Automatic class attendance system using installed CCTV cameras

As maintaining accurate attendance records in educational institutions is a time-consuming and error-prone process, traditional methods such as manual roll calls or paper-based registers often disrupt classroom teaching and are susceptible to proxy attendance and human error. Even biometric systems require physical interaction, leading to delays and hygiene concerns. With the increasing class sizes and the need for efficient academic management, there is a growing demand for automated, contactless, and reliable attendance monitoring systems that can operate seamlessly without interrupting the learning environment.

To overcome these challenges, student under DICE developed an Automatic Class Attendance System using Installed CCTV Cameras. The system utilizes existing CCTV infrastructure along with computer vision and facial recognition techniques to identify students present in the classroom. Live video feeds captured by the cameras are processed in real time to detect and recognize faces, which are then matched with a pre-stored student database to automatically mark attendance. This eliminates the need for manual intervention while ensuring accuracy and transparency in attendance record. The system continuously monitors classroom activity during lecture hours and generates attendance reports that can be securely stored and accessed by faculty or academic administrators. It covered global SDG-4 Quality Education, SDG-9 Industry, Innovation, and Infrastructure, SDG-11 Sustainable Cities and Communities, and SDG-16 Peace, Justice, and Strong Institutions

Automatic class attendance system using installed CCTV cameras

Rescue Drone with GPS and Gas Sensor

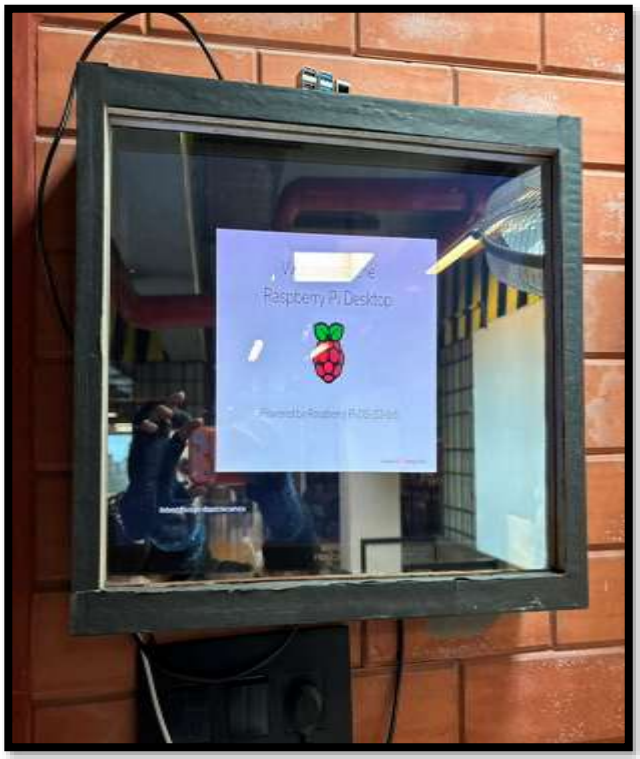
As emergency response operations during natural disasters, industrial accidents, and hazardous environments often pose significant risks to human rescuers, timely assessment and victim location become challenging. Situations such as building collapses, fires, chemical leaks, and gas-filled confined spaces limit human access and delay rescue efforts, increasing the chances of severe injuries and loss of life. Conventional rescue methods lack real-time environmental monitoring and precise location tracking, making rescue missions inefficient and dangerous.To address these challenges, students under DICE developed a Rescue Drone with GPS and Gas Sensor. The system integrates an unmanned aerial vehicle equipped with GPS technology and gas sensors to assist rescue teams in locating victims and identifying hazardous environmental conditions. The drone can be deployed to inaccessible or dangerous areas, providing real-time location data and detecting the presence of harmful gases, enabling responders to make informed decisions before entering the site. The GPS module allows accurate tracking of the drone's position, helping rescue teams pinpoint affected locations. It covered global SDG-3 Good Health and Well-Being, SDG-9 Industry, Innovation, and Infrastructure, SDG-11 Sustainable Cities and Communities, and SDG-13 Climate Action.

Rescue Drone with GPS and Gas Sensor

IoT based Smart Mirror

As modern lifestyles demand quick access to information while managing daily routines, individuals often rely on multiple digital devices to check news updates, weather forecasts, and other essential information. This dependency on smartphones and computers can be time-consuming and inconvenient, especially during morning routines. Traditional mirrors serve only a basic purpose and do not integrate smart functionalities that could enhance user experience and productivity. There is a growing need for intelligent, space-efficient solutions that seamlessly integrate information access into everyday activities.

Students under DICE developed an IoT Based Smart Mirror. The system utilizes a Raspberry Pi connected to a display monitor, enclosed within a wooden frame fitted with a mirror surface. While functioning as a regular mirror, the smart mirror simultaneously displays real-time information such as news headlines and weather insights fetched from the internet. This allows users to stay informed while getting ready, without the need for additional devices. The Raspberry Pi serves as the core processing unit, handling internet connectivity and content display. It covered global SDG-9 Industry, Innovation, and Infrastructure, SDG-11 Sustainable Cities and Communities, and SDG-12 Responsible Consumption and Production.



IoT based Smart Mirror

Raspberry Pi powered sign language decoder and text to speech

As communication barriers faced by individuals with hearing and speech impairments remain a significant social challenge, effective interaction with the general population is often limited. Sign language, while a powerful medium for expression, is not universally understood, leading to difficulties in everyday communication, education, and access to essential services. Visually impaired individuals face challenges in reading printed text, documents, or signboards, restricting their independence.

To address these challenges, students under DICE developed a Raspberry Pi Powered Sign Language Decoder and Text-to-Speech System. The system uses computer vision and embedded technology to decode hand gestures used in sign language and convert them into meaningful text, which is then spoken aloud through a speaker. This enables real-time communication between sign language users and non-sign language users. The system also incorporates a camera-based text recognition feature, where images of documents, printed text, or scenes are captured and processed to extract text, which is subsequently converted into speech output. The system supports multilingual speech output in English, Hindi, and Punjabi, enhancing accessibility across diverse linguistic groups. It covered global SDG-3 Good Health and Well-Being, SDG-4 Quality Education, SDG-9 Industry, Innovation and Infrastructure, and SDG-10 Reduced Inequalities

Raspberry Pi powered sign language decoder and text to speech

Smart Trolley System with OLED UI and QR- based Payment Integration

As traditional retail shopping systems rely heavily on manual billing counters, customers often experience long queues, delayed checkouts, and billing errors. These inefficiencies not only reduce customer satisfaction but also increase operational costs for retailers. With the growing demand for fast, contactless, and automated shopping experiences, there is a need for intelligent retail solutions that simplify product billing and payment processes while minimizing human intervention.

Students under DICE developed a Smart Trolley System with OLED UI and QR-Based Payment Integration. The system enables real-time product scanning and automated cart management directly on the shopping trolley. Using a camera-based scanning mechanism, items added to the trolley are detected and processed and the corresponding product details and total cost are displayed on an onboard OLED screen. This eliminates the need for manual barcode scanning at checkout counters. When the payment option is selected, a unique QR code is generated and displayed on the OLED screen, allowing customers to complete payment using their mobile phones. Upon successful payment confirmation, the system generates a digital bill and resets for the next user. By combining IoT, embedded systems, computer vision and secure digital payments, the project offers a low-cost, portable, and efficient solution for modern retail environments. The proposed system significantly reduces checkout time, improves shopping convenience, and supports contactless transactions. It covered global SDG-9 Industry, Innovation, and Infrastructure, SDG-11 Sustainable Cities and Communities, SDG-12 Responsible Consumption and Production, and SDG-8 Decent Work and Economic Growth.

Smart Trolley System with OLED UI and QR- based Payment Integration

Electric KICK Scooter

As cities grow more crowded and urban populations rise, transportation in metropolitan areas faces significant challenges. Traffic congestion, pollution, and limited mobility options are increasing at an alarming rate, leading to longer commute times and a greater environmental impact. Department of Interdisciplinary Courses in Engineering (DICE) has made “Electric Kick Scooter” in DICE LAB. This project focused on creating an electric kick scooter to help solve transportation issues in crowded cities. With more traffic and pollution, cities need better options for short-distance travel. Our electric scooter is designed to be lightweight, energy-efficient, and easy to use, making it a great choice for quick trips in busy areas. Safety and portability are key features, ensuring the scooter is practical and user-friendly. It includes a strong yet light frame, an efficient motor, and a compact battery, making it both functional and eco-friendly. By offering a greener way to travel short distances, this project aims to reduce traffic and cut down on emissions. It covered global SDG 9 – Industry, Innovation, and Infrastructure, SDG 11 – Sustainable Cities and Communities and SDG 13 – Climate Action Goals

Electric KICK Scooter

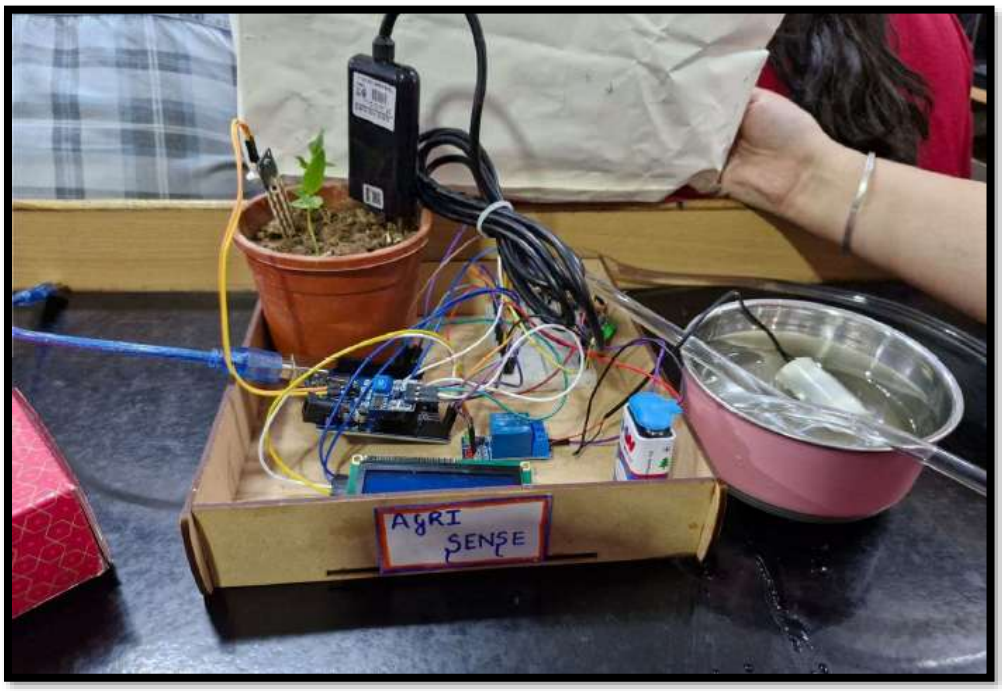
MineGaurd- Mine Saftey Helmate using IoT

As miners in mining industry face various risks, including exposure to hazardous gases, extreme temperatures, and potential accidents. These hazards can lead to severe injuries, illnesses, and even fatalities. Traditional safety monitoring systems often lack real-time data and proactive alerting capabilities. To address these challenges students under DICE made “MineGuard” which aims to revolutionize mining safety through IoT technology. By integrating a suite of sensors into a smart helmet and glove combination, MineGuard enables continuous monitoring of the miner's environment and health condition. Realtime monitoring of hazardous events such as increase in temperature and humidity, release of gases like methane, consciousness, blood oxygen levels and heartrate of the workers, removal of helmet. The working consists of major two sections, the helmet which monitors worker’s health and the working conditions and the control room section which receives the data from the helmet and relays it to the supervisors to ensure welfare of the worker. The above systems and designs will help stop several hazards and will increase a level of safety and health for the miners. It covered global SDG-3 Good Health and Well-Being, SDG 9 – Industry, Innovation, and Infrastructure and SDG 11 – Sustainable Cities and Communities

MineGaurd- Mine Saftey Helmate using IoT

Agrisense

As The inefficient use of water and resources in agriculture poses a significant challenge to sustainable farming practices, leading to suboptimal plant health and reduced crop yields. Traditional farming methods often rely on generalized irrigation schedules and fertilizer application, which do not account for the unique needs of specific crops or changing environmental conditions. the monitoring of essential soil nutrients specifically nitrogen (N), phosphorus (P), and potassium (K) is often overlooked. The absence of real-time data on soil NPK values inhibits farmers from accurately assessing soil fertility and applying fertilizers judiciously. Without this information, farmers struggle to make informed decisions regarding irrigation and nutrient delivery, which negatively impacts crop productivity. Students under DICE implemented "AgriSense" Project. By continuously monitoring soil moisture, nutrient levels, and other relevant environmental factors, the system can prevent both overwatering and underwatering, ensuring that plants receive precisely the right amount of water and nutrients needed for optimal growth. It covered global SDG-3 Good Health and Well-Being , SDG 9 – Industry, Innovation, and Infrastructure, SDG 11 – Sustainable Cities and Communities and SDG 12 – Responsible Consumption and Production



Agrisense Project for Smart Agriculture practices

Smart Home

As residential safety, energy efficiency, and automation have become essential aspects of modern living, traditional homes often lack intelligent systems to respond proactively to security threats, energy consumption, and hazardous situations. Manual control of lighting, ventilation, and security systems can lead to inefficiencies, delayed responses, and increased safety risks. With rising concerns related to home intrusions, gas leakages, and energy sustainability, there is a growing demand for integrated smart home solutions.To address these challenges, students under DICE developed a **Smart Home. Th**e system is designed to automatically detect human presence within the home and switch on lights accordingly, enhancing both convenience and energy efficiency. A laser-based security fence is implemented to detect unauthorized intrusion, triggering alerts and strengthening home security. These features ensure continuous monitoring and timely response to potential threats.The project also incorporates renewable energy generation through solar panels, reducing dependence on conventional power sources and promoting sustainable energy usage. An automatic ventilation mechanism is integrated to detect LPG gas leakage and immediately activate exhaust systems, ensuring proper air circulation and preventing hazardous conditions. By combining home automation, security, renewable energy, and safety monitoring, the system creates a safer, smarter, and energy-efficient living environment. It covered global SDG-7 Affordable and Clean Energy, SDG-9 Industry, Innovation, and Infrastructure, SDG-11 Sustainable Cities and Communities, and SDG-12 Responsible Consumption and Production.

Smart Home

Automatic Curtains

As daily household activities increasingly move towards automation for improved comfort and energy efficiency, manual operation of curtains can be inconvenient, especially for elderly individuals or people with limited mobility. Traditional curtain systems require physical effort and do not adapt to modern smart living requirements. There is a growing need for simple, affordable, and user-friendly automation solutions that enhance convenience and integrate seamlessly into smart home environments.To address this need, students under DICE developed a Smart Curtain Automation System. The project is built using an Arduino Uno as the main controller, integrated with a motorized mechanism to enable automatic opening and closing of curtains. The system is wirelessly controlled via Bluetooth using a mobile application, allowing users to operate the curtains remotely with minimal effort.Through the mobile application, users can easily send commands to control the motor, enabling smooth and controlled movement of the curtains. The system improves user comfort, supports hands-free operation, and contributes to better natural light management within living spaces. The proposed solution demonstrates a cost-effective approach to home automation and promotes smart living practices. It covered global SDG-9 Industry, Innovation, and Infrastructure, SDG-11 Sustainable Cities and Communities, and SDG-12 Responsible Consumption and Production.

Automatic Curtains

Electric Grasscutter

As conventional grass cutting machines largely depend on petrol or diesel engines, they contribute to air pollution, noise pollution, and rising fuel costs. Manual lawn maintenance is also labor-intensive and time-consuming, making it inefficient for regular use. With increasing emphasis on sustainable practices and automation, there is a need for eco-friendly and user-controlled alternatives that reduce environmental impact while improving operational convenience.

To address these challenges, students under DICE developed a Bluetooth Controlled Electric Grass Cutter. The system is designed using an Arduino microcontroller integrated with Bluetooth communication to enable wireless control through a mobile application. Using the app, the user can wirelessly drive the grass cutter as well as control the cutting motor, allowing safe and convenient operation from a distance. The prototype uses six electric motors, including drive motors for movement and a dedicated motor for grass cutting. By operating entirely on electrical power, the system eliminates the use of petrol or diesel, reducing emissions and operating costs. The project demonstrates an efficient, low-maintenance, and environmentally friendly solution for lawn maintenance. It covered global SDG-7 Affordable and Clean Energy, SDG-9 Industry, Innovation, and Infrastructure, SDG-11 Sustainable Cities and Communities, and SDG-13 Climate Action.

Electric Grasscutter

IoT based Smart Trolley Bag

As carrying heavy luggage during travel can cause physical strain, fatigue, and discomfort, traditional trolley bags require users to manually pull or push them, which may be challenging for elderly individuals or frequent travelers. Navigating crowded spaces such as airports, railway stations, or hotels further adds to the difficulty. There is a growing demand for smart mobility solutions that enhance travel convenience and reduce physical effort.To address these challenges, students under DICE developed an IoT Based Smart Trolley Bag. The system is designed using an ESP32 microcontroller integrated with motorized wheels to enable automated movement of the trolley bag. Through Bluetooth connectivity, the user can wirelessly control the movement of the trolley using a mobile application, allowing the bag to move alongside the user without manual pulling. The motorized wheels provide smooth and controlled motion, improving ease of transport and reducing physical strain. The project demonstrates the practical application of IoT and embedded systems in personal mobility and travel assistance. The proposed solution enhances user comfort, convenience, and accessibility and covered global SDG-9 Industry, Innovation, and Infrastructure, SDG-10 Reduced Inequalities, and SDG-11 Sustainable Cities and Communities.

IoT Based Smart Trolley Bag Project

IoT Based Intravenous (IV) Bag Monitoring System

The IoT-Based Intravenous (IV) Bag Monitoring System is a transformative healthcare innovation designed to enhance patient safety and optimize medical resource utilization. Traditional IV monitoring relies on manual observation by healthcare professionals, which can lead to human errors, delayed interventions, and increased workload. This project integrates IoT technology with IV bag monitoring, enabling real-time fluid level tracking and automated alerts to medical staff when replenishment is required. By minimizing the risks associated with improper IV administration, the system significantly reduces complications like air embolism and under-dosing. From a societal standpoint, this system improves healthcare efficiency, ensures timely patient care, and alleviates pressure on medical professionals, particularly in understaffed hospitals. The SDGs covered with this project are **SDG-3** Good Health and Well Being and **SDG 9** – Industry, Innovation, and Infrastructure..

IoT Based Intravenous (IV) Bag Monitoring System

IoT Based Smart Shoe

The IoT-based Smart Shoe brings a revolutionary approach to fitness tracking by integrating technology directly into footwear. Using an ESP32 microcontroller, accelerometer, and GPS module, it monitors steps and calculates calories burned, ensuring precise and real-time data synced to the Blynk app. In Emergency condition, user location can be shared with the family. Unlike traditional fitness devices like smartwatches, this shoe offers a more practical and universal solution, since shoes are worn daily by everyone. Designed to promote active lifestyles, the smart shoe combines innovation with accessibility. By seamlessly blending technology with everyday life, it provides an effortless, hands-free way to track fitness. The SDGs covered with this project are **SDG-3** Good Health and Well Being and **SDG 9** – Industry, Innovation, and Infrastructure.

IoT Based Smart Shoe

IoT based Liquid vending machine

Traditional liquid dispensing methods often involve manual operation, which can lead to spillage, inconsistent serving volumes, and unnecessary waste. Moreover, these systems do not cater to hygienic standards or user convenience in high-traffic areas. To address these limitations, students under DICE developed a smart IoT based Liquid Vending Machine that automates the dispensing process using object detection sensors. This innovative system uses IR sensors to detect the presence of a glass or container, then though IoT using Blynk app it activates a controlled mechanism to pour a precise amount of liquid. It can be deployed in school and college canteens to provide safe and consistent distribution of beverages, reducing queuing time and human effort. The SDGs covered with this project are SDG-8 Decent Work and Economic Growth, SDG 9 – Industry, Innovation, and Infrastructure, and SDG 12 – Responsible Consumption and Production.

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IoT based Liquid Vending Machine

Automated Voice Controlled Wheelchair

Wheelchairs are essential mobility aids, but traditional models require manual effort, which is not always feasible for the elderly or people with physical disabilities. To solve this, our team developed a Voice-Controlled Smart Wheelchair- a low-cost, Arduino-based assistive solution that responds to voice commands and buttons via Bluetooth. The system is powered by an Arduino Mega 2560, and uses two high-torque Yalu 24V DC geared motors controlled through BTS7960 motor drivers. For wireless control, we used an HC-05 Bluetooth module paired with the Arduino Bluetooth Controller app on Android, which allows both voice and button-based movement commands. To enhance safety, two ultrasonic sensors (HC-SR04) are mounted in front for obstacle detection. The setup is powered by two 12V 7Ah lead-acid batteries connected in series to provide 24V. The design eliminates the need for expensive voice recognition modules by smartly utilizing Google Assistant's voice recognition through the mobile app interface. This project supports SDG 3, 7, 8, 9, and 13, contributing to health, clean energy, innovation, inclusive growth, and climate action.

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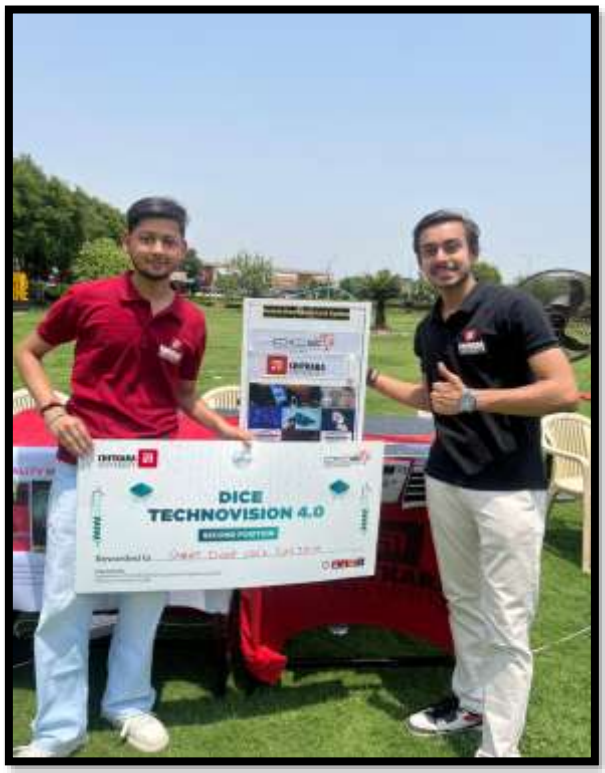
Automated Voice Controlled Wheelchair

Smart Door Lock System

This project introduces an advanced two-factor authentication (2FA) door lock system designed to enhance security while providing contactless and convenient access. The system combines face recognition and QR code detection technologies to ensure that only authorized individuals can unlock the door. At first, the individual scans a QR code, which serves as the initial authentication factor. Once the QR code is validated, the system then scans the individual's face, matching it against a secure database of authorized users. This technology eliminates the need for physical keys or PIN codes, providing a seamless experience. This not only improves access control but also significantly reduces the risks of unauthorized access, identity theft, and potential property damage. Ideal for both residential and commercial settings, this innovative system offers a modern, contactless solution to traditional lock-and-key security methods, making it a reliable choice for anyone seeking advanced security. The SDGs covered with this project are **SDG 9**: Industry, Innovation, and Infrastructure, **SDG 11:** Sustainable cities and communities**, and SDG 17:** Partnerships for the Goals



Smart Door Lock System

AuralVision

Visually impaired people face many difficulties in daily life. One big problem is reading printed text around them, like signs, menus, or papers. They often depend on others to read for them. This makes them feel less independent and confident. Though there are some tools like Braille or smart glasses, they are often expensive or hard to use. “Aural Vision” is a smart system developed to help blind and visually impaired people. It works by converting visual text into spoken words. The device uses an ESP32-CAM module to take pictures of written content, like signboards, menus, or documents. These pictures are then sent to a server through Wi-Fi. The server uses the Gemini API to find and read the text from the image. After this, the user gets a phone call, and the system reads the text aloud to them. Sustainable Development Goals (SDGs) Covered: • SDG 3: Good Health and Well-being (assistive technology for disabled persons) • SDG 9: Industry, Innovation, and Infrastructure (innovative use of IoT and AI) • SDG 10: Reduced Inequalities (helping visually impaired people).

Aural Vision

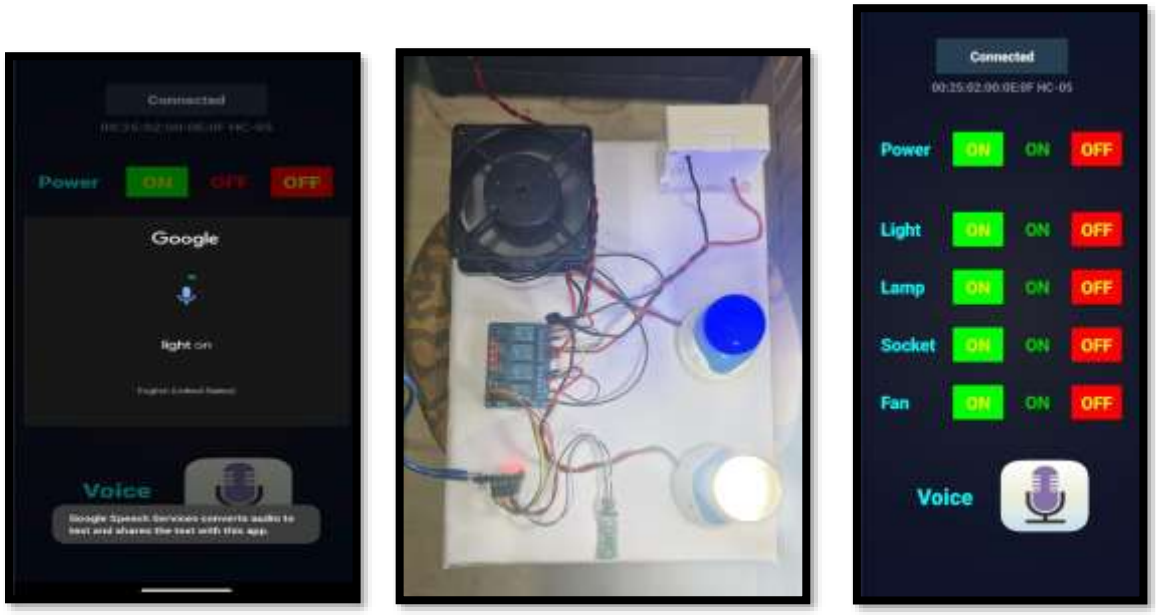
Hand Gesture Controlled Wheelchair

Traditional wheelchairs, especially manual ones, often require significant physical effort from users or constant assistance from caregivers, limiting independence and mobility for individuals with physical disabilities. To address this, students under DICE developed a Hand Gesture Controlled Wheelchair that enables users to navigate using intuitive hand movements. The system employs an MPU9250 sensor to detect hand gestures, which are transmitted wirelessly via the nRF24L01 module to a receiver connected to an Arduino Nano. The received signals then control the wheelchair's motion using an L298N motor driver, ensuring smooth and accurate movement. This innovative solution promotes autonomy, reduces physical strain, and enhances accessibility for people with mobility impairments. It holds great potential for use in hospitals, care homes, and personal settings. The project aligns with SDG 3 – Good Health and Well-being, SDG 9 – Industry, Innovation, and Infrastructure, SDG 10 – Reduced Inequalities, and SDG 11 – Sustainable Cities and Communities.

Hand Gesture Controlled Wheelchair

Voice-Controlled Smart Home Automation System

Modern homes increasingly demand intelligent, accessible, and energy-efficient automation solutions. Traditional home control systems often rely on manual switches or mobile apps, limiting accessibility for elderly users and persons with disabilities. To address these challenges, students under DICE developed a Voice-Controlled Smart Home Automation System that offers offline, low-cost, and efficient control over home appliances using voice commands. The system employs an Arduino Nano, HC-05 Bluetooth module, and a 4-channel relay to receive voice input via a mobile app and trigger corresponding devices such as lights, fans, or other electronics. Designed to be scalable and user-friendly, this solution enables hands-free operation without internet dependency, making it ideal for low-income or rural households. It can be integrated into residential, industrial, and institutional environments where convenience, accessibility, and power conservation are priorities. The project supports SDG 7 – Affordable and Clean Energy, SDG 9 – Industry, Innovation, and Infrastructure, and SDG 11 – Sustainable Cities and Communities, aligning with global efforts toward inclusive and sustainable technological growth.



Voice-Controlled Smart Home Automation System

Smart Dustbin

As improper waste management and delayed garbage collection contribute to unhygienic conditions and environmental pollution, traditional dustbins provide no information about their fill status. Overflowing bins lead to foul odor, health risks, and inefficient waste collection processes. With the growth of smart cities, there is a need for intelligent waste monitoring systems that can optimize collection schedules and improve cleanliness. To address this issue, students under DICE developed a Smart Dustbin Monitoring System. The project uses an Arduino Uno microcontroller integrated with an ultrasonic sensor to continuously monitor the fill level of the dustbin. The sensor measures the distance between the waste surface and the top of the bin, allowing the system to determine when the dustbin is full. When the dustbin reaches a predefined threshold level, the system sends a status alert to the user, indicating that the bin requires emptying. This helps prevent overflow and enables timely waste collection. The proposed system supports efficient waste management, improves sanitation, and contributes to cleaner surroundings. It covered global SDG-9 Industry, Innovation, and Infrastructure, SDG-11 Sustainable Cities and Communities, and SDG-12 Responsible Consumption and Production.

Smart Dustbin

E-Tricycle with Solar Power System

Disability affected older people who use wheelchairs have a main problem with being unable to move aroundfreely and being more dependent on others. Their ability to move around independently can become increasingly challenging. When using a traditional motorised wheelchair, it may take a lot of physical effort, especially when going up or down stairs or long distances. Department of Interdisciplinary Courses in Engineering (DICE) created “Solar based Wheelchair Tricycle” from scrapped materials. Project shows the immense potential of sustainable solutions in transforming everyday transportation. By reusing materials from scrap and harnessing solar power we are not just reducing waste but creating a smart, eco-friendly alternative solution for mobility to wheelchair. A distinctive feature of our tricycle is the integration of a solar panel on the roof, which serves both as an eco-friendly power source and a protective shelter for the rider. As the world seeks alternatives to reduce emissions, carbon foot prints and dependence on non-renewable resources, the "Solar based wheelchair tricycle" is a perfect solution for disabled persons

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Solar based E-Tricycle for disable persons

E-Bike

An electric bike is a motorized bike with an integrated electric motor used to assist propulsion. Electricmotorcycles are plug-in electric vehicles with two wheels. Keeping in view the benefits of EVs, students of DICE, Chitkara University has design and modified an old bike into electric bike. Students learnt to install BLDC motor, controller, batteries and other accessories. Students also learn to find out troubleshooting at different speed using multiple tooling. Exposure to live project gives more confidence an whichd knowledge reflects at the time of placements. This project is non-polluting and cost efficient. Some of E-bike specifications are given below.

E-BIKE	
Key Feature: **Conversion of an old engine bike into an electric bike.**	
Specifications:	
Motor	**Brushless Direct Current (BLDC)**
Voltage (V)	72
Output Power (W)	2000
Rated Current (A)	30
Battery	**Lithium-ion**
Rated Power (Wh)	2520
Rated Current (Ah)	42
Rated Voltage (V)	60
Maximum Charging Current (A)	10

DICE Team with Dr.Madhu Chitkara madam, Pro-Chancellor, after winning Future award at Galgotia University

E-Bicycles

Electric bicycles helps ride farther and faster than you would on a traditional bicycle. E-bicycle features a motor, battery and controller. Keeping in view the benefits of e-bicycle the student of DICE have designed an economical electric bicycle that is powered by Lithium ion Battery. The main idea is to convert old bicycle into electric bicycle, resulting in low cost as well as pollution control. This idea shows futuristic approach of Chitkara students. DICE provide Hands on exposer to students along with their regular study. Following are some specifications of E-bicycle:

E-CYCLE	
Key Feature: **Conversion of existing pedal cycle to E-Cycle.**	
Specifications:	
Motor	**Brushless Direct Current (BLDC)**
Voltage (V)	24
Output Power (W)	250
Rated Speed (rpm)	2800
Rated Current (A)	14
Battery	**Lithium-ion**
Rated Power (Wh)	312
Rated Current (Ah)	13
Rated Voltage (V)	24
Maximum Charging Current (A)	3