



Gandhinagar Institute of Technology

A Report on “Design Demo Day” (26 March 2021)

Introduction:

Gandhinagar Institute of Technology had organized Online Design Demo Day-2021 on 26th March 2021 with the permission of Dr H N Shah, Director. The event was organized for third year students as a part of the curriculum. Total 491 students of different branches like Computer Engineering, Information Technology, Mechanical Engineering, Civil Engineering, Electrical Engineering and Electronics & Communication Engineering were given platform to show their design thinking capability by showing their project ideas.

Objective:

The objective of the Design Demo Day was to give platform to demonstrate the innovative ideas for solving community problems. The silent objective was to enhance the presentation capabilities and skills of the students. The conversation with evaluation panel members and other faculties, helped them in upgrading their prototype model and guide how to convert them as a final product. The objective was also to perform preliminary screening of the students' projects to identify and nominate them for SSIP review and IPR review.

Event Overview:

1. **Date:** 26/03/2021
2. **Place:** Gandhinagar Institute of Technology, Moti Bhoyan, Gandhinagar
3. **College:** Gandhinagar Institute of Technology (012)
4. **Outline of the event:**

Gandhinagar Institute of Technology had organized Virtual Design Demo Day-2021 on 26th March 2021 from 9:00 am onwards. The third-year students of different branches like Mechanical Engineering, Civil Engineering, Electrical Engineering, Electronics &

Communication Engineering, Computer Engineering & Information Technology had participated in the event. Students demonstrated their innovative ideas to the evaluation panel members and other faculty members. Total 491 students had presented their ideas. The evaluation was done by the panel of internal faculty members of the institute. The best 3 projects of each department were given token of appreciation.

5. How many teams presented in which branch:

Sr. No.	Department	No. of Students	No. of Teams
1	Computer Engineering	211	57
2	Information Technology	128	36
3	Mechanical Engineering	72	21
4	Civil Engineering	44	12
5	Electrical Engineering	23	6
6	Electronics & Communication Engineering	13	6
	Total	491	138

6. Feedback from Students:

I am very thankful to the SSIP club for organizing such a wonderful event. I got great technical knowledge. Please arrange more such interactions so that we become aware about the technological advancements in the industry.

- **Sreeraj S Tharakan-**

(180120111010)

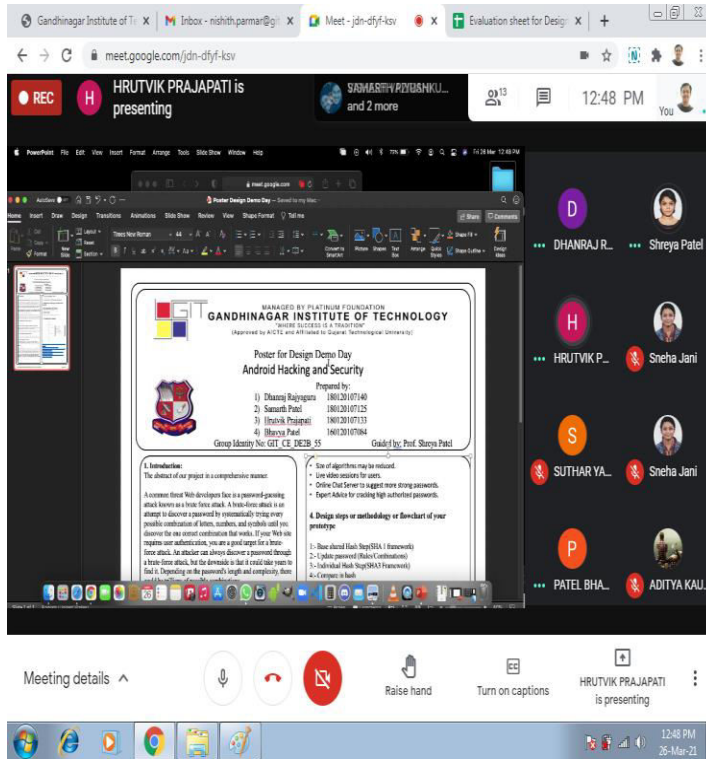
7. Feedback from faculty members:

The design demo day organized by SSIP was very effective for encouraging students to develop skills required by the industry. Such session helps to create an environment where experience of faculty can guide the students to get prepared for the challenges they are going to face after graduation.

- **Prof. Chintan Patel,**
APEC

8. Photos:

Computer Engineering Department



Tools and Technologies

Online/Digital Library

We are using DLNA for providing educational content like ebooks, audiobooks, videos to stream across the devices.



Library Management System

We are using web technologies like Java, Python, SQL, cloud services for developing our library management system.



Information Technology Department

GANDHINAGAR INSTITUTE OF TECHNOLOGY

Computer Engineering Department

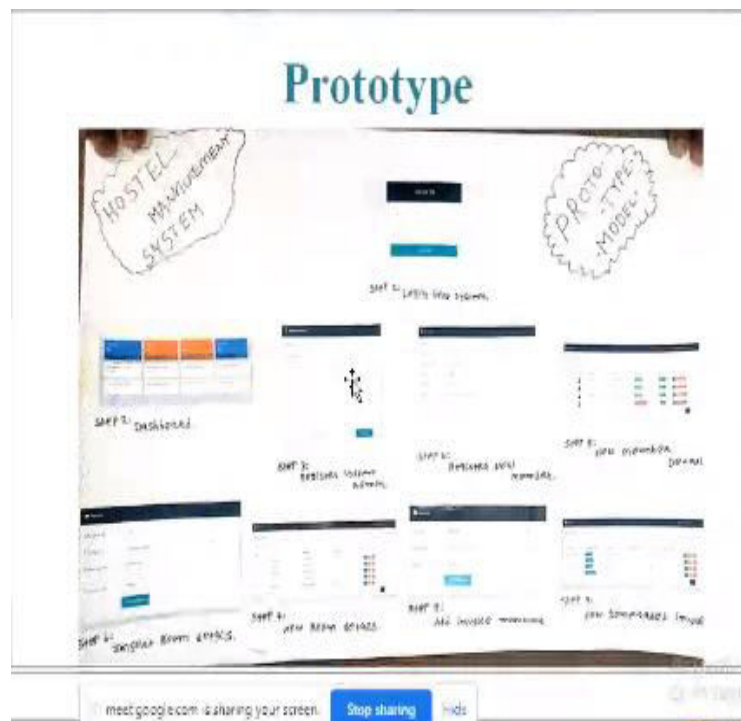
Design Engineering-2B(3160001)

Cyber Based Online Mock


Presented By
Group ID: GIT_CE_DE2B_45

Harsh Mehta(180120107078)
Hetvi Patel(180120107107)
Tojal Katwala(180120107065)
Poonam Chauhan(180120107017)


Guided By
Prof. (Nishith Parmar)




3. Key features



Salon At home



Payment



Post Feedback

4. Discussion

-To provide hassle free salon service without wasting time at home is the main purpose of our system.

5. Conclusion and Future Enhancement

From the entire System we have concluded the following points:

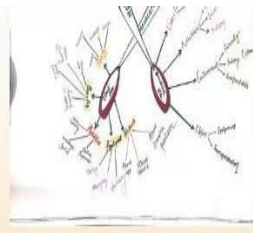

- There is a huge difference in the way the old and the new Shopping procedure working.
- There is a tremendous improvement in the way the new technology operates over the old conventional system.
- The System is much more accurate and fast as compared to the old one which is evident while more crowd is there.

Future Enhancement


1. IOS application
2. Inventory Management
3. Notification Alert
4. Bill Mating

6. References


7. Acknowledgment

MAHEENBAIGU...



Rahul Vaghela



STUTI SHAHU

5. Photographs of your prototype

meet.google.com is sharing your screen. Stop sharing Hide

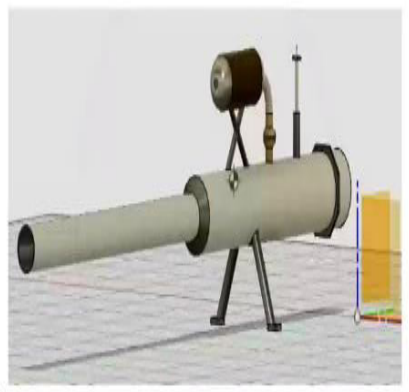
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Poster for Project Fair / Design Demo Day
CLEANER ON WHEELS
 Prepared by:

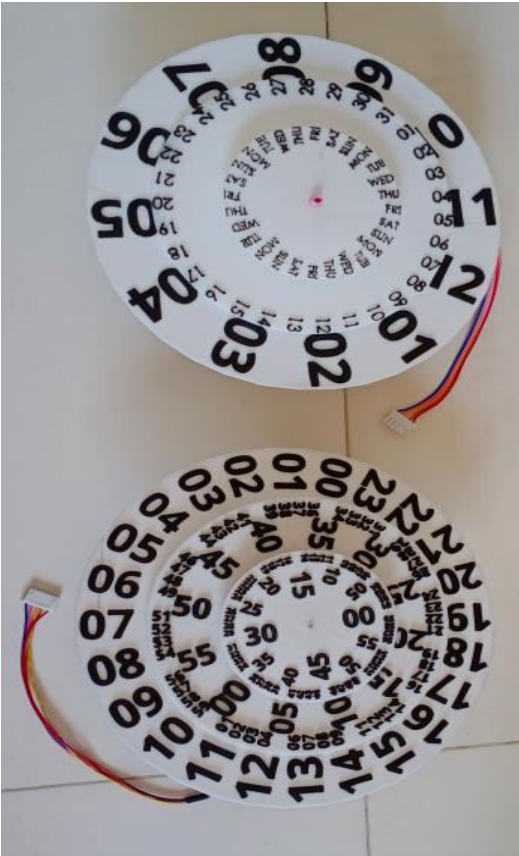
Expandable Bicycle Design:



Fake News Detection System



**Mechanical Engineering
 Department**



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Design Demo Day "SMART WASTE MANAGEMENT"

DOC NO:0074



Prepared by :

1. Krupal Balwani (180120106002)
2. Gunjal Maru (180120106012)
3. Dhruvin Moghariya (180120106013)
4. Abhishek Rajput (180120106019)

Group Identity No: 283127

Guided by: Prof. Sumedha Mahajan

INTRODUCTION

- Today's main issue for pollution is garbage overflow. It creates unhygienic condition for the people and creates bad smell around the surrounding and spreading some deadly disease & human illness.
- To avoid all such situation we're going to implement a project A SMART WASTE MANAGEMENT using smart dustbin.

LITERATURE REVIEW

The concept of smart bins isn't new . It has been in talks for much of the time.

• Various authors have published their papers regarding smart bins.

Some of these are as follows:-

•Saurabh dudhe and pooja Shelar worked on Efficient

GARBAGE COLLECTOR



1.Introduction:

Carbon Fiber Reinforced Polymer (CFRP) is an advanced composite material with the advantages of high strength, lightweight, no corrosion and excellent fatigue resistance. Therefore, unidirectional CFRP has great potential for cables and to replace steel cables in cable structures. However, CFRP is a typical orthotropic material and its strength and modulus perpendicular to the fiber direction are much lower than those in the fiber direction, which brings a challenge for anchoring CFRP cables. This paper presents an overview of application of CFRP cables in cable structures, including historical review, state of the art and prospects for the future.

2. Why CFRP Reinforced Bar been used?

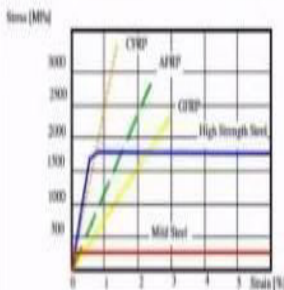
- ✓ Impervious to Chloride ion and chemical attack
- ✓ Tensile strengths greater than steel
- ✓ Modulus approaching that of steel & much greater than FRP
- ✓ Can withstand greater sustained loads
- ✓ 1/5th the weight of steel rebar
- ✓ "Consumable" by excavating equipment

3. Manufacturing process:

It is done in 3 major steps:-
1. The Stabilization stage
2. The Pre-tensioning stage

4. Result:

Bar Size	Diameter (mm)	Area (mm ²)	Elastic modulus (Gpa)	Tensile strength (Mpa)	Tensile Strain (%)
CFRP bars					
#2	6.4	32	127	$f_u = 1518$	1.20
#3	9.5	71	120	$f_u = 1196$	1.33
#4	12.7	129	140	$f_u = 1899$	1.57
Steel Bars					
#3	9.5	71	200	$f_y = 460$	0.2
#15	16	200	200	$f_y = 460$	0.2



maintenance of existing public transport infrastructure in the city is a major bottleneck. It leaves a bad impression on commuters who have left the comfort of their private vehicle to boards a bus.

•AMTS with a fleet of about 1000 cabs to about 8-70 lakh passengers every day AMC undertook a restructuring exercise during 2006 and invited private operators to operate on gross contract basis leading to doubling of fleet size, with half owned by AMTS and the remaining half hired on gross contract basis.

SCOPE

- Increase transit ridership
- Decrease time travel in study way
- Increase transportation system
- productivity
- Improve access to the regional transit network.

OBJECTIVE

- To provide basic amenities
- Maintain cost
- To provide speedy transportation
- To provide safety
- Economic, Safety of passenger, Convince
- Speedy Transport
- Proven navigation

STUDIES DONE

As per the household survey (CEPT, 2008), 6 lakh bicycles are operation in the city accounting for 19% of the total tips. The use of four wheelers is still low. They constitute to about 12.3% of the total vehicles and 3% of total tips.

automobiles may impede bus operators. This make HCV lanes less efficient than bus only lanes.

•Decreases the length of the main road where the two vehicles and four vehicles run.

•Implementation of row bus lanes with street widening may displace parking and pedestrian paths.

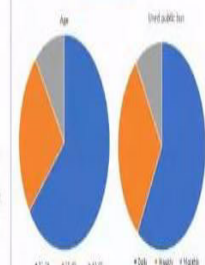
DIFFICULTIES FACED BY PASSENGER

- Overcrowded busses
- No safety concerns
- Pick pocketing in busses
- No seating places in the bus than also bus driver picks up more passengers
- Low quality standards busses

DATA COLLECTION

- Total 28 stop in route we have selected
- Total 10 buses are running with total 132 round trips in a day
- Operational Timings: Between 7:00 AM to 10:30 PM.
- Peak hours are: 8:30 AM - 11:30 AM and 5:00 PM - 8:00 PM
- Frequency of buses is 5 minutes during peak hours and rest 10 minutes
- Total Revenue in 1 month: 25,11,888 Avg. Revenue/day: 81,029
- Total passengers: 5,30,841 Avg. passenger: 17,347
- Avg. max. hourly: 962, Avg. per round trip/day

ANALYSIS



CONCLUSION

•This study helps us to know about the route of BRTS and AMTS bus along the cost of the bus routes per station. And the



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Poster for Project Fair / Design Demo Day **DOC NO:0074**
POWER GENERATION USING FLUE GASES

Prepared by:
 1) SUTHAR RUTVIK (190123109017)
 2) VADHER VINESH (190123109004)
 3) SURAJ SINH VAGHELA (190123109018)
 4) JADAV MANSI (190123109002)
 Group Identity No: 280601 Guided by: Prof.Natik Trivedi

1. Introduction:

In this project electrical energy is generated with the help of flue gas. Industry such as high pressure measured gas production such as thermal power station food factory industry like petrochemical 85% coal is burned in a 400 MW power plant, 3200 ton CO₂ and 6500 ton flue gas cores are obtained. About 40 to 50 MW of power can be generated with the help of the amount of flue gas obtained from thermal power station. Electrical power generation using flue gases with micro turbine.

2. Observations:

AEIOU is the sheet which is based on the short summary of our project how it works so our project mobile power generation using flue gases in which our project the mini turbine with compressor is kept inside this project and run of turbine by this natural gases pressure this is a project to run electricity generated about of 200 to 500 kw such industry.

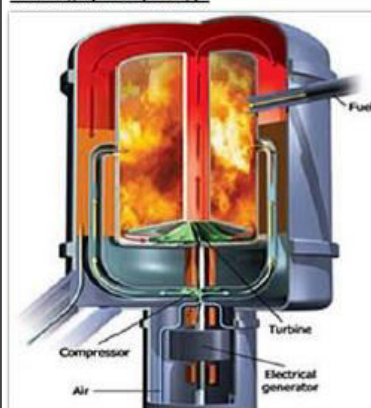
3. Understanding of Canvases:



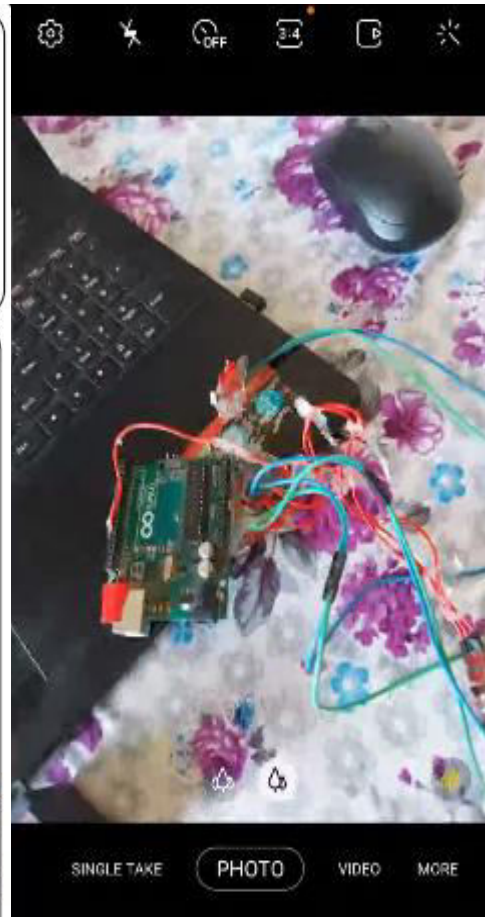
We have prepared six different canvases in that there is a short detail of the power generation using flue gases is divided all so our product usually micro turbine and high reliable system. New technology provided this is produced by electricity.

4. Design methodology or flowchart of prototype

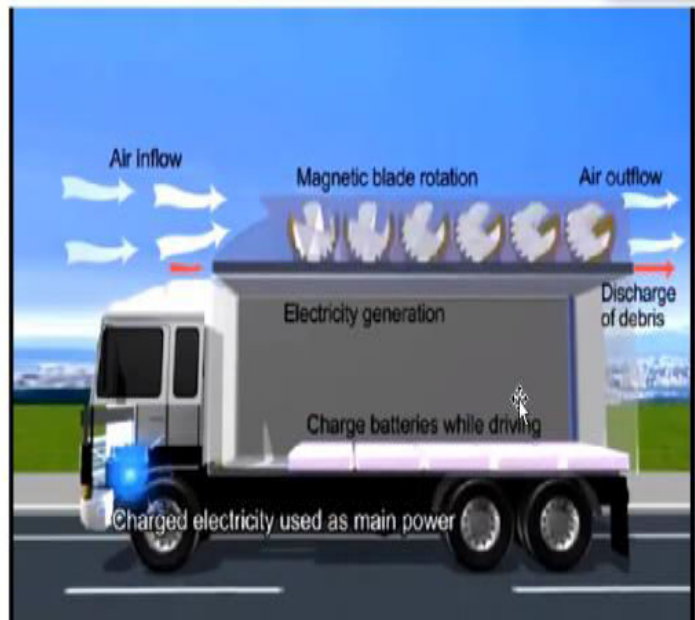
5. Photographs of prototype



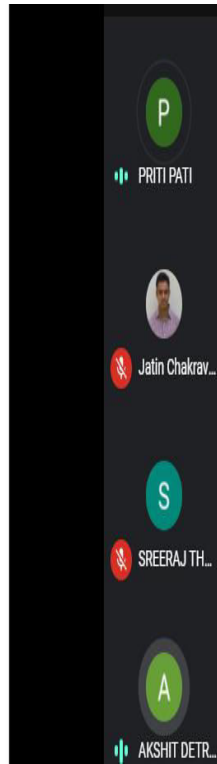
Fuel enters the combustion chamber. The turbine can run on natural gas, gasoline, kerosene- virtually anything that burns. The hot combustion gases spin a turbine, which is connected to the shaft of an electrical generator. The exhaust transfers heat to incoming air. Air passes through a compressor and is warmed by the exhaust gases before entering the combustion chamber.



**SOLAR BIKE
 PROTOTYPE**

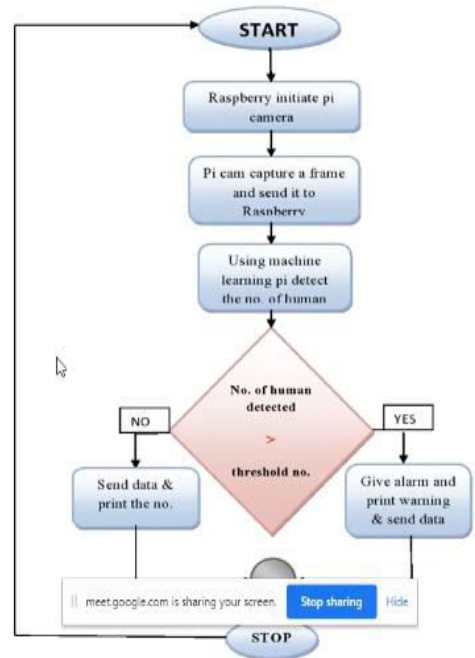


PROTOTYPE



**Electronics & Communication Engineering
Department**

FLOWCHART

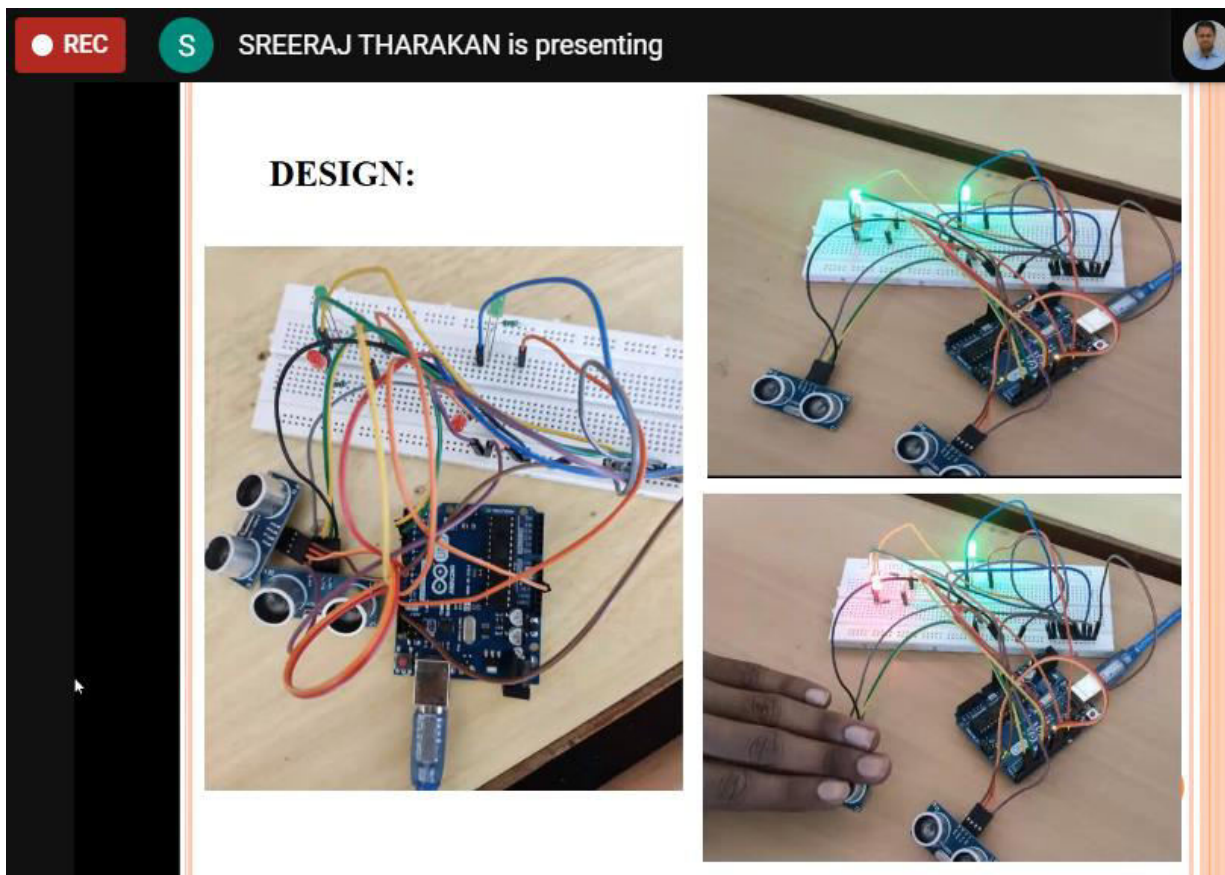


9. Mention which department did what:

All the department faculties had motivated the students to participate in the Design Demo Day. The respective faculty guides mentored students to complete their projects and summarize their work into the poster. The students were provided the guidelines for the Design Demo Day by their respective department faculties & their guides.

10. Key insights/ benefit/learning from the event:

The event was grand success due to the collective efforts of students who had shown their hard work and technical skills by demonstrating their innovative ideas, faculty members who guided the students continuously and suggestions from evaluation panel members and other faculties to the students. Students also got a chance to know others' unique ideas.



Details of Best 3 Projects

Computer Engineering Department				
Rank	Team /Group No.	Enrollment No.	Full Name	Title
1	GIT_CE_21_09	180120107079	Sanskar Mehta	Smart Mask Detection Entry Gate/ Machine Learning
		180120107080	Het Mistry	
		180120107111	Jay Patel	
		180120107098	Ayush Parikh	
2	GIT_CE_21_51	180120107011	Utsav Bhavsar	Online Recruitment System
		180120107067	Kunal Kothari	
		180120107186	Manan Vora	
		180120107184	Aman Velani	
3	GIT_CE_21_40	180120107188	Yadav Sunny	Smart Parking System
		180120107162	Shukla Hrushindra	
		180120107166	Sojitra Urvish	
		180120107174	Thakkar Maurya	

Information Technology Department				
Rank	Team /Group No.	Enrollment No.	Full Name	Title
1	GIT_IT_21_13	180120116106	Shukla Tirth D	Voice Based Email for Visual Challenged
		180120116112	Soni Kanal B	
		180120116100	Shah Kavya N	
2	GIT_IT_21_25	180120116060	Patel Gaurav G	Predicting Air Pollution Level in Specific City
		180120116061	Patel Happy N	
		180120116049	Panchal Darshil D	
		180120116007	Barad Malav A	
3	GIT_IT_21_30	190123116022	Parmar Krushang D	Kidzoo Learning with Happiness
		190123116020	Modi Raj M	
		190123116009	Parmar Rajan A	
		190123116001	Chauhan Sohil I	

Mechanical Engineering Department				
Rank	Team/Group Id No.	Enrollment No.	Full Name	Title
1	GIT_ME_21_01	190123119039	Soni Janardan	Home/Wall Clock
		190123119003	Hingu Abhishek	
		190123119013	Patel Dharmik K	
		190123119014	Rami Tirth A	
		190123119015	Rana Mihir S	
2	GIT_ME_21_05	190123119012	Patel Devang S	Modified of Fire Artillery
		190123119010	Pandey Rohitkumar K	
		190123119034	Senva Nirmal J	
		190123119023	Kharvar Sagarkumar P	
3	GIT_ME_21_12	190123119002	Bhavsar Yash P	Cleanzer On Wheels
		190123119008	Panchal Shubh M	
		190123119035	Shah Saumya D	
		190123119011	Pandya Mayur S	
		190123119029	Patel Aditya S	

Civil Engineering Department				
Rank	Team/Group No.	Enrollment No.	Full Name	Title
1	GIT_CL_21_03	180120106002	Krupal Balwani	Smart Waste Management
		180120106012	Maru Gunjal	
		180120106013	Dhruvin Moghriya	
		180120106019	Abhishek kumar Rajput	
2	GIT_CL_21_07	180120106011	Shakti Makwana	Rainwater Harvesting at Primary School Campus - Case Study Design and Implementation
		180120106016	Smit Patel	
		180120106007	Darshil Jain	
		180120106009	Darshil Koshti	
3	GIT_CL_21_08	190123106015	Mehul Rathour	Transparent Concrete
		190123106005	Vanpariya Deep	
		190123106018	Sharma Nirav	
		190123106007	Tushar Kachariya	

Electrical Engineering Department				
Rank	Team/ Group No.	Enrollment No.	Full Name	Title
1	GIT_EE_ 21_05	190123109011	Prajapati Nikunj	90 Degree Rotating Solar Panel by using LDR Sensor
		190123109014	Senma Atul	
		190123109008	Panjriwala Sachin	
		190123109010	Patel Ravi	
2	GIT_EE_ 21_02	190123109001	Bathani Daksh	Safety Limiting and Locking Entrance Controller
		190123109003	Shaikh Saffan	
		190123109009	Parmar Nishit	
		190123109016	Solanki Nilesh	
3	GIT_EE_ 21_03	190123109017	Suthar Rutvik	Power Generation using Flue Gases
		190123109018	Vaghela Surajsinh	
		190123109004	Vadher Vinesh	
		190123109002	Jadav Manshiben	

Electronics & Communication Engineering Department				
Rank	Team/ Group No.	Enrollment No.	Full Name	Title
1	GIT_EC_ 21_02	180120111010	Sreeraj S Tharakan	Car and Road Safety
		180120111005	Twisha Patel	
2	GIT_EC_ 21_04	180120111003	Gourav Mishra	Dense and Sparse Crowd Estimation Using Opencv
		180120111008	Sanjana Singh	
3	GIT_EC_ 20_05	180120111001	Akshit Detroja	Voice Activated Home Automation
		180120111006	Priti Pati	
		180120111009	Dhanshree Thaker	