



Venkateswara Rao Appalabattula

Project Portfolio 2022



2-6

Web
Portfolio
personal

7-11.

Skill-e-Labs
internship

NDA*

12-15.

Suraksha
Device
research publication

16-19.

AUMS
Re-design
personal

Web Portfolio

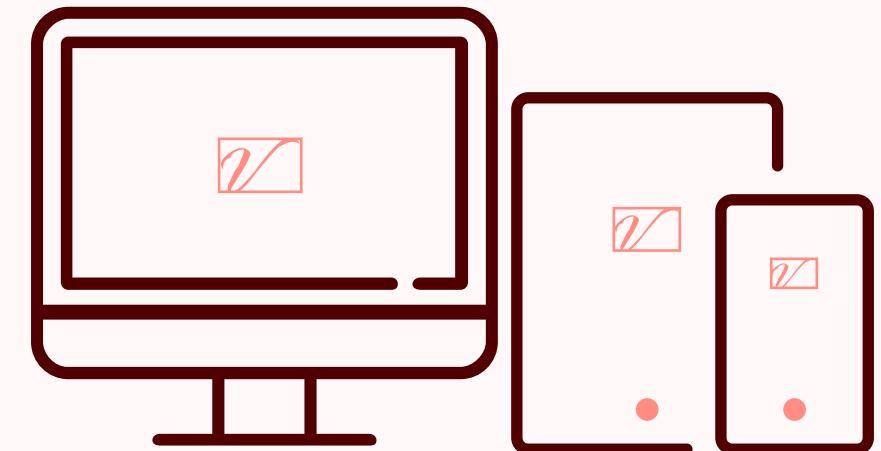
“ Worried was I, as months passed by,
carrying stardust, my work left behind,
It hit me then, I shall use my ken,
to help the glitter, it must summon. ”

Date: August 2022 - present

Platform: Desktop, mobile and tablet

Purpose and goals:

Understanding the need to present and organise the scattered and meticulous nature of my work. The purpose of this project is to design and develop a readable, accessible and responsive website ,enabling freedom to show-case my future and present work while helping me learn front-end development.



Stakeholders:

Admission committee, Potential employers and collaborators.

Skills used :

UX Design, front-end development.

Tools used :

Figma, HTML, Custom CSS, git and github-pages.

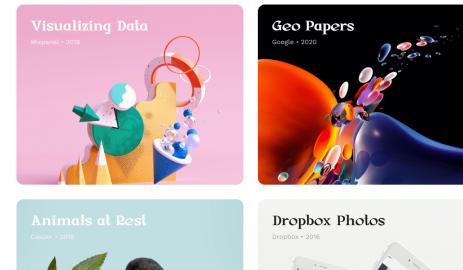
Site URL:

venkatappalabattula.github.io

General Research

Observations from other's portfolios:

- Projects are easily available and enticing to further explore.
- Hierarchy is followed consistently and emphasis is used when necessary, to make the site communicate important aspects with ease.
- Complex aspects are well organised and visual aids such as scrollable containers and animations are used to represent transitions in design.
- Text is visible, readable and well spaced
- White space is used to create an extra presentation like experience
- Design language is utilized as a way to second the designer's own personal flair. for example : 3D elements in the site, give immediate insight that this person is into 3D.

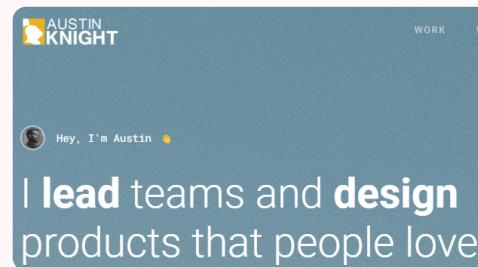


jermshaw.com

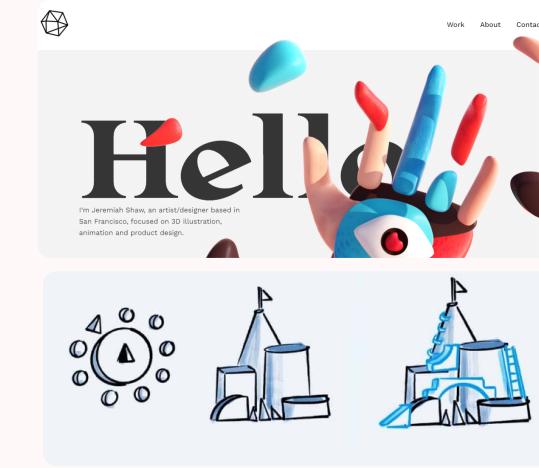
Chrome OS System menu
A case study into the design and spec of the future redesign of the Chrome OS system menu: the foremost, core point of access of the core system features.
[SEE MORE](#)

Redesigning Chrome desktop
I dedicated a quite lengthy article on the 2 year long process of redesigning the chrome desktop Core UI to talk design process, relationship with engineering, technical details and lessons learned from the initial public and internal release.
[READ+](#)

sebastien-gabriel.com



austinknight.com



jermshaw.com

Yatrik

Hi I am Yatrik Raithatha

UX DESI

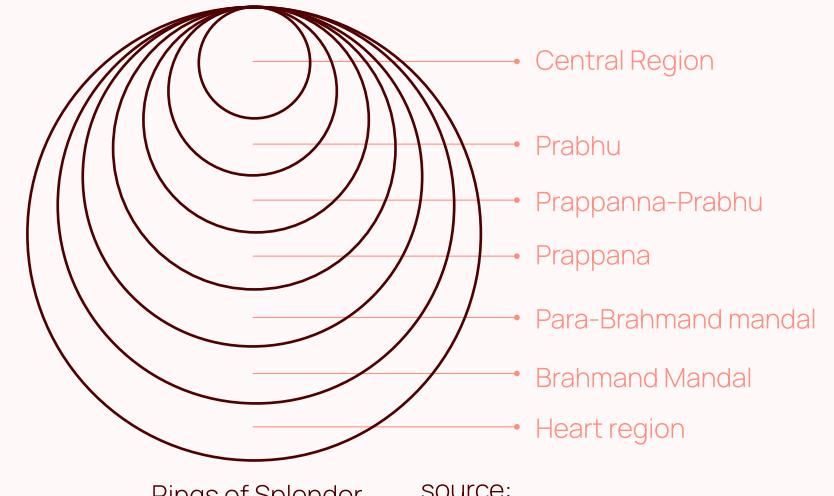


yatrik.design

Experiments:

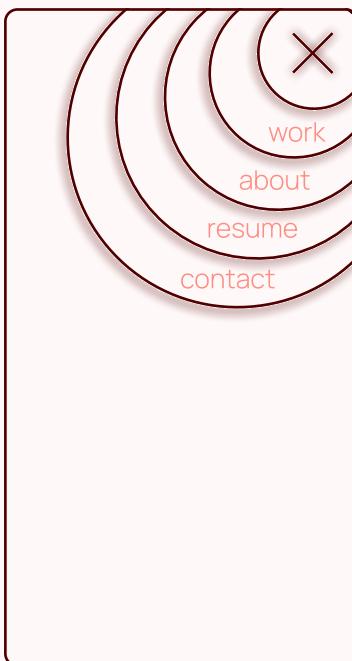
context:

In an attempt to leverage the power of writing my own code, I decided to have a personal introspection to come up with a theme that had a symbolic meaning. The only instances of early creative expression in me, were at my heartfulness ashram. Inspired by its utter simplicity, I attempted to incorporate one of its philosophies into my site's design.

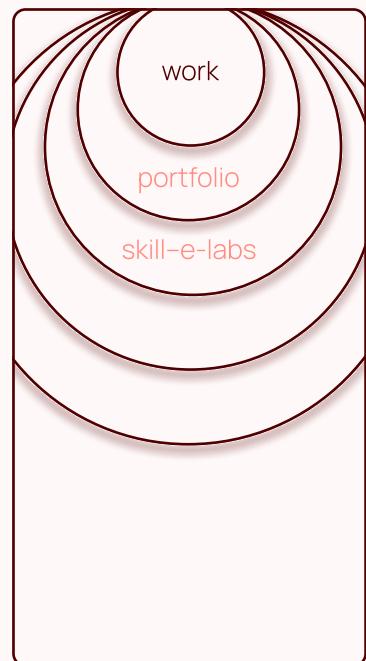


source:
[The march to freedom - part 4](#)

wireframes:



Navbar



Project navigation



A touch on the screen was thought to ideally feel like a droplet in still water. Concentric circles forming a ripple if looked at laterally look very similar to the Rings of Splendor,

limitations and drawbacks :

- Visually unappealing when the design is made responsive .
- As a beginner in front-end development, implementing complex designs and transitions would not allow me to focus on the deliverables.
- Lack of user research to know if a novice is overwhelmed to navigate.

Approach:

To transcend the attempted interface experience into a responsive and easily understandable site while prioritizing the deliverables .

deliverables:

- Glimpses of projects upfront
- About me section
- Easily downloadable Resume
- Contact details
- In depth work case studies.

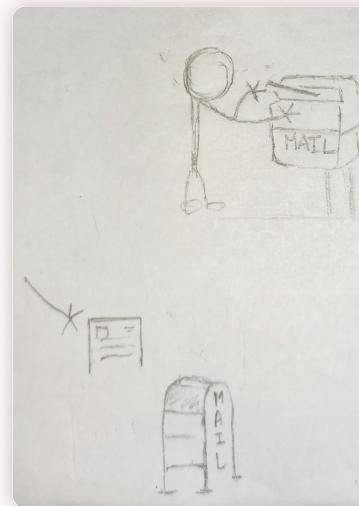


About me section



experience and tone :

- simple and elegant
- Fluid interactions and motion effects
- Easy to find and easy to read
- unique display of personal creativity



Connect section



distinctive features:

- doodles
- custom logo
- svg animations and svg scroll effects

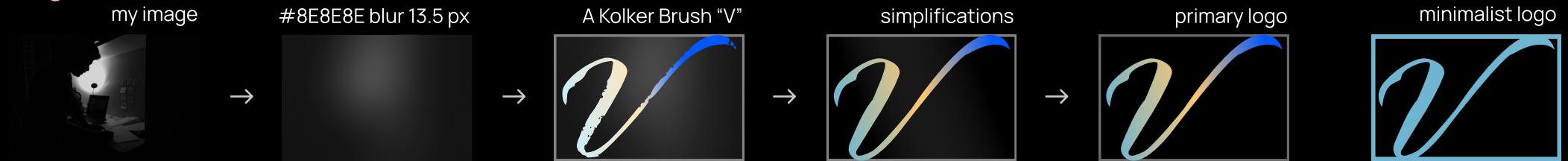


message svg moves from social links to the logo , on scroll



Final results :

Logo:



Color scheme:



Font: **Noirden** Sans-Serif family

Screens:

The portfolio website features the following screens:

- Landing page**: Shows a large 'Hello!' message, the name 'I'm Venkat.', and a bio about being a product and UX designer based in Hyderabad, India.
- Projects section**: Displays a project titled 'Suraksha Device' with a timeline from Mar - Aug 2020. It includes a description, contribution details, and logos for World Health Organization and IEEE.
- About me**: Features a photo of the designer and a bio stating, 'I am A Venkateswara Rao , I live in Hyderabad , I like solving design'.
- Mobile navigation menu**: A sidebar with links for Work, About, Resume, and Contact.
- Clickable breadcrumbs**: Indicators for the current page path.
- Case-study chapterwise navigation menu**: A horizontal bar with arrows for navigating through case studies, showing completion percentages for March '22 and April '22.
- Fully responsive- Desktop Version**: A desktop view of the landing page with a navigation bar at the top.
- Nav bar also acts as breadcrumb indicator**: A callout pointing to the navigation bar which also serves as a breadcrumb indicator.

Skill-e-Labs

Context: Skill-e-Labs is a government initiative to foster vocational training by building 3D virtual labs for children of sixth to twelfth grade.

Date: March 2022 - August 2022

Platform: Desktop, mobile and tablet

Purpose and goals:

To create an easily understandable, scalable and consistent user interface that can help children navigate the virtual environment. There are around 700 of government approved labs, spanning across various sectors such as Agriculture , Engineering and Business .

Stakeholders:

Children and adults from ages 10 and above. Users who are novice as well as well verse with virtual labs

Skills used :

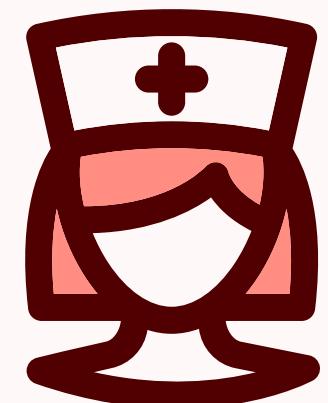
UX Design, User Research, 3D and 2D Testing

Tools used :

Figma, Unity 3D.



Mechanic



Nursing

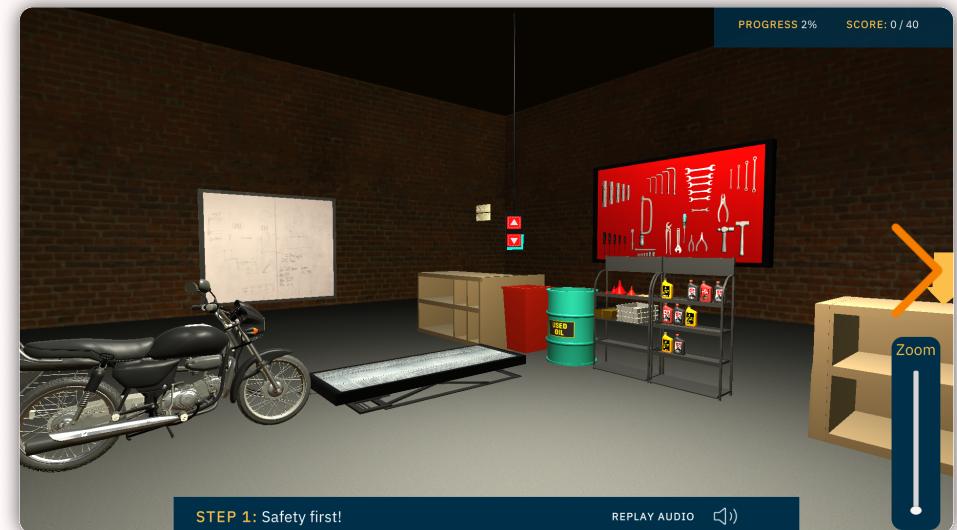
Non-disclosure Agreement :

Can not disclose project and syllabus related information

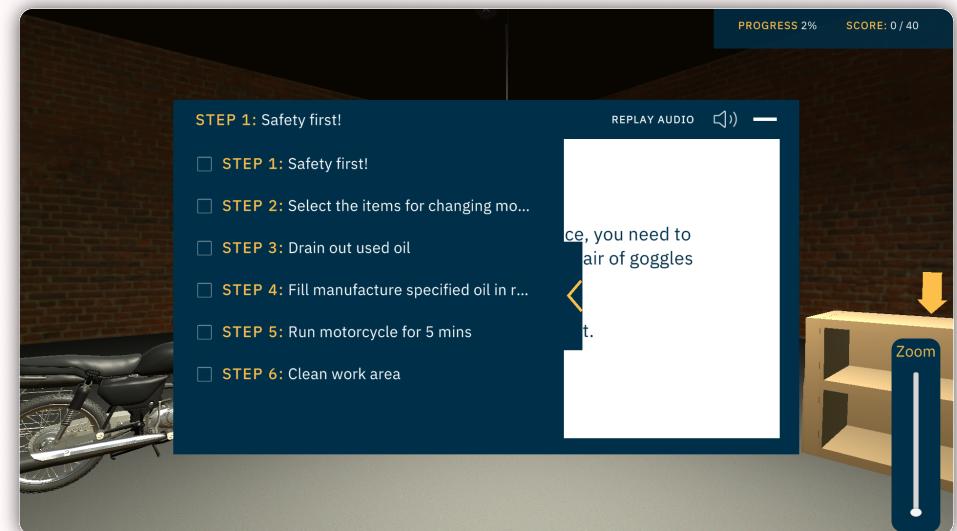
Existing Designs and Deliverables:

Deliverables:

- User Interface should be usable on mobile, tablets and PC.
- The design should stay mostly consistent with the need of minimal changes in support of variety of labs present
- Essential contents :
 - a. Step number and Step name
 - b. Step instructions
 - c. Progress bar
 - d. Score
 - e. Mute audio and Replay audio options
- The interface should not use screen space to enable an immersive experience
- Text should be clearly visible and readable
- Every element must be designed to handle dynamism , for example: providing enough space for accomodating more steps and more badges , so that the Interface stays consistent



Existing UI followed a scattered approach , which makes the remaining screen space feel constricted.

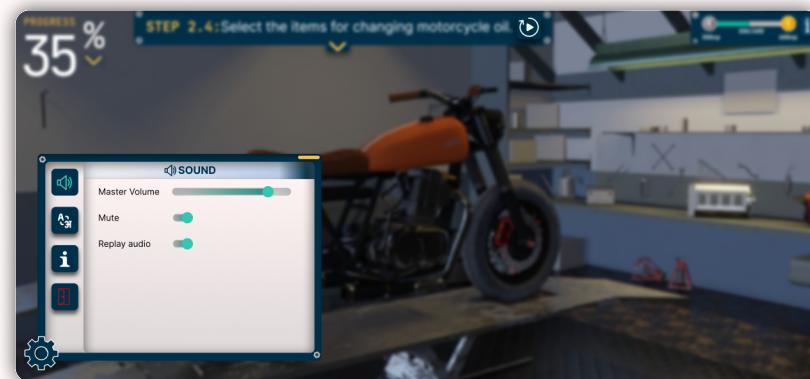
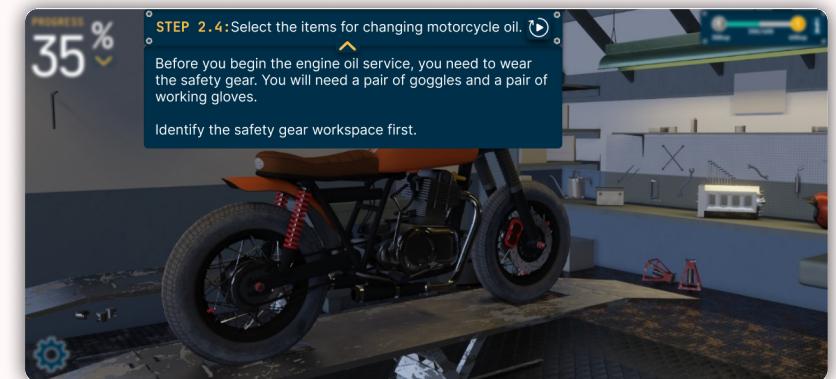
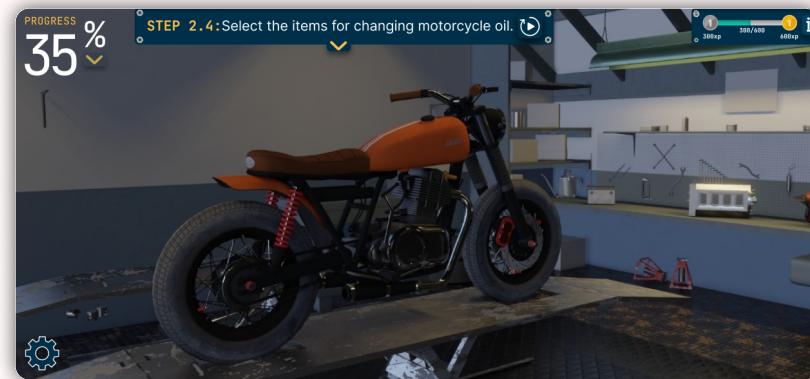


Clickin on the step name opened step instructions which also contained the list of all steps. Progress is represented in percentage, zoom slider is also seperated to the side.

My Designs:

Changes:

- Did comparative research with a very similar app named “Labster” .
- Gamification elements were studied to help navigation and help the user remember things easily , the app “Retro Garage” was studied as it was also built on unity 3D.
- Design was pushed to the top to enhance thumb finger interactions with the Interface and to allow a more cluster free environment.
- Dedicated popouts for progress and step instruction were provided to add an ease for access
- Introduced the settings menu to organise all settings for any further lab .
- Tried to make the UI more appealing for a younger audience.



Added gamification elements:

Score: Based on in-game MCQ answers.

Badges: Based on in-game tasks and achievements.



Testing:

How UI testing was performed:

- All the questions used in testing were created to observe, and validate ease of access and understandability .
- The study was done on 20 students from ninth grade. To observe all the micro-interactions , students were called into the testing room one by one.

Questions:

1. What is the name of the task being performed as of now?
2. Name step number # 1
3. Check the instructions for the current task - If you were looking for instructions on what to do, where would you expect to find it?
4. Mute the audio of the game? - What do other settings in the volume menu represent?
5. Change the Language of the UI - If you were looking to change the language, where would you expect to find it?
6. What is your current score - What does the bar in top right corner represent? - If you were looking for a score, where would you expect to find it?
7. What is the name of the badge that you currently have?
..... 13 questions
more..



Observations:

- The hit-box of small dropdowns were not properly visible and accessible
- The progress as a percentage would not give insight that the steps menu is related to it .
- The scoring system was very confusing .
- Step numbers in decimels did not imply that the decimels mean substeps.

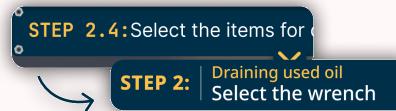
Iterations and Final Design:



Upon discovering that percentage being so evident is meaningless and it does not help the users if they remembers the percentage and also it does not let the user track their step number, hence progress is was changed to show show step numbers directly. Small hit-boxes of each menu to expand were removed making the entire menu clickable, which also enables ease of use in mobiles.



A novice user might not understand the meaning of an icon, to make icons more easily understandable all icons were labelled.



Decimals in Step numbers served no cognitive meaning hence decimels in step were removed to show only the step number and the step and substep also are clearly shown, heirarchical emphasis was put on the substep as it is the substep, but to indicate the main-step yellow color was used to give out an "essential" expression



The badges menu and the badges itself were drastically changed, the badges now are specific to each achievement as this promoted customizability of the badges for each task of each lab. The menu was made scalable , more the number of badges, they can just be added to the badge menu like a grid, and if the number of badges are lesser then the badges increase in size by a factor of 0.3 and again divide themselves in a grid like system .



Earlier the progress bar failed to indicate the user how many badges were present in the lab and it was hard to track how many achievements were achieved, another issue was it is hard to understand for a novice user. A flat layout of the badges solved two problems, the user can now know how many badges they have and how many are left , but it also created a sense of achievement as the badges now move from left to right



I drew the inspiration of the new badge system from fridge magnets, I wanted each achievement when achieved to stick on like a magnet to the achievements panel, which is also why there is an indication that something can be stucked on to by the semicircles in the new design. Sound also adds to the experience of something sticking on.

Suraksha Device

Context: With outbreak of the global covid pandemic , social distancing was an instrumental and achievable prevention measure against covid, Understanding the importance of social distancing, we attempted to aid a common man in doing so.

Date: April 2020 - December 2020

My role in the team of 4:

Product Design, Ideation, User Research

Purpose and goals:

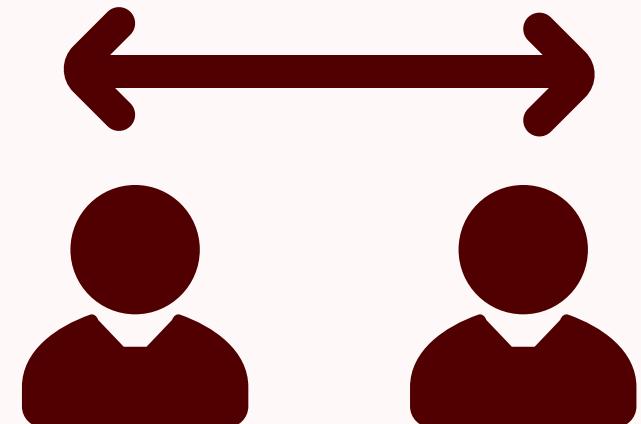
To Design and develop an efficient system to aid social distancing, that can be easily understandable, affordable and fool-proof. The design should further encourage the user to have the comfort of wearing the device consistently and increase awareness in social distancing for others.

Stakeholders:

General population including children.

Tools used :

Adobe Illustrator , Arduino, Tinker-cad



Published and listed at:

- 2020 4th International Conference on Electronics, Communication and Aerospace Technology (ICECA)
- World Health Organisation global literature on novel coronavirus 2020 ncov.

Experiments and approach:

Design:

A design to hold all the various sensors required in the future and present had to be made.

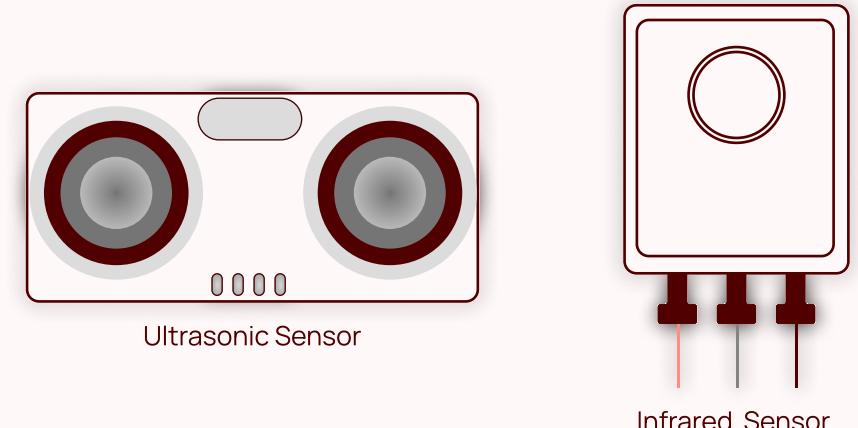
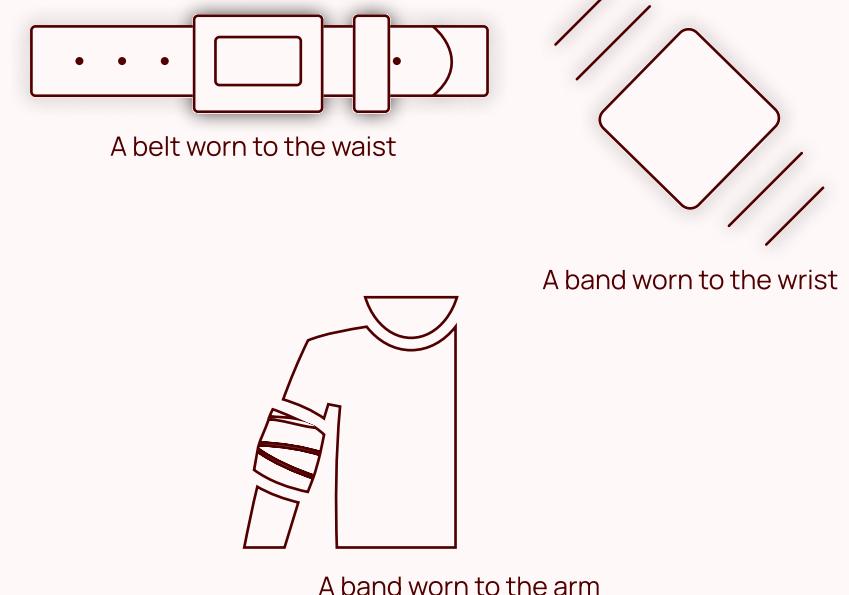
- The idea of a wrist band however, was ruled off as it had a high risk of detecting the user's own body, as it operates close to the user's body, which might result in false alerts.
- The belt was also ruled off, as making use of many US or IR sensors to cover 360-degree range would make the device very bulky and inconvenient.

Sensors:

sensors used should accurately detect a human in the vicinity of 1.5 metres while also being portable and light-weight. Some of the narrowed down sensors were:

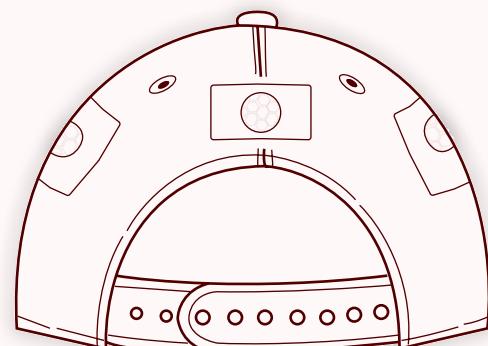
The Ultrasonic Sensors and Infrared sensors, have 30 degrees and 45 degrees range of sensing, respectively. They detect every inanimate object in their vicinity, giving false-positive results as the detected object might not always be a human.

Using too many of aforementioned sensors to achieve 360-degree implementation will definitely make the system more complex, bulky and most importantly, inefficient.

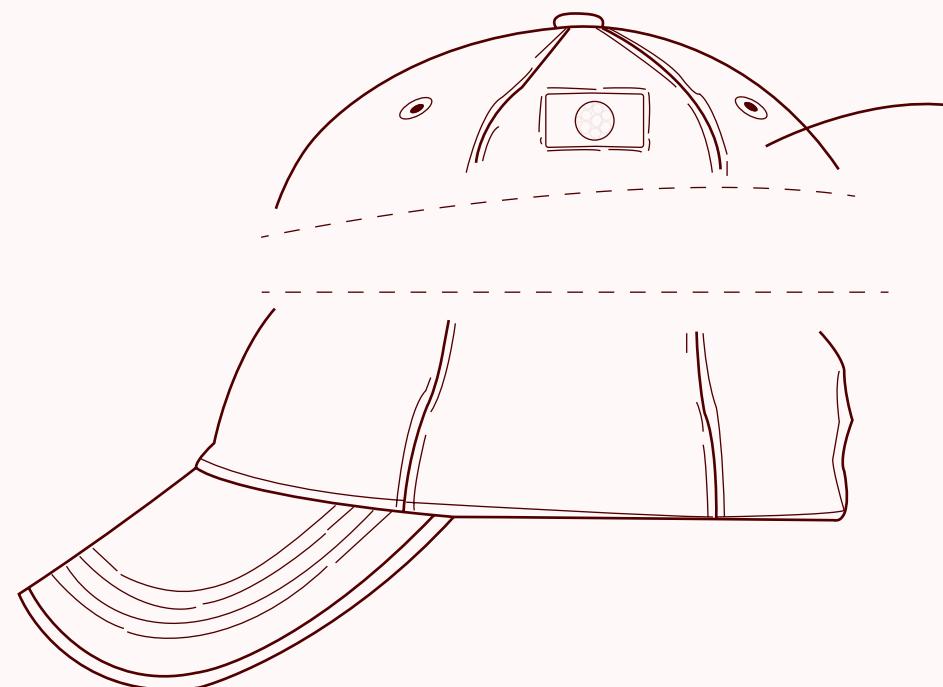


Final Designs:

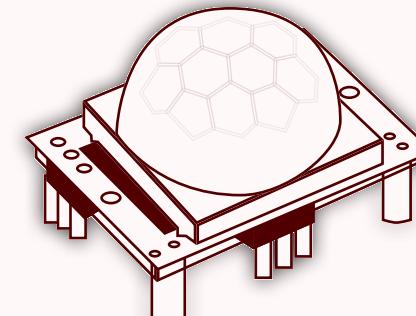
- The final sensors used for the system for the use of Passive Infrared motion sensors which detect only human and animal objects elimination false-positive results as well as having a large range of 120°.
- The final model of the device was decided to be cap worn on the head as it can be worn at convenience. It also enhances comfort as all the sensors and microcontroller can be tucked into a compartment on top while accomodating the head of the user



View of all 3 PIR sensors used on the cap, each having a range of 120° which results in the collective range of 360°. Sensors can further be designed to make the cap attractive.



Exploded view of the cap and it's components



PIR Sensor



Baseball cap

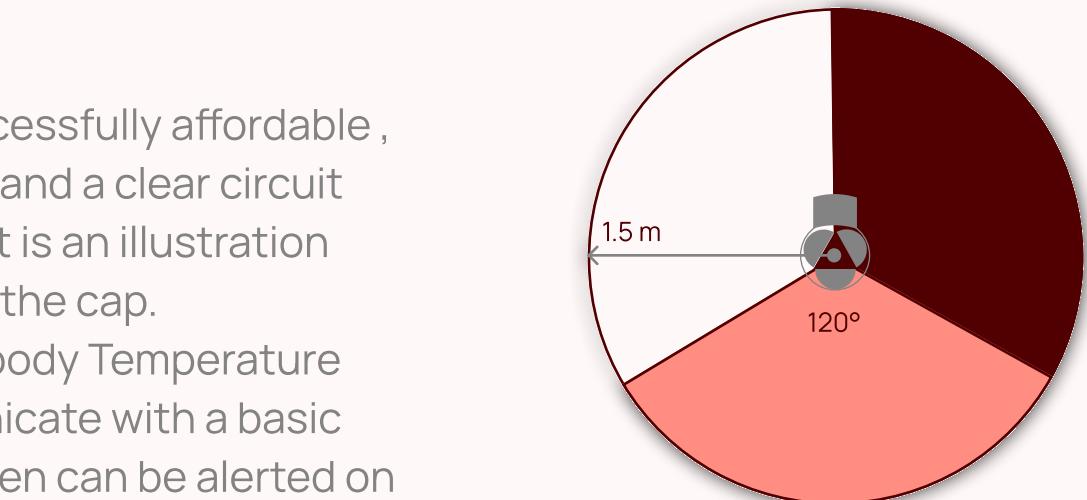
Compartment above head contained:

- 1x Node Micro controller Unit
- 3x PIR sensors
- 1x Buzzor
- 1x LED bulb
- 2x Lithium ion 5V batteries

Project specifics and Results :

- The design and development project were successfully affordable , given below are the prices for the components and a clear circuit diagram made using Tinker Cad, to the the right is an illustration demonstrating the coverage of the sensors on the cap.
- Future ideas are to include MAX30205 Human body Temperature sensor and use a bluetooth module to communicate with a basic mobile app interface to provide alerts, these then can be alerted on a smartwatch as well

S.no.	Component Name	Purpose and Specifications	Price (INR)
1	NodeMCU	Manage the complete system onboard Wi-Fi and Bluetooth 32bit dual core processor 12 bit ADC and GPIO	700
2	HC-SR501 PIR motion sensor	Detects the human movement 5V supply voltage, 120 degree coverage	300
3	Buzzer	To alert the user and other people 5V 80dB	50
4	LED	To notify the user 1.5V	5
5	Li ion Battery	To power the complete system 5V 2000mAh with BMS	400
Total Cost in INR			1455₹ or 17.65\$



Sensing range of the PIR Sensors

