DESIGN PORTFOLIO

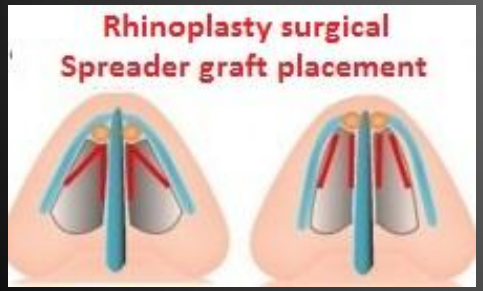
ABHIJEET

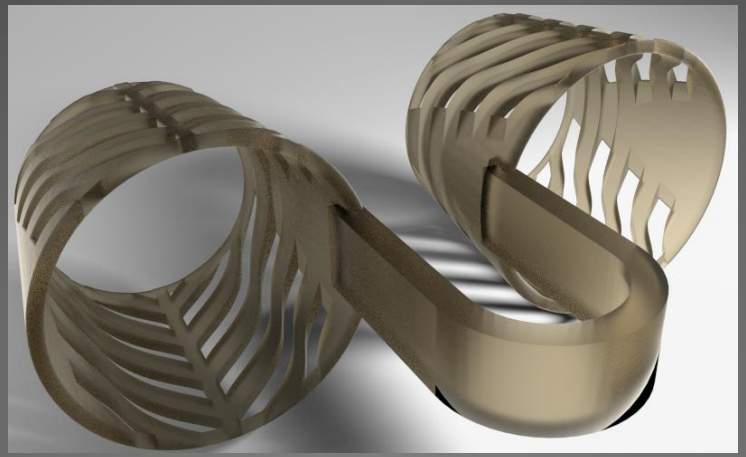
Master of Design

Indian Institute of Technology Kanpur

Design of Wearable Nasal Stent

- Patient's face identity changes dramatically due to surgery
- Causes Dysmorphic disorder in patients





- Stent open nasal airway for full volume breathing
- Design follows the internal anatomy of nose

Breathing is a compulsory part of everyday life and Nasal wall collapse is a common cause of breathing obstruction

It causes-

- Snoring
- Tiredness
- Loss of attention
- Headache
- Depression
- Restlessness

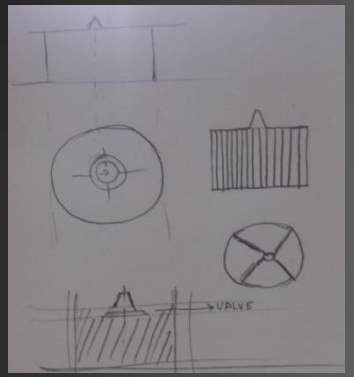
Nasal Stent is designed to provide in situ dilation of nasal airway. Unlike the surgical method it is a wearable solution which doesn't changes the face identity of user. Ultra soft polyjet polymer material makes it safe enough to be used during sports and adventure activities.

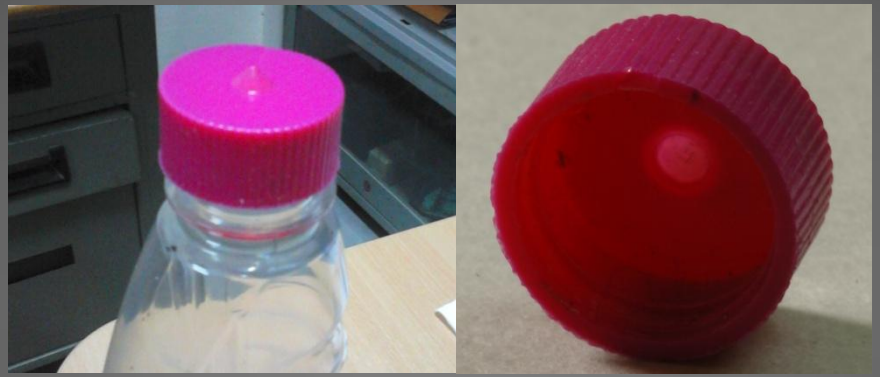
USER EXPERIENCE DESIGN PLAN FOR INDUSTRIAL PROJECTS

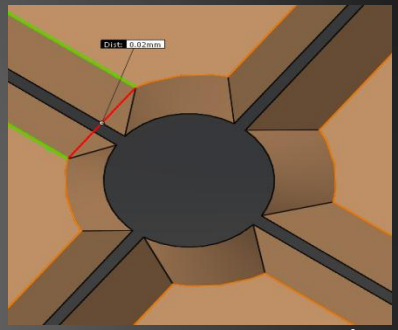
RESEARCH	PLAN	EXPLORE	COMMUNICATE	CREATE
Competitive Analysis How others have done it but don't reinvent it	**User Stories** Create personas, user stories and scenarios	**Brainstorm & Sketch** Get together & sketch, discuss, vote, disrupt, have fun !	**Information Architecture** Organize data structure and channels to create navigation and content	**UI Elements** Use patterns,, style guidelines to create a page
Data Analysis Collect all data you need	**User Flows** Create user's flow based on created scenarios	**Wireframe** Add details, structures to your idea on top of created user flows	**User Context** Bridge brand identity, user's culture and priorities together	**Gestures** Discover more about simple gestures to create an impact
User Feedback Speak to customer care team or look at old surveys or collect it	**Priority Identification** Sort and eliminate any usability obstacles on key user journeys	**Prototype** Create paper and functional prototypes	**Accessibility** Access team skills instead of duplicating things & wasting time	**Responsiveness** Check it for cross platform device experience

Zero Assembly Design of Squeeze Bottle Cap

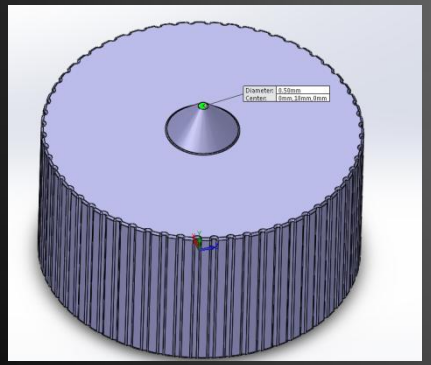
Problem statement: Business requirement is to design a squeeze bottle cap with minimal assembly parts for multi material Additive manufacturing.



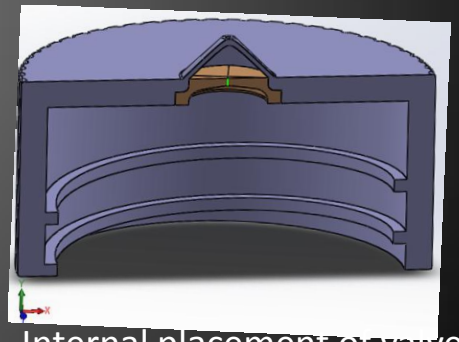




squeeze response Valve



- Design comprises of a single part with different hardness zones.
- Internal placement of valve in design allows it to be intact with main body
- Outer design of body is optimizable according to user's need
- Design is first ever successful attempt to deliver an intact valve with main body using multi material additive manufacturing using Connex 3D printer

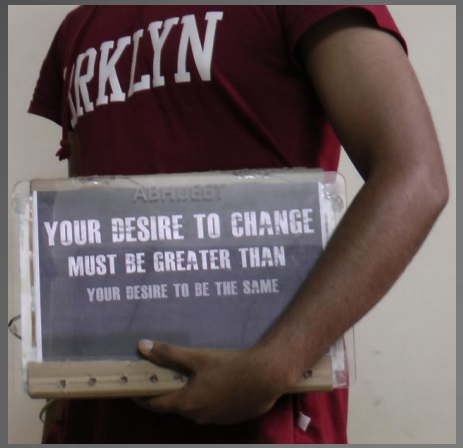


Internal placement of valve

Design of Green Laptop for Minimal Plastic Usage

Design and prototype a gadget for environment sustainability and user customization

•Available products are full of high density plastics and thermoset parts



Perspex sheet give option for creative personalization of laptop

•40% reduction in plastic usage

•30% weight reduction

• No compromise with handling and transportation

•Unavailability of effective solution for bio degradation of plastic

•70-80% gadgets directly go for landfills

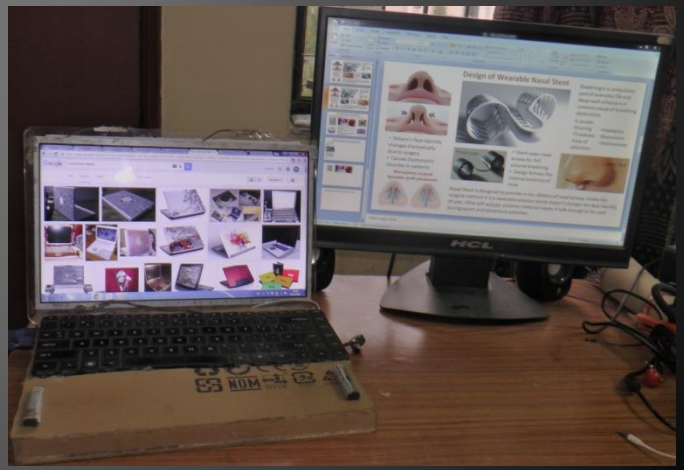
•Very limited option for user to customize the laptop

Timber reinforcement of high density cardboard

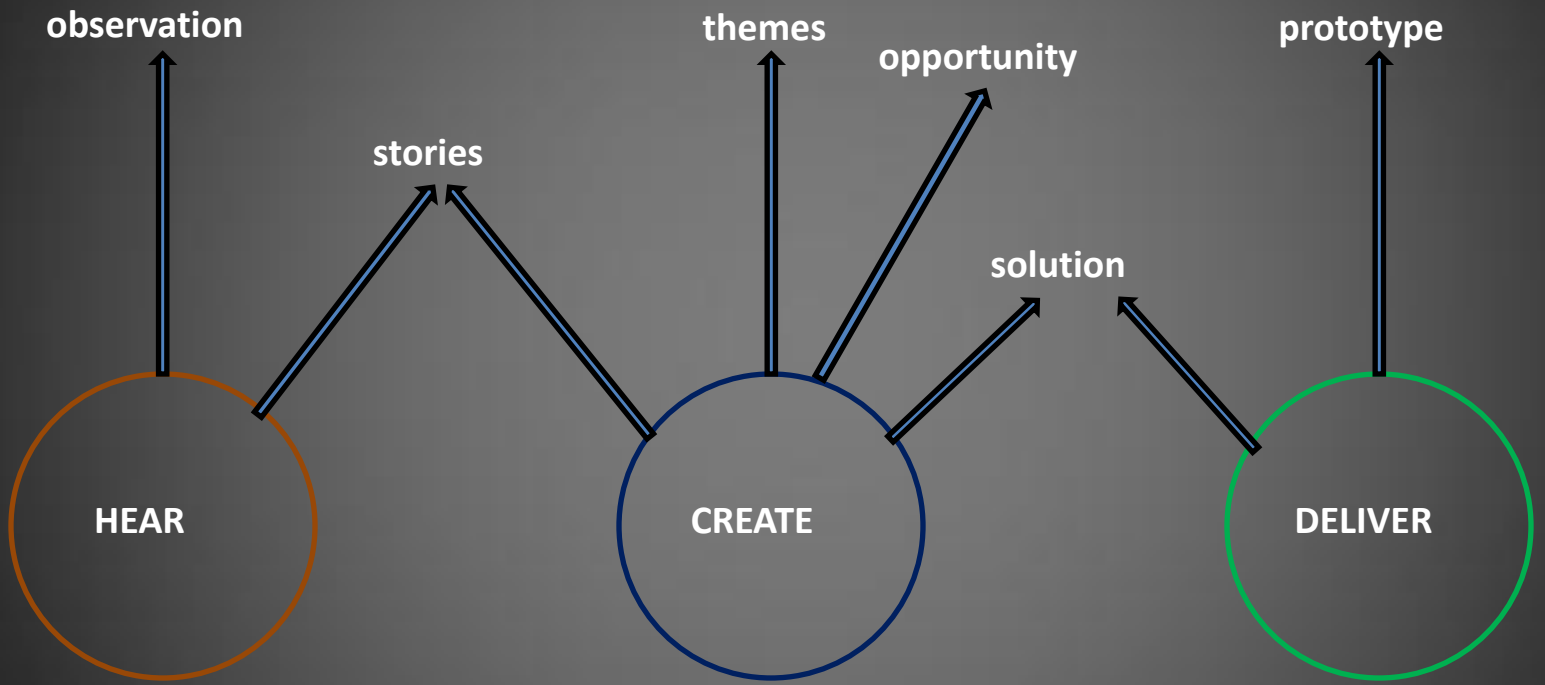
•I chose my own laptop for this project

•Developed prototype is under user test

•A lot of development is still in continuation

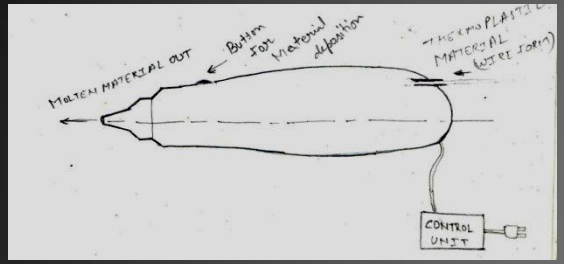


Human Centred Design Process

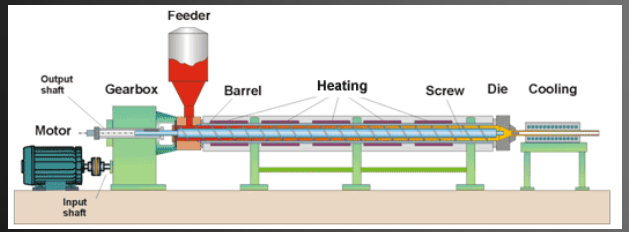


Multi Purpose Fused Filament Fabrication Device

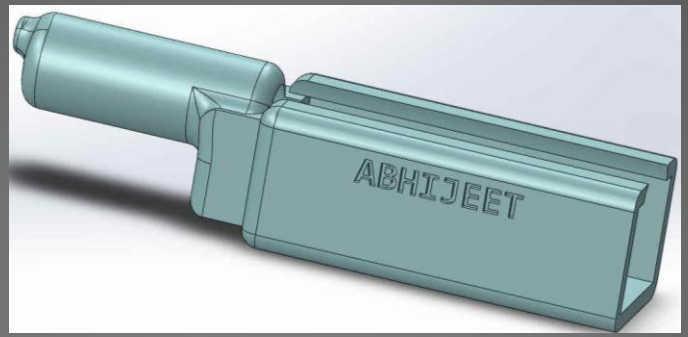
Design of extruder which can be used as handheld extruder for 3D concept prototyping by designers and engineers



Filament extruder are used to extrude plastic in industries

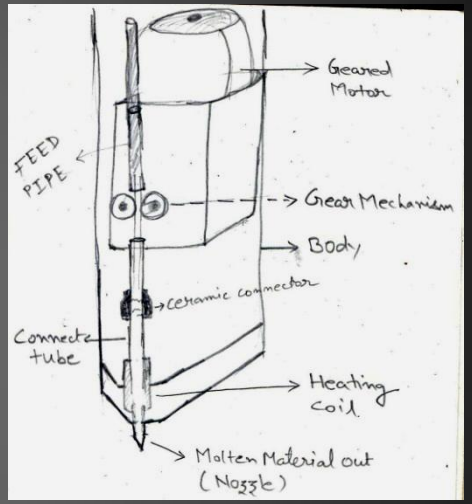


Extrude thermoplastics like ABS and PLA available in standard filament sizes



Ergonomic design is lightweight and delivers firm grip

Ceramic material insulates high temperature of heating coil to reach user



Designed device has various application such as-

- Prototyping
- Plastic filling
- Welding plastic parts

Thanks for your attention and precious time
For more projects please visit my webpage and feel free to contact me

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