Portfolio

NIRMAL KUMAR.A
PRODUCT DESIGNER

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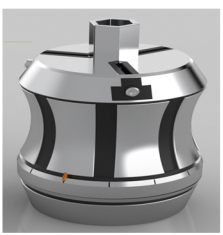
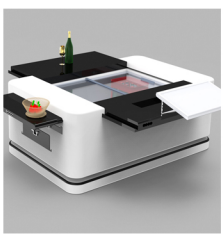
EDUCATION:
1. Diploma in Tool n Die making
2. B.Tech Mechanical
3. P.G in Product Designing

SOFTWARE SKILLS:
Alias, Cre-o, Keyshot, Solidworks
Photoshop, Illustator, Sketch book.

WHAT I'VE DONE WITH MY LIFE SO FAR





3 Tool in 1 = Quick Tool

QUICK TOOL

Combination of {Allen key + sockets + ring spanners}
Adjustable tool tips ranging from 4mm to 24mm
Tip outer hexagon as allen key and inner as socket
Tool tips can be replaced if worn-out
Design inspired from drill chuck
Working mechansim from lathe chuck

Market study

Product / Description						
1. Product name	steel hexagon spanner	universal wrench	adjustable spanner	socket wrench	schrodinger multi tool	wrenchit
2. Product size	15.3×4.8 cm	12×6×1 inch	200×50×14 mm	255×50×14 mm	90×40×25 mm	13.4×2.3 cm
3. Material	steel	alloy steel	iron-nickel alloy	stainless steel	hardened cast steel	stainless steel
4. Colour	silver	silver	silver metallic	silver	nickel & black	silver
5. Tools range	8 to 17 mm	9 to 42 mm	max 24 mm	12-19/8-21/10-22 mm 8 in 1 socket	2 to 6mm allen key 6&8 socket	6 to 13 mm bits

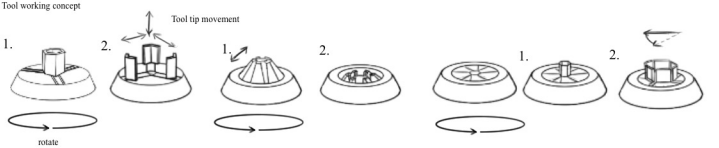
Product design specification - QUICK TOOL

1. Product name — Quick tool
2. Product size — Dia 26 mm×45mm height
3. Material — Body - steel; Tool tip - hardened cast steel
4. Colour — Silver
5. Tool range — 4mm to 24 mm allen key size; 2mm to 22 mm socket size

working mechanism insipred from lathe chuck

design insiprition from drill chuck

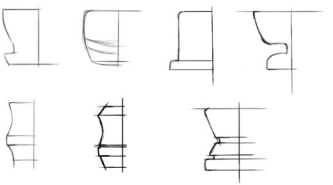
Tool working concept



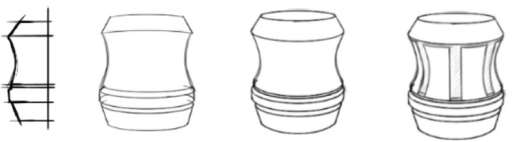
1. minimum tool size in closed condition

2. maximum tool size in fully opened condition

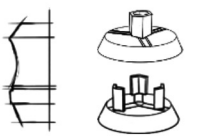
Body design concept

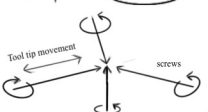


concept detailing

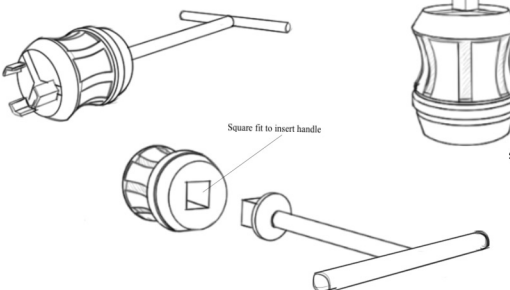


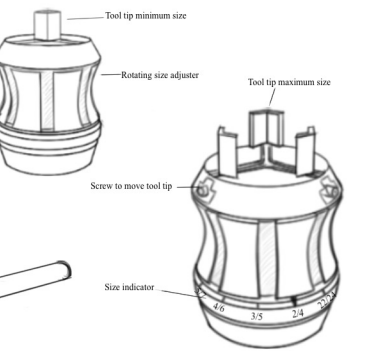
final concept

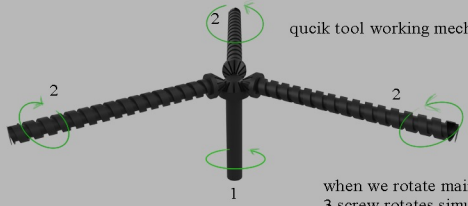




when we rotate the main gear the screws rotates
which will make the tool tip to move front and back .

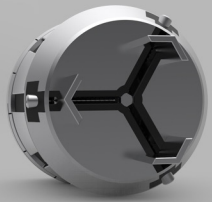






qucik tool working mechanism

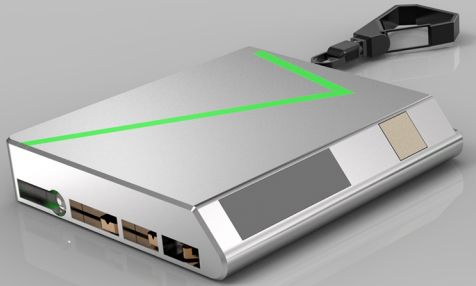
when we rotate main gear the 3 screw rotates simuntanuiosly leading the tool tip to adjust front and back .
1. main gear
2. adjusting screws

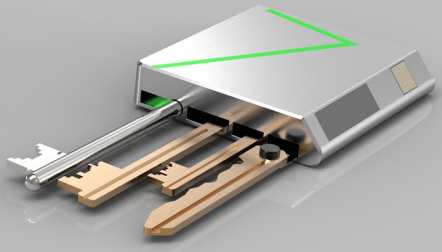


replacable tool tips when worne out

Handle & gun holder slot

Air gun, T-handle, L--handle can be used in quick tool

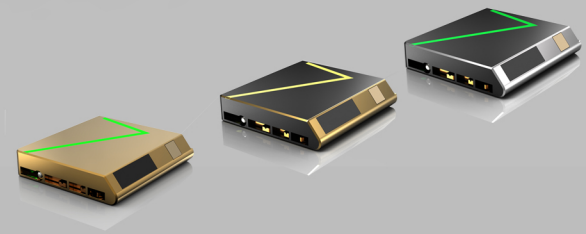




key finder and holder

That early-morning scramble to find your keys before you leave the home doesn't have to be so frantic if you've got a key finder and holder that connects with smartphone or tablet via bluetooth You then locate your item via the free app on your smartphone and GPS..

key finder has four key slot where you can insert your personal keys which can be opened via finger print access. key finder and holder has led lights fitted in side and top faces and 90LB audiable alert noise which helps user to locate in darkness.key finder and holder is attach with 2-way finder button to locate your smartphone and tablet while missing.



Data collection

user study

market study

Brands / Features						
BRAND NAME	Tile mate	Trackr bravo	Chipolo plus	Duet protag	Nut	Pally smart finder
RANGE (ON AVERAGE)	68 feet	70 feet	66 feet	70 feet	65 feet	93 feet
BATTERY TYPE	Nonreplaceable battery	Replaceable CR2016 battery	Nonreplaceable battery	Replaceable CR2016 battery	Replaceable CR2016 battery	AAAA battery
COMPATIBILITY	Android, iOS	Android, iOS	Android, iOS	Android, iOS	Android, iOS	Android, iOS
GEOFENCE FEATURE	Yes	Yes	Yes	Yes	No	Yes
AUDIBLE ALEART NOISE	88 dB	85 dB	90 dB	75 dB	75 dB	115 dB
GPS NAVIGATION & TRACKER	2-way tracking	2-way tracking	2-way tracking	2-way tracking	2-way tracking	1-way tracking
DIMENSION	1.3×1.3×0.2 inches	Dia 1.2×0.14 inches	Dia 1.5×0.23 inches	1.1×1.1×0.2 inches	1.4×1.4×0.22 inches	1.5×0.9×0.52 inches
LED LIGHT	No	Yes	No	No	No	No

mood board

1.stress

2. Depression

3. Time waste

4. Tension

Bench marked product

Tile mate

specification

weight	6.1g
size	34344.65 mm
sound	88 decibel melody
charging	none
keyring hole	yes
Technology	bluetooth LE
Battery	Nonreplaceable
Compatibility	iOS, Android
Water resistance	up to IP5 standards

Quality functional deployment

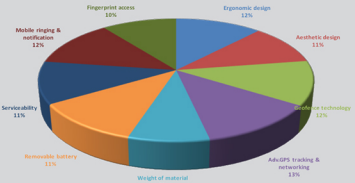
POSITIVE ✤
NEGATIVE ▬

TECHNICAL REQUIREMENTS / CUSTOMER REQUIREMENTS	Customerpriority	Ergonomic design	Aesthetic design	Geofence technology	Adv.GPS tracking & networking	Weight of Material	Removablebattery	Serviceability	Mobile ringing & notification	Fingerprint access	Our product	Tile mate	Tracker bravo	Planned rating	Improvement	Sales	Overall weighing	Total %
User friendly	5	♦	♦	♦	♦	♦	♦	♦	♦	♦	5	5	3	5	1	1.1	5.5	10.8%
Cost	5	♦	♦	▲	♦	♦	♦	♦	▲	♦	5	5	5	5	1	1.1	5.5	10.8%
Reminder alarm	5	♦	▲	♦	♦	●	♦	▲	♦	●	5	3	1	5	1	1.1	5.5	10.8%
Avoid key breakage	3	♦	▲	●	●	▲	●	●	●	▲	5	1	1	5	1	1.1	3.3	6.5%
Attractive	3	♦	♦	●	●	▲	●	●	●	●	3	3	3	3	1	1.1	3.3	6.5%
Tracking	5	●	●	♦	♦	●	♦	♦	♦	♦	5	3	3	5	1	1.1	5.5	10.85
Battery backup	3	▲	●	▲	♦	▲	♦	♦	♦	▲	3	3	3	3	1	1.1	3.3	6.5%
Mobile App	5	●	▲	♦	♦	●	●	●	♦	▲	5	3	1	3	1	1.1	5.5	10.8
LED light	1	♦	♦	▲	●	●	♦	▲	●	●	5	0	3	5	1	1.1	1.1	2.1%
Single use network	3	●	●	▲	♦	●	●	●	♦	●	5	1	1	5	1	1.1	3.3	6.5%
Safety	5	♦	♦	♦	▲	▲	▲	♦	♦	♦	5	5	3	5	1	1.1	5.5	10.8%
Easy battery change	3	♦	▲	●	●	▲	♦	♦	●	●	3	1	3	3	1	1.1	3.3	6.5%
TECHNICAL PROPERTIES		172	154	170	180	120	164	162	180	148								
TOTAL PERCENTAGE		11.8%	10.6%	11.7%	12.4%	8.2%	11.3%	11.1%	12.4%	10.2%								
OUR PRODUCT		G	F	F	G	F	G	G	G	G								
COMPETETORS PRODUCT		G	F	F	G	G	P	F	F	P								

PLANNING MATRIX

STRONG - 5 ♦
MEDIUM - 3 ▲
WEEK - 1 ●

Good G
Fair F
Poor P



product design specification

1.	Brand name	Key finder and holder
2.	Range (on average)	70 feet
3.	Battery type	Replaceable CR2016 battery
4.	Compatibility	Android, iOS
5.	Geofence feature	Yes
6.	Audible aleart noise	90 db
7.	GPS Navigation & tracker	2-way tracking
8.	Led light	Yes
9.	Finger print access	Upto 10 person
10.	Key holding	Upto 4 different keys
11.	Material	Steel
12.	Colour	Silver, gold & black
13.	Dimension	55×40×10 mm
14.	Buttons	Key release button, 2-way finder button
15.	Packaging	56×41×10.5mm cardboard box

With 0.6mm thick.

Theme board

zippo lighter

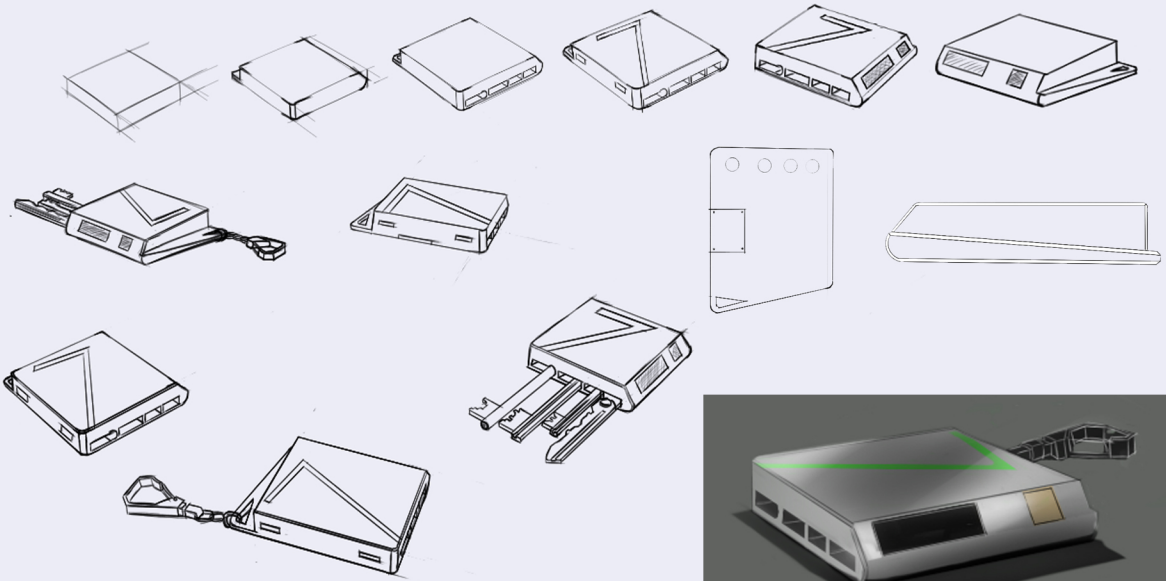
spartan war shield

Design characters

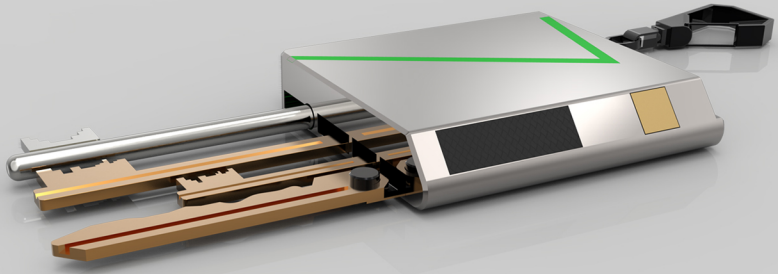
1. Square in shape
2. Steel material
3. Silver colour
4. Ruggedness look
5. Egde radius

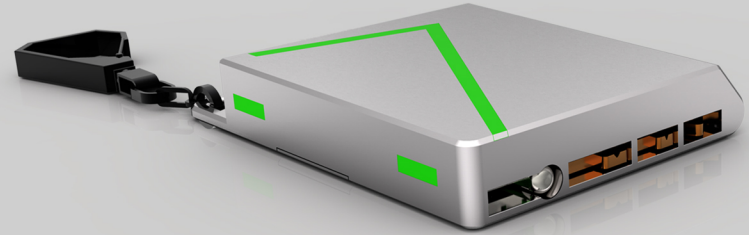
Shield shape is for led lights

Sketches(Sketch book),Rendering (Photoshop)

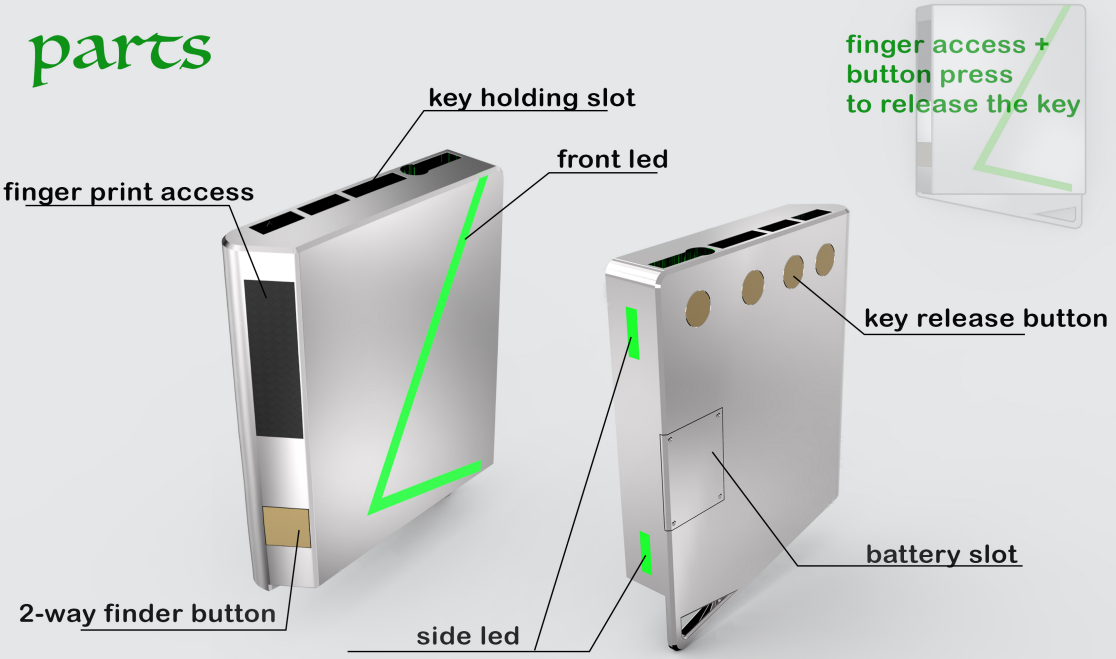


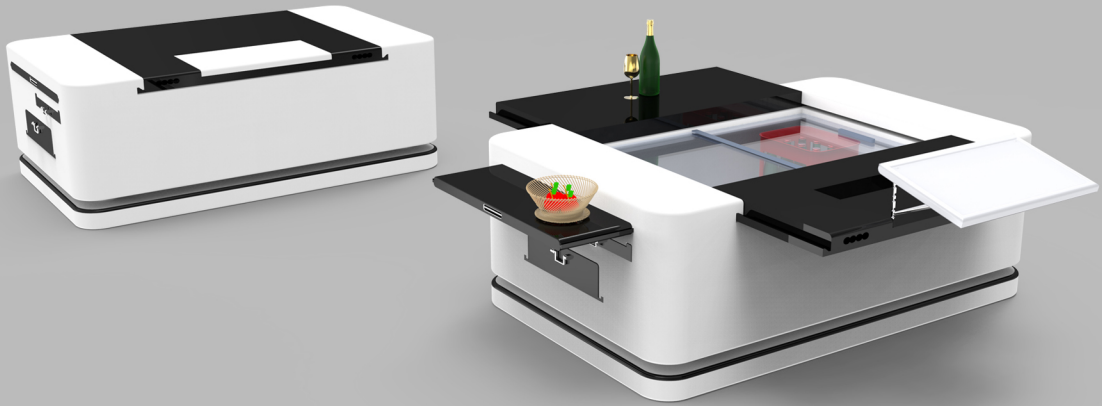
Rendering (Key shot)





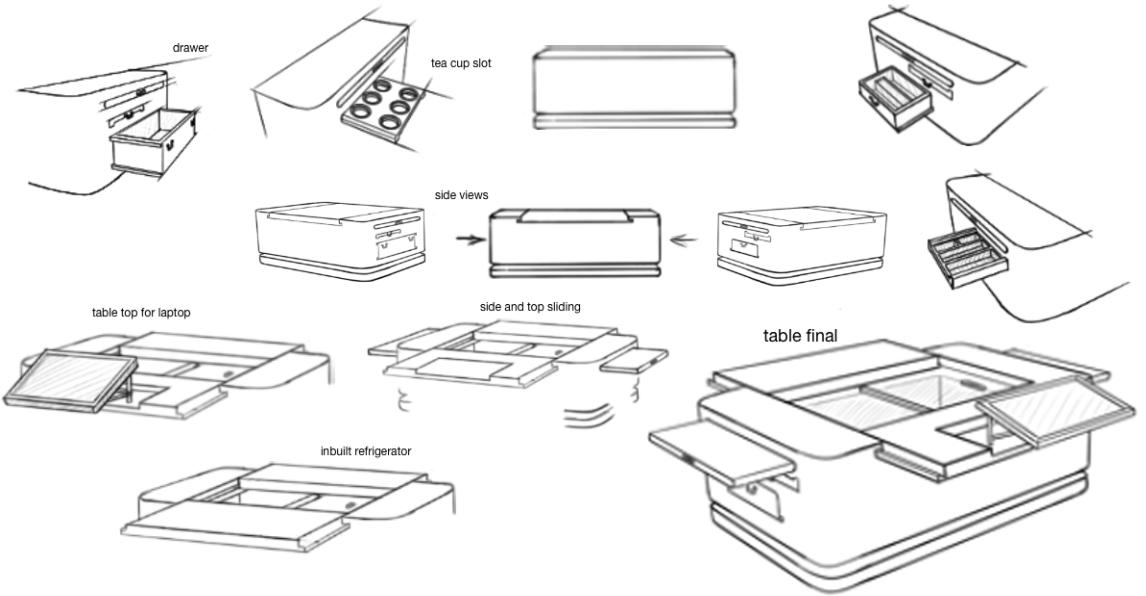
parts

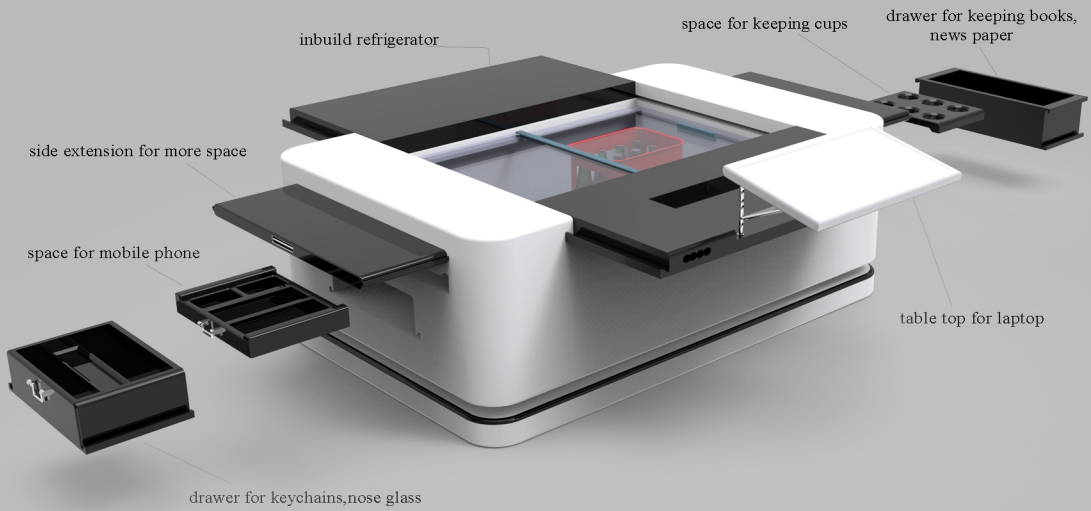

key holding slot
front led
finger print access
finger access +
button press
to release the key
key release button
battery slot
2-way finder button
side led

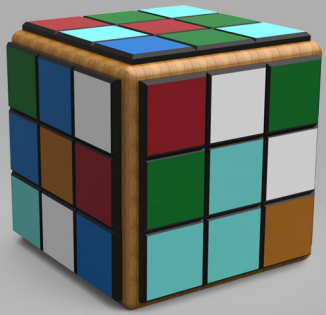


multi-centre table

Table with inbuild refrigerator
Top four side extension
Storage space for keeping stuffs like
(news paper, books, key chains, mobile phone)

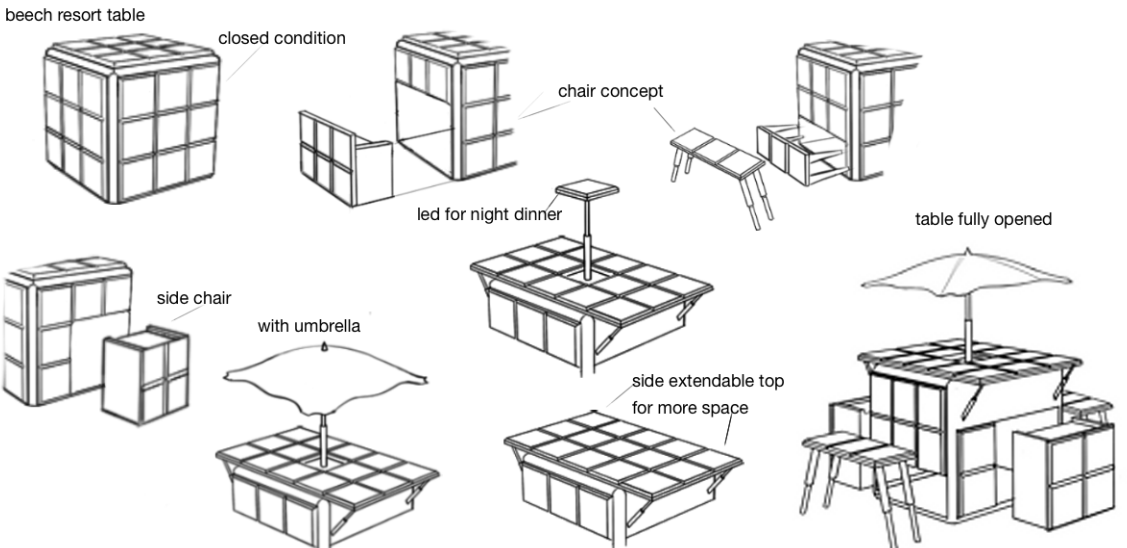

drawer
tea cup slot
side views
table top for laptop
side and top sliding
table final
inbuilt refrigerator


inbuild refrigerator
space for keeping cups
drawer for keeping books, news paper
side extension for more space
space for mobile phone
table top for laptop
drawer for keychains,nose glass



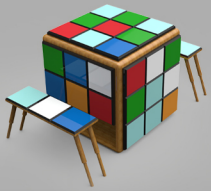
Beech Resort Table

Table concept is taken from rubix cube
Chairs can be folded into the cube
Umbrella or led light can be attached
Table top is extended for more space
This is a convertable space saving resort table


beech resort table
closed condition
chair concept
led for night dinner
table fully opened
side chair
with umbrella
side extendable top
for more space

Fully closed table

with detachable chairs



with side chairs

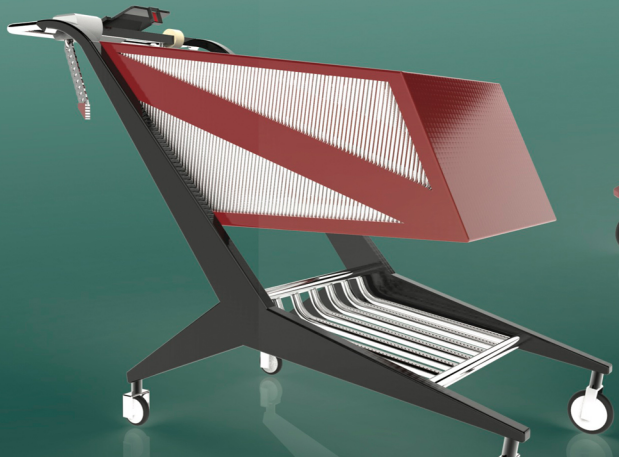
Top extendable for more space

Led lights attached for night dinners

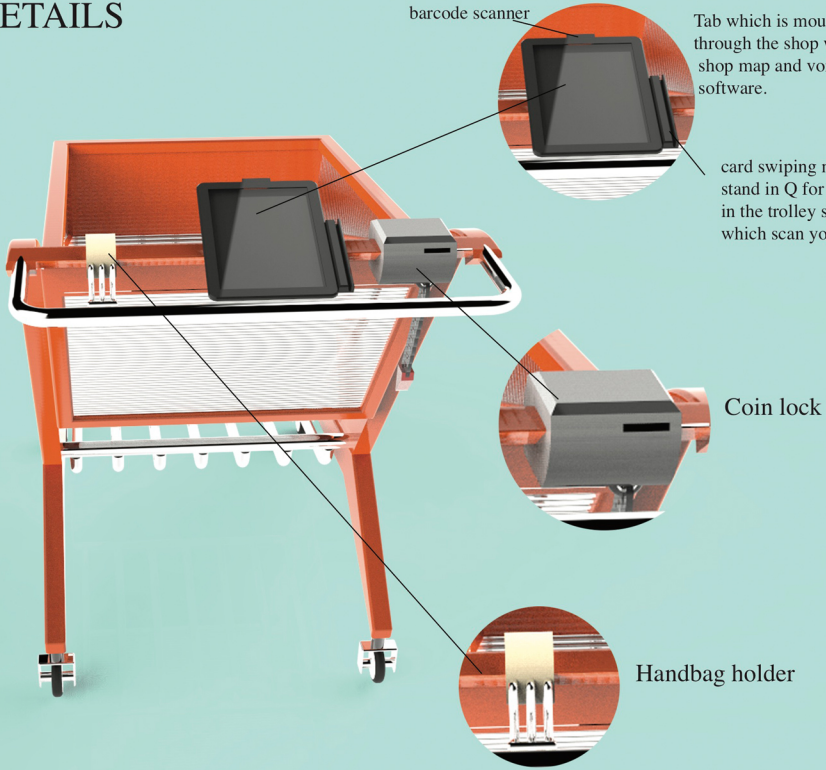
umbrella attached for outdoor beeach view

smart trolley

1.Trolley is designed in a way to feel the robustness in the line flows
2.The tab which is fitted in the trolley will guide you through the shop to easily pick your needs
3.No need to stand in the que for billing.Trolley is inbuild with a barcode scanner
and a card swiping machine where you can swipe your bills directly.

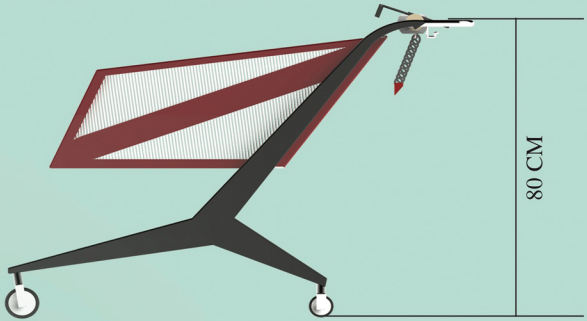


DETAILS

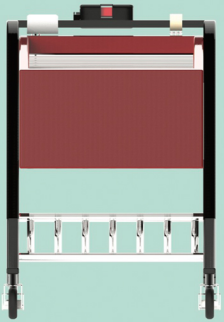

barcode scanner
Tab which is mounted will read your voice and guide you through the shop what you want to buy it is inbuild with shop map and voice reader softwares and bill generator software.
card swiping machine which is inbuild with tab.No need to stand in Q for paying your bill you can pay your amount in the trolley swiping machine itself it as a barcode scanner which scan your items and generate ur bill amount.
Coin lock
Handbag holder

views

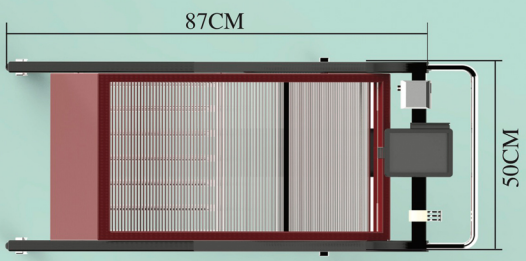
SIDE



FRONT



TOP



BACK