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Design Thinking Lab Report
20MCA27

on

Title E-WASTE MANAGEMENT SYSTEM

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DEPARTMENT OF
MASTER OF COMPUTER APPLICATIONS

2021-2022

RV COLLEGE OF ENGINEERING®

(Autonomous Institution Affiliated to Visvesvaraya Technological University, Belagavi)

DEPARTMENT OF

MASTER OF COMPUTER APPLICATIONS

Bengaluru– 560059

CERTIFICATE

Certified that **Design Thinking Laboratory work titled** **"E-waste Management System"** carried out by **Nagaratna, USN:1RV20MC054, Sahana R Koralli, USN:1RV20MC089, Megha M, USN:1RV20MC048,** who are bonafide students of **RV College of Engineering®, Bengaluru** submitted in partial fulfilment for the award of Design Thinking Lab marks for the 2nd Semester MCA during the academic year 2021-22.It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report.

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ABSTRACT

Design thinking helps you in defining problems and constructing actionable questions and answers. It gives you the opportunity to generate and visualize ideas using creative processes. It also stresses imagination, meaning it helps you in generating a lot of ideas

Create design thinking teams and conduct design thinking sessions Apply both critical thinking and design thinking in parallel to solve problems Apply some design thinking concepts to their daily work. Design thinking involves the mainly 5 steps **Empathize, Define, Ideate, Prototype and Test. Each** steps contains the corresponding input and output, It will helps to develop the final project in correct way.

Understand the concepts of design thinking approaches. Create design thinking teams and conduct design thinking sessions. Apply both critical thinking and design thinking in parallel to solve problems. This helps the team to design better products faster, reduce costs, and increase profits. Other goals include: Improving the problem-solving skills of the team.

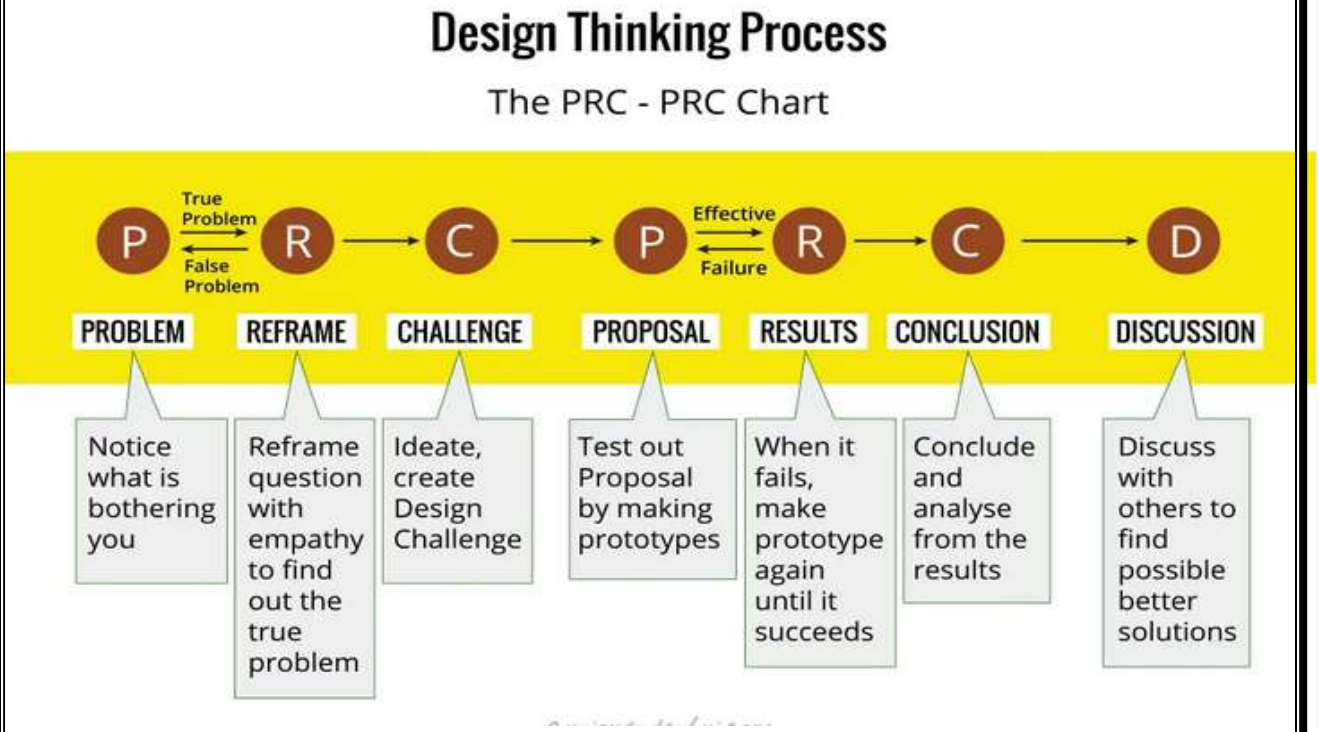
Contents

Empathy

Empathy is the first step in design thinking because it is a skill that allows us to understand and share the same feelings that others feel. Through empathy, we are able to put ourselves in other people's shoes and connect with how they might be feeling about their problem, circumstance, or situation

Client Details:

Stakeholders of e-waste include a Public,Students,institution. The generators are required to discard their household E-wastes into the formal collection channels.



Need Analysis with evidences

The problem need is analysed based on the answers given by the users for this questions.

Questionnaire and Analysis

1.Are you a student?

2.Do you know what is E-waste?

3.What do you do with electonic or electrical product which is of no longer use?

4.How many electrical or electronic items do you purchase per year?

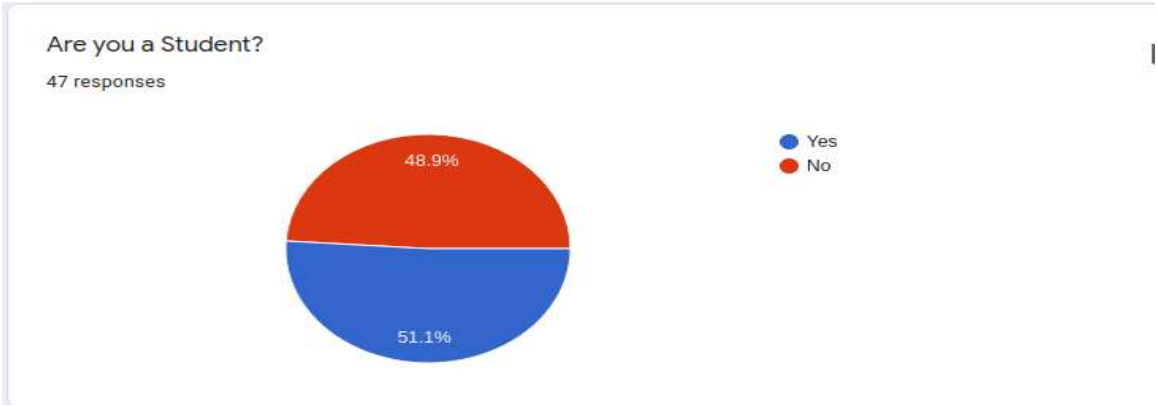
5.Do you think public need to be educated how E-waste can be recycled properly?

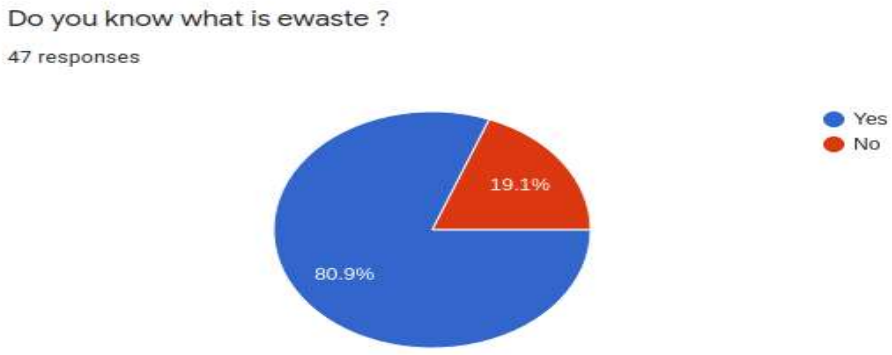
6.Have you been to any E-waste recycling event Before?

7.How much do you spend do you spend on the electrical/electronic products in a year for your home?

8.Do you know how E-waste effects on the Environment?

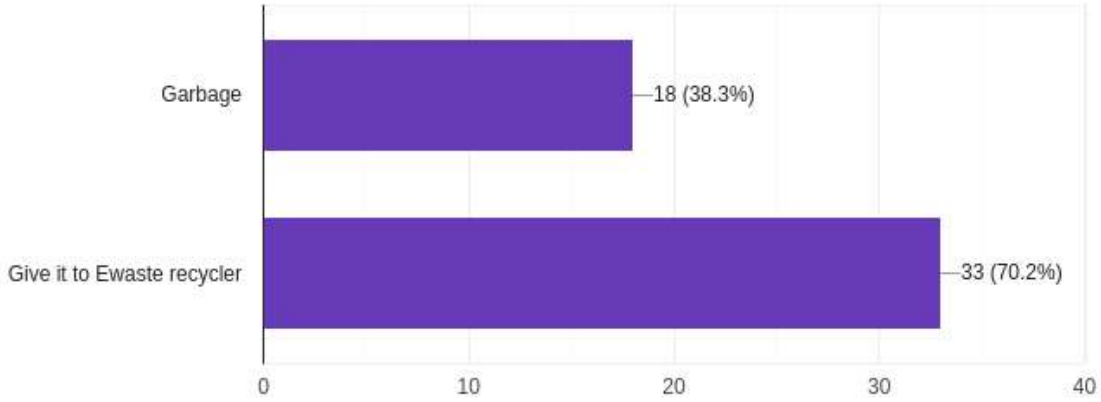
9.If we Educate Public regarding E-waste recycling is it helpful or not?





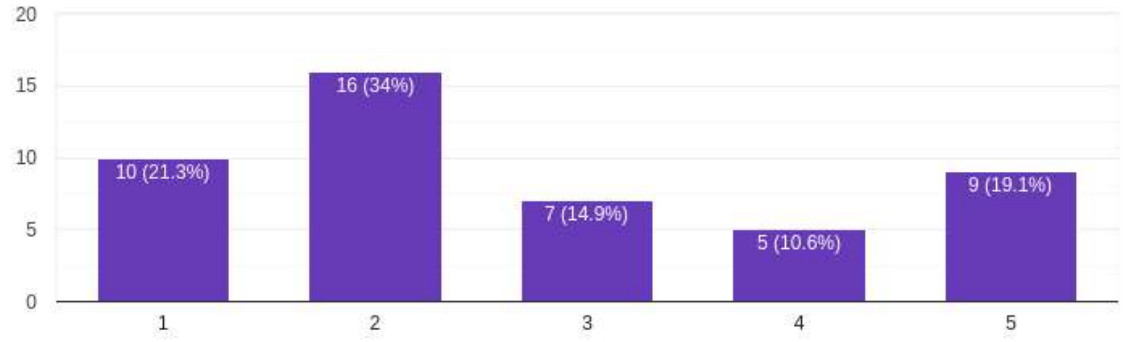
What do you do with working electronic/electrical product that is of no longer use?

47 responses



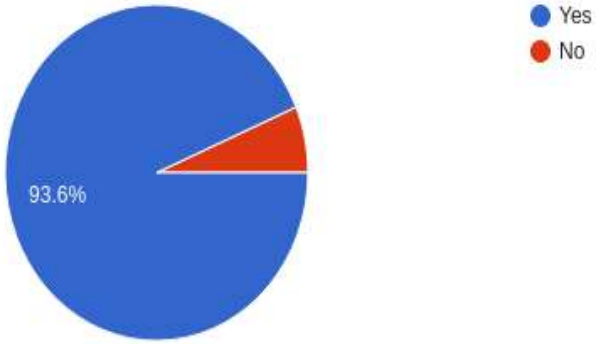
How many electronic/electrical products do you purchase per year?

47 responses



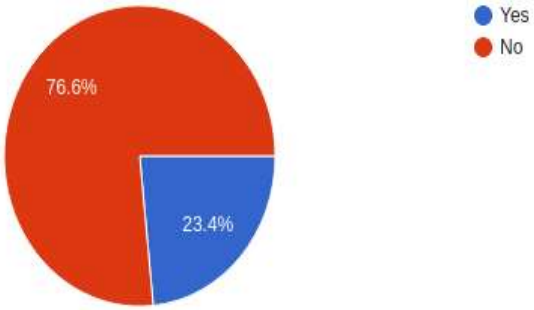
Do you think public need to be educated how ewaste can be recycled properly?

47 responses



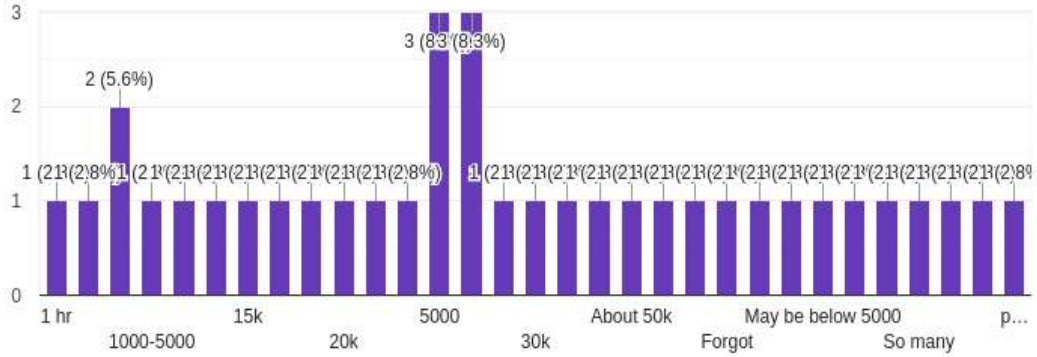
Have you been to any ewaste recycling event before?

47 responses



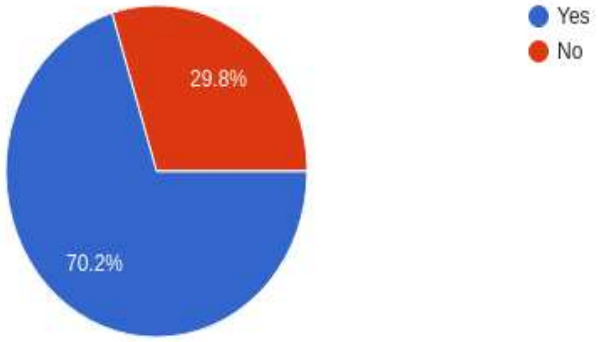
How much do you spend on electronic/electrical products in a year for your home?

36 responses



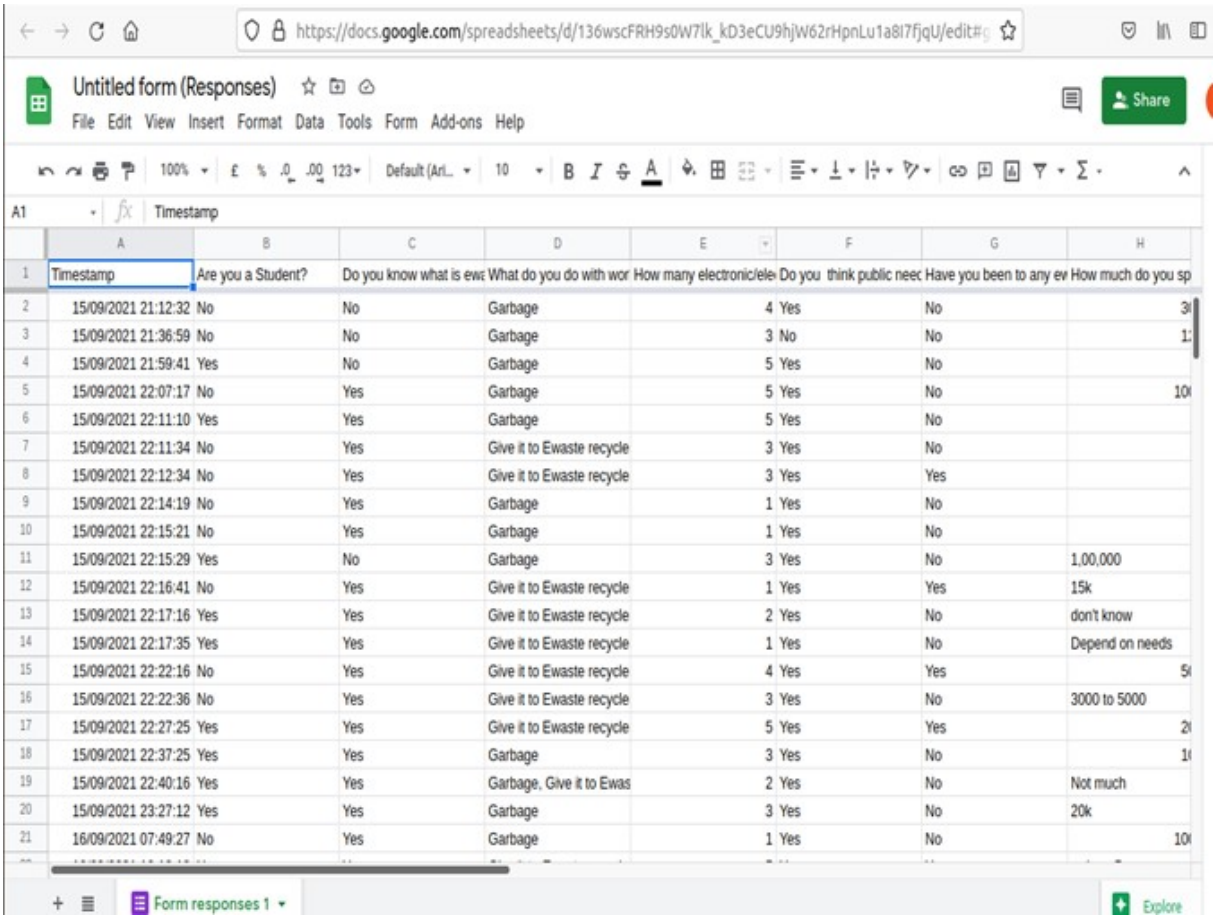
Do you know how ewaste effects on the environment?

47 responses



If we educate Public regarding Ewaste recycling is it helpful or not?

47 responses



Untitled form (Responses)

File Edit View Insert Format Data Tools Form Add-ons Help

Share

A1 Timestamp

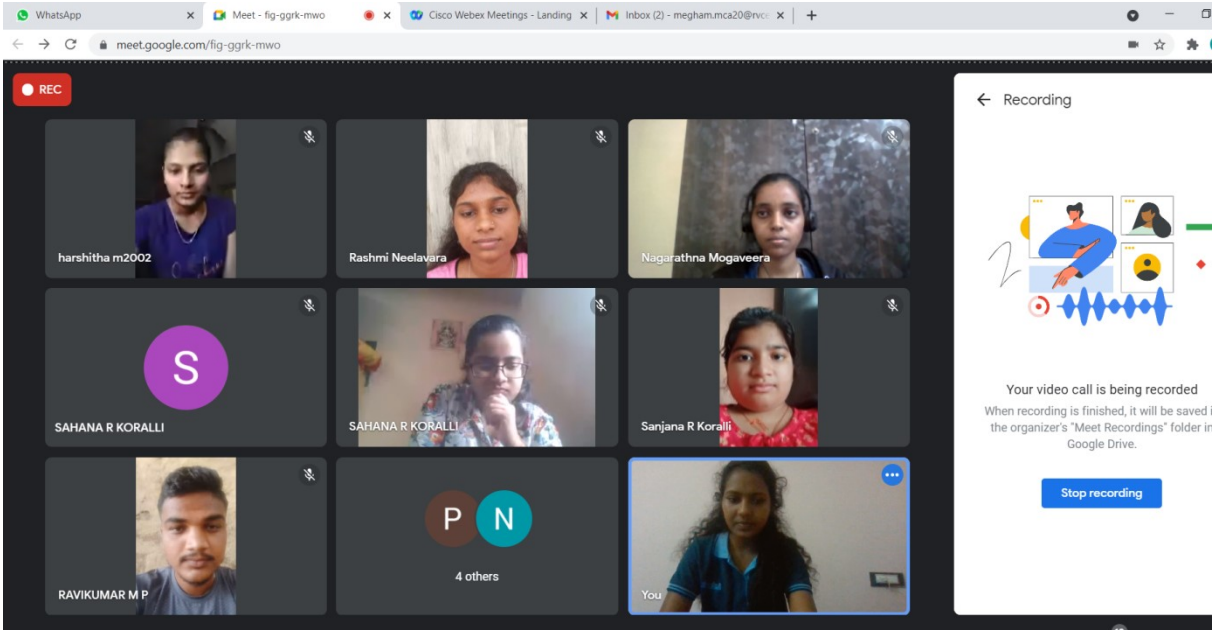
	A	B	C	D	E	F	G	H
1	Timestamp	Are you a Student?	Do you know what is ewa	What do you do with wor	How many electronic/ele	Do you think public neec	Have you been to any ev	How much do you sp
2	15/09/2021 21:12:32	No	No	Garbage	4	Yes	No	3
3	15/09/2021 21:36:59	No	No	Garbage	3	No	No	1
4	15/09/2021 21:59:41	Yes	No	Garbage	5	Yes	No	
5	15/09/2021 22:07:17	No	Yes	Garbage	5	Yes	No	10
6	15/09/2021 22:11:10	Yes	Yes	Garbage	5	Yes	No	
7	15/09/2021 22:11:34	No	Yes	Give it to Ewaste recycle	3	Yes	No	
8	15/09/2021 22:12:34	No	Yes	Give it to Ewaste recycle	3	Yes	Yes	
9	15/09/2021 22:14:19	No	Yes	Garbage	1	Yes	No	
10	15/09/2021 22:15:21	No	Yes	Garbage	1	Yes	No	
11	15/09/2021 22:15:29	Yes	No	Garbage	3	Yes	No	1,00,000
12	15/09/2021 22:16:41	No	Yes	Give it to Ewaste recycle	1	Yes	Yes	15k
13	15/09/2021 22:17:16	Yes	Yes	Give it to Ewaste recycle	2	Yes	No	don't know
14	15/09/2021 22:17:35	Yes	Yes	Give it to Ewaste recycle	1	Yes	No	Depend on needs
15	15/09/2021 22:22:16	No	Yes	Give it to Ewaste recycle	4	Yes	Yes	5
16	15/09/2021 22:22:36	No	Yes	Give it to Ewaste recycle	3	Yes	No	3000 to 5000
17	15/09/2021 22:27:25	Yes	Yes	Give it to Ewaste recycle	5	Yes	Yes	2
18	15/09/2021 22:37:25	Yes	Yes	Garbage	3	Yes	No	1
19	15/09/2021 22:40:16	Yes	Yes	Garbage, Give it to Ewas	2	Yes	No	Not much
20	15/09/2021 23:27:12	Yes	Yes	Garbage	3	Yes	No	20k
21	16/09/2021 07:49:27	No	Yes	Garbage	1	Yes	No	10

Form responses 1

Explore

Interaction Photos with captions:

We are host an google meet throw this we are collect the input from the users.



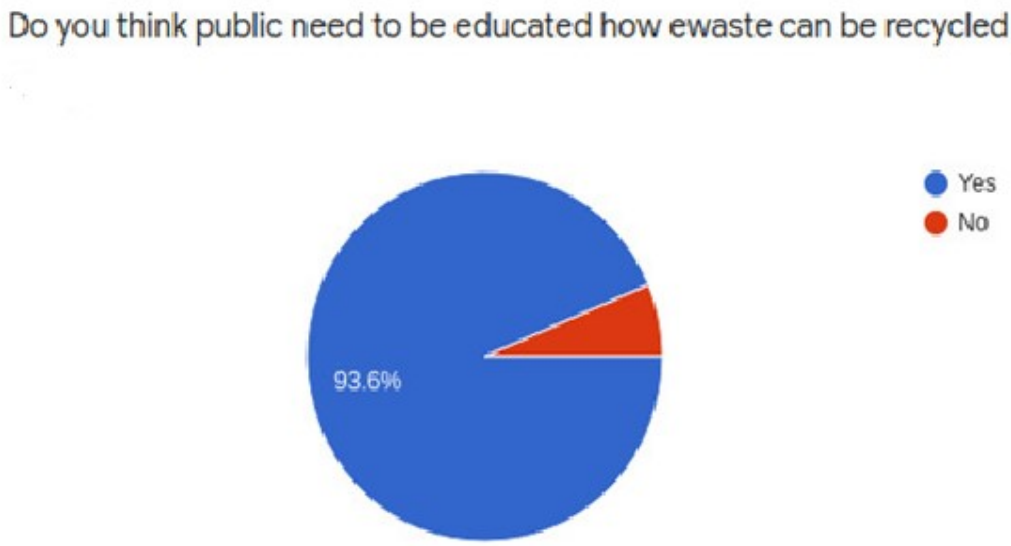
Tools used for Empathy phase:

- Online forms to collect the data
- Statistical Analysis
- E-waste Management company website and their videos

Define

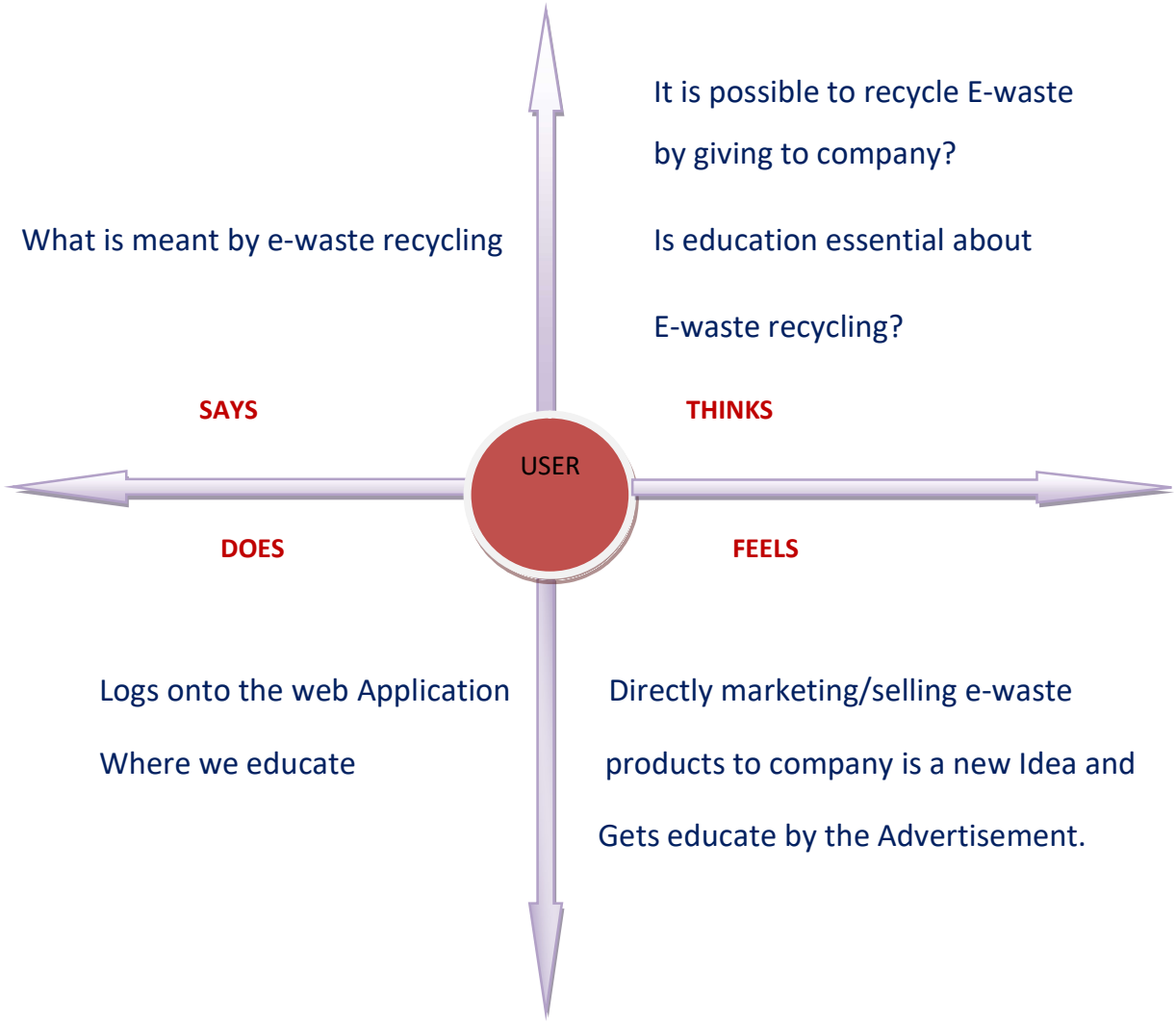
PROBLEM STATEMENT:

From the above data set we came to know that public knows what is meant by e-waste but they don't know how they can recycle the e-waste . So we conclude that educating public regarding e-waste recycling management is important.



The above diagram says that it is required to educate the people about e-waste recycling.

Empathy Map:


It is possible to recycle E-waste
by giving to company?
What is meant by e-waste recycling
Is education essential about
E-waste recycling?
SAYS
THINKS
USER
DOES
FEELS
Logs onto the web Application
Where we educate
Directly marketing/selling e-waste
products to company is a new Idea and
Gets educate by the Advertisement.

How might we Questions

We have used Four W's techniques in defining the problem statement

Four W's

- **Who is experiencing the problem?**

  The target user here for this problem are the public. They will be the main focus of the problem statement.

- **What is the problem?**

  Based on the observations we made during the empathize phase, The main problem is that the people knows the what is e-waste but they not know about hoe to recycle it.

- **Where does the problem present itself?**

  This problem is present in both urban and ruler place. All peoples need to be educated about this.

- **Why does it matter?**

  This problem is very important If we neglects this know it will affect all human bean and environment.

Ideate

After completion of problem defining we are come up to Ideate Phase. Here we are generating a lot of ideas that would be helpful for this in different way. In ideation phase it will provides the different tools and techniques i.e Brainstorming, Brain Writing, Empathy mapping , Mind maps etc through this we can generate the solution.

For this project we consider the mind mapping tools to develops the deferent idea**s.**

Mind Mapping

Link to this image - https://coggle.it/?org=0

Above diagram shows the all possible idea generated for stated problem.

Posters: Hanging out the posters on the public place walls. People who reads this they will come to know about how much it is necessary to give the e-waste for recycling.

Include in Syllabus : “TODAY'S CHILDREN ARE TOMORROW'S CITIZENS” like this quotes says if we are educates the students about e-waste harmfulness and their recycling. Further they will adopts the e-waste recycling process in their life.

Manually Collecting: Like waste collecting process we have to collect the e-waste from each and every people that will gives recycling process. This Idea is real hard to implement.

Advertisement: This Idea about Educating the people through TV advertisement , Move Advertisement or through social media.

Seminars: Host the public seminars freely that must gives the knowledge about e-waste harmfulness and its recycling process.

Government Rules: make it as act or rules that should be followed by all people.

Webpage: Creating a webpage that will contains the all the information about the e-waste and its recycling process in detail through that we can educate the peoples.

Prime challenge identification

In prime challenge identification process we have to identify the all the strength and weakness of the project. For this identification we are doing the SWOT analysis.

SWOT ANALYSIS:

A SWOT analysis is one of the methods that is used to evaluate strength (S), weakness (W), opportunities (O) and threats (T) involved in innovative ideas and strategies. It can be applied to products, services and strategies. Those four factors evaluate both internal and external factors related to a specific project.

Strength:

- public who are knows about e-waste
- Volumes are at a manageable level
- Employment creation and revenue generation

Weakness:

- peoples who don't know about how to recycle the e-waste.
- Lack of awareness of the need for an e-waste management system
- Limited national capacity to process e-waste

Opportunity:

- publics and companies, reduces the environment pollution. Gdp increases.

- Government stockpiled equipment can be accessed to increase volumes and business case for recycling
- Employment opportunities

Threats:

- Time Consuming
- Limited capacity of government agencies to deal with e-waste

Prototype

After getting the all the Idea we have choose the one of the feasible, low cost idea that must satisfy the all user requirements. For this Idea we are develop a prototype model that should be easily explain the actual process of the solution.

Technologies used for prototyping

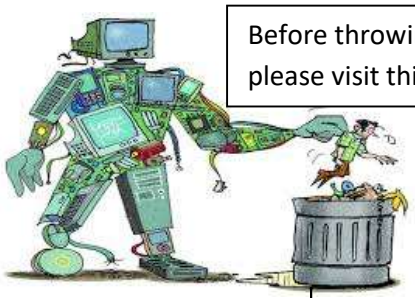
- Web Application
- Advertisement
- Posters

Solution developed

People Who are through the E-waste to garbage or fire

Before throwing the e-waste please visit this website

Poster which gives the information about our website



Our website which contains the information about e-waste harmfulness and recycling process And recycling company address

WEB PAGE WHICH GIVES THE DETAILED EXPLAINATIN ABOUT THE E-WASTE RECYCLING PROCESS

Actual recycling process of e-waste

Reduce

Recycle

Reuse and Recovery

The out of this process is helpful for environment

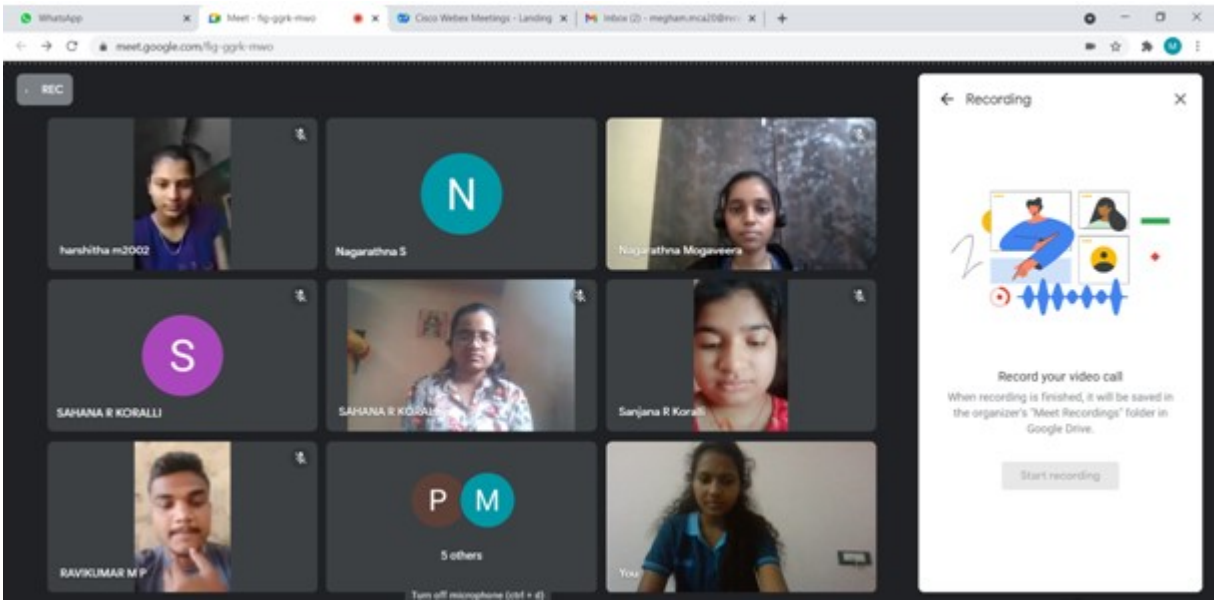
Outcomes:

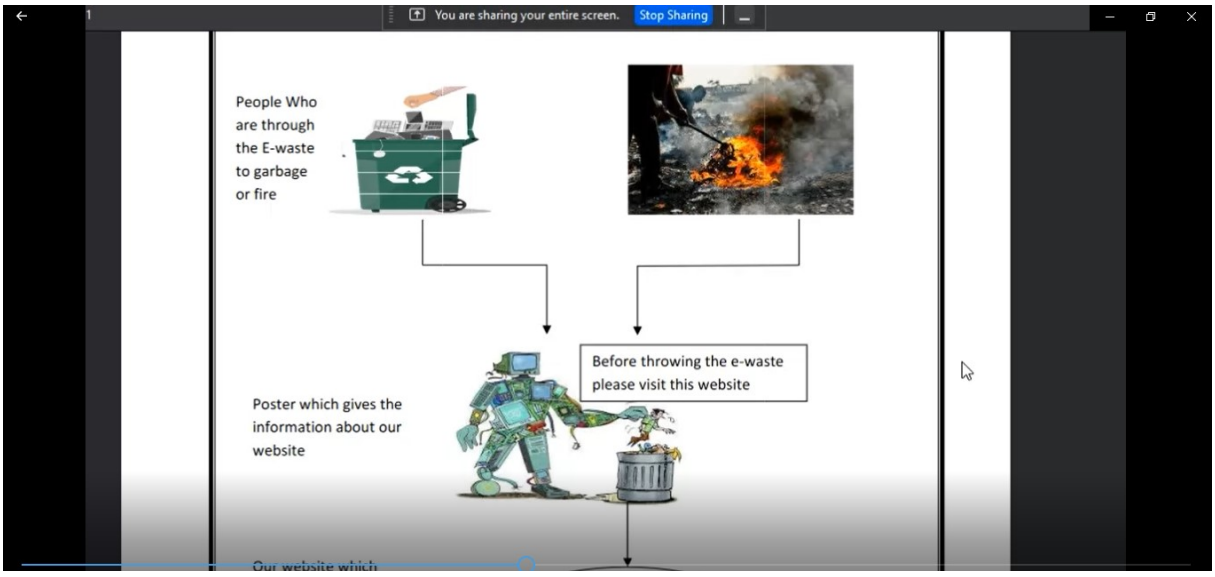
- publics and companies, reduces the environment pollution. Gdp increases.
- Government stockpiled equipment can be accessed to increase volumes and business case for recycling
- Employment opportunities

Test

Client feedbacks:

Here we give our prototype model to the clients and also get the feedback from them.





Conclusions and Future Scope

Our main intension is to educates the people about e-waste and its recycling process that can be done by using this project. Final model will gives the education about E-waste effects and its recycling process benefits so that after visiting to this website people will comes know about how e-waste effects to environment and their life. This results into, people stop by throwing the e-waste to garbage and collect the all e-waste and gives it's to recycling.

In future if it is implement correct that leeds to save the environment from the pollution and also lot of health disease for human beans also reduced

References

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