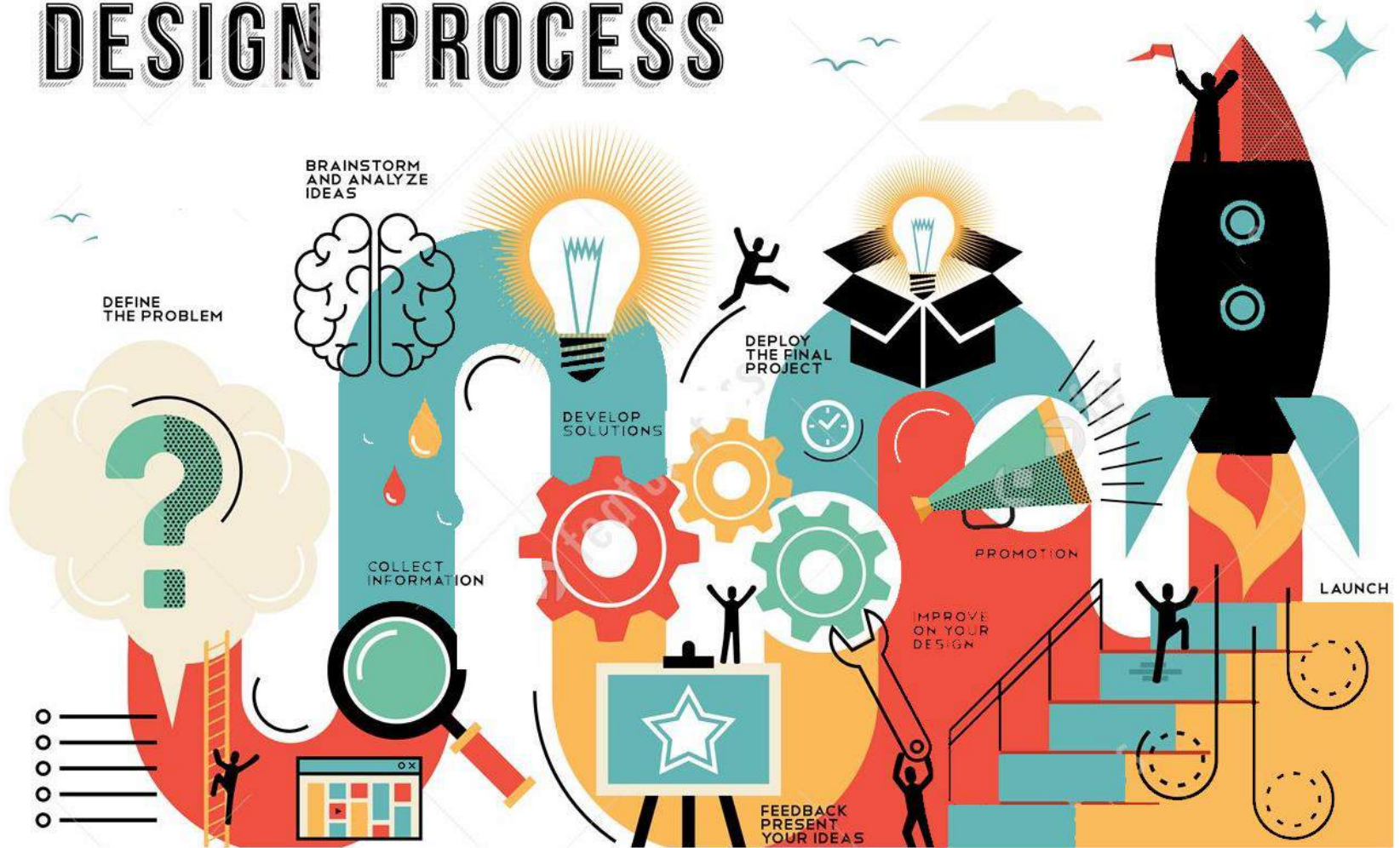
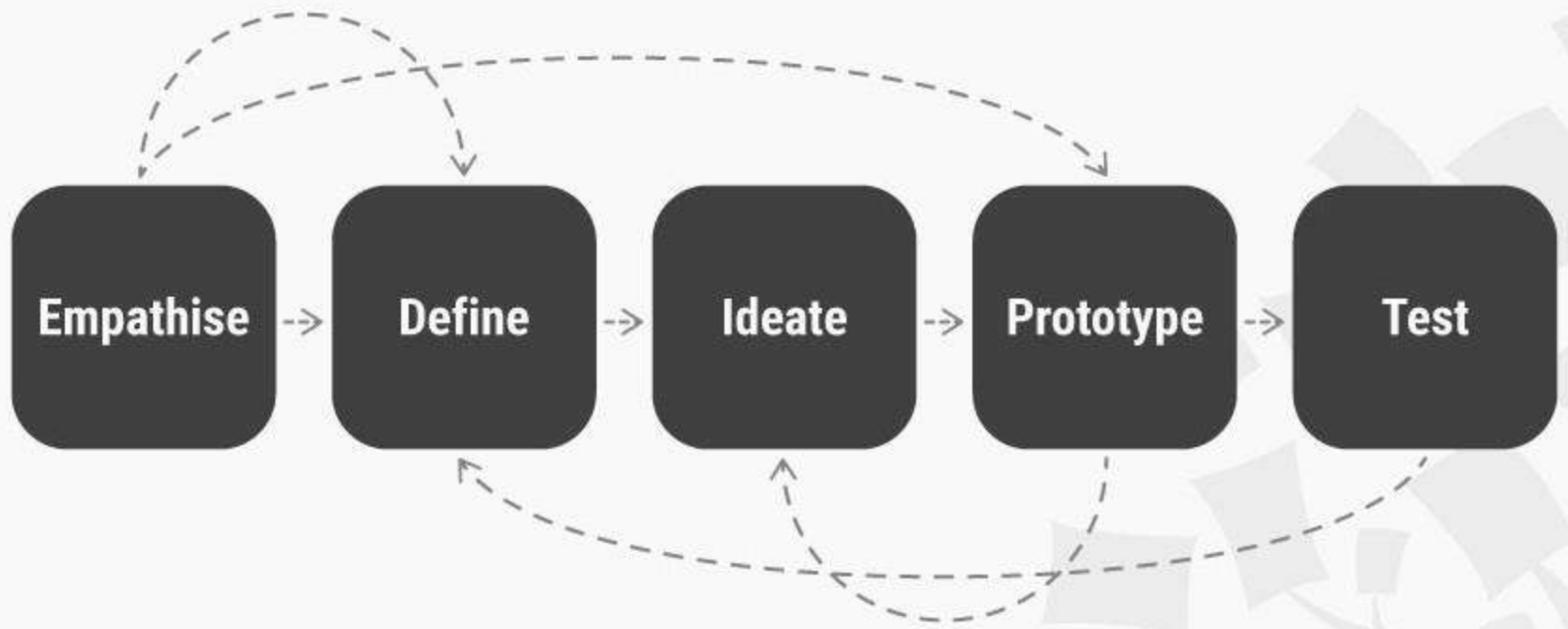


# DESIGN PROCESS



# INTRODUCTION

- This project shows all the steps and processes we have followed , starting from the first stage of research to the final stage of prototyping. The project is based on the issues/problems faced by the senior secondary students in rural areas and which also gives us the opportunity to think and design something effective for them.



# Design Thinking: A 5 Stage Process

*and*

Our project followed these 5 stage process



EMPATHY

Research your user's need

# RESEARCH AND FINDINGS

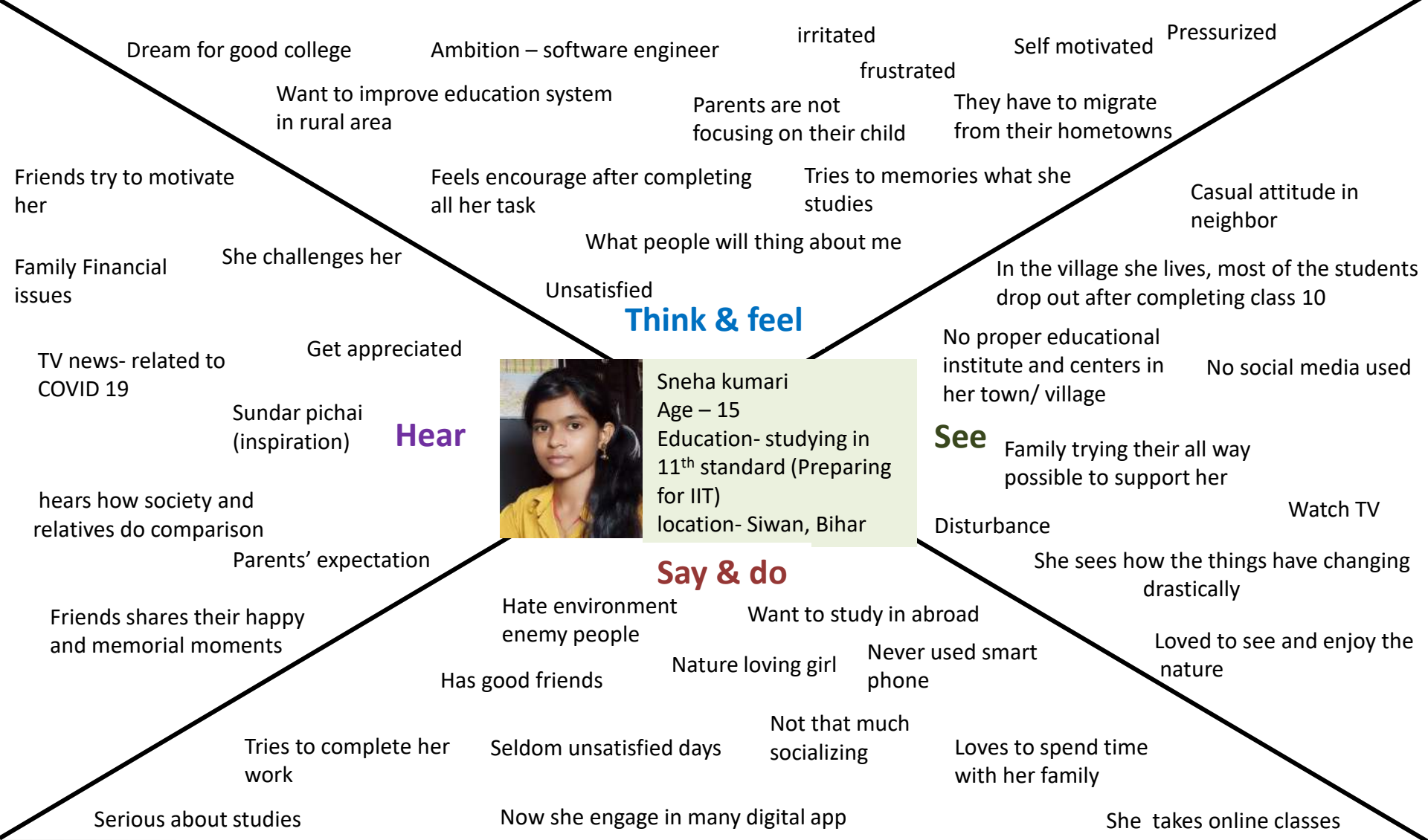
- There are a total of approx. 2,212 government schools in the state as per the report of MHRD, among which 879 are up to class 12.
- In 2015, there were around 1,82,015 students in class 12 and 14% schools failed their class 12 exams which show two broad possibilities – maybe due to lack of interest from student side, teachers are not fully practicing their duties, some other reasons.
- In 2015, the state had 5.81 students enrolled in all schools, out of which, 3.23lakh (55%) were in government schools and 2.57 lakh (45%) in private schools.
- The Himachal Pradesh Board of School Education is commonly known as HPBOSE. It is the main exam conducting authority in the state of Himachal Pradesh, founded in 1969 as per Himachal Pradesh Act No. 14 of 1968. The headquarter of the board is located in Dharamshala. Over 8,000 schools in Himachal Pradesh are affiliated with the HPBOSE. Every year approx. 5 lakh students appear in the exam under the supervision of the board in Himachal Pradesh.
- According to 2011 census percentage of literacy rate in Himachal Pradesh  
male: 89.53%  
female: 75.93
- In 2015, the state had 5.81 students enrolled in all schools, out of which, 3.23lakh (55%) were in government schools and 2.57 lakh (45%) in private schools.
- There has been tremendous growth in the availability of educational institutions in Himachal Pradesh in last few decades, but there is still a shortage of schools and colleges In most of the villages in the state.

## **Government initiatives for students**

- Himachal not only became one of the first states in India to launch a formal online education program for all grades in government schools, but it also beat many private schools. Within a week of the lockdown being announced, the Government of Himachal Pradesh started planning for online learning assuming long-term closure of schools. Within a week, the state launched a program called “Har Ghar-Pathshala”, with a vision to convert every home into a school.
- With the government trying all options for education from online, to television classes through community radio, online education has not got the desired response due to poor internet connectivity in the remote areas of the hilly districts in the state.
- Various schemes has been started like Kalpana Chawla Chhattarvrati Yojana, Swami Vivekananda Chhatrvrati Yojana, Beti Hai Anmol Yojana-

# Broad issues identified through research and interview

- Lack of participation by all stakeholders and teachers
- Lack of trained and dedicated teacher in rural areas.
- School dropout after completing 10th standard.
- Pressurized and influenced by peers and wrong people which leads to get involved in bad habits- stealing, smoking, creating and lot more.
- Lack of basic facilities
- Mental health problems: higher expectations, more pressure of achievement, job anxiety
- One of the most crucial issues, that occurs in the adolescent age, is that when young minds are not stable, lot of things are going on in the mind, they are at the growing stage, sometimes this leads them to take wrong and biased decisions. So, this required to be handled with great care and love
- Comparing face to face learning with online learning bring forth significant deficiencies in the online mode such as lack of human connect absence of opportunities of collaborative learning
- Student find it difficult to adapt to an online learning environment after traditional classroom learning.
- Many times students had to trek for a few kilometers in certain areas to get a proper signal so that they could attend classes or submit their assignments online.



Sneha kumari  
Age – 15  
Education- studying in 11<sup>th</sup> standard (Preparing for IIT)  
location- Siwan, Bihar



# MASLOW'S HIERARCHY OF NEEDS

---



- So, our user is on the 2<sup>nd</sup> stage which is “security and safety needs”.
- She want to be a software engineer. She is struggling to get proper education and want to achieve things that she wants.
- In some way she is insecure-
  - She is insecure about her career, she don't know what will happened, what to do, etc.
  - She is also financially insecure.
  - To some extent health and personal insecurity is also there.



# DEFINE

state your user's needs and problems

1.

## No proper environment for studies

### USER

A senior secondary student who is studying in village's government school, who want to become a very well known software engineer.

### NEED

She want a proper environment for herself so that she can sit constantly for a very long time and concentrate on her studies

### INSIGHT

As she is a very much serious about her studies but due to a lot of disturbance, distraction and pressure at home she is not able to memorize/ concentrate whatever she is studying and she also face mental stress, anxiety which make her unsatisfied and frustrated. So, she is looking for a appropriate environment or space within her house, so that she can't feel distracted or unsatisfied.

2.

Due to lack of knowledge about smart phone she is facing issues

## USER

A senior secondary student who is studying in village's government school, who want to become a very well known software engineer.

## NEED

She wants something which can guide her or tell her what to do in step wise at every moment.

## INSIGHT

She never used smart phone before and because she know less about smart phone she is facing issues because in present day coronavirus situation everything is done digitally, from attending class to ordering groceries everything. And nowadays she is working on digital platforms-attending online classes, submitting assignments, etc. which make her unproductive in her studies. So, she want a kind of guide who tell her what to do or how to go through various applications, etc.

3.

She want to motivate herself and release her stress but unable to do so

## USER

A senior secondary student who is studying in village's government school, who want to become a very well known software engineer.

## NEED

She want a stress relief tool or something which can also motivate her to study.

## INSIGHT

As things are changing drastically, everyday she is hearing news regarding coronavirus spreading, things are not happening smoothly which leads to irritation, stress and due to all of these she is not able to motivate herself to concentrate on her work. So, she want something which can release her stress as well as motivate her.



Sneha kumari

**Age** – 15

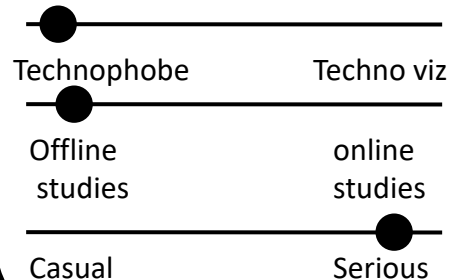
**Education**- studying in 11<sup>th</sup> grade

**Marital status** – Unmarried

**Location** – Siwan, Bihar.

**Occupation** - NA

**Internet usage:** 5-6 hours.



**Education is very important for Sneha. Sr. secondary classes are very necessary for her to step towards her dream for a good college.**

**Obstacles Sneha faces:**

- Not able to manage to use online application.
- Stress.
- No proper environment.

## How will Sneha interact?

**Questions Sneha will ask:**

- Different doubts related to different subjects.
- How can I clear my concept?
- How can I manage time to solve all the assignments.?
- How can I not feel stressed out?
- How can I motivate myself?

## Who influences Sneha?

Sundar Pichai

Friends

Family

## Sneha's situation

**Goals, motivation**

- Something that can guide her in using different online platforms.
- Something that can provide her productive studies.

## Key words

Management, stress, confusion, arrangement, environment, nature.

## Sneha's story

She is a girl from a rural middle class family who is happy that she got admitted after class 10 to an institute so that she can fulfill her dream and can get opportunity to go in a reputed college. But due to pandemic she has to attend the class online. When she attended the class for the first time she was not able to get how to use as she was using it for the first time . She is facing problems in making different assignment digitally. Even she does not have anyone to give her guidance how to get exposure to different online facilities available.

**SAY**

**DO**

"I am stressed but I cannot take break because I have a huge syllabus to complete."

"It would be better if I get a better environment for study."

"I love studying but it become so monotonous while studying for the whole day on phone and no such interaction are there with teachers and friends."

"I work hard on my studies to get good knowledge."

"I sometimes help my mom in doing household works."

"I attend online classes and use different applications."



"Who can I contact to clarify my doubt as there is less interaction with teachers?"

"Why everyone drops their children after class 10 in my surrounding? I want to change it."

"How can I fulfill my parents' expectation and get into a good college?"

"I am annoyed with so many digital apps as I am using them for the 1<sup>st</sup> time and do not know how to manage it."

"I feel that I can contact to my teachers and get my doubt clarified."

"I feel that I am missing my group studies and that is affecting me."

**THINK**

**FEEL**

# KIPLING THEORY

WHO	Students of senior secondary school are facing a problem while attending online classes.
WHAT	Digital learning and application handling is a problem.
WHERE	Problem arises when she attend her class :- <ul style="list-style-type: none"><li>• during online class she face network issues</li><li>• communication gap ,</li><li>• don't know how to handle a application ,</li><li>• difficult to focus etc.</li></ul>
WHY	<ul style="list-style-type: none"><li>• Due to lack of knowledge</li><li>• Unaware of smart phones application</li></ul>
WHEN	These problem arise when she :- <ul style="list-style-type: none"><li>• Does her assignment / home work .</li><li>• Submission of assignments.</li><li>• During online exams.</li></ul>
HOW	How the problem affecting her:- <ul style="list-style-type: none"><li>• She is facing issues in handling the smart phone.</li><li>• smart phone to some extend hindering her work productivity.</li></ul>



## PROBLEM

- Confusion
- Stress
- Frustration
- Disturbance
- Unsatisfaction
- Hectic schedule
- Preparation for two examination together
- Face difficulty in managing the smart phone

## USER NEED

- Guidance
- Good environment
- Need motivation
- Proper study space
- Mentor
- Satisfaction
- Routine
- Balance in life
- Productive education
- Achieve something good
- Good college
- Want something which can help her in managing and handling the smart phone

## OPPORTUNITY

- Creating something which will be user friendly.
- Providing something new, cheap with easy maintenance
- Create something which will be desirable, feasible and viable
- Combination of aesthetics (beauty) and functionality

# HMW questions

- how to help a user so that she can use phone application easily
- how to help a user so that she can work more effectively and efficiently
- How to help a user so that she can get motivated towards her career with less distraction and irritation
- How might we help her so that she can interact with teacher and friend to clear all her doubts
- How might we make online classes more adaptable for the students
- How might we improve the quality of network
- How might we use multiple platforms at a time
- How might we make less data consuming app
- How might we improve app
- How might we develop a app through which student also download the lecture for the future use
- How might we make an app where all classmate can meet and interact at any time they want
- How might we increase her productivity towards the work
- How might we develop her interest in virtual sessions.
- How might we can tackle her problem and develop an app
- How might we motivate her to study with interest during pandemic.
- How might we provide her information and guidance so that she can use all the digital platform without any difficulty
- How might we provide her a booklet with all the information in it
- How might we provide her a voice assistant
- How might we design an easy and simple app
- How might we reduce screen time and provide her audio book for her classes
- How might we reduce their problem of online classes
- How might we help her to understand the apps used in online classes
- How might we guide her

- How might we make the process of online classes stress free
- How might we reduce the communication gap between the teachers and students
- How might we make an student friendly app
- How might we make a routine for the user to overcome the hectic schedule and make balance in their life
- How might we create balance in the user's life in both the field (competition & board examination), so that she can achieve her dream to go to a renowned college
- How might we solve the problem of confusion while using a smart phone by providing a guide so that the user can get productive education
- How might we provide the user a good environment so that they will not feel frustrated or stressed out and achieve something good
- How might we provide the user a space so that they won't feel disturbed and can able to concentrate in their studies
- How might we provide the user a mentor to overcome the frustration and stress, she is feeling. So that she can concentrate in her studies
- how might we make an efficient and effective solution which can help her in handling the smart phone.
- how might we can create an challenge or complex free solution
- how might we can create something which will not need any kind of extra efforts or any difficulty while we are using some kind of new application.
- how might we can provide a guide. Who will be there every time whenever we need and who will tell u what to do next.
- how might if we make some sort of screen( average size ) in which you just need to say something or ask anything you want, Then all the steps that are need to be followed or the information you want to know will automatically displays on the screen



IDEATE

challenge assumptions and create ideate

Reminder  
convenient  
Handy  
language issue  
difficult to focus  
one touch guidance  
body pain  
feeling overwhelmed  
voice guiding application  
easy maintenance  
hectic schedule  
Focus  
wrong step indicator  
smart and simple way to learn  
automatic voice guide

easy to handle  
Guide  
mind sensor  
collaborative learning  
adaptability struggle  
stress on eyes  
Interesting  
easy to understandable technology  
Solve Financial problem  
Google search  
voice sensor  
hard to use application  
bigger screen  
thin and slim body

no proper diet  
wastage of time  
need Guidance  
easy app  
Can be use wherever you want  
harmful radiation from phone  
lack of knowledge about smart phone  
motivation  
guideline  
mentor  
something like Google assistant with more efficiency  
thin and slim body

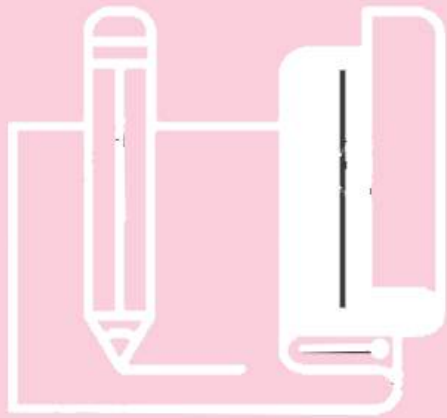
Idea generation  
all in one application and apps  
want more efficient and effective work  
representative  
look aesthetically pleasing  
easy to store  
no time for rest  
irritation  
provide guidelines  
Interaction  
bright light  
can't communicate  
time management  
Compact  
guided-orientation  
headache

weakness  
connectivity  
center- search option  
multi-languages  
no Interaction with other students  
human friendly  
distraction

Network issue

# Problem statement

Our Sneha	WHO
have the problem that she face difficulties while using her smart phone, she don't have much knowledge about the features and applications of the smart phone	WHAT
when she takes her online classes, working on her assignments	WHERE
An ideal solution would a connectible screen which can be connect with your phone through USB or Bluetooth. It has a little larger screen with additional feature which will be provided to the user so that she can get it in a cheaper price as well as it can be easy and flexible to use . This will be more simple and efficient with a voice sensor in it.	WHY # 1
while creating new, innovative design and raising customer satisfaction	WHY # 2



# PROTOTYPE

Paper representation of a product

# Description of the prototype

## Features

- \*There is a phone which will be connected to a larger screen which size is 119 mm height and 120 mm width.
- \*The screen will have a feature of voice sensor so that it can hear the voice and follow the instructions.
- \*It will have a Bluetooth feature to pair with phone system and an additional it will have a USB cable as well for emergency.
- \*Screen will have a charging point which can easily be charged with type B charger.

## Pros

- \*It is cheaper in cost
- \*Screen can be visible clearly
- \*Easy to use because of voice sensor where user has to just speak and instruct.

## Cons

- \*Difficult to carry



HOW MAY I  
HELP YOU

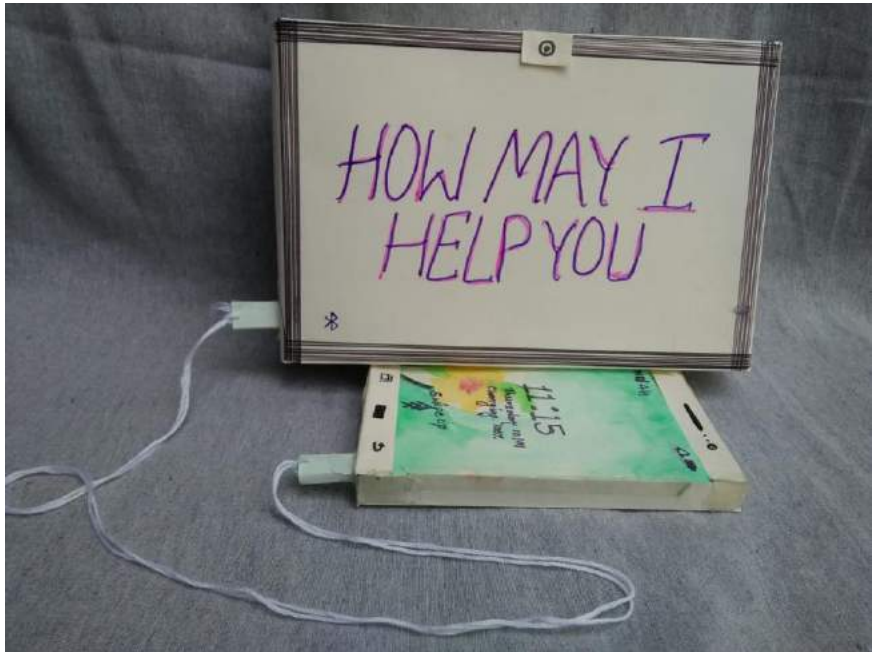
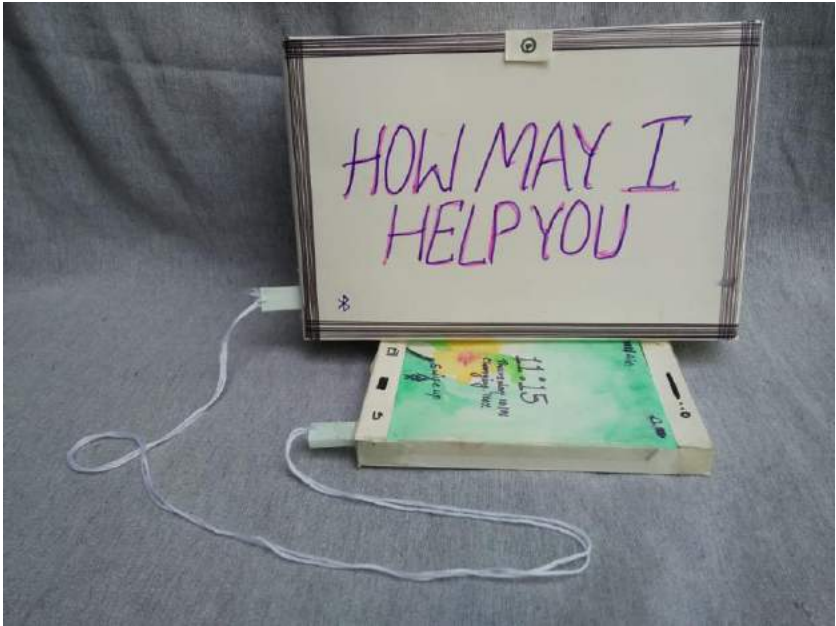
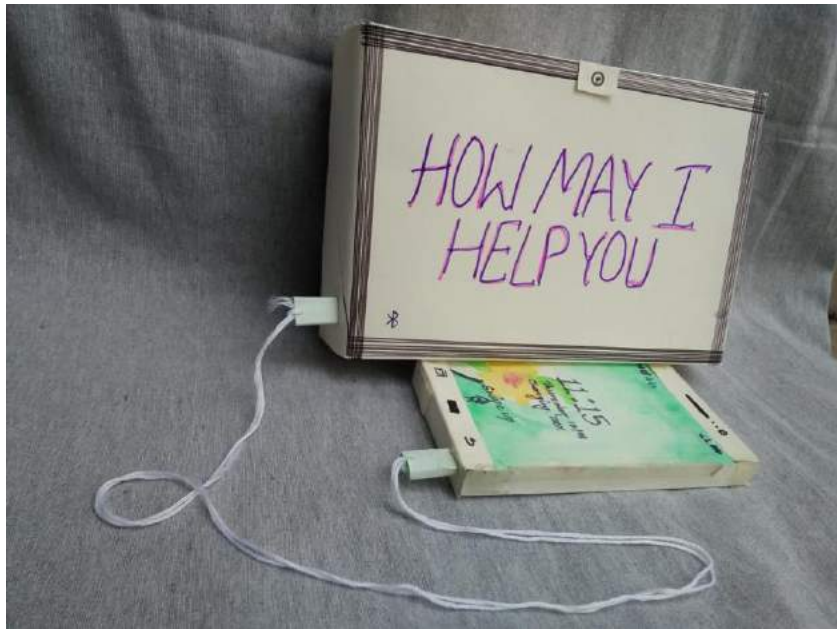


5

Swipe up  
Thursday 10/10/19  
Charging 100%

11:15

PAPER PROTOTYPE

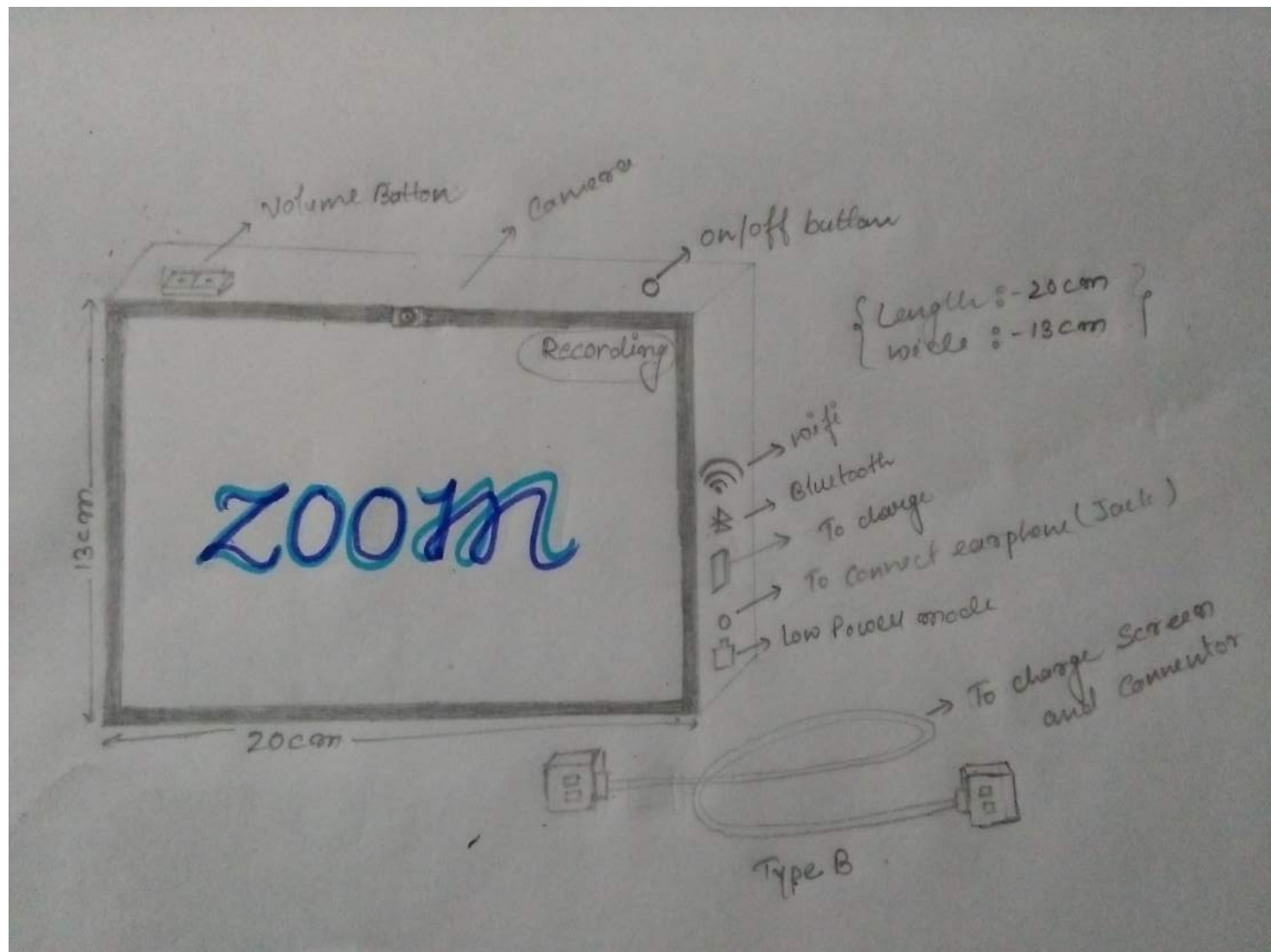




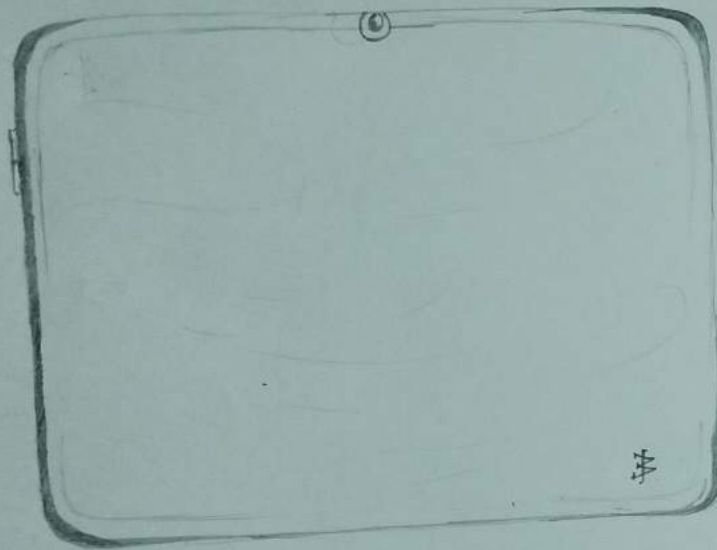
TESTING



PHASES	MORNING TIME	EVENING TIME	NIGHT TIME
DOING	WAKE UP EARLY IN THE MORNING, AND ATTENDED ONLINE CLASSES	RECAP, MORNING LECTURED AND NOTED DOWN IMPORTANT POINTS	SOLVED MATHS QUESTIONS
THINKING	DISTRACTED DURING ONLINE CLASSES	PRESSURED	TOO MUCH CONFUSED
FEELING	DISTRACTED STRESSED	CONFUSED	STRESSED

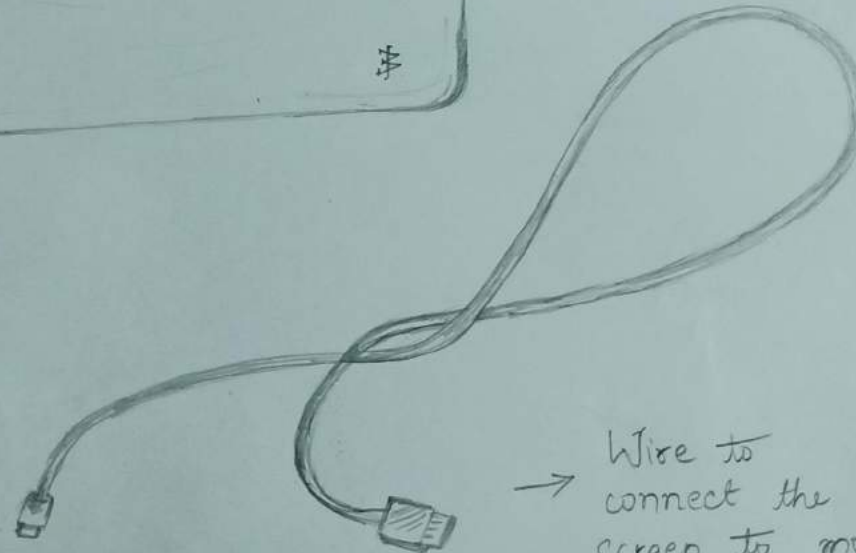


Phase	Travelling through train	Travelling through bus	While eating	Going to sleep
Doing	Attending an online class	Reading a book	Pack the books and keep them safe	Arranging the bed and trying to watch some videos related to study.
Thinking	Network is lagging	No comfortable sitting area	No easy movement in the vehicle	So much buffering in the video and less concentration
Feeling	Frustrated, Tensed	Irritated, Less concentrated	Anger, irritated	Lazy and sleepy



### Features:-

- Camera
- Bluetooth facility
- Big screen to provide comfort to eye.
- Recording facility
- Volume button
- Chargeable.

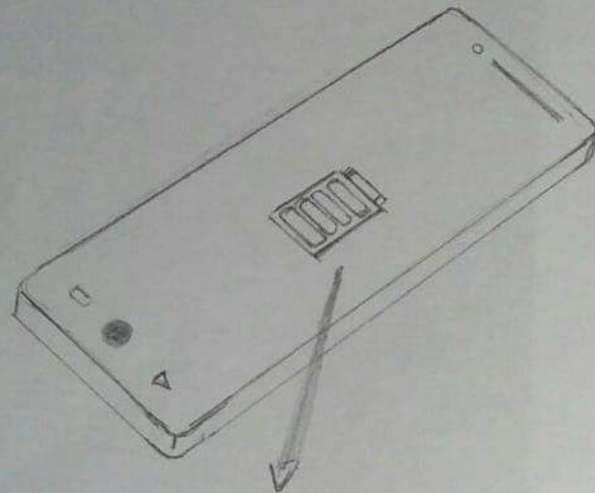


→ Wire to connect the screen to mobile.

PHASES	ONLINE CLASSES	TRAVELLING	ONLINE EXAM
DOING	6-7 HOURS ONLINE CLASS	INTERNET CONNECTION, HEAVY LAPTOP NO CHARGING SYSTEM.	EXAM THROUGH GOOGLE FORMS .
THINKING	DISTRACTION DURING CLASS (NO CLASSROOM ENVIROMENT) NEED PEACEFULL ENVIRO- MENT AND INTRACTION WITH STUDENTS	EASY TO CARRY DEVICE	COULD BE BETTER IF THE CONNECTION WAS GOOD
FEELING	DISTRACTIONS AND EYE PAIN	FRUSTRATION	INSECURE REGARDING MARKS



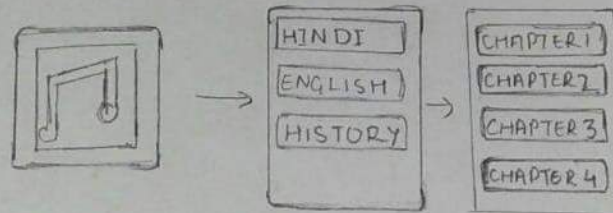
① SMART-PHONE THAT COULD  
BE CHARGE OVER WI-FI



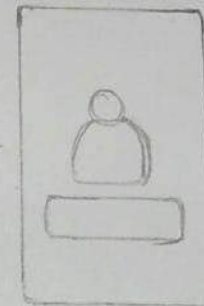
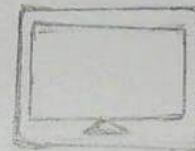
CHARGING  
OVER  
WI-FI

② APP FOR ONLINE CLASS

→ AUDIO BOOK FOR SUBJECTS LIKE  
- HINDI ENGLISH HISTORY



→ ONLINE CLASS FOR 2-3 HOURS -  
A DAY






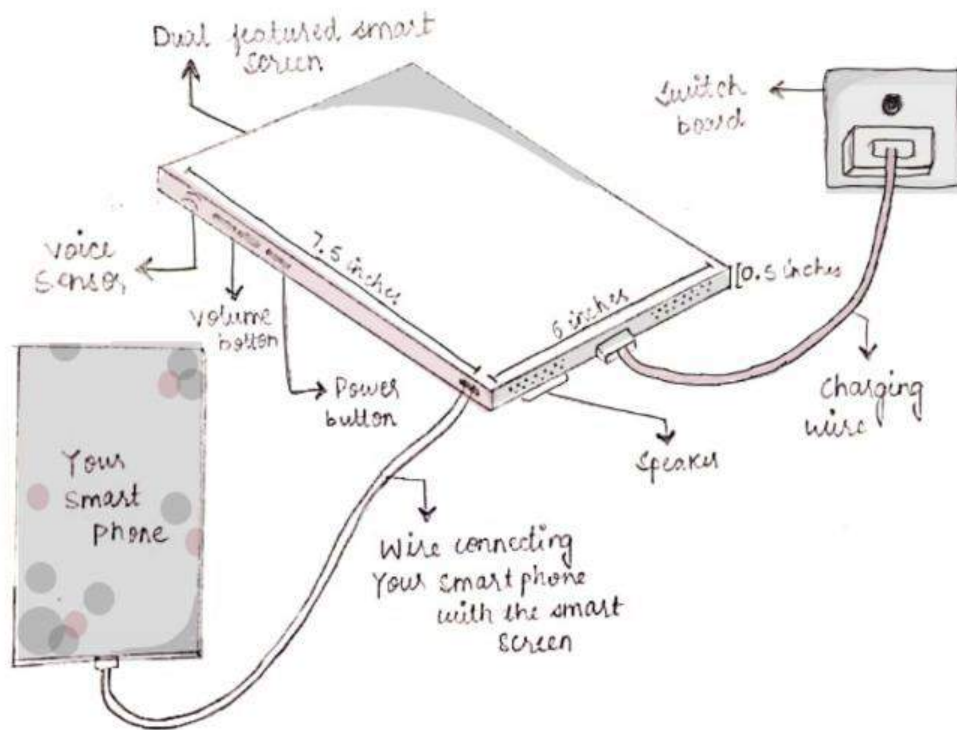
→ STUDENTS CAN  
RECORD THE SESSIONS

→ EASY TO USE

→ SCHEDULE FOR  
NEXT CLASS (UPDATE)

→ QUESTION

Phases	Scienero during the family functions (unnecessary)	In between the going on family events	Finally after the family events ends
Doing	<ul style="list-style-type: none"> <li># Engaged with my family members.</li> <li># Helping my mumma.</li> <li># Unintentionally neglecting my studies.</li> </ul> 	<ul style="list-style-type: none"> <li># Holding my voice sensor screen and listening or watching my class lectures while moving here and there.</li> <li># Everyone is talking and making a lot of noise.</li> </ul>	 <ul style="list-style-type: none"> <li># cleaning the house.</li> <li># trying to study but due to entire hectic day it's not possible.</li> <li># So, i'm going to bed.</li> </ul>
Thinking	<ul style="list-style-type: none"> <li># I'm thinking why the family events always happens during my exams or when it's precious time for my studies.</li> <li>#when all this will finish.</li> <li># i'm thinking about what will be the best way possible to study and concentrate on my studies.</li> </ul>	<ul style="list-style-type: none"> <li># This voice sensor screen is so handy and comfortable, i can take it where ever i want to.</li> <li># Even it's quit different from the other products and apps, i just need to say what i want and it will visible in front of my eyes.</li> </ul>	<ul style="list-style-type: none"> <li># atleast i've studied little bit in the whole day and this is due to my screen buddy, who made me understand and find things easier.</li> <li># after such a hectic day,i need to sleep.</li> </ul> 
Feeling	<div>frustrated</div> <div>trying to concentrate</div> <div>feeling helpless</div> <div>anxious</div>	<div>quit satisfied</div> <div>hopeful</div>	<div>tired</div> <div>bored</div> <div>distressed</div> <div>sleepy</div>



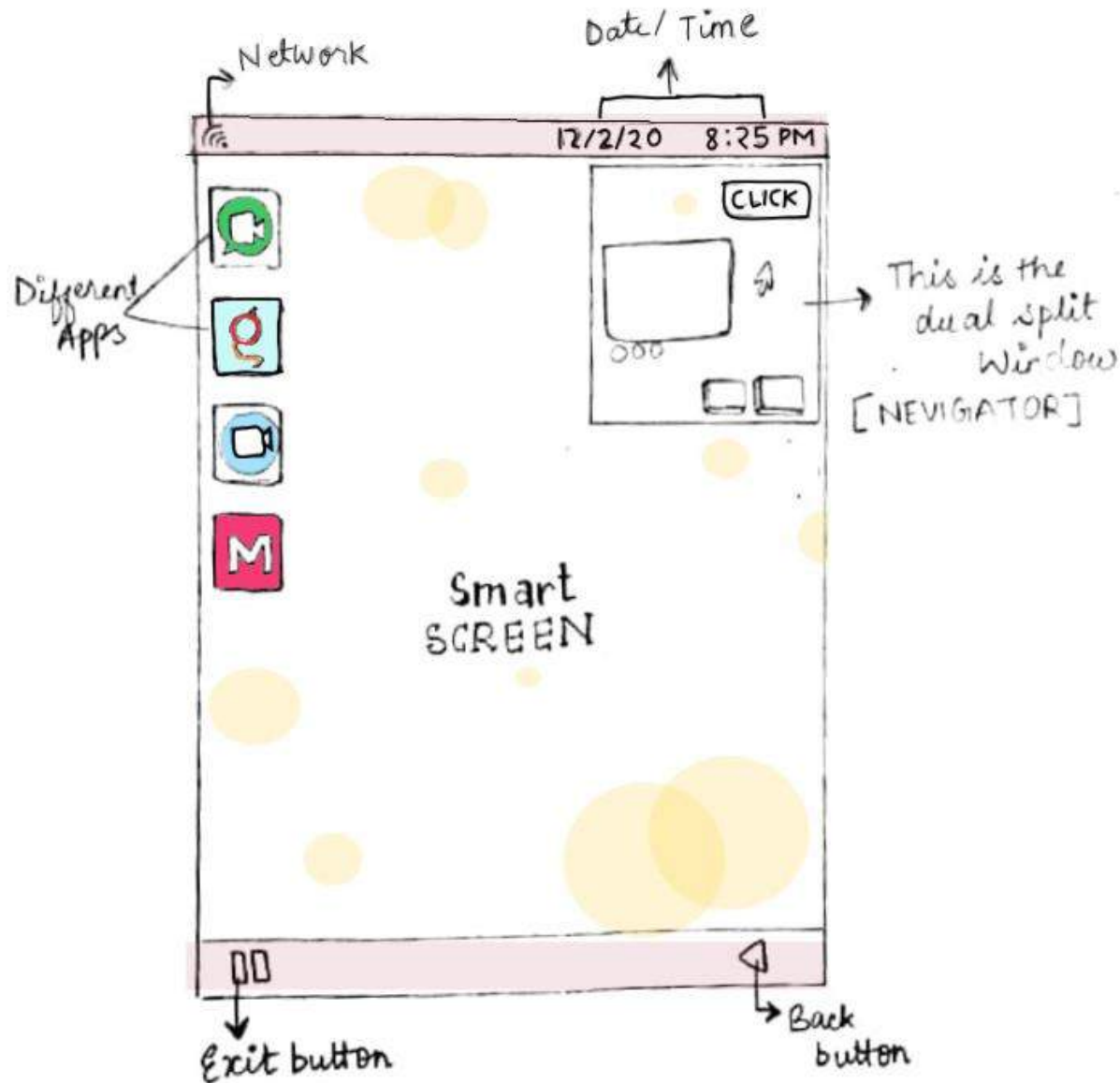
## BASIC INFORMATION

★ The main idea behind the development of such smart screen is the lack of knowledge among the students who are not aware about the features and process that are available in these devices. So, to overcome this issue to some extent we have designed this dual featured smart screen [touchable and voice sensor ability].

other parts :-

- It is available in  $7.5 \times 6 \times 0.5$  inches
- consist of speaker, charging wire (USB), back camera, voice sensor.





## Variation in the prototype

\* The variation or changes that are done was based on the testing of the prototype. The variation that I'm thinking of and the need from the subject also.

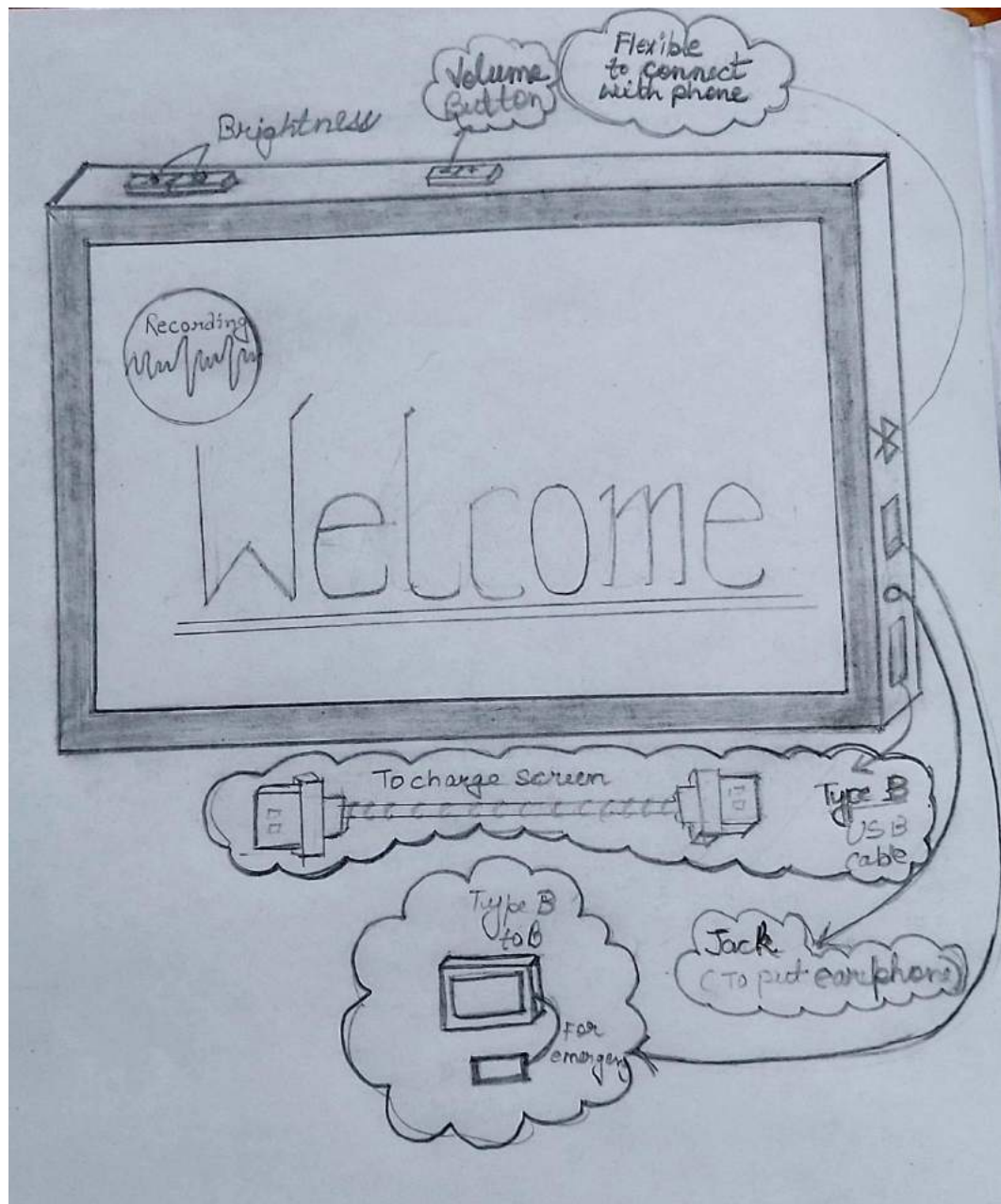
So, I have an idea of adding a split window feature in which there will be one additional small window for navigating the user at every single step (it will be visible on the right hand top corner).

\* This window navigator will show you things step by step, if the user is clicking the wrong button or going in the wrong direction then it will not show or move forward. Basically it will navigate how to use and handle a particular app in the device.

You have to just say then it will start navigating in the case of app. but if you need to search something then it will automatically show the results.

You can buy or rent this smart screen from the store. In the case of renting you can rent this smart screen at lower price, but if any damage done by the user then the user need to pay the bill for the damage. You can rent this screen as long as the customer want.

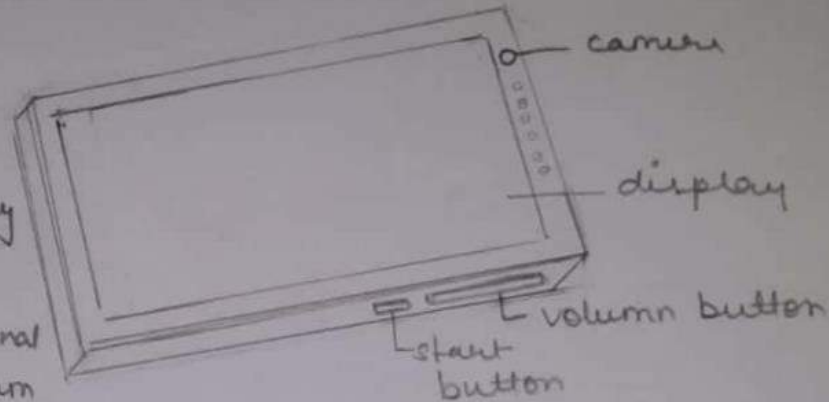
PHASE	Parents living home	Going to Study	Moving Toward Kitchen	Finally to bed
DOING	Giving the packed item and necessary stuffs Dropping them till gate	Making imprtant notes in copy Studing alone	Keeping the copy side and moving toward kitchen. Taking the screen to kitchen	Arranging bed. Listening to class video
THINKING	Have to pack fastly Missing my class There might be a recordingsystem also in a screen.	Such a clear screen to study having no stress in eye. How long will the battery last?	Can't concentrate properly.	There might be a recordingsystem also in a screen.
FEELING	Anger Stressed	Good Confused	Stressed Lazy	Exhausted



PHASES	Stay in relative house	In all of the day	challenges	
DOING	<div>Preparing for exam</div> <div>study</div>	<div>Attending online classes</div> <div>Self study</div> <div>revision</div>	<div>Time management</div> <div>Focus on study without any distraction</div>	
THINKING	<div>Can't concentrate</div> <div>No privacy</div> <div>Distraction during study</div>	<div>Make routine for study</div> <div>I have to increase my speed so that I cover my syllabus</div>	<div>Network connection have to be good</div>	
FEELING	<div>confused</div>	<div>motivated</div> <div>organised</div>	<div>Stay motivated</div>	

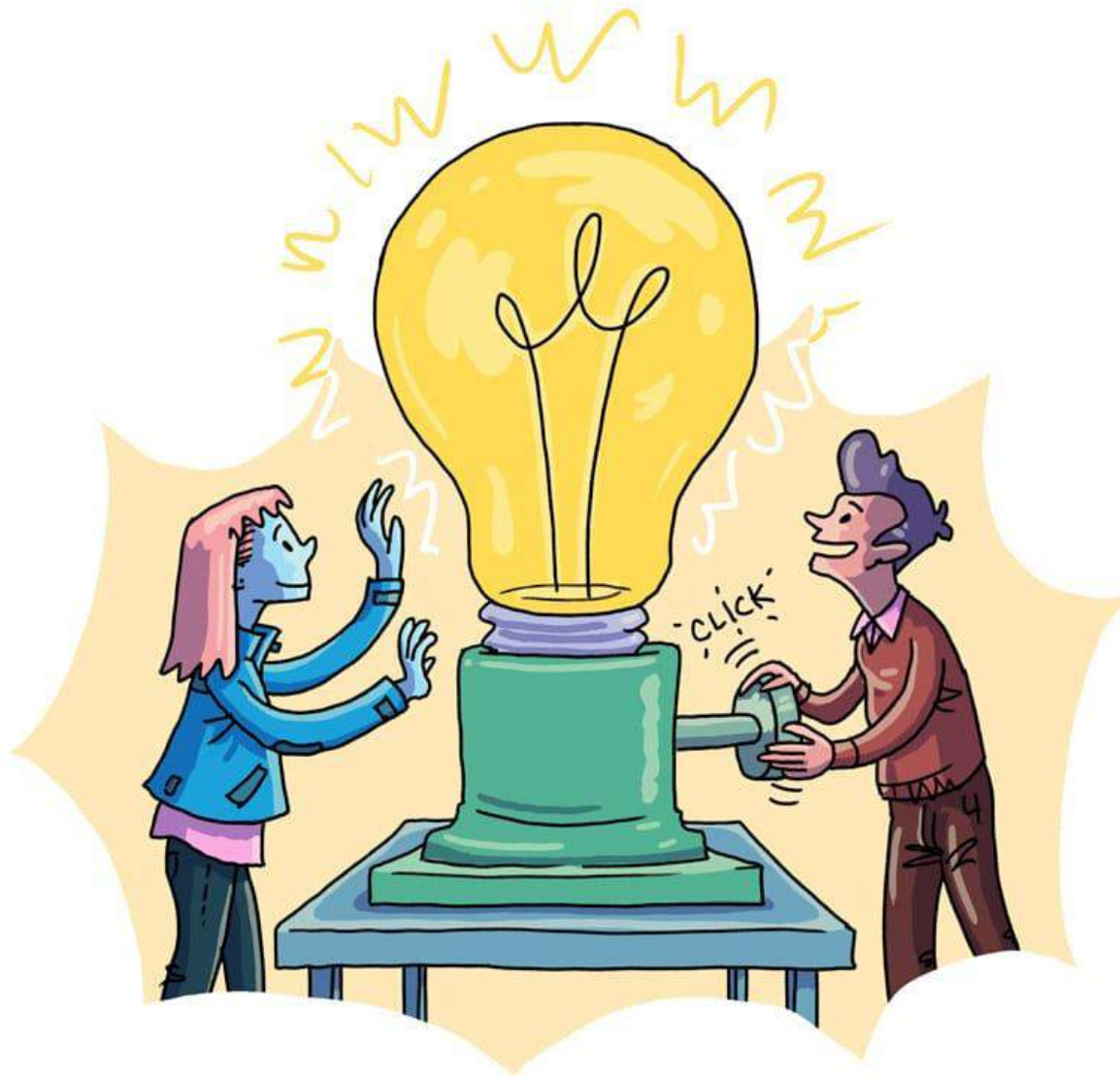


## Product



- \* This product is mainly made for study.
- \* It has large internal storage of maximum 64gb or more than that - So that student can store their assignment.
- \* Student can take online class on this.
- \* There is no any other app for distraction, so, study distraction free.
- \* Its battery life is long-lasting so that student can use as long as they want.

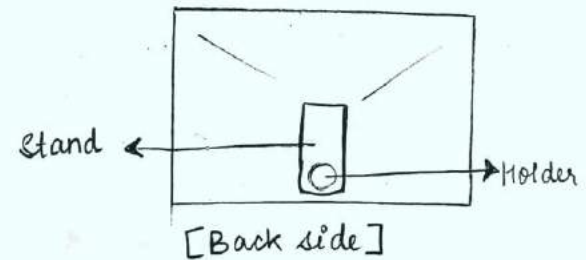
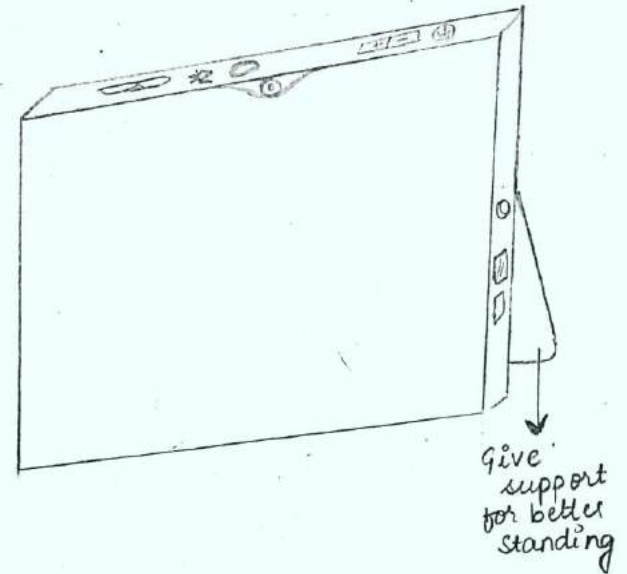
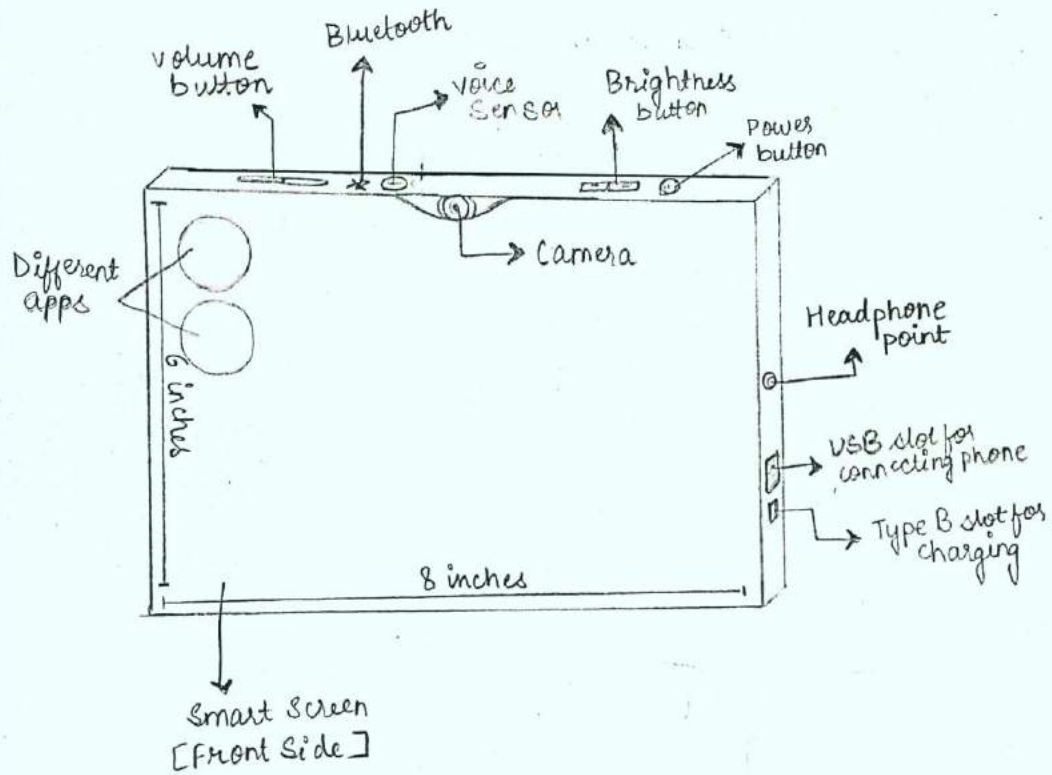




FINAL DESIGN



# FINAL SKETCH



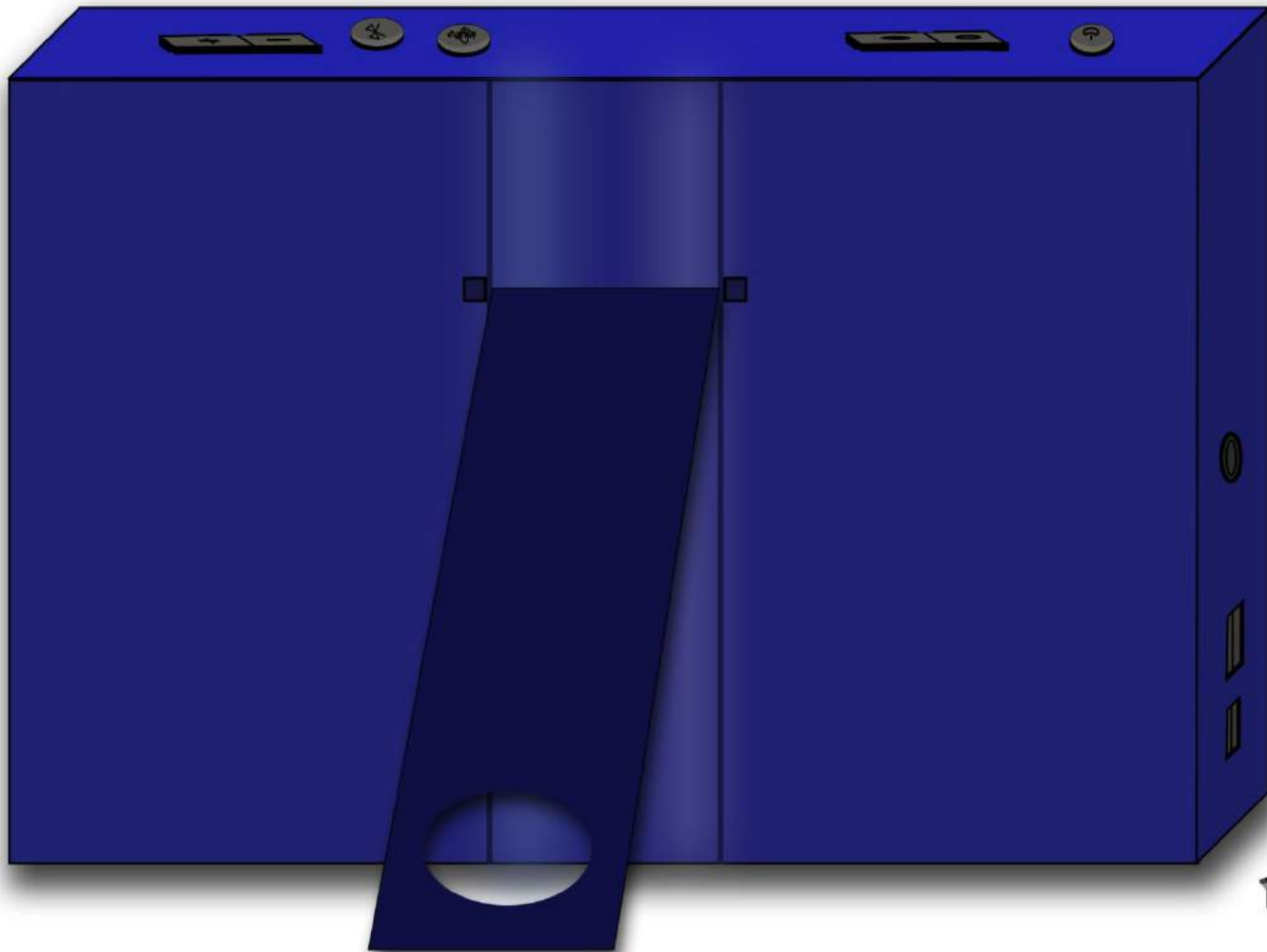
# PROJEXA

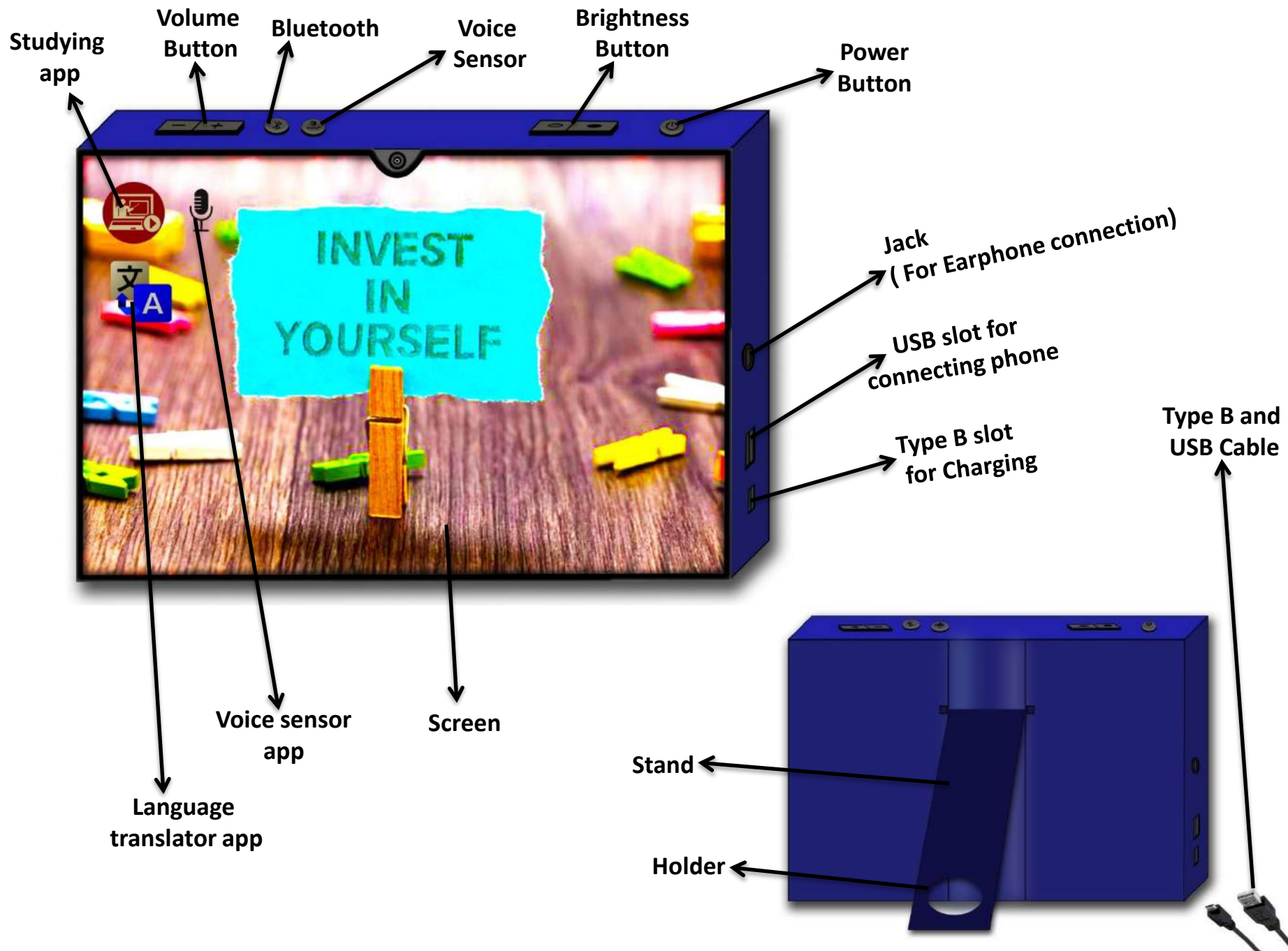
(Name of the product)



Front View

Back View







# DESCRIPTION AND FEATURES

- The name of the product is “**PROJEXA**”. Took inspiration from projector and Alexa.
- It's cost or range is 4000rs.
- It is mainly made for a student who have to study online these days and also it is affordable, so that weaker section can also take benefits of it.
- Study, language and voice sensor app is inbuilt so that it can be easy to use and understand.

- **FEATURES**

- ✓ Charging point with type B Charger.
- ✓ Battery – 3500MAh
- ✓ Size – 6 x 8 x 0.5 inches
- ✓ Connect with phone through USB (emergency) and Bluetooth.
- ✓ Camera – Front Camera 2MP
- ✓ RAM – 2GB
- ✓ Memory Card – 8 GB
- ✓ Power button
- ✓ Voice Sensor Button
- ✓ Brightness Button
- ✓ Jack ( For Earphone connection)
- ✓ Holder and stand at back

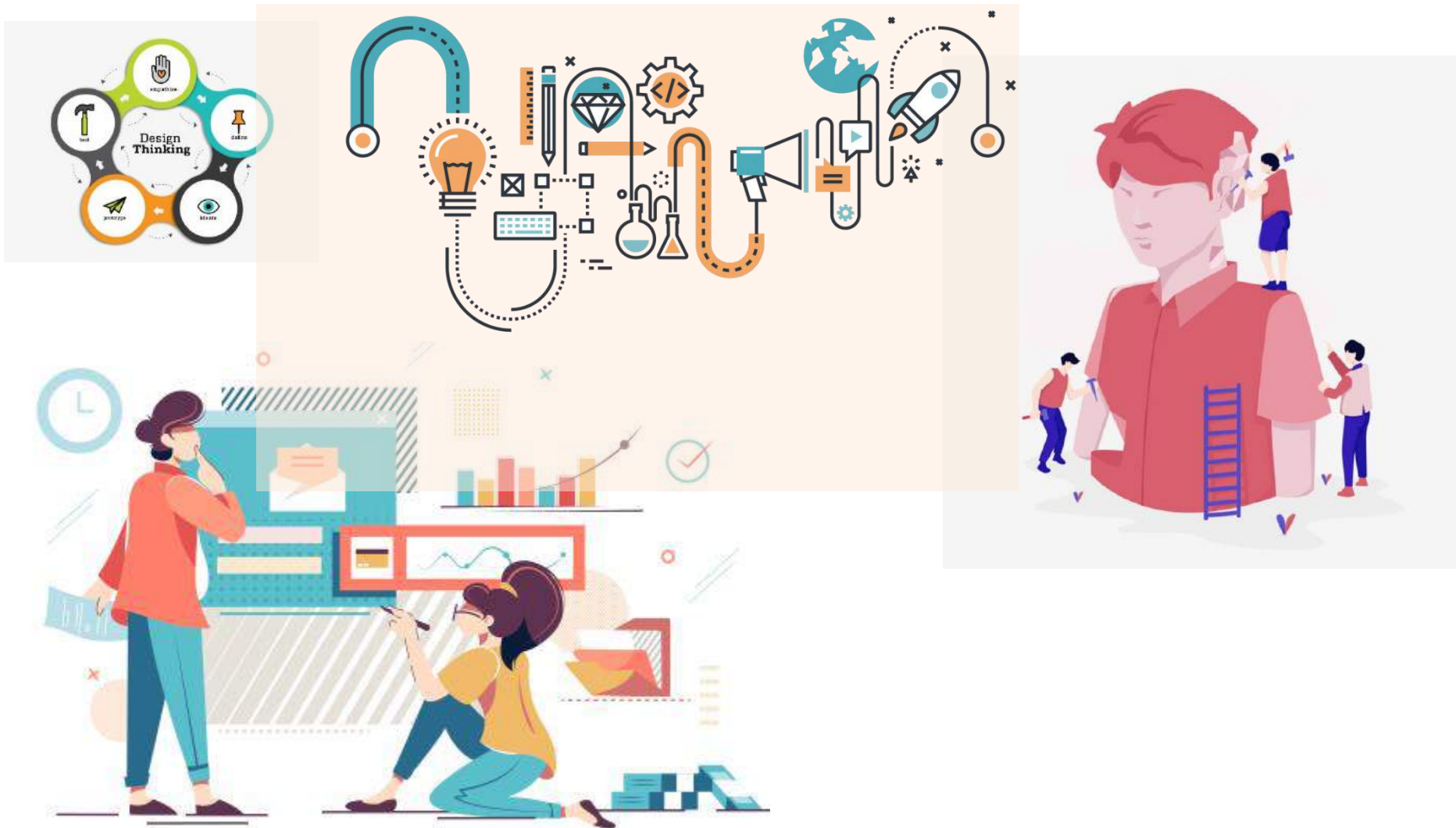
# PROS AND CONS

- **PROS**

- ❖ Cheaper in cost.
- ❖ Large Screen
- ❖ Easy to use and understand
- ❖ Concentration in studies because no other application can be installed.
- ❖ Portable
- ❖ Light in weight
- ❖ Balance and flexible to use due to holder and stand
- ❖ No Language barrier

- **CONS**

- ❖ It is not having a feature of touch screen.



Thank You