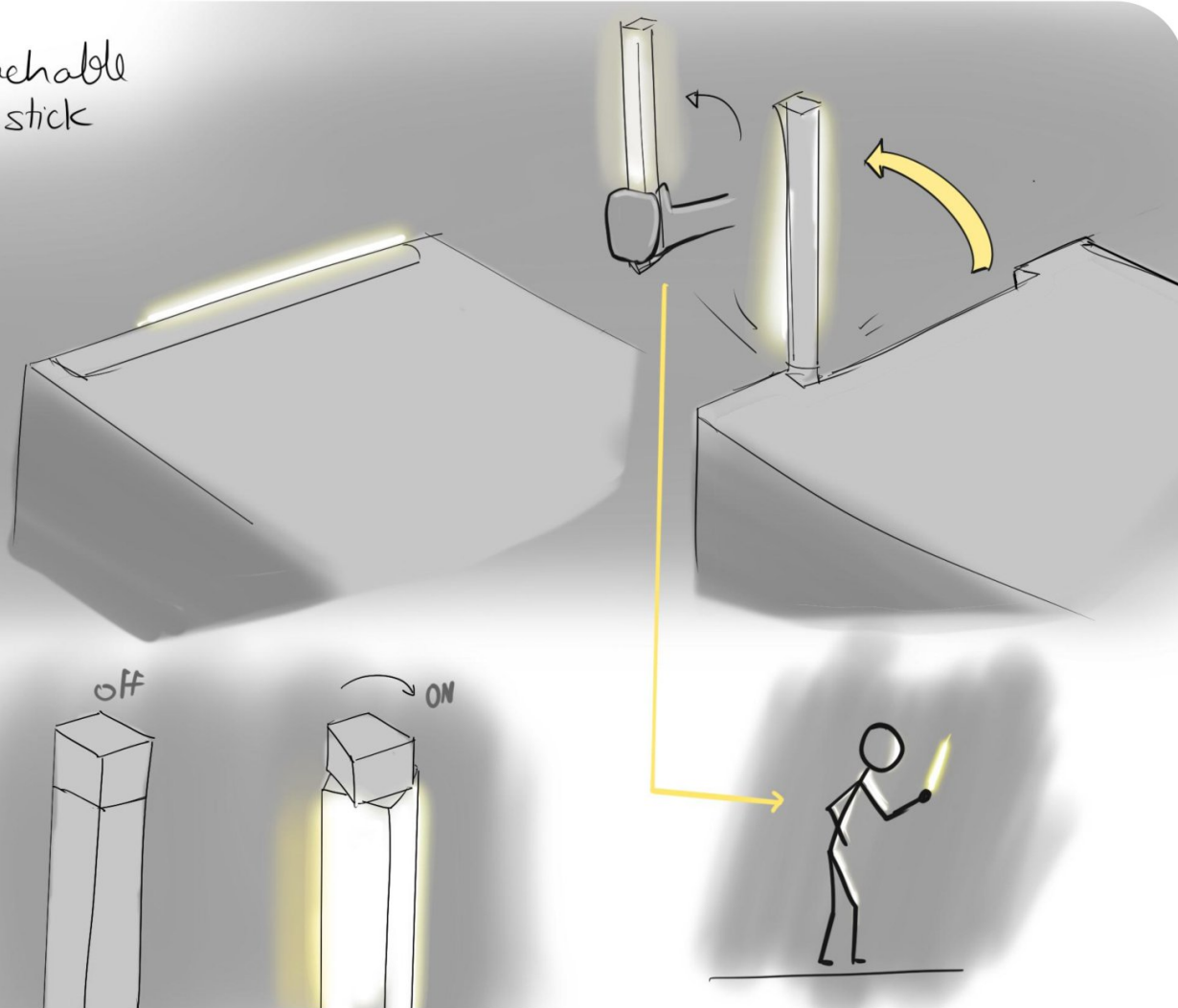


RF tags stickers

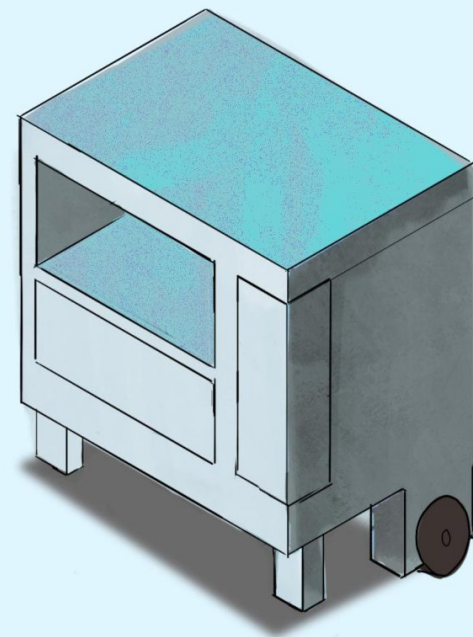
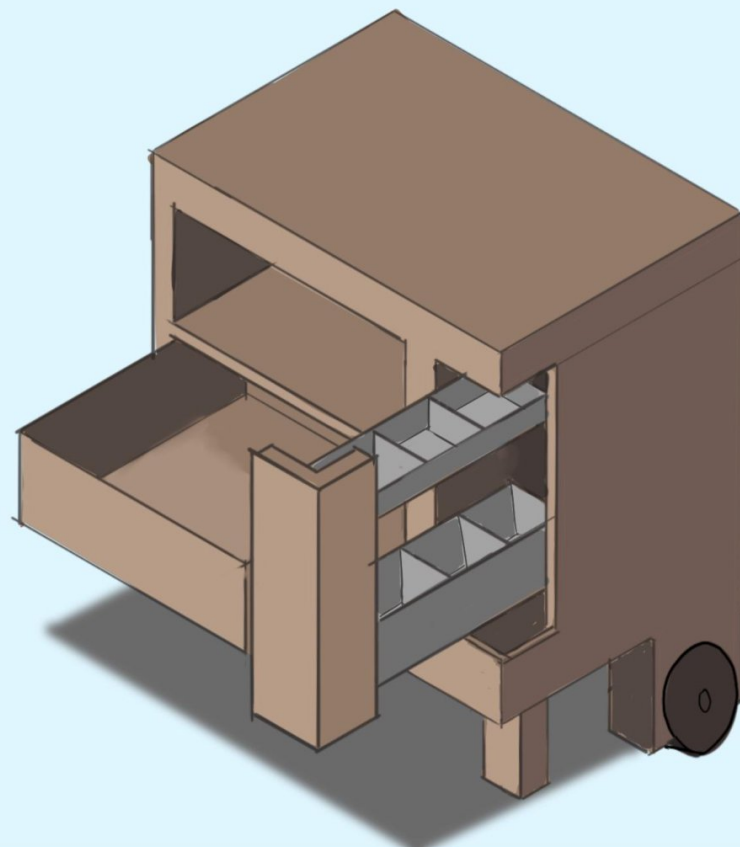
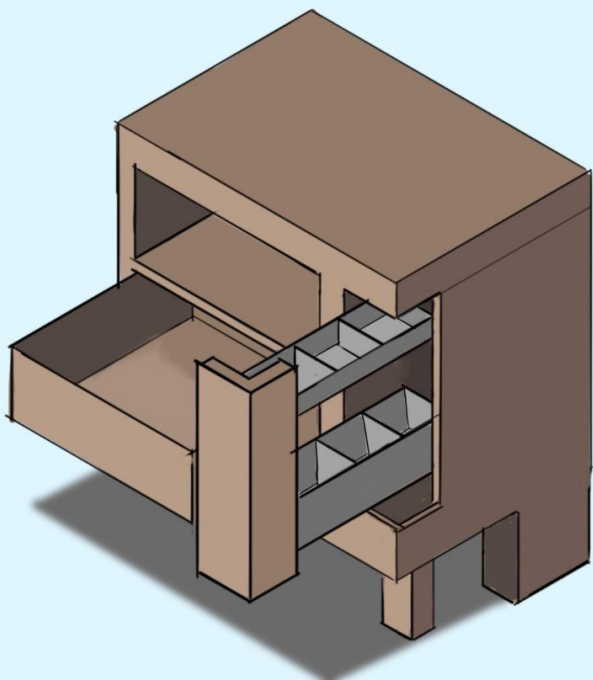
These stickers are used in malls to keep track of the items in the store, also to prevent stealing from the store, as there tags activate alarm when passed out by the scanning machines at the way out

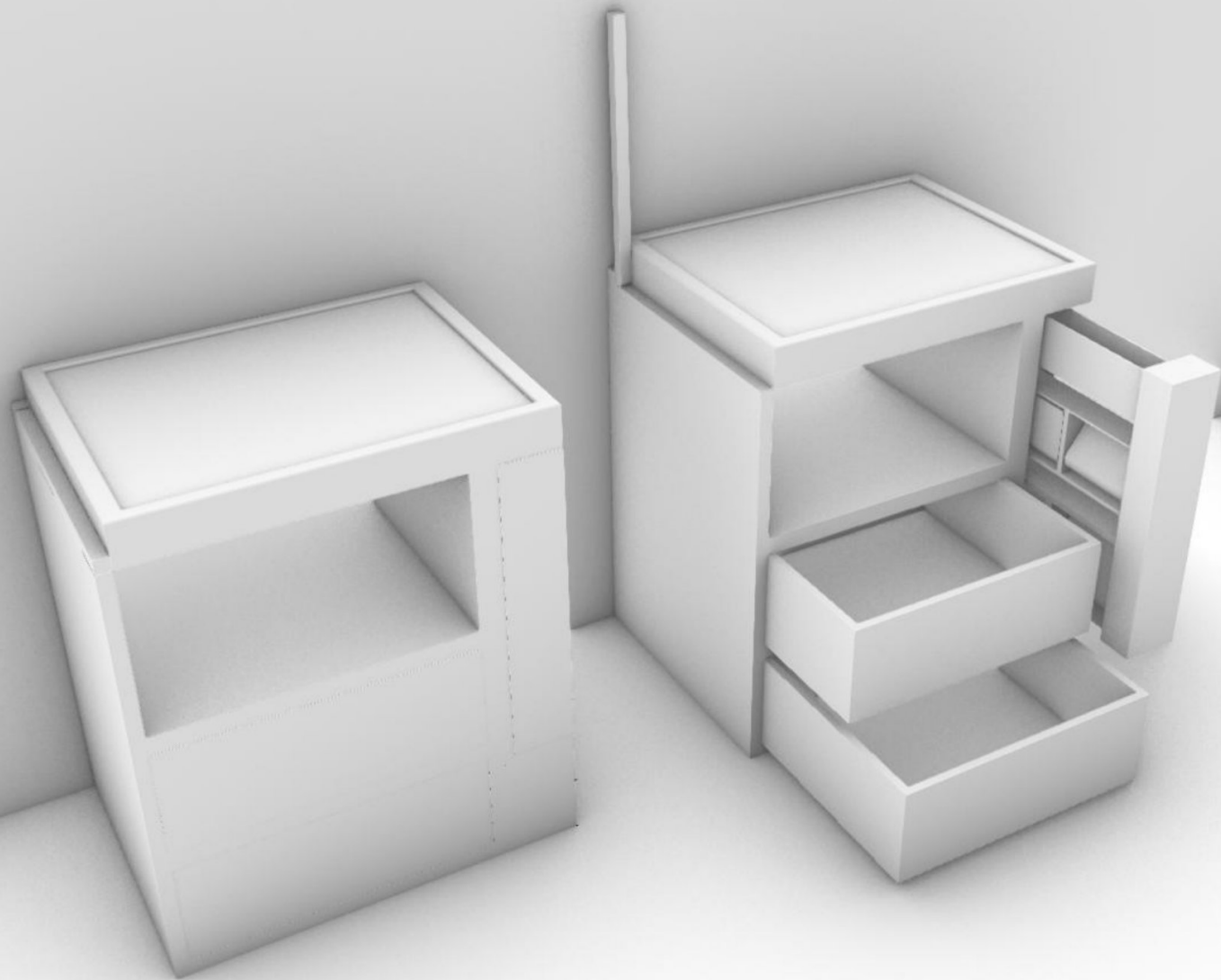
Lighting

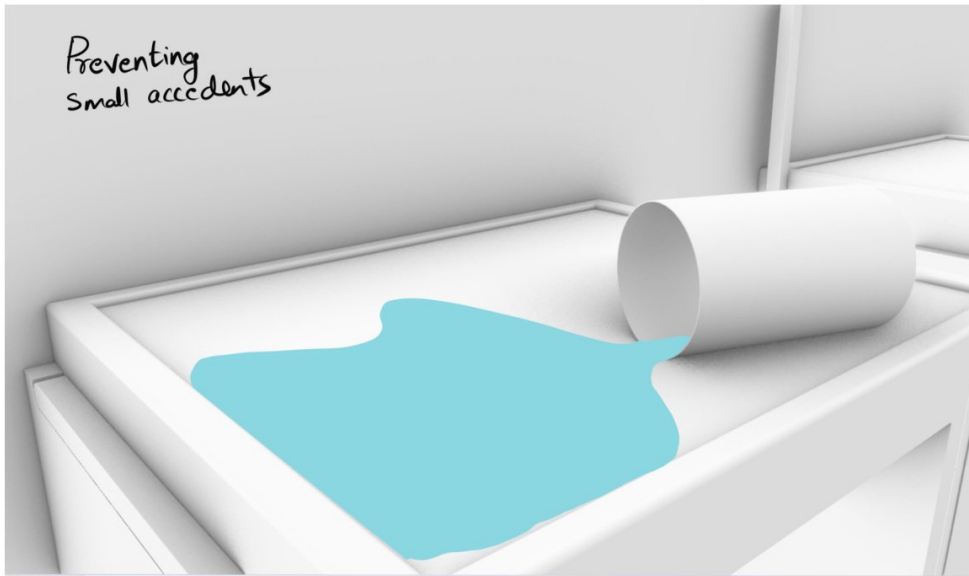
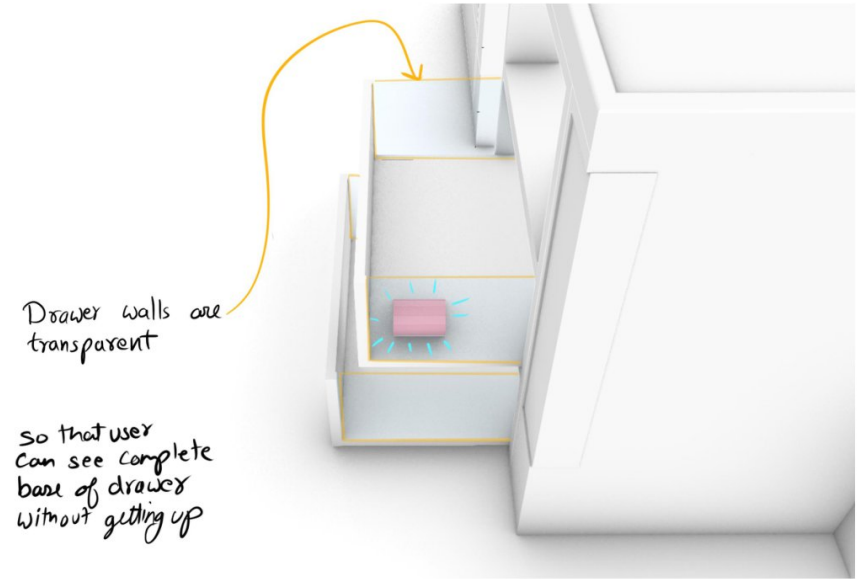
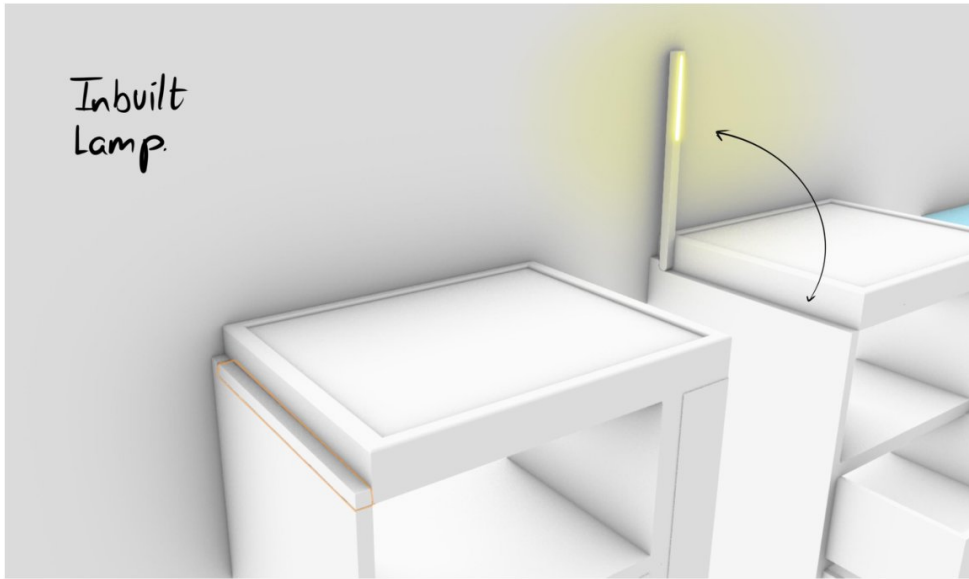
Detachable
light stick

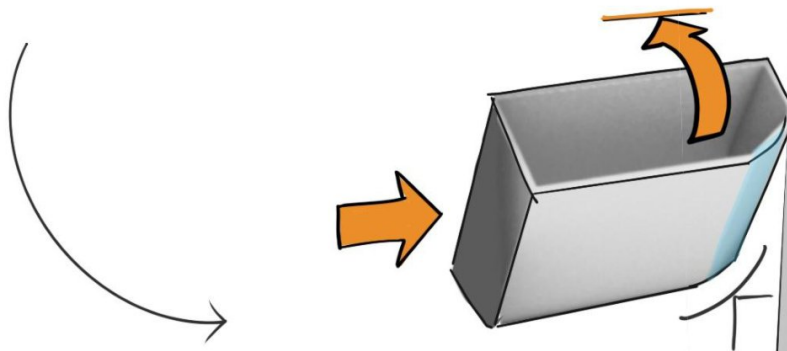
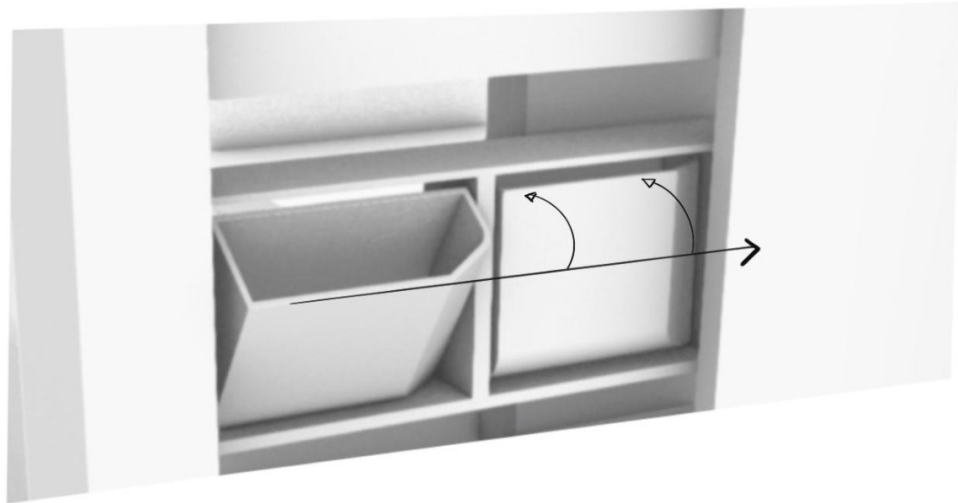
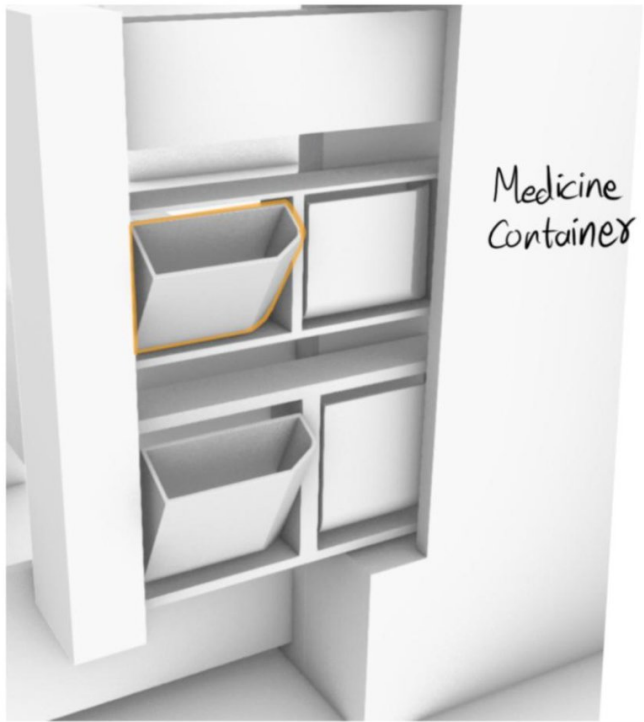


Concept 1

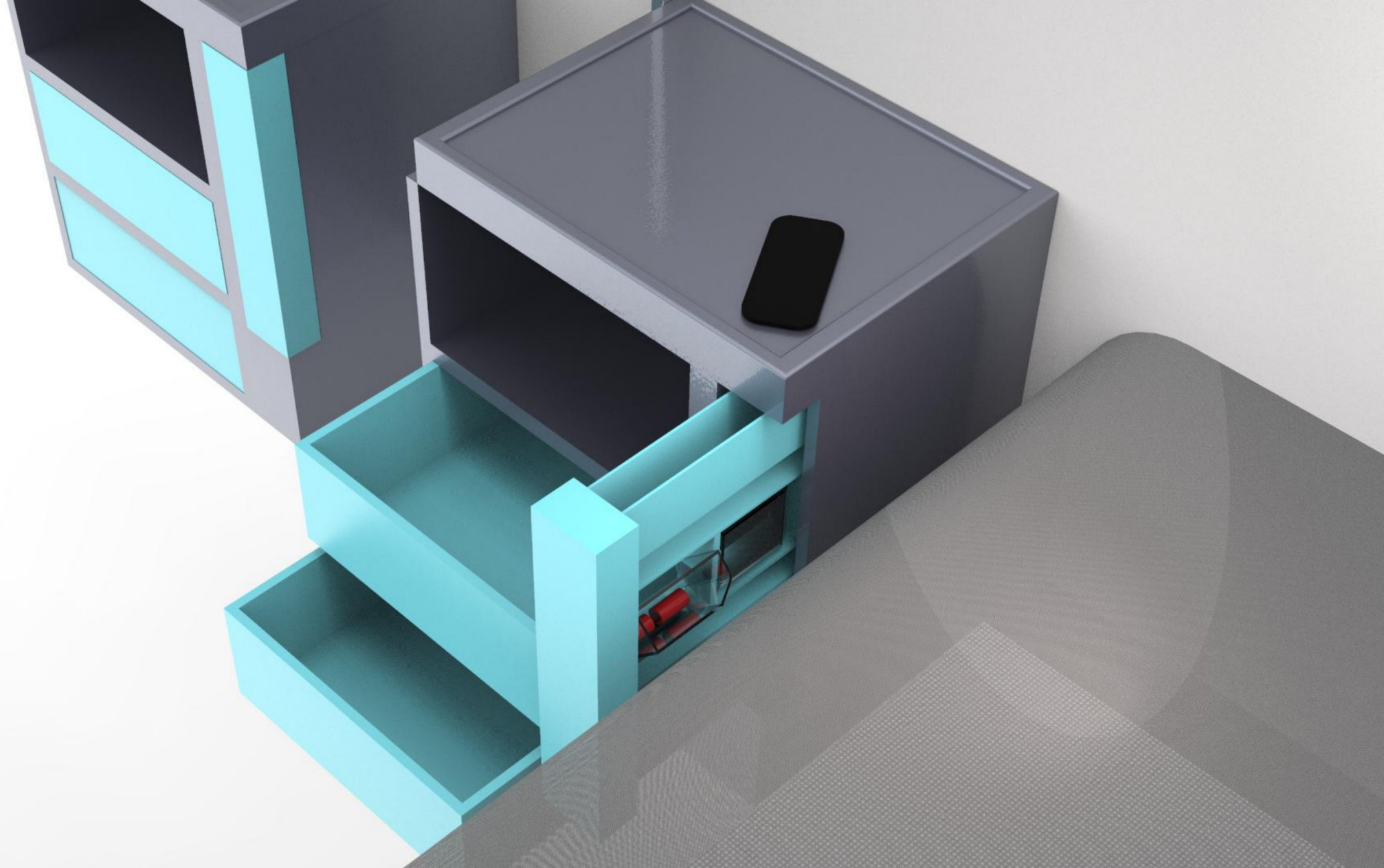


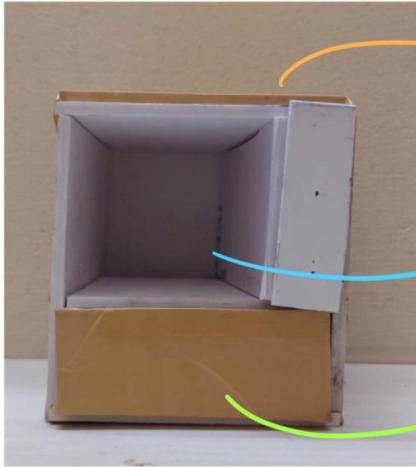






The form of the container will reorient the container in upright position





• Primary access items
• essential

• Secondary access items
• less essential

• Tertiary access items
• least essential



Spiritual Items
& note Books

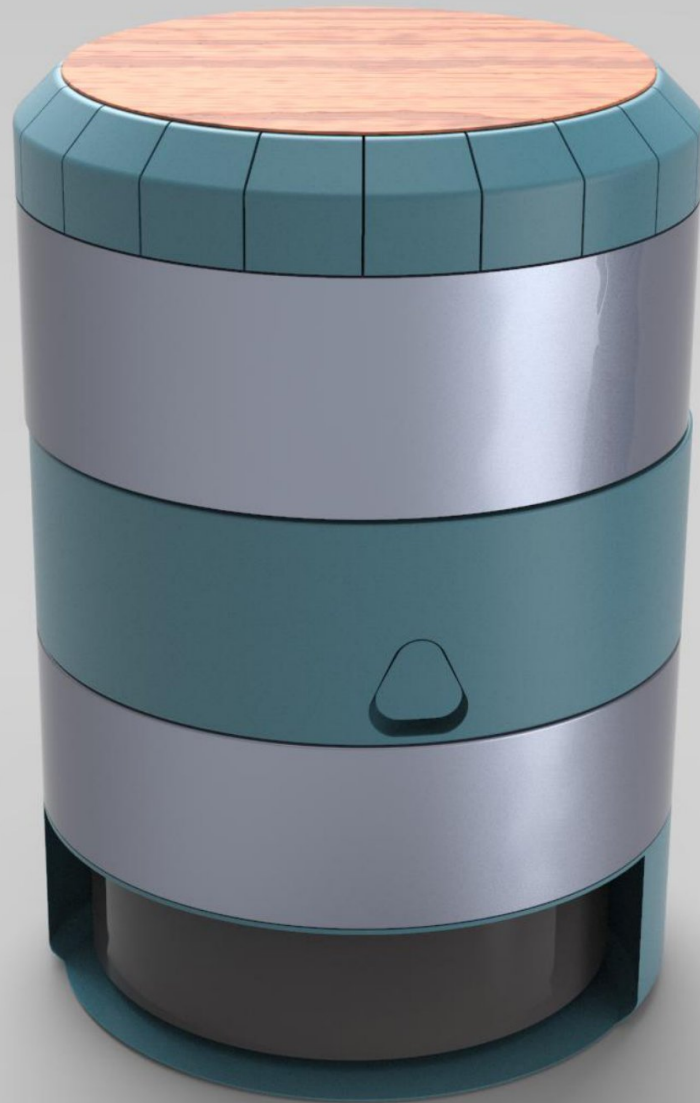
most essential & Regularly Required Items
like

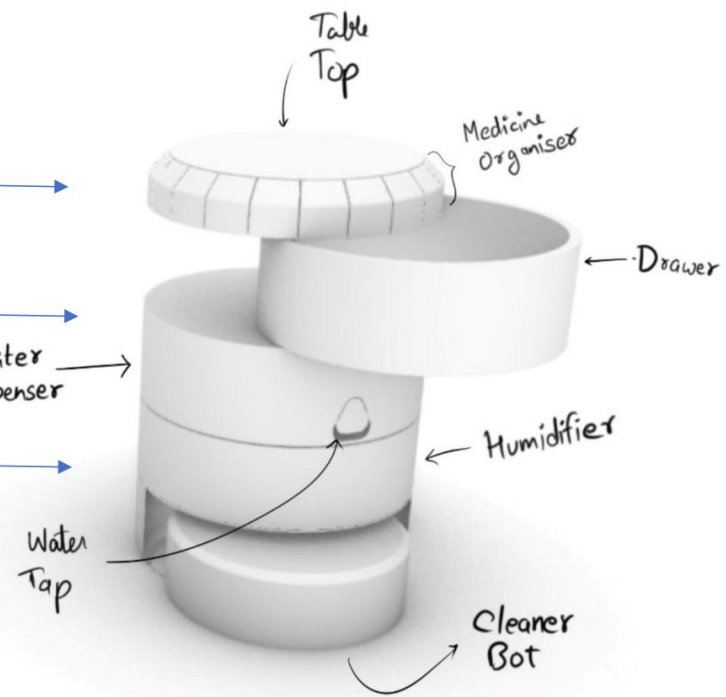
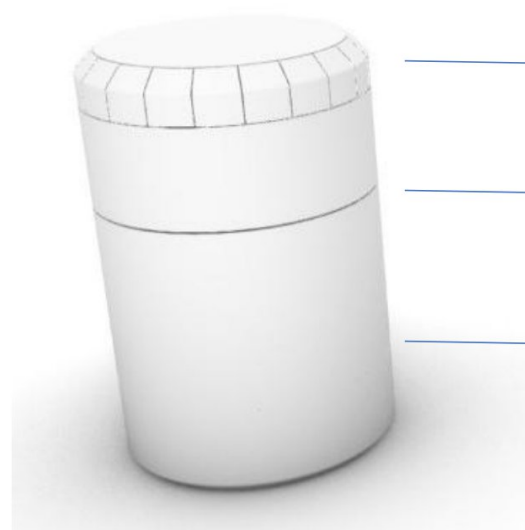
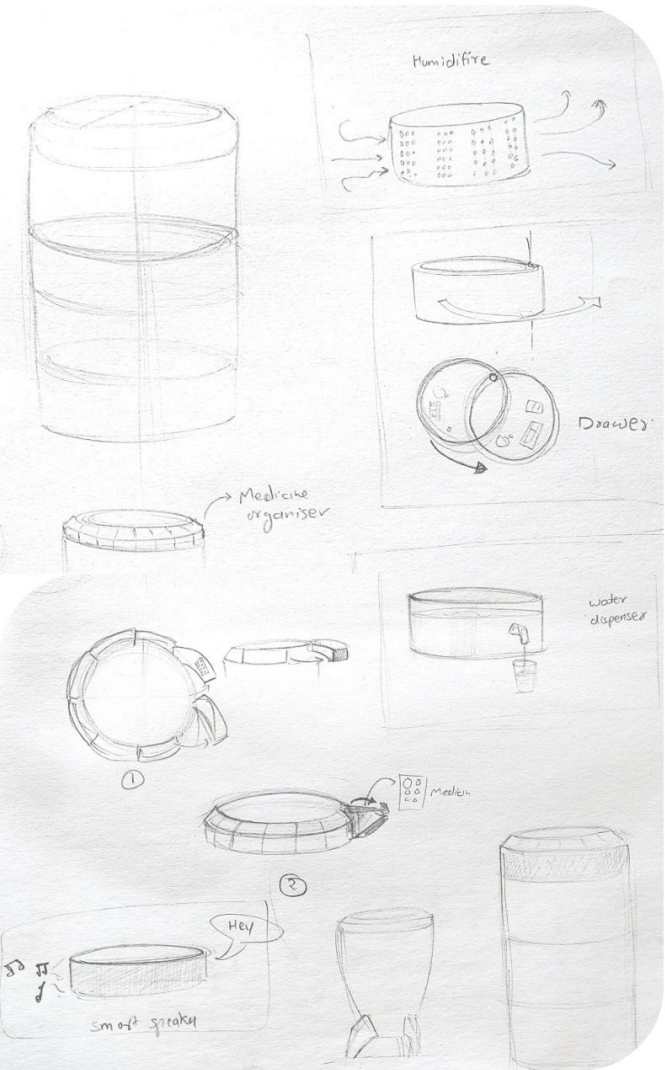


Regular medicines

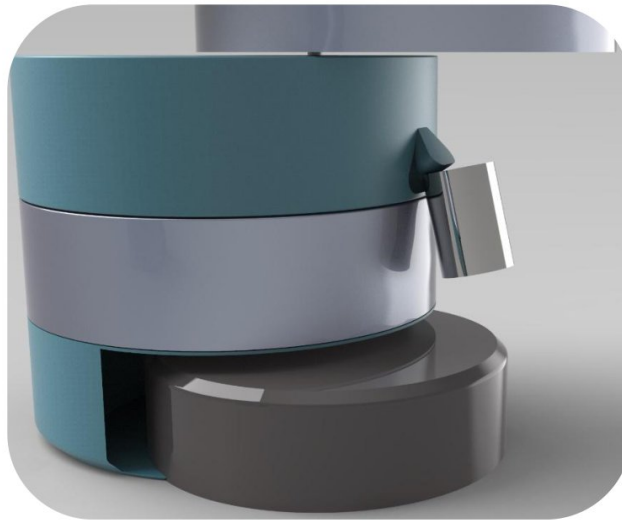
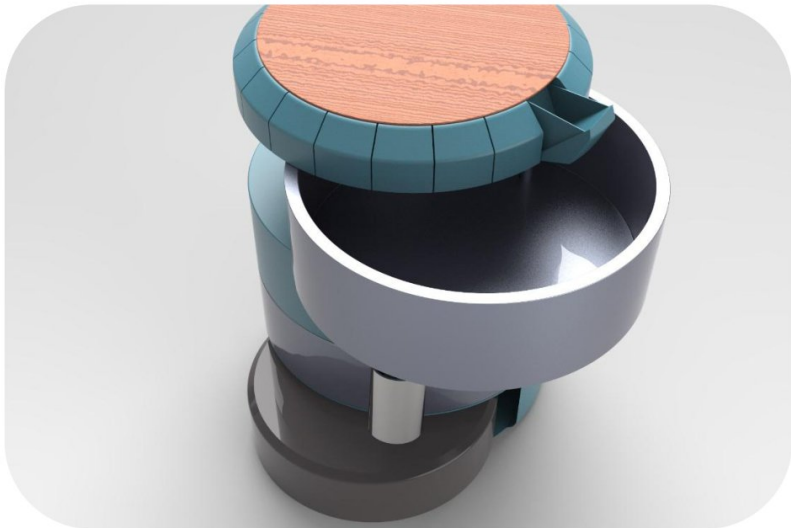
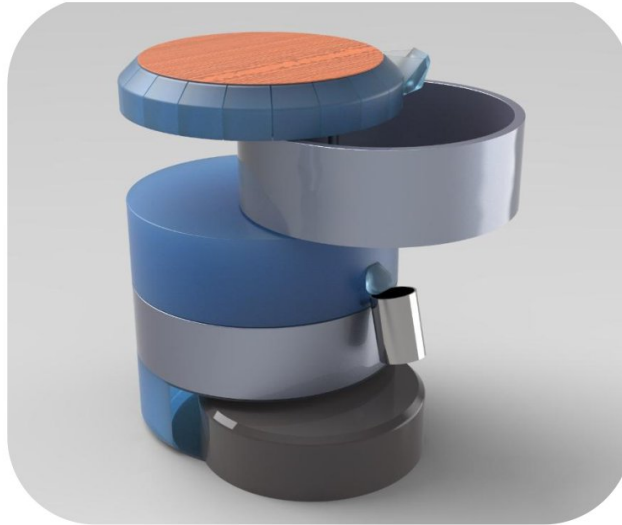
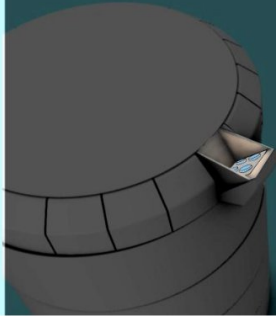
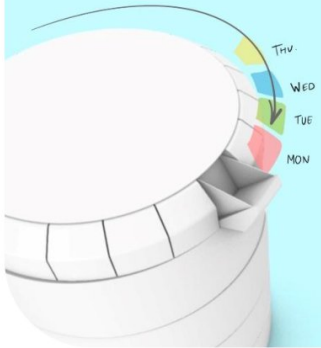
Irregular medicines

Concept 2





Scheduled Medicine Dispenser



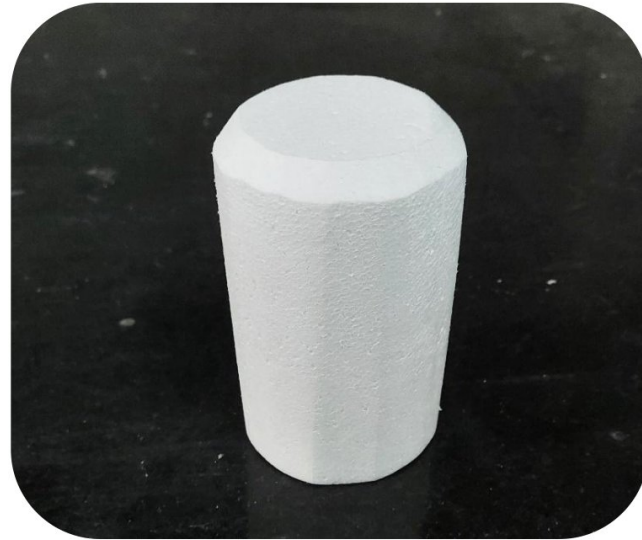
Renders

This concept includes

- a medicine dispenser with LED integrated to access medicines in the dark at night.
- There is a drawer which will open radially with sufficient space for storage
- there is a water dispenser below the drawer to reduce the placement of liquid on the top hence eliminating the chance of spills
- Third module is a humidifier to keep air fresh and clean
- Lastly the cleaning bot

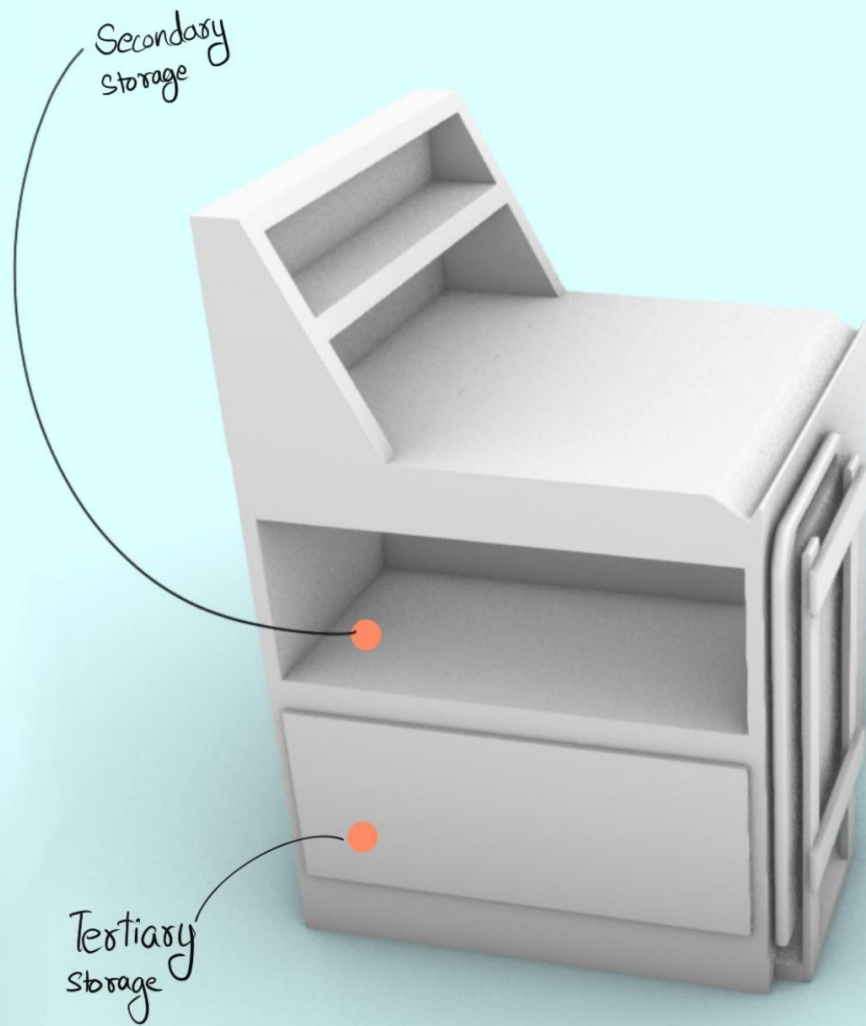
Mini Mock-up

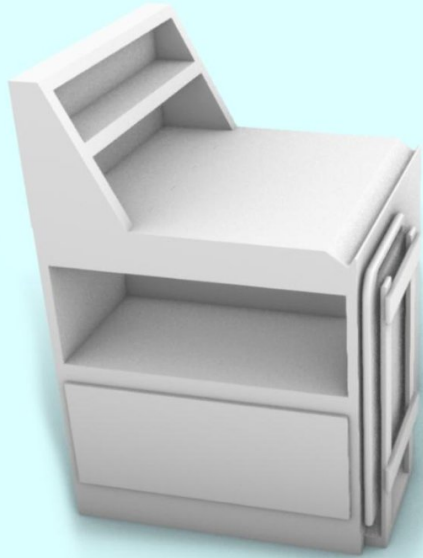
To better understand the form I used Styrofoam to create a mock-up to experience the movement of the modules and realize the form whether it fits in the context or not.



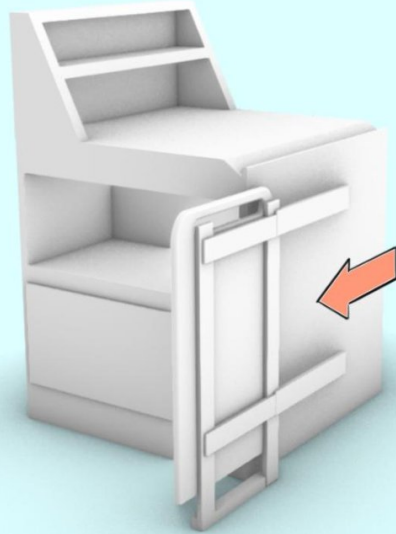
Concept 3



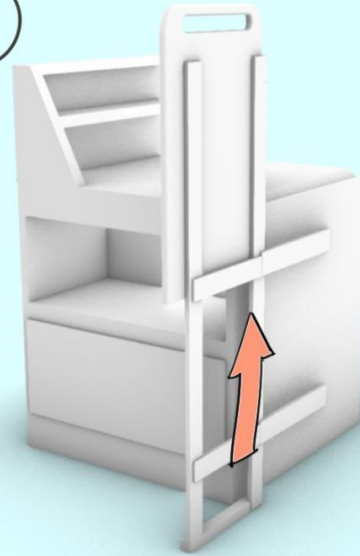




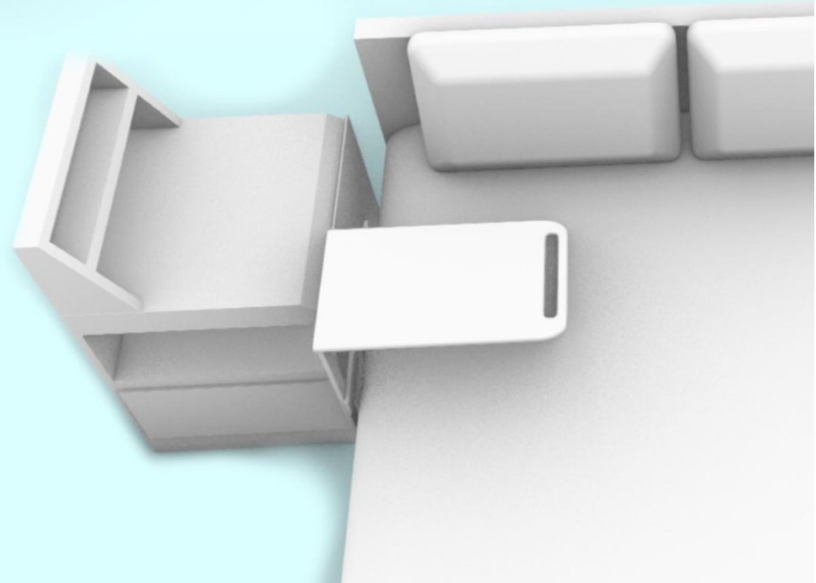
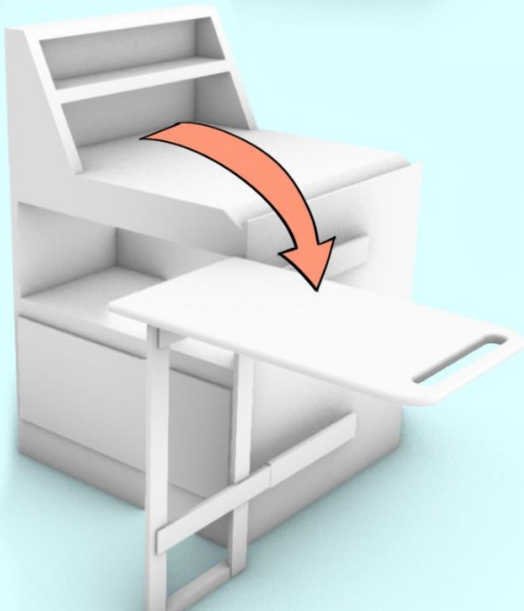
i

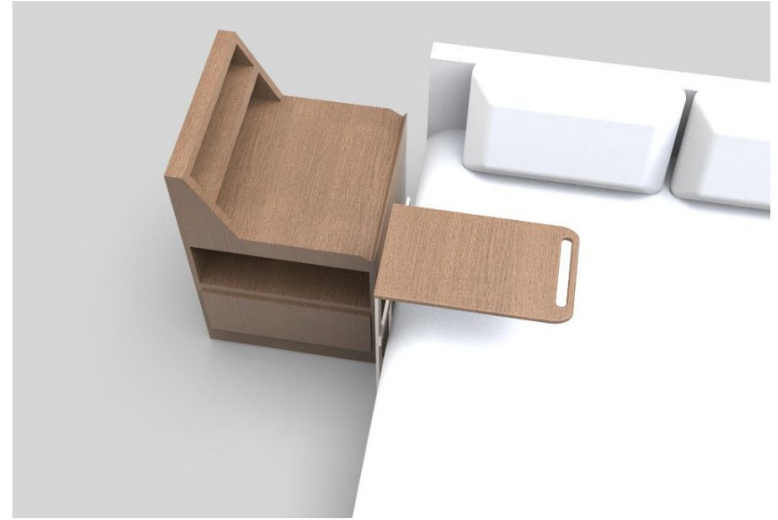


ii

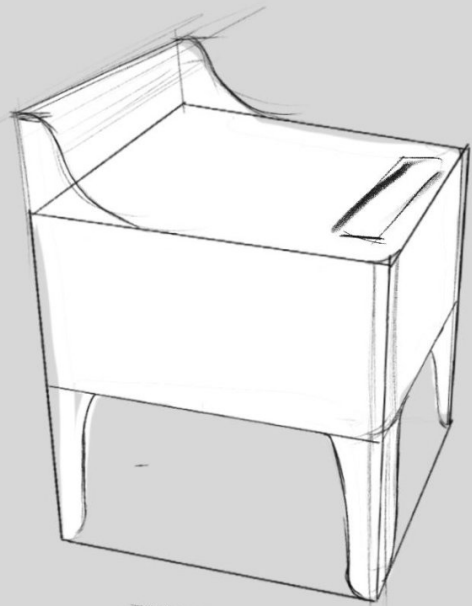
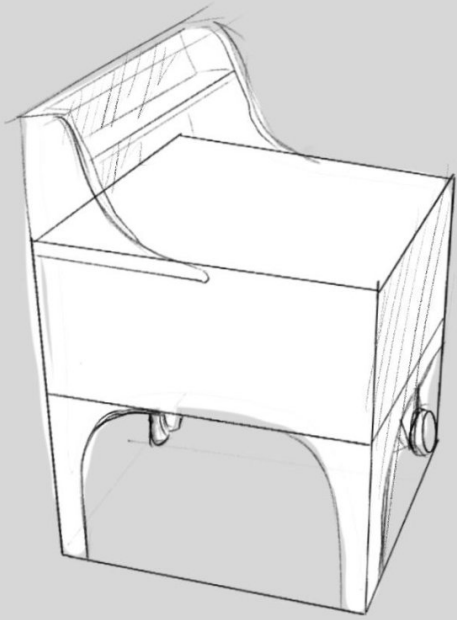


iii

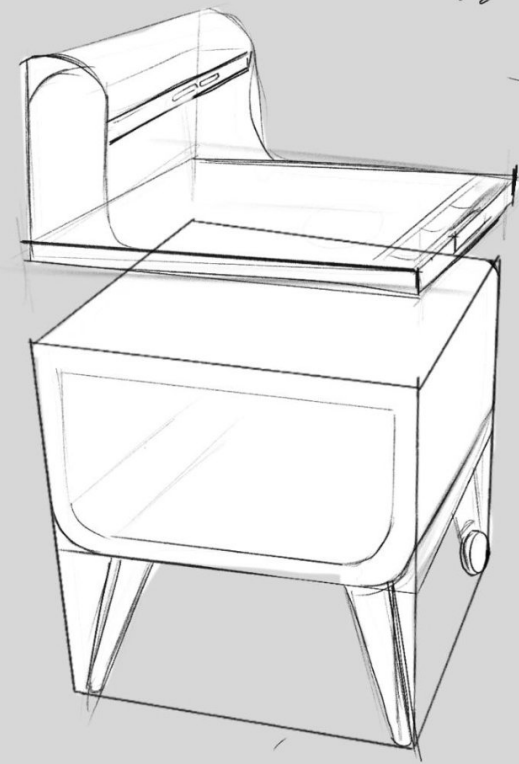
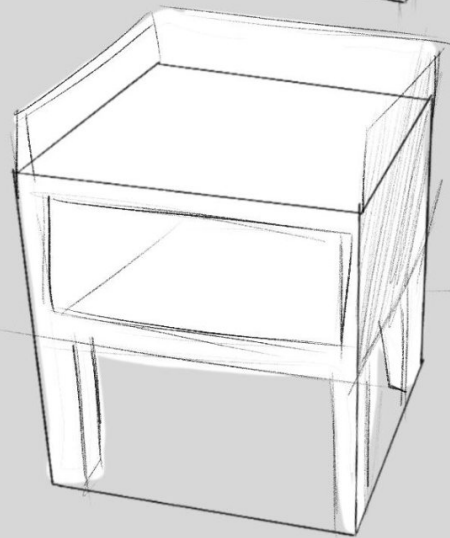
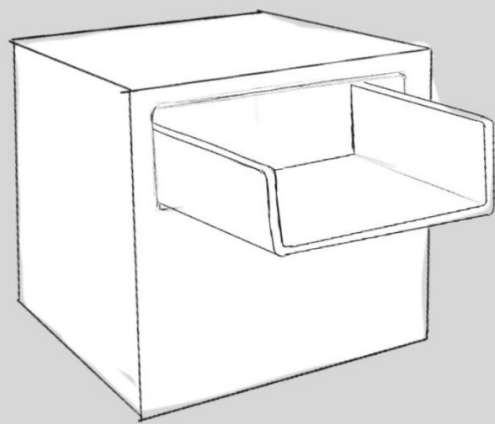




Final Concept

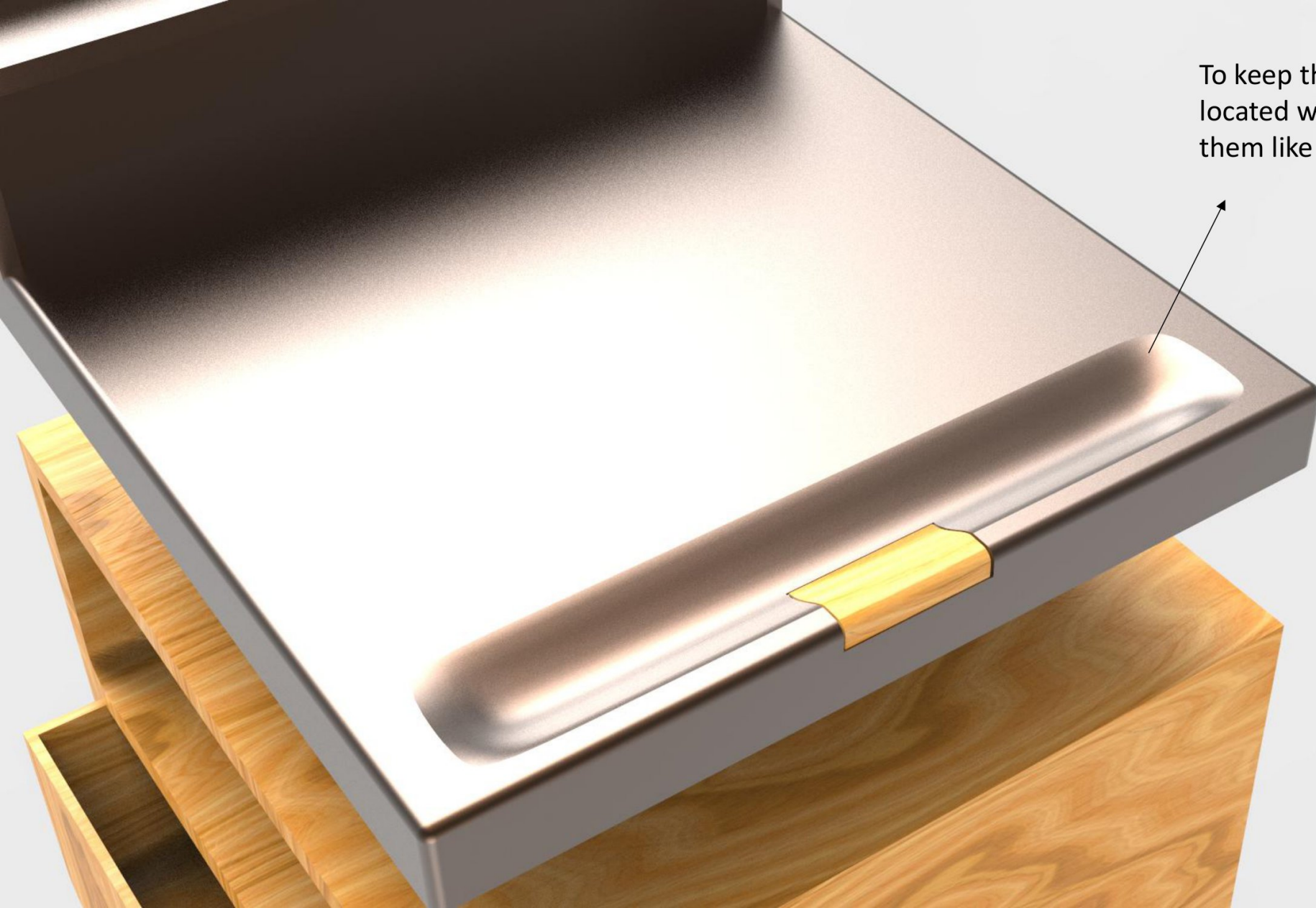


wireless charging





To keep things which can be located without looking at them like glasses

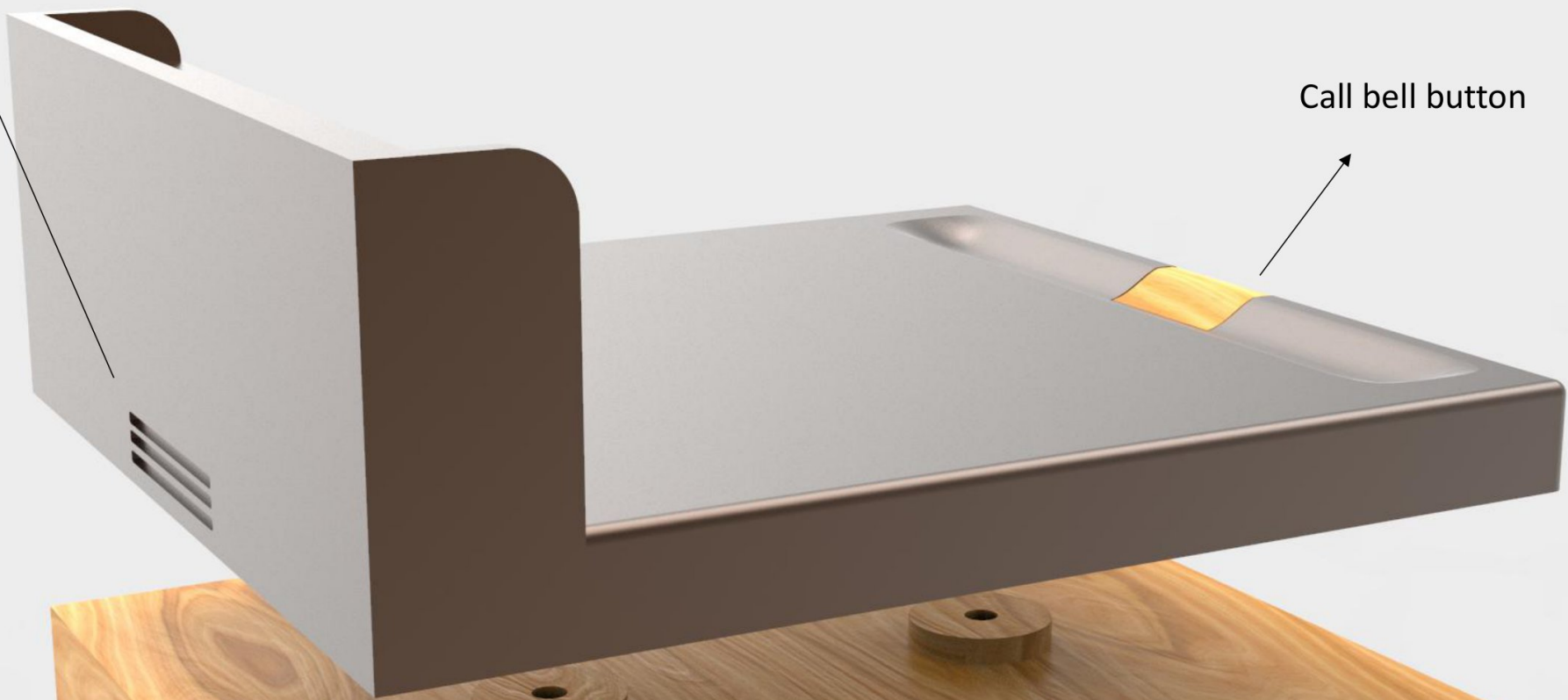


USB C sockets





Call bell button



4 screw to fix
base



Power supply

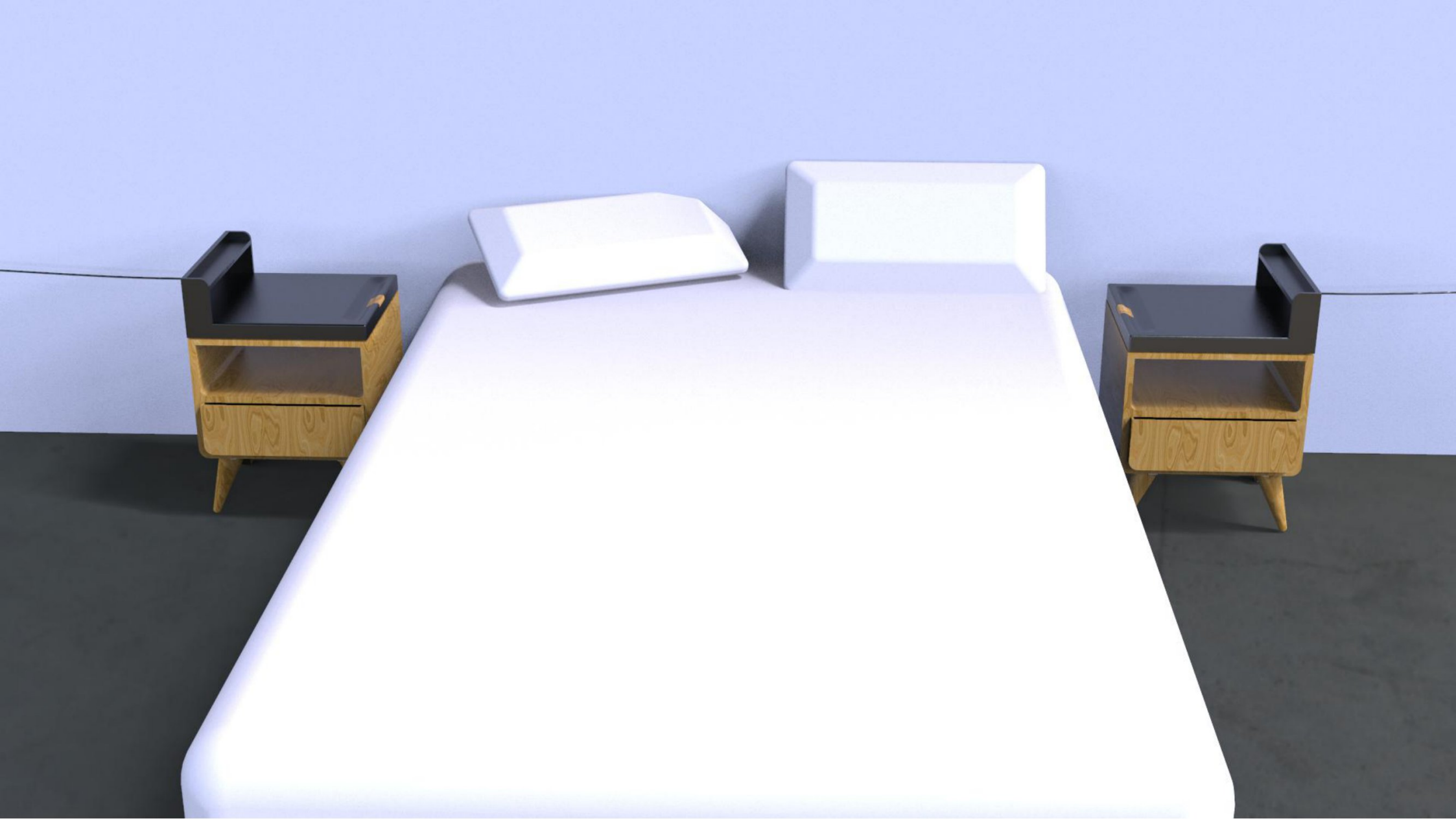


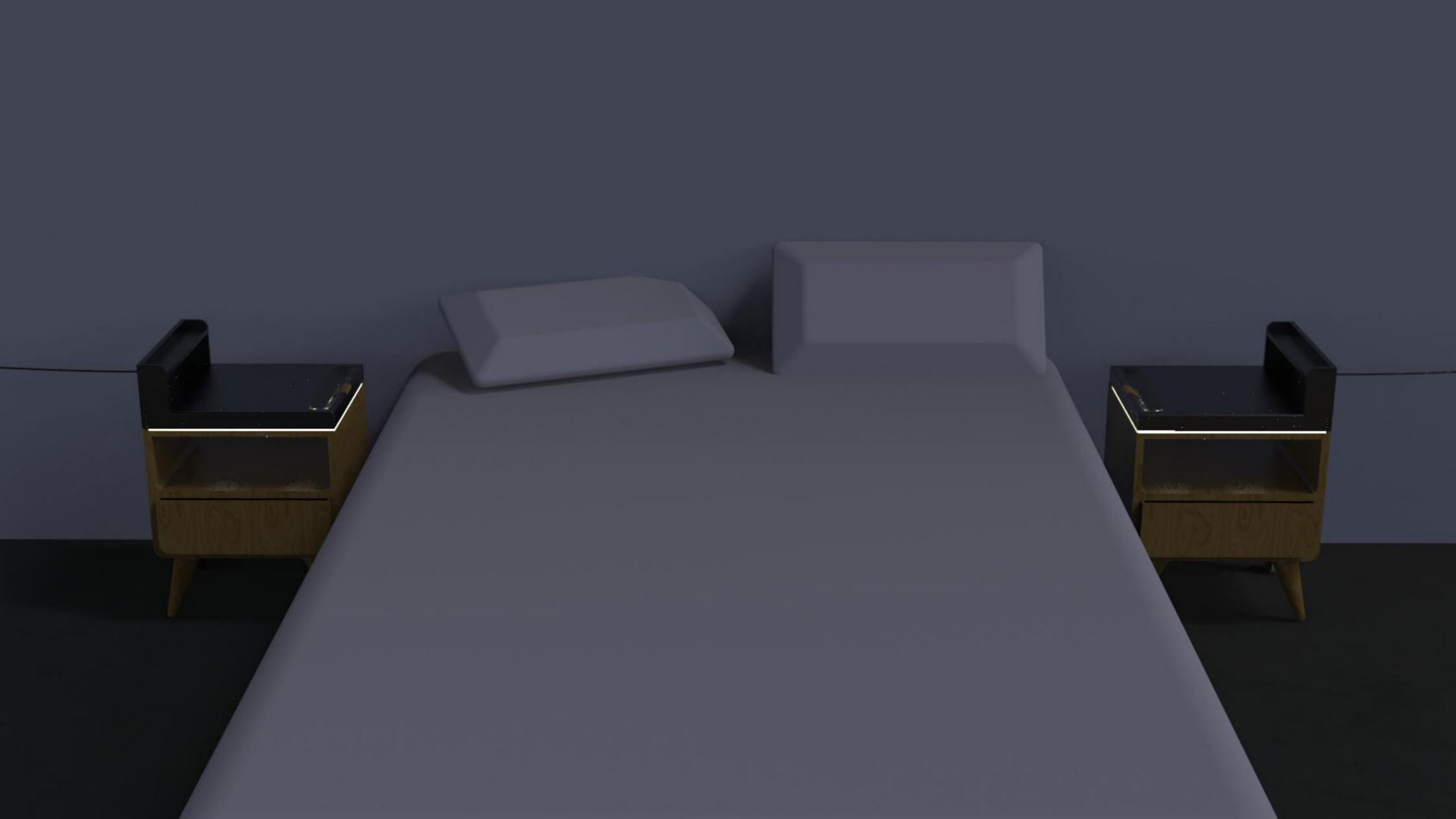
Top is screwed on the body with
2 screws from the bottom

Push to open drawer



Convertible for both LHS & RHS of
the bed

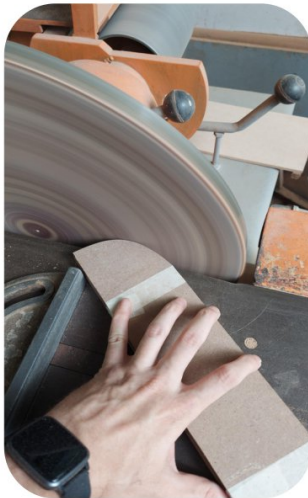
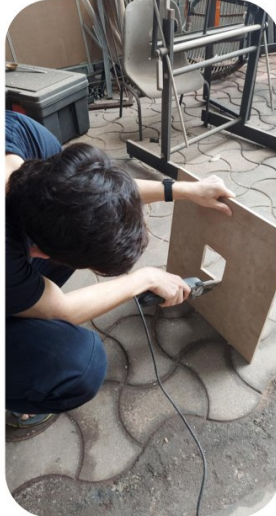




Prototyping

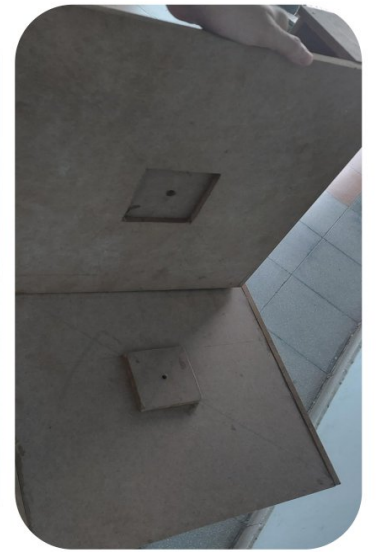


Making



Final Prototype





Design testing

I asked three of my friend to use this table for a day and give critical feedback on the this prototype, I summarized them about the brief before the testing I also gave them a brief presentation about the features of the table and how it functions

Ajit Dhebe



Mainak Mitra



Syam Lal



Feedback



Ajit Dhebe

"I like the design, it is a bit different from the regular bedside table.

I appreciate the integration of the slot to keep glasses so that elderly will become habitual of that spot

there could be improvement in adding new electronic features like smart assistant which keep them connected to outer world."



Ajit using slot to find locate his glasses without seeing for them



It is easy to move the table by lifting and rolling forward.



The extra cabin on the top is providing more space for primary & essential storage like medicines note books etc.

Also it is under my easy reach so no need to extend myself to pick up things



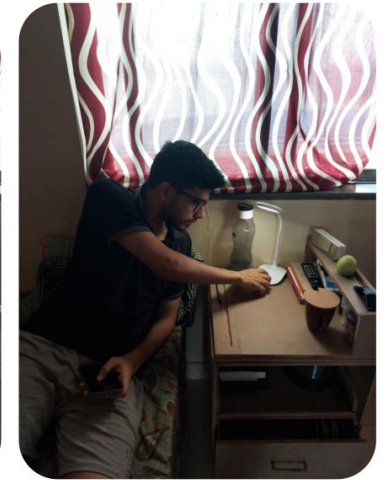
Mainak Mitra

"Well designed a must table to have.

You can make it more light weight and a medicine organiser could be integrated, also you can add screen on the table top it be cool and can futuristic.



Mainak using the casters to move the table to clean the back and bottom of the table finding it easy to move



He suggested that he found using opposite hand is more comfortable than the hand on the same side as the table.



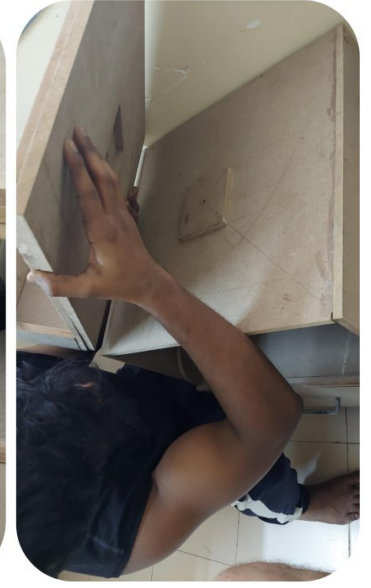
He tries to use the open drawer as he is finding it difficult to access things which are inside the drawer



Syam Lal

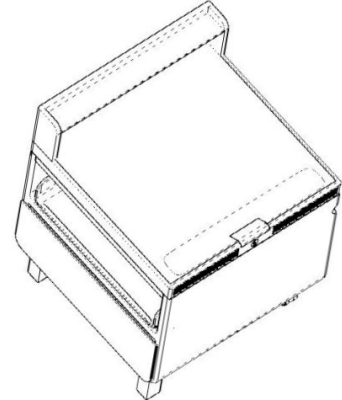
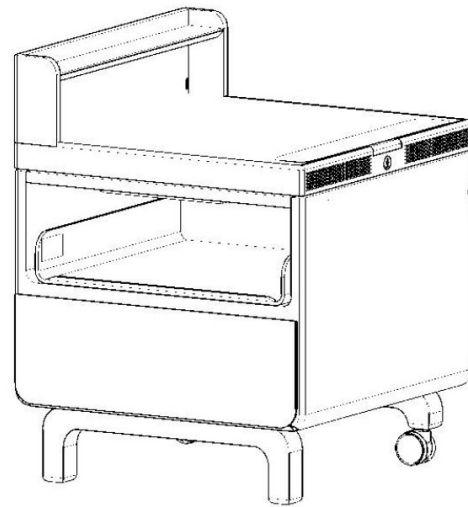
“
A good thing is given to
be behind this table, I like the
concept of how you have
achieved the symmetry
via asymmetric form.

Add lighting in the drawer
it is hard to see in the
dark,



Improved Design

Mitra

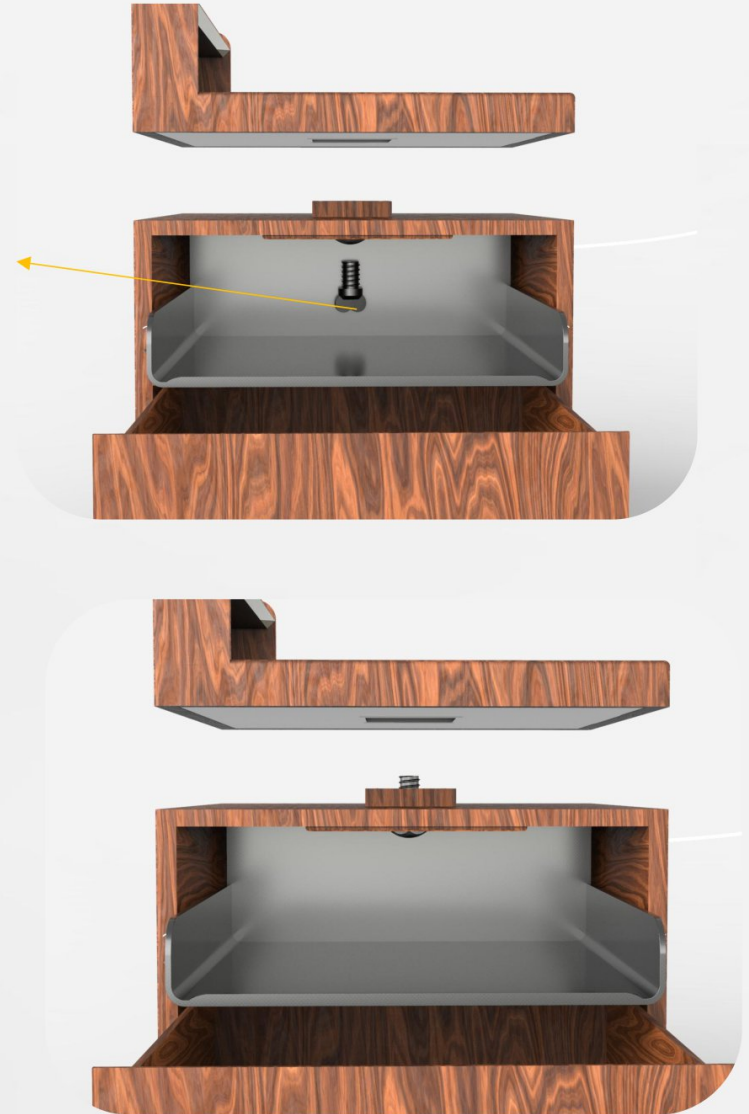




Casters on the back legs

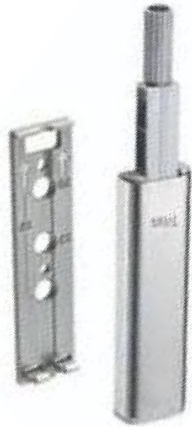


Butterfly wrench Screw



Push to open

To come up with the issue of drawer handle push to open drawers are integrated, to accomplish this we push latch is used along the drawer





Push latch
placement



Call bell

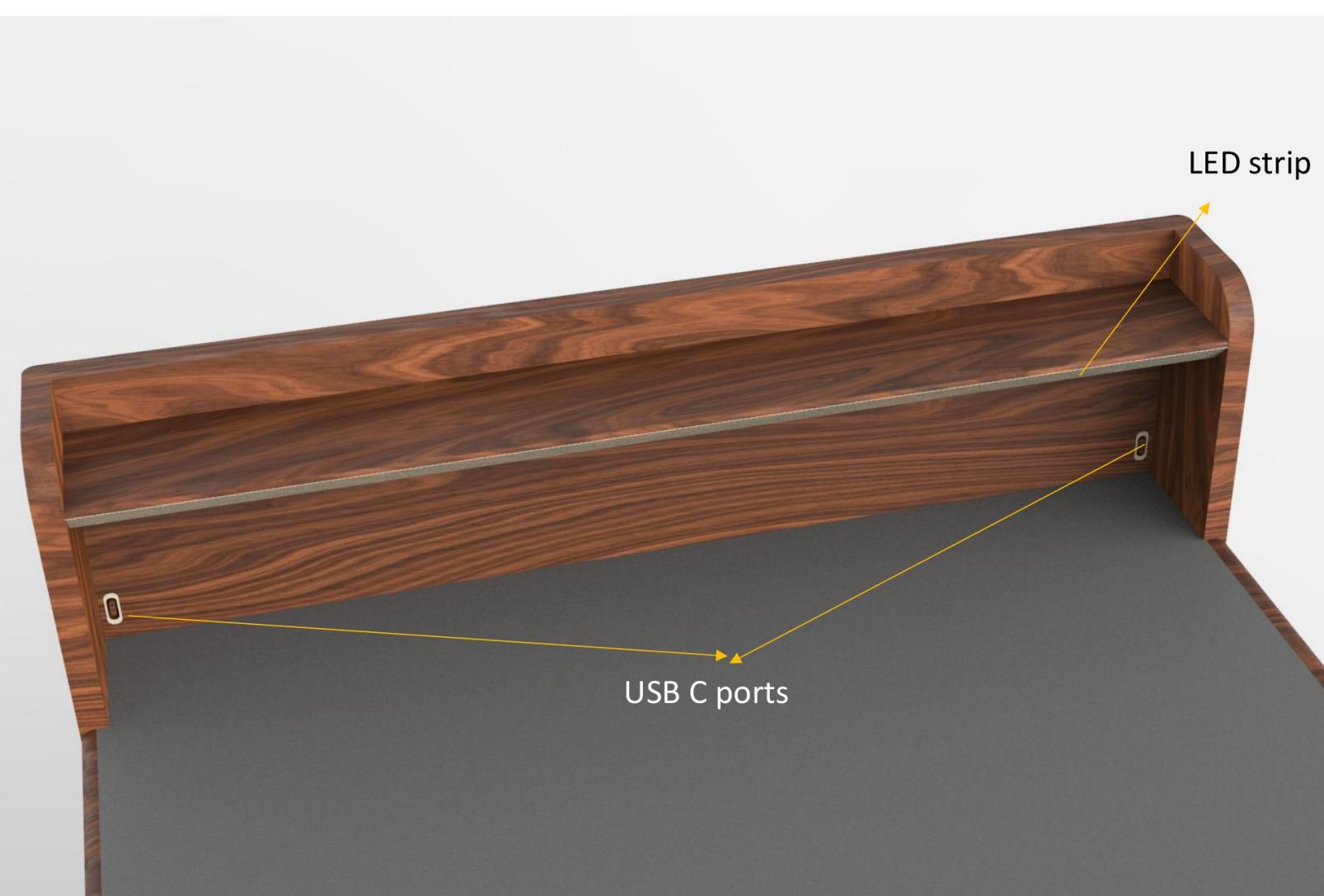
Smart assistant

It will always be on to ready to listen and interact with the user

Its three thirty pm

Hey mitra, Time kya hua

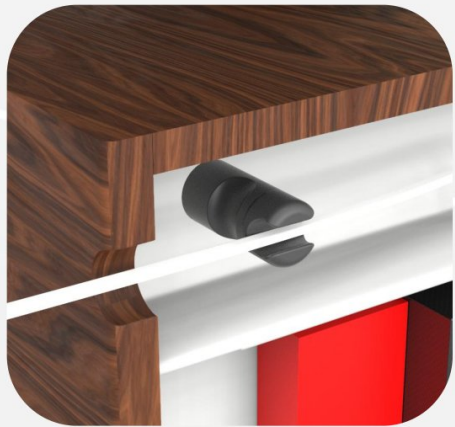




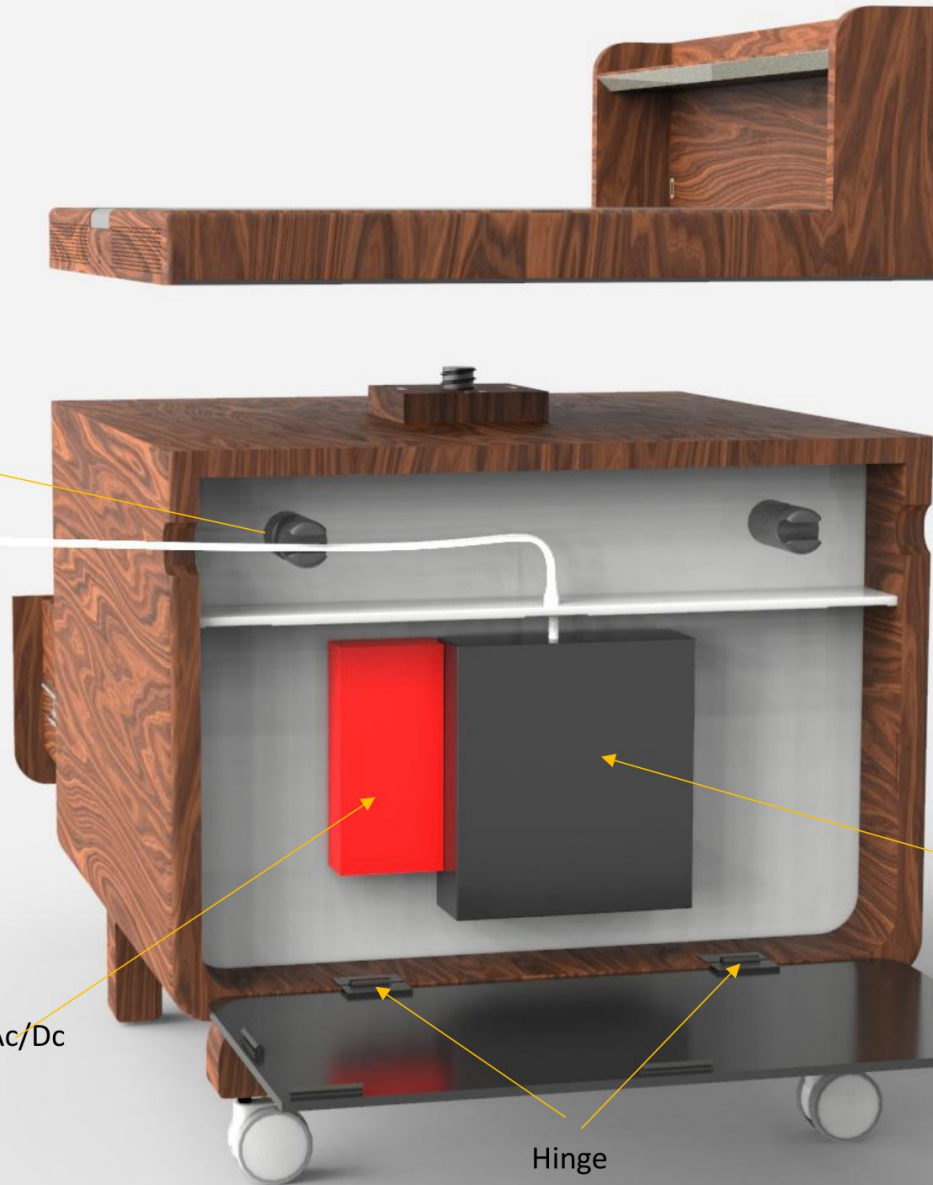
Plug & cable can be wrapped around while not in use



Power cable



Cable winder and supporter



220 volts Ac/Dc Converter

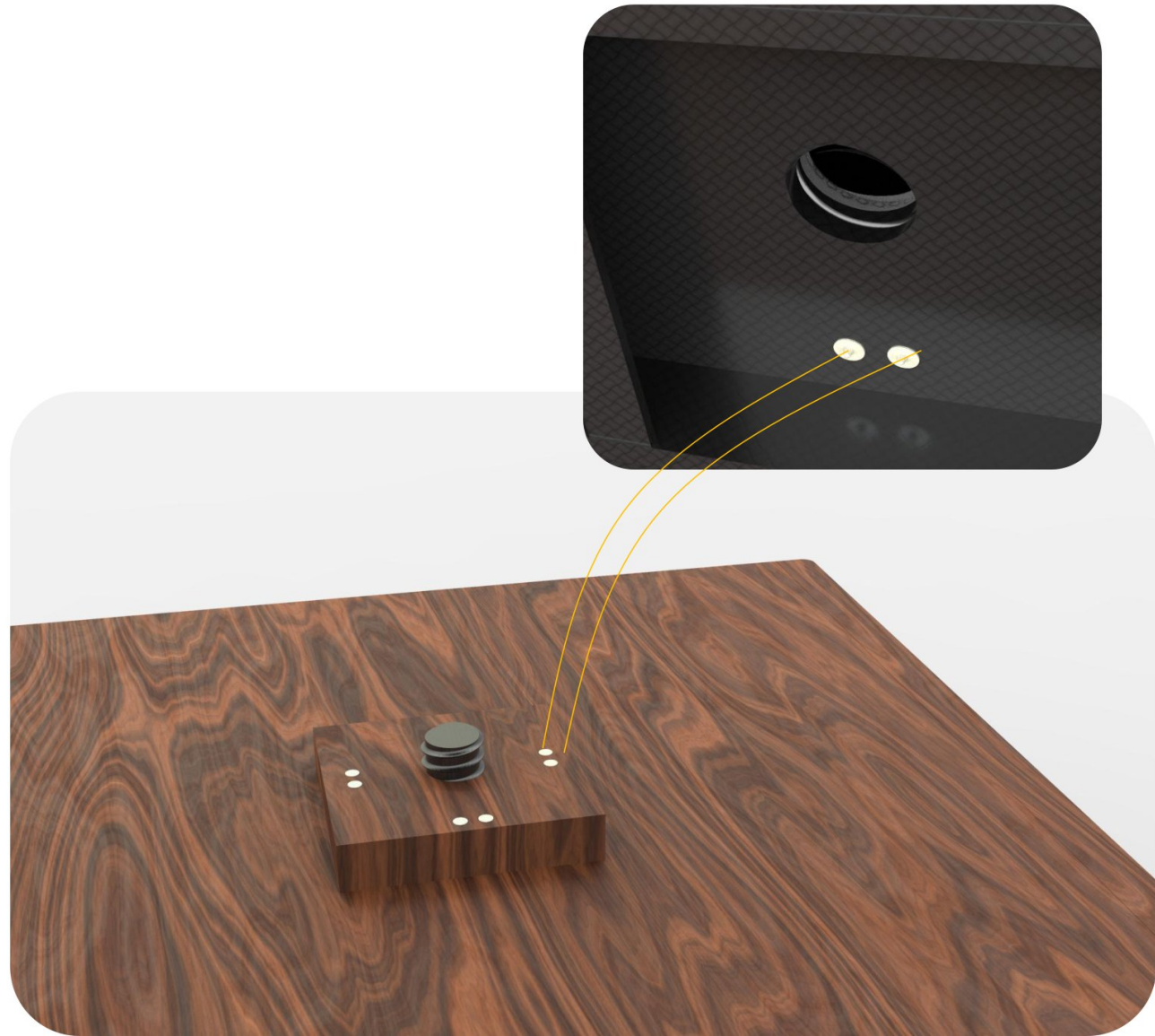
Battery

Hinge

Snap fit back panel

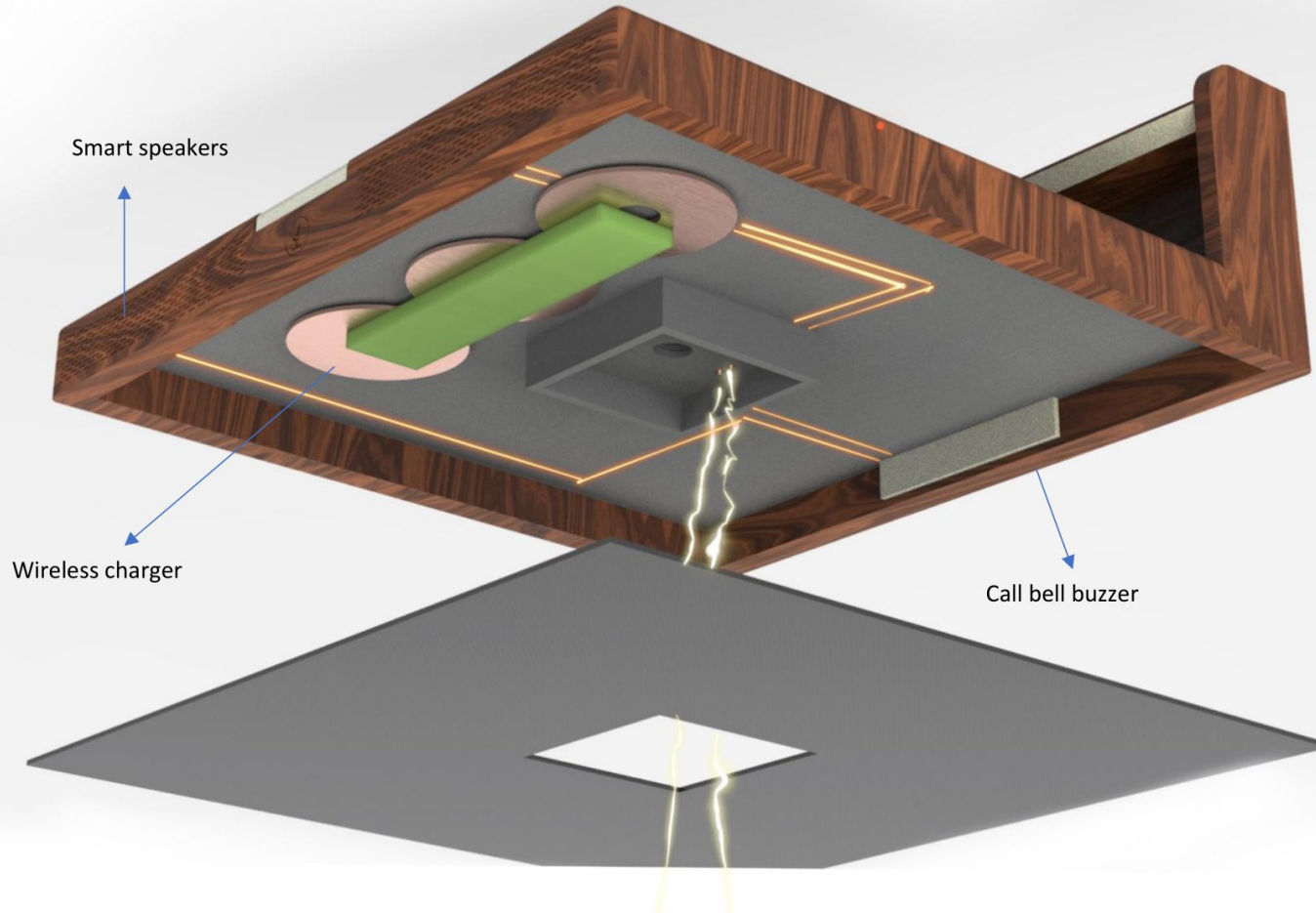
Connecting to the table top

Magnetic connectors which are used in magnetic chargers can be used to transfer DC current from the base of the bedside table to the top



Wireless charging top

To Charge wirelessly a wireless charger is integrated on the table top

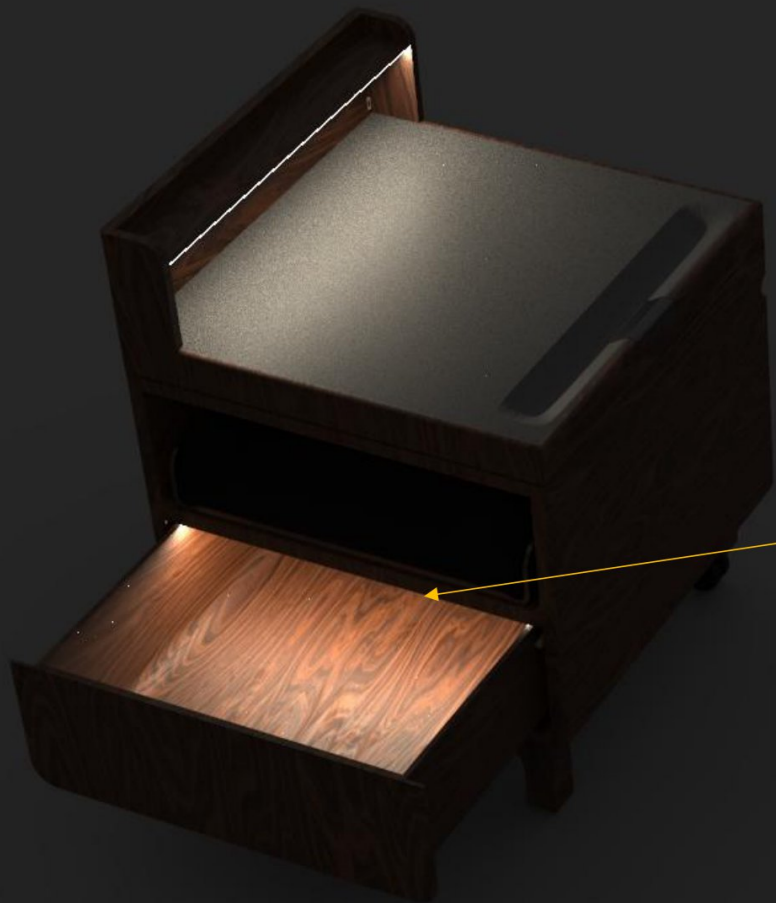


Lights

On the top lighting to locate things on the top (150 lumens)

Foot light for clear vision of the floor (20 lumens)





Drawer light (60 lumens)
to easily find things
inside the drawer

Knocking interface

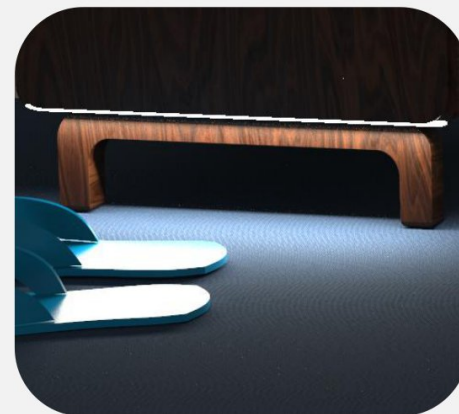


● ● ON
● ● OFF

● ● ● ON
● ● ● OFF



2 knocks to activate on table lamp & again to turn it off



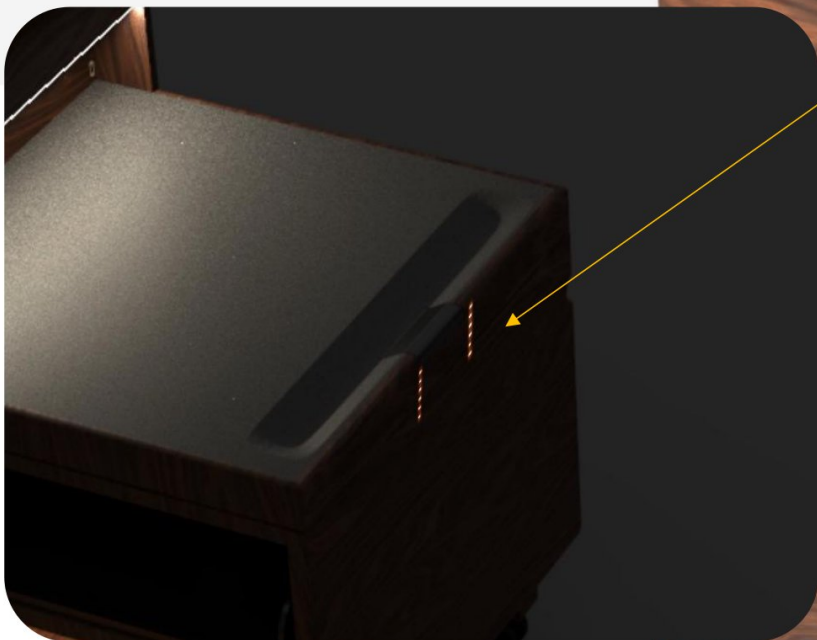
3 knocks to on foot light & repeat it to turn it off



Drawer lights will always turn on when you open them

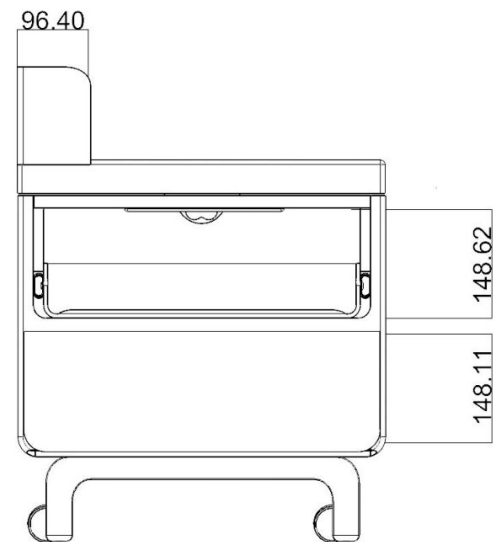
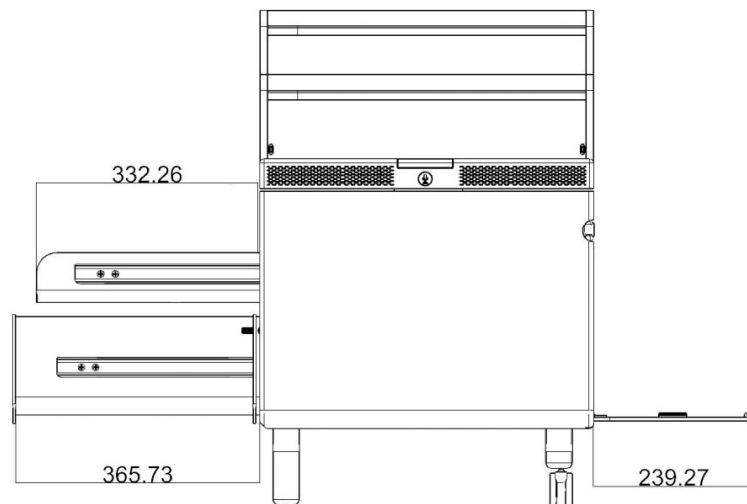
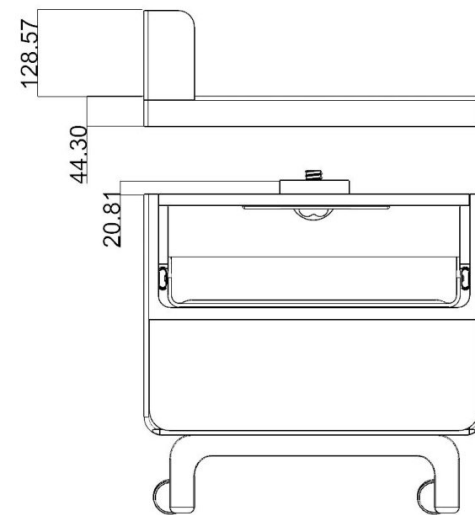
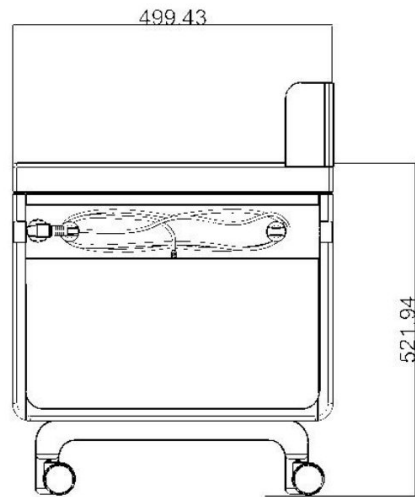
Low Battery indicator

Low battery indicator is located within the speaker grid. It blink in red but not continuously as it might irritate the use.



Low battery indicator in Dark

Dimensional drawing



Thank you

References

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