



A Report on

IoT Design Challenge 3.0

Organized by:

Electronics and Communication Engineering Department, Sarvajanik College of Engineering and Technology, Surat in association with R&D cell SCET

Date:	18th and 20th November 2025
Time:	9:00 AM – 11 AM
Venue:	Computer Labs, AV Room, ECE Department, SCET
Student coordinators:	Khushi Desai and Jharna Nakrani
Faculty coordinators:	Prof. Nehal Shah and Prof. (Dr.) Vandana Shah
Participants:	21 teams, consisting of more than 70 participants from Engineering branches like ECE, IT, AIDS, Civil, EL, Chemical, and IC

About Event:

The IoT Design Challenge 3.0 was organized on 18th and 20th November 2025 by the Department of Electronics and Communication Engineering at Sarvajanik College of Engineering and Technology (SCET), Surat, in collaboration with the R&D Cell, SCET, and IETE Surat Sub-Center. The event aimed to enhance students' understanding of Internet of Things (IoT) technology and strengthen their innovative and problem-solving capabilities.

A total of 21 teams, consisting of more than 70 participants, took part in this year's challenge. Each team presented their IoT project concepts supported by block diagrams and technical insights. The competition was a lively display of talent, creativity, and engineering skills as students proposed practical solutions to real-world challenges. All the teams presented their captivating prototypes along with posters containing the respective group details, Block Diagrams, Brief Explanation and Outputs. Juries keenly listened to the participants and gave their valuable feedbacks.

The primary goal of the IoT Design Challenge was to cultivate hands-on learning, encourage innovative thinking, and give students a practical perspective on how IoT technologies can address everyday problems. The event provided an ample amount of networking opportunities, allowing attendees to connect with the faculty members, and peers. The event fostered project-based learning while motivating students to explore emerging technologies.

TO summarize, the IoT Design Challenge 3.0 successfully encouraged innovation, teamwork, and technical excellence among students while highlighting the transformative potential of IoT technologies in solving real-life problems

Several remarkable projects were demonstrated during the event:

IoT-Enabled Smart Waste Management System: Participants showcased a smart dustbin monitored through a real-time dashboard displayed on a city-wide map. The system generated alerts when bins reached 75% capacity and sent notifications to waste collectors. Once the garbage was cleared, the dashboard updated automatically.

- **Contactless Doorbell with Face Recognition:** This project demonstrated a secure, touch-free door access system that unlocked doors using facial recognition.
- **Room Safety and Monitoring System:** Equipped with motion, gas, and fire sensors, this system detected hazardous conditions and sent alerts through the WhatsApp API to ensure timely response.
- **Smart Parking System:** Using a rack-and-pinion mechanism, students built a multi-level parking prototype designed to maximize parking capacity within limited space.
- **Smart Energy Meter:** This IoT-based solution measured appliance-wise energy consumption and enabled remote switching of devices to prevent unnecessary power usage.

Major Outcome:

- Enhanced practical understanding of IoT concepts through hands-on project development.
- Improved innovation and real-world problem-solving skills among participants.
- Strengthened teamwork, coordination, and presentation abilities.
- Increased awareness of emerging IoT technologies and their real-life applications.
- Encouraged networking and knowledge exchange among students and faculty.

Details of Participants

No	Team Name	Title of your Project	Name of Team Leader	Members
1	Binhive	IoT Enabled Smart Waste Management for Cleaner Cities	Gurav Nainesh Rajeshbhai	Kavani Arya Vitthalbhai, Jariwala Ayush Chetankumar, Rathod Pranjal Narendrakumar
2	Incognito	Contactless Doorbell	Nishant Shah	Sagar, Khushal
3	Team SafeGuard	SafeHaven	Rana Kishan Pravinbhai	Chaudhari Shreyash Kumar Pravinbhai
4	VoltVision	Smart energy meter	Shiv patel	Neel patel, dhruvil bardoliwala
5	Instrupark Systems	Smart Parking	Aryan Singh	Kevin Babariya, Henil Goyani, Aryan Velari
6	Secure Vision	Face recognition based digital home lock	Mayuri Boghara	Hiya Vasani , Khushi Dholariya
7	Trash2Tech	Smart Waste Bin Management System	Disha Deputy	Karmavee Gandhi , Drashti Kalathiya

8	Alexa, Do my project.	Efficient garbage collection system	Aaryamaan Mehra	Harkirat Sandhu , Dhruvil Tandel
9	Team Evolv	Smart Safety Monitoring System	Bhavya Ladumor	Smit Vyas, Kartavya Vegad, Amaan Surati
10	Civil team	Home Automation	Yug kakadia	Nidhi Patel, Parth Vasava, Pratham Soni
11	The og	Smart robotic arm	Krish	Alok Rawal
12	Controvert	Controvert	Dharm Kasodariya	Aryan Singh, Aryan Velari, Henil Goyani
13	Team Focus	Face recognition door lock system	Vishal Singh	Kartik, Upen , Smit
14	Civil_Core	Automation Through Voice Assistant (ALEXA)	Jenil Patel	Het Patel , Raj Makwana , Mukti Patel
15	Team smart connect	Smart Health Care Monitoring system	Harsh pasiyawala	Sanyati Kothari, Vatsal Lakdawala, Dev chokhawala
16	Smart Street Syndicate	Density-Based Traffic Signal System	Nisarg Mistry	Manisha Patel, Yug Patel
17	Civil_IoT	Smart Patient Health Monitoring System Using IoT	Henil Parmar	Nikhil Patel, Jalpesh Wagh
18	Team Tron	Fingerprint scanner lock system	Parth vekariya	Krish Kukadiya, Niraj Bhandari, Jaydev Prajapati
19	Team Chemical	Smart Irrigation System	Dhruvit Postiwala	Patel Sarthav, Parmar Rudra, Badgujar Vivek
20	IoT Breeze Builders	IoT-enabled temperature-controlled fan	Rudra Nareshkumar Baruwala	Rushabh R. Solanki , Yash P. Thummar , Parthiv A. Patel
21	IoT controllers	IOT based smart doormat automation system	Saakshi Champaneria	Namya Hekkad, Chirag Singh, Bhamini Raval



Electronics and Communication Engineering Department
(Re-Accredited by NBA, New Delhi for 3 years, W.E.F 1 July 2022)
Sarvajanik College of Engineering and Technology, Surat
In association with R&D cell, SCET

Organizes
STATE LEVEL

IOT DESIGN CHALLENGE 3.0

RULES:

- PARTICIPATION IS IN A GROUP
- MAX. 4 STUDENTS/GROUP
- POSTER MUST BE PREPARED FOR PRESENTATION COMPRISES OF GROUP DETAILS, BLOCK DIAGRAM, BRIEF EXPLANATION AND OTHER TECHNICALITIES

FACULTY COORDINATOR:
DR. NEHAL SHAH
DR. VANDANA SHAH

HEAD OF DEPARTMENT:
PROF. (DR.) CHIRAG PAUNWALA

STUDENT COORDINATOR:
KHUSHI DESAI
(9824125846)
JHARNA NAKRANI
(9429990594)



18TH & 20TH NOVEMBER, 2025
TIME: 09:00 AM- 11:00 AM
VENUE: EC AV ROOM



સુરત 20-11-2025

WORKSHOP

સ્કેટ કોલેજ ખાતે 'IoT ડિઝાઇન ચેલેન્જ 3.0' નું આયોજન કરાયું સ્માર્ટ ડસ્ટબિન, કોન્ટેક્ટલેસ ડોરબેલ, સ્માર્ટ પાર્કિંગ સિસ્ટમ સહિતના પ્રોજેક્ટ રજૂ કરાયા

સુરત • સાર્વજનિક કોલેજ ઓફ એન્જિનિયરિંગ એન્ડ ટેકનોલોજી ખાતે ઇલેક્ટ્રોનિક્સ એન્ડ કોમ્યુનિકેશન એન્જિનિયરિંગ વિભાગ દ્વારા R&D સેલ SCET અને IETE સુરત સબ-સેન્ટરના સહયોગથી 'ઈન્ટરનેટ ઓફ થિંગ્સ ડિઝાઇન ચેલેન્જ 3.0' યોજાઈ હતી. આ ઇવન્ટનો મુખ્ય હેતુ વિદ્યાર્થીઓની ઇન્ટરનેટ ઓફ થિંગ્સ ટેકનોલોજી પ્રત્યેની સમજણ અને નવીન ક્ષમતા વિકસાવવાનો હતો. જેમાં કુલ 22 ટીમોમાં 70થી વધુ વિદ્યાર્થીઓએ ભાગ લીધો હતો. આ સ્પર્ધા વિદ્યાર્થીઓની ક્રિએટિવિટી, ટેકનિકલ કુશળતા અને સમસ્યા-નિવારણ ક્ષમતા દર્શાવતું મંચ બની હતી.

ડસ્ટબિન 75% ભરાઈ જાય ત્યારે સિસ્ટમ એલર્ટ અને નોટિફિકેશન આપે છે



• વિદ્યાર્થીઓ દ્વારા IoT આધારિત સ્માર્ટ વેસ્ટ મેનેજમેન્ટ સિસ્ટમ બનાવવામાં આવી હતી. જેને સ્માર્ટ ડસ્ટબિન નામ અપાયું હતું. જેને શહેરના નકશા પર રિયલ-ટાઈમ ડેટાબોર્ડ દ્વારા મોનિટર પણ કરી શકે છે.

• ડસ્ટબિન 75% ભરાઈ જાય ત્યારે સિસ્ટમ એલર્ટ અને નોટિફિકેશન મોકલે છે અને કચરો ઉપાડી લેવાયા બાદ ડેટાબોર્ડ માહિતી આપમેળે અપડેટ થાય છે.

• આ ઉપરાંત કોન્ટેક્ટલેસ ડોરબેલ વિથ ફેસ રિકગ્નિશનનું પણ પ્રોજેક્ટ રજૂ કરાયો હતો. જે ચહેરાની ઓળખના આધારે દરવાજાને આપમેળે અનલોક કરે તેવી સ્માર્ટ એક્સેસ સિસ્ટમ છે.

સેન્સરથી સજ્જ ઝૂમ સેફ્ટી એન્ડ મોનિટરીંગ સિસ્ટમ

• ઝૂમ સેફ્ટી એન્ડ મોનિટરીંગ સિસ્ટમ: મોશન, ગેસ અને ફાયર સેન્સરથી સજ્જ આ સિસ્ટમ વોટ્સએપ API મારફતે જોખમની સ્થિતિમાં તરત જ એલર્ટ મોકલે છે.

• સ્માર્ટ પાર્કિંગ સિસ્ટમ: રેડ-એન્ડ-પિનિયન મિકેનિઝમ આધારિત આ પ્રોજેક્ટ ઓછી જગ્યામાં મલ્ટી લેવલ પાર્કિંગની સુવિધા આપે છે.

• સ્માર્ટ એનર્જી મીટર: આ સિસ્ટમ ઉપકરણ પ્રમાણે વીજળીના વપરાશનું માપન કરે છે અને અनावશ્યક વપરાશ થતો હોય ત્યારે ઉપકરણોને રીમોટલી બંધ કરવાની ખાસ સુવિધા આપે છે.

Photographs of the Event



