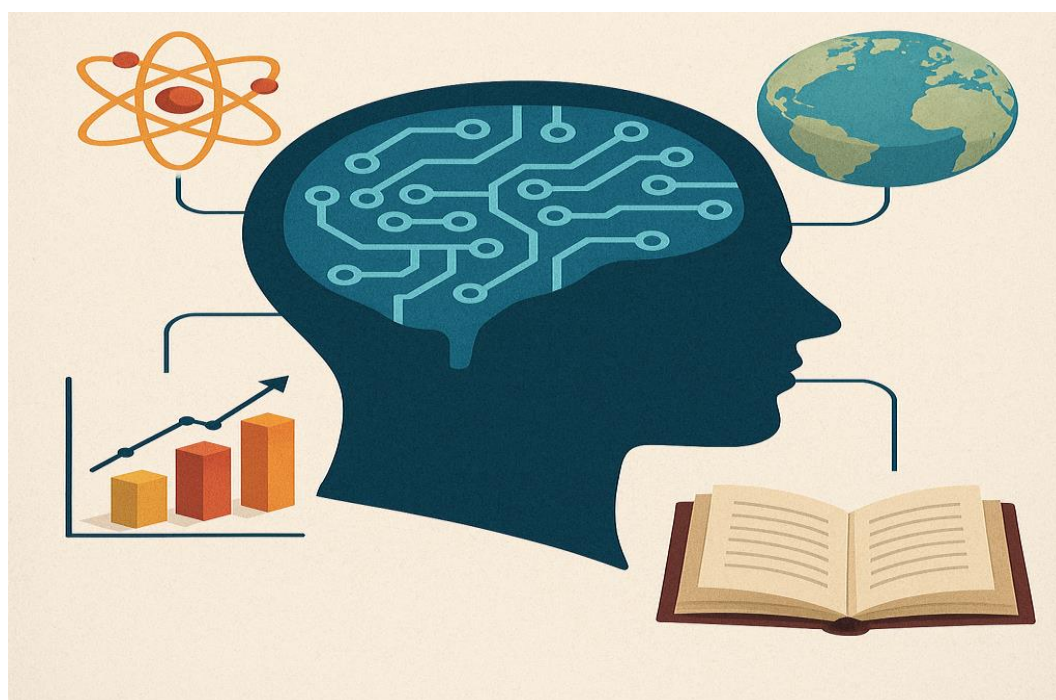


DEPARTMENT OF SCIENCE AND HUMANITIES
TECHNICAL MAGAZINE
ACADEMIC YEAR 2024-2025 EVEN SEMESTER

Issue 2 [MAY, 2025]



The Department of Science and Humanities at Akshaya College of Engineering and Technology has been an integral part of the institution since its inception. The department is dedicated to imparting teaching and promoting the practical aspects of Physical Science and Humanities. It offers first-year courses for all department students, focusing on subjects like English, Mathematics, Physics, and Chemistry. The department aims to lay a strong foundation in these fundamental areas to make engineering streams more accessible to students. By bringing a human touch to technology, it strives to assist engineers in developing themselves within the social context. With a mission to build a solid foundation as part of engineering education, the department plays a unique and distinctive role where the ethos of science and technology prevails.

Program Outcomes - POs

PO1: Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2: Problem Analysis: Identify, formulate, review research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3: Design/Development of Solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4: Conduct Investigations of Complex Problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5: Modern Tool Usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

PO6: The Engineer and Society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7: Environment and Sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9: Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11: Project Management and Finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12: Life-long Learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

FROM THE EDITORIAL DESK.....

We are excited to announce the release of their year's "Technical Magazine," showcasing ground breaking research and projects from our students and faculty. We encourage everyone to explore the articles that reflect our commitment to excellence. This collection highlights the ACET Community's achievements and innovations, presented by the Akshaya Editorial Board. This magazine honours the dedication and creativity of our students, who continually pursue excellence. The article highlights the significant progress ACETians have made this academic year. This magazine covers various topics from innovative research to technological advancements, showcasing the dynamic and progressive spirit of our institution.

We sincerely thank the management, principal, and department heads for their invaluable support in making this prestigious publication a reality. Their guidance was crucial in ensuring the timely and high-quality publication of the technical journal. The student body deserves special recognition for their enthusiasm and contributions. This journal reflects our collective achievements made possible by your dedication to innovation and technology. This publication would not be possible without your efforts.

We expect "Technical Magazine" to continue inspiring ACETians to excel in technology, creativity, and knowledge. This platform will showcase the high quality of our students and the excellence we uphold in all areas. We eagerly anticipate upcoming editions that highlight our collaboration and creativity. Your ongoing participation is essential to our progress. Together, we can inspire innovation and embrace new opportunities for a more promising future.

CHIEF EDITOR:

Prof.C.Nirmala, HoD/S&H

EDITOR:

Mrs. P. Soundarya, AP (SG)/English

STUDENT EDITORS:

Mr. Karventhan K S I-CSE

Mr. Kishore Kumar S, I-AI&DS

MESSAGE FROM THE HEAD OF THE DEPARTMENT.....

I am proud to share my thoughts on the launch of the 2024-25 edition of our Technical Magazine. This publication is a testament to our students' creativity and commitment. Each article reflects extensive research and teamwork, showcasing their technical skills and ability to tackle complex challenges with innovative solutions and dedication.

As you read this magazine, you will be amazed by the remarkable accomplishments of our young brains, who have worked hard to achieve excellence in academics, technology, and innovation. By capturing the spirit of our students' ideas, thoughts, objectives, hopes, and beliefs, this journey gives readers a peek at the brilliant minds that will shape our future, in addition to their achievements. As you read more, you will find motivational tales that showcase the fortitude and perseverance of these people. Each piece mirrors their journey, urging readers to accept curiosity and follow their interests with unyielding passion.

I would like to congratulate the editorial board and the students for their hard work in creating this edition of the Technical Magazine for 2024-2. Wishing you all the best...



Prof. C. Nirmala, HoD/S&H

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SMART STREET LIGHT SYSTEM

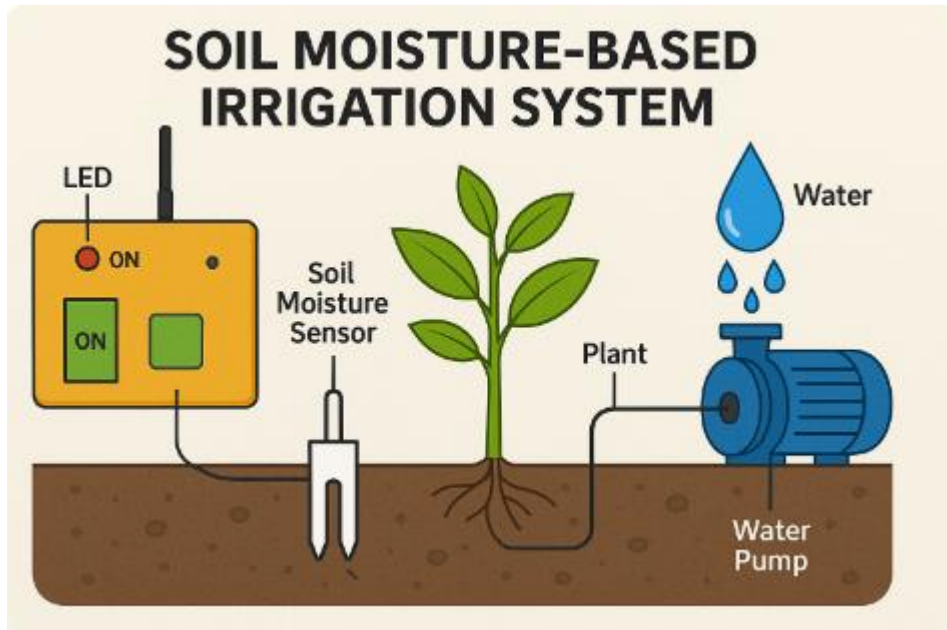


This project uses an LDR sensor with Arduino to automate street lighting. The system turns ON the lights during dark conditions and OFF during the day. It helps in reducing manual efforts and energy wastage. It simulates real-time light detection and control. Basic electronics and microcontroller coding are involved. It promotes energy-efficient smart cities. A simple model with LEDs and sensors illustrates the concept.

The smart street light system operates on the principle of ambient light detection using an LDR. When the surrounding becomes dark, the resistance of the LDR changes, which signals the Arduino to activate the lights. During daylight, the lights are automatically turned off. This system is designed using simple components: an Arduino Uno, LDR sensor, and LEDs. It reduces energy consumption and provides automation in street lighting. The project helps students learn sensor interfacing and conditional control in embedded systems. It demonstrates how environmental data can trigger automation. The model also showcases wiring techniques and debugging skills. Students can build the model on a breadboard. It integrates coding with real-world applications. This is an ideal beginner project in the Embedded domain.

- **Stephen A, Mujiph Rahman M, Pavithra B, Gowtham R (I-Civil)**

SOIL MOISTURE-BASED IRRIGATION SYSTEM



This project automates watering of plants using a soil moisture sensor and Arduino. It detects the moisture level of the soil. When dryness is detected, a water pump is activated. The system ensures optimal soil moisture. It minimizes water usage and improves crop health. It demonstrates smart farming concepts. It introduces sensor-driven automation.

The soil moisture-based irrigation system continuously monitors the moisture level of the soil using a sensor. When the moisture falls below a threshold, the Arduino activates a water pump to irrigate the soil. This ensures that the plant receives the right amount of water only when needed. The system is built using a soil moisture sensor, relay, mini water pump, and Arduino board. It supports the idea of water conservation and smart agriculture. The student learns about analog sensor readings and triggering outputs through microcontroller logic. The project highlights the importance of automation in agriculture. It provides practical exposure to relay operations and pump control. The setup can be replicated on small plant pots. It connects classroom learning with sustainable technology. The model is both educational and environment-friendly.

-Aathisivan S, Dhanusiya Sri N, Agelish Shagar A, Parthiban S (I-Mech)

TEMPERATURE & HUMIDITY MONITOR

This project uses a DHT11 sensor to monitor real-time temperature and humidity. The values are displayed on an LCD screen. It utilizes an Arduino board for processing. The system shows live atmospheric data. It introduces sensor interfacing and data display. It simulates a simple weather station. Useful in indoor and greenhouse monitoring.

The temperature and humidity monitoring system helps track environmental conditions using the DHT11 sensor. The data is processed by an Arduino Uno and shown on a 16x2 LCD display. It demonstrates the conversion of physical data into digital format. The project teaches students how to collect, process, and display real-time data using embedded systems. Applications include weather monitoring, indoor climate control, and greenhouse farming. The student gains experience with digital sensors and I2C communication. The model is designed using a breadboard setup. It emphasizes understanding of loops, libraries, and sensor calibration. Practical outcomes include environmental awareness and automation skills. It also introduces the basics of IoT by discussing data logging potential. This project is ideal for first-year students learning sensor integration.

-Hariharan C, Sabarinathan S, Santhoshkumar M, Mohan S (I-Mech)

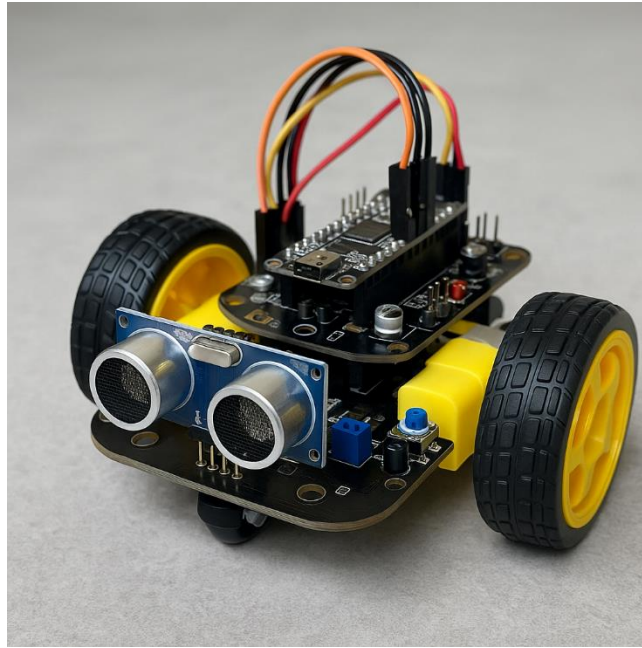
SIMPLE BUDGET PLANNER IN EXCEL

Students build a monthly budget planner using Excel. Tracks income, fixed costs, and variable expenses. Calculates savings automatically. Teaches budgeting and financial planning. Uses formulas like SUM, IF, and conditional formatting. Encourages money management habits. Valuable life skill development.

The simple budget planner project allows students to manage their monthly finances by listing income sources and expenses in structured categories. Students use formulas to automatically calculate balances and highlight budget overruns. Charts can show spending trends. The planner develops awareness about financial planning, savings, and responsible spending. It improves Excel skills, including cell referencing and formula application. This project teaches one of the most crucial life skills—money management—early on. It can be adapted for students' hostel, travel, or personal goals. A highly practical and realistic project.

- Arunkumar B, Boopesh M, Mohammed Asik J, Jeevaprabhakaran S (I-Mech)

OBSTACLE AVOIDING ROBOT

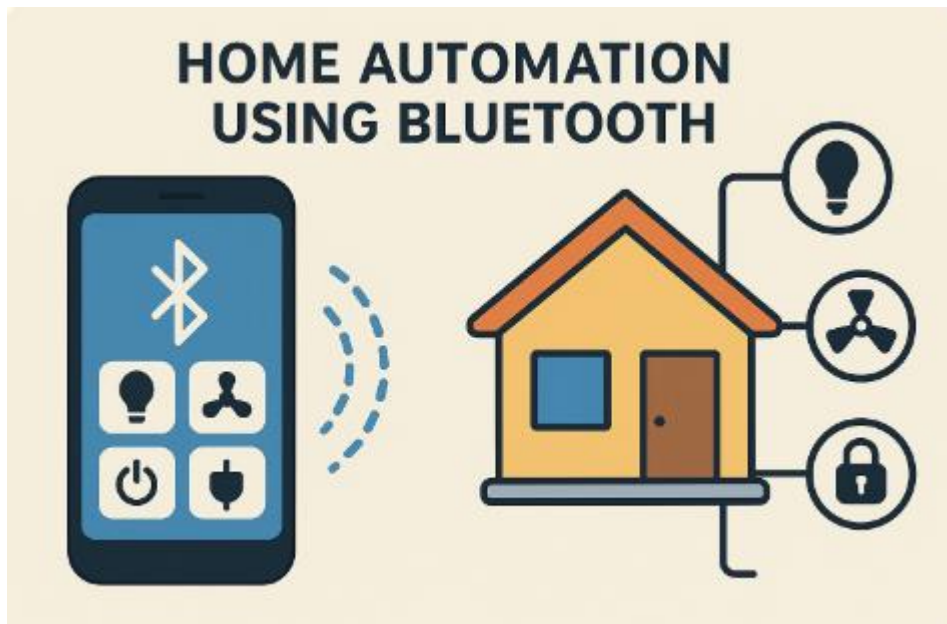


This robot moves forward and changes direction when it detects obstacles. It uses ultrasonic sensors and Arduino. The system avoids collision autonomously. It introduces basic robotics and sensor control. Motor drivers are used to control wheel movements. It demonstrates real-time decision making. Useful in smart mobility systems.

The obstacle avoiding robot uses ultrasonic sensors to detect objects in its path and reroute accordingly. Controlled by an Arduino board, the robot employs a pair of DC motors and an L298N motor driver for movement. When an obstacle is detected within a specified range, the robot calculates a new direction to avoid it. This project demonstrates the basics of automation, logic implementation, and actuator control. Students learn about sensor input handling and real-time conditional branching in embedded programming. The concept can be extended to advanced robotics and self-driving technology. It encourages logical thinking, hardware integration, and structured coding. The bot can be built using simple wheels and chassis. It also involves practical assembly, wiring, and testing skills. It lays the foundation for more advanced robotic applications.

-Arnish R, Bharanidharan M, Deepika S, Mathumitha K (I-MT)

HOME AUTOMATION USING BLUETOOTH



This project allows wireless control of home appliances using Bluetooth. A mobile app sends commands to an Arduino board. Devices like fans or lights can be controlled remotely. It demonstrates wireless communication and device interfacing. Useful in smart home environments. The project is cost-effective and easy to build. Encourages IoT-based automation thinking.

The home automation project enables students to control electrical appliances using their smartphone via Bluetooth communication. An HC-05 Bluetooth module receives commands from the mobile app and transmits them to an Arduino Uno. Based on the command, the Arduino toggles a relay that switches devices like bulbs or fans. This project introduces wireless protocol concepts and real-world use of mobile-to-device interaction. Students gain experience in circuit design and Bluetooth pairing. The system provides comfort, energy savings, and security for users. The project offers flexibility for future upgrades with voice or sensor-based triggers. It enhances knowledge in both electronics and app development. It helps students understand the structure of IoT systems. The setup is affordable and suitable for home labs. It bridges basic embedded skills with modern automation needs.

- Mohammed Rashid P.A, Kanishkar K, Phanindran S B, Balasivakannan M (I-MT)

SIMPLE CALCULATOR USING PYTHON

This project builds a basic calculator using Python. Performs addition, subtraction, multiplication, and division. Operates in command-line interface. Reinforces arithmetic logic. Introduces input/output and conditional flow. Beginner-friendly code structure. Foundational for future programming skills.

The simple calculator project uses basic Python functions to perform arithmetic operations. The user enters two numbers and selects an operation. The code then processes the input using if-else statements and displays the result. Students practice syntax, variable handling, and function use. This project builds confidence in problem-solving and reinforces math through programming. It's often a student's first Python program and helps them understand the structure of interactive applications. Easy to build and customize further with features like loop-based repetition or GUI. A classic foundational coding task.

-Revathy T, Shobana M, Shobana M, Santhiya M (I-MT)

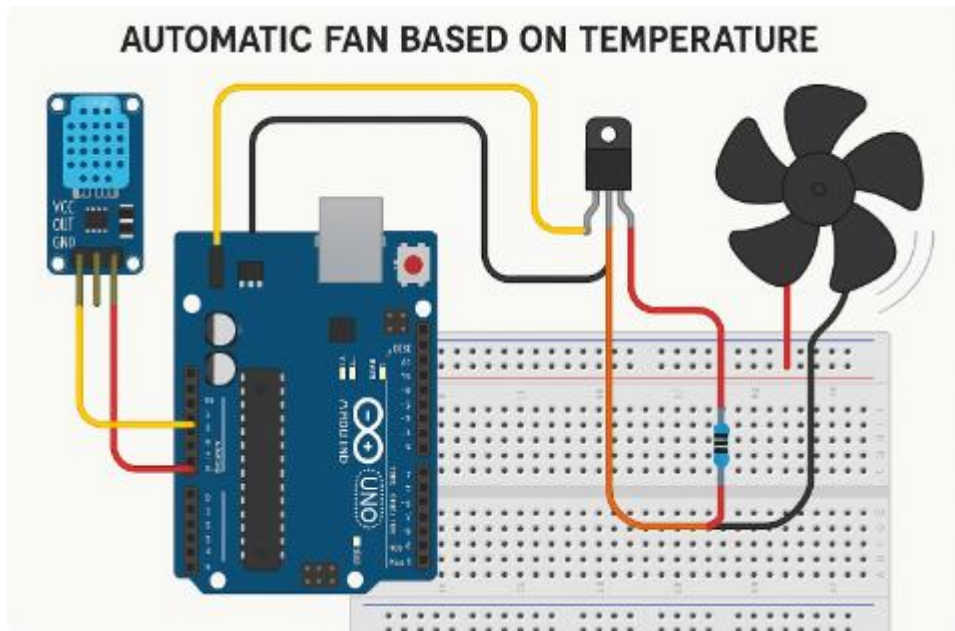
FIRE DETECTION SYSTEM

This system uses flame sensors to detect fire in real-time. When fire is detected, an alarm and LED indicator are activated. It uses an Arduino for sensor processing. The system is ideal for homes, labs, and small offices. It increases fire safety awareness. Easy to build and test. Encourages emergency alert system development.

The fire detection system uses a flame sensor to detect fire signals and responds by activating a buzzer and an LED warning light. The Arduino board reads the flame sensor's digital output and initiates the alarm sequence. The system can detect flames within a specific range and is ideal for early warning fire safety applications. This project introduces environmental monitoring and rapid-response alert logic. Students learn how to process digital input and activate output signals based on conditions. The setup includes a flame sensor, buzzer, LEDs, and Arduino. It promotes the use of embedded systems in public safety applications. Students also learn about threshold calibration and sensor positioning. The project helps in understanding real-time alerts and control systems. It lays a basic foundation for designing smart security or hazard detection tools. This is a practical and life-saving concept for tech learners.

**- Naveen Madhaiya Ganapath S, Arun Kumar Sethu S A, Monika Sri G A,
Nivetha M (I-AI&DS)**

AUTOMATIC FAN BASED ON TEMPERATURE



This project controls a fan based on room temperature using a DHT11 sensor. The Arduino processes the temperature data. If the temperature crosses a threshold, the fan turns ON. The system helps maintain ambient conditions. It shows environmental automation. Demonstrates sensor use with actuators. Simple and cost-effective for students.

The automatic fan system is designed to maintain comfort by controlling fan operation based on ambient temperature. A DHT11 sensor captures the current temperature, and when it exceeds a set value, the Arduino activates a relay connected to the fan. When the temperature drops below the threshold, the fan is turned off. This system mimics smart home HVAC automation. Students gain experience with sensors, conditional statements, and relay modules. It also demonstrates how embedded systems respond to environmental changes. The circuit is built on a breadboard using basic components. Practical applications include indoor climate control and greenhouses. It teaches real-time monitoring and action based on data input. Easy to build, test, and modify. A valuable project for first-year engineering learners.

- Jerusha V.P, Pooja S, Sugeesha P, Janavarshini K.B (I-AI&DS)

BASIC PORTFOLIO WEBSITE (NO-CODE USING CANVA)

Students create a digital portfolio website using no-code tools. Includes intro, skills, and sample work. Teaches design thinking and presentation. Encourages digital presence building. Helps in future internships or networking. No coding required. Builds creative and personal branding.

This project enables students to build a personal portfolio site using free no-code platforms like Canva, Wix, or Google Sites. Sections include personal bio, academic achievements, hobbies, and contact details. Students practice visual design, layout planning, and writing. It promotes online visibility and professional presentation. Useful for sharing resumes, project links, or creative works. No programming knowledge is needed, making it beginner-friendly. Encourages experimentation with fonts, colors, and user experience. A strong first step into the world of personal branding and digital identity.

- Jana B, Chandhru Priyan S, Kishore Kumar S, Padmesh B (I-AI&DS)

INTERNET SAFETY AWARENESS POSTER

This creative project involves designing a poster on digital safety. Covers topics like phishing, passwords, and cyberbullying. Can be made using Canva or PowerPoint. Promotes cyber security awareness. Enhances design and communication skills. Encourages responsible internet use. Suitable for group collaboration.

The internet safety awareness poster project allows students to express key messages about online safety through creative design. Using tools like Canva or PowerPoint, they create posters on themes like secure browsing, avoiding scams, and respecting privacy. Students research, write, and visually present important cybersecurity tips. This improves awareness and digital responsibility. The project builds graphic design, layout composition, and educational writing skills. It's ideal for class presentations or digital campaigns. Encourages team collaboration or solo creativity. Helps prepare students for responsible digital citizenship. A socially relevant and expressive project.

- Anuvarshini S, Ravula Palli Sunanda, Lathika P, Kanmani S (I-AI&DS)

RFID DOOR LOCK SYSTEM

This project uses an RFID sensor and Arduino to create a secure lock. Only authorized RFID tags can open the lock. An LED and buzzer provide status feedback. It introduces students to electronic security. Teaches RFID interfacing and data validation. Encourages interest in smart security systems. Useful in homes and institutions.

The RFID-based door lock system enhances security by granting access only to pre-approved RFID tags. An RFID reader connected to an Arduino reads the tag's unique ID. If the ID matches a stored value, a servo motor unlocks the door. Feedback is given via LEDs and a buzzer for valid or invalid access. This project introduces concepts of identity verification, embedded access control, and electronic locking mechanisms. Students learn about RFID communication and simple database logic using microcontrollers. Real-world applications include smart locks in hostels, offices, and lockers. It encourages thinking around data storage and privacy. The system is expandable for larger-scale applications. A low-cost and practical entry into electronic security.

- Jeshna Sherin J, Sahashra Santhosh K.M, Sandhya R, SriAmirtha S (I-AI&DS)

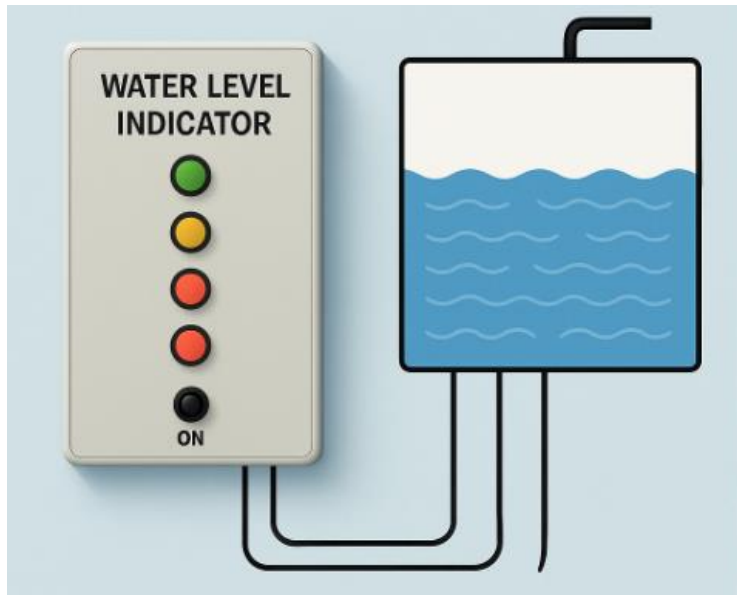
SMART DUSTBIN USING ULTRASONIC SENSOR

This project uses an ultrasonic sensor to automate the dustbin lid. When someone approaches, the lid opens. It simulates touchless waste management. Promotes hygiene and reduces contamination risk. Controlled using Arduino and servo motor. Encourages smart city innovation. Useful in hospitals, kitchens, and offices.

The smart dustbin is a hygiene-focused automation system that opens the lid when someone comes near. An ultrasonic sensor detects motion within a preset range, triggering a servo motor to lift the lid. The system is powered and controlled via an Arduino Uno. This project demonstrates automation in waste management and public hygiene. It introduces students to motion detection, servo control, and threshold-based logic. Ideal for first-time builders, the dustbin setup can be constructed from cardboard or plastic. Students gain insights into environmental sensors and mechanical actions. Promotes innovation in health-conscious technologies. A relevant and engaging project post-COVID. Supports concepts of public sanitation, embedded system response, and practical design.

- Karventhan K S, Praveen Kumar S, Kaviyasri M, Kirubhatharani E K (I-CSE)

WATER LEVEL INDICATOR



This project uses multiple probes and LEDs to show water levels. Arduino reads the sensor signals. When the water reaches certain levels, corresponding LEDs glow. Helps in tank monitoring and water conservation. Easy to demonstrate on a small scale. Encourages sustainability thinking. Teaches basic circuit logic.

Summary: The water level indicator project helps monitor the level of water in a tank using metal probes and LEDs. Each probe is placed at a different height in the container and when water touches the probe, it completes a circuit, signaling the Arduino to light up the corresponding LED. This gives a visual representation of the tank's water level. The project is simple and uses very few components: wires, resistors, Arduino, and LEDs. It reinforces concepts like voltage sensing and digital input detection. Students learn about real-world monitoring systems. It fosters awareness of water management and conservation. Easy to replicate and low-cost. A strong foundation for smart monitoring applications.

- Sanjay K, Mohansiva A, Prapanj Kumar N E, Kurva Venu Madhav (I-CSE)

DIGITAL CLOCK USING PYTHON

This project creates a digital clock using Python's Tkinter GUI. Displays current time in hours, minutes, and seconds. Updates in real-time using loops. Introduces GUI programming basics. Enhances logical flow and time functions. Simple design, suitable for beginners. Builds confidence in creating desktop apps.

The digital clock project uses Python's Tkinter library to create a live time display. It teaches GUI window setup, label updates, and the use of the time module. Students write a loop that updates the display every second. The project strengthens understanding of real-time programming. It's ideal for introducing GUI concepts like layout, labels, and event-driven logic. The design is customizable with fonts, colors, and formats. Students can also add features like date or alarms. An engaging and useful project that brings coding to life on-screen.

**- Mustoor Lokesh, Surya Prakash R, Kesa Pakkireddy Gari Naveen Kumar,
Moulishwaran P (I- CSE)**

PERSONAL EXPENSE TRACKER IN EXCEL

This project helps students track their daily expenses using Microsoft Excel. It includes sections for income, expenses, and balance. Students can categorize expenses and visualize spending patterns. Encourages financial awareness and digital organization. Easy to implement and modify. Teaches spreadsheet formulas. Builds essential budgeting habits.

The personal expense tracker project enables students to maintain a record of daily transactions in a structured Excel sheet. It categorizes income and expenses under various heads and calculates the daily/monthly balance. Students use basic Excel functions like SUM, IF, and conditional formatting. It teaches financial discipline and introduces digital tools for daily planning. The visual elements such as pie charts or bar graphs help in understanding expense distribution. The tracker is customizable and adaptable for any personal finance goal. First-year students gain practical spreadsheet experience while learning to manage resources. This project is ideal for enhancing self-management and analytical skills. It connects digital literacy with real-life applications. Easy to use, update, and replicate.

- C Sirisha, Nithya Lakshnri B, Nalamathi I, Lavanya V (I-CSE)

RESUME BUILDER IN WORD

This project involves designing a personal resume using MS Word. Students list their skills, education, and goals. Teaches document formatting and layout. Encourages self-reflection and presentation. Useful for future interviews. Enhances written communication skills. Easy yet impactful for personal branding.

The resume builder project empowers students to prepare a professional CV using Microsoft Word. It includes sections such as objective, education, skills, projects, and contact information. Students learn to use formatting tools like bold, bullets, tables, and alignment. The project introduces them to the importance of layout and clarity in communication. It encourages introspection on career goals and accomplishments. They practice editing, proofreading, and visual design principles. This resume can be used for internships, workshops, or competitions. It lays the foundation for career readiness. Helps build self-confidence and personal branding. A must-have skill for every engineering student.

- Sameem Anvar I, Srikrishna K, Sanopiya A, Thanva S S (I-CSE)

MOTIVATIONAL QUOTE GENERATOR USING PYTHON

This project displays random motivational quotes using Python. Encourages positivity and self-growth. Uses random module and a list of quotes. Simple output on console. Enhances list handling and randomness logic. Easy to customize. Fun beginner programming project.

The motivational quote generator is a console-based Python application that prints a random quote each time it is run. A list stores the quotes, and the random module selects one at runtime. The program introduces students to string lists, importing libraries, and function calls. It can be expanded to include categories, daily schedules, or even a GUI. This project promotes optimism while strengthening fundamental programming logic. It's a great way to build coding habits and positive thinking together. Engaging, personal, and highly adaptable for learners.

- Visaaganan S, Sarathi T, Mohammed Rinshad A, Prakash A (I-CSE)

HEALTH BODY MASS INDEX (BMI) CALCULATOR

This calculator computes BMI based on height and weight. It classifies the result into health categories. Built using basic Python or Excel logic. Promotes health awareness among students. Teaches mathematical formulas in programming. Encourages personal wellness monitoring. Simple yet effective learning tool.

The BMI calculator project allows students to input their height and weight to compute their Body Mass Index. The system evaluates whether the result falls under underweight, normal, overweight, or obese categories. Built using basic Python input/output functions or Excel formulas, this project demonstrates real-world application of mathematical concepts. It familiarizes students with variables, arithmetic operations, and conditionals. The logic is easy to follow and encourages debugging and testing. Health-conscious tools like this introduce the idea of self-monitoring using technology. Students gain motivation to develop more wellness applications. It connects health education with software basics. A great blend of numerical reasoning and programming.

- Amal M, Kavipriya P, Sowrathi V, Pradeepa S (I-EEE)

STUDENT ATTENDANCE MANAGEMENT SYSTEM (MANUAL LOG)

This system keeps track of student attendance in tabular format. Records date, name, and presence/absence. Can be developed in Excel or Python. Helps organize classroom management. Students learn data logging and organization. Encourages systematic recordkeeping. Promotes responsibility and routine.

The attendance management project lets users maintain a clear record of daily attendance for a group of students. Built using Excel or a Python script, it logs dates, names, and statuses (Present/Absent). This enhances administrative skills and understanding of time tracking. Students use lists, loops, and conditionals in programming-based versions. In Excel, they apply sorting and lookup formulas. The project teaches students about creating functional data sheets and the importance of accurate recordkeeping. It can be adapted for clubs, study groups, or hostels. This task enhances punctuality and documentation skills. Encourages digital literacy in classroom environments. A practical utility project with daily relevance.

- Hariharan S, Shuriya S R, Kalaiyarasu R, Venkateshwaran R (I-EEE)

RECYCLING AWARENESS INFOGRAPHIC

Students design an infographic on recycling and sustainability. Includes key facts, benefits, and local practices. Made using Canva or PowerPoint. Encourages eco-conscious thinking. Develops research and visual storytelling skills. Enhances awareness of environmental responsibility. Suitable for exhibitions or digital sharing.

The recycling awareness infographic project combines creativity and environmental science. Students research the importance of recycling, current waste statistics, and tips to reduce consumption. They organize this information visually using Canva or similar tools. Design elements include icons, charts, and color-coded sections. The infographic helps promote sustainability and environmental responsibility among peers. It also improves skills in layout design, audience engagement, and public communication. Suitable for classroom displays, competitions, or community outreach. A meaningful project to blend design, information, and social change.

- Charu Harsini S J, Shobana R R, Periyamma S, Rama Sree G (I-EEE)

ELECTRICITY BILL CALCULATOR

This tool estimates monthly electricity bills based on appliance usage. Input: device power and usage time. Calculates total energy consumption. Helps in understanding energy efficiency. Can be created using Excel or Python. Encourages conscious resource usage. Builds math and logic skills.

The electricity bill calculator helps users estimate their monthly bill by entering details like device wattage, usage time per day, and unit rate. The tool multiplies wattage by hours and number of days to compute energy consumption (in kWh), then applies the per-unit cost. Students learn about energy usage, cost breakdown, and units of power. Implemented in Python or Excel, it involves basic input/output and formulas. The project raises awareness of sustainable energy habits. Encourages thoughtful electricity usage and budgeting. Ideal for promoting STEM concepts in daily life. Reinforces the importance of real-world logic applications. Fun, useful, and easy to build.

- Bhavatharani L, Gayathiri –A, Divya L, Dharshini S, Haritha H (I-CSE)

SIMPLE WEATHER JOURNAL APP (MANUAL ENTRY)

This project involves creating a weather journal in Excel or Word. Students manually log daily weather conditions. Encourages observation and recordkeeping. Includes fields for temperature, sky condition, and mood. Helps connect environment to health and productivity. Improves data collection habits. Fosters daily reflection.

The weather journal app encourages students to track daily weather conditions such as temperature, humidity, rain, or sun manually. Built in Excel or Word, students enter data into a structured table and optionally include their mood or productivity score. The project helps recognize patterns between environment and behaviour. They learn how to structure tabular data and apply styles, colour codes, or charts. Students may use online sources like weather.com to retrieve data and build a consistent record. Ideal for combining observation with technical formatting skills. Teaches patience, organization, and environmental awareness. Encourages students to look beyond screens and assess surroundings. Simple, calm, and mindful project.

- Sajjath Umar M, Ruban B S, Ansar Rahuman M, Aatharsh B (I-CSBS)

TIME TABLE SCHEDULER IN EXCEL

This project creates a visual weekly timetable in Excel. Students input classes, times, and subjects. Teaches calendar planning and time organization. Uses tables, color coding, and borders. Helps improve daily routine and prioritization. Builds basic spreadsheet design skills. Reinforces importance of time management.

The timetable scheduler project helps students design a personal weekly schedule using Excel. They divide the sheet into columns for days and rows for time slots, assigning subjects or tasks to each block. Formatting tools such as cell merging, fill colors, and bold fonts are used to make it readable and efficient. The project develops planning and productivity habits. It serves as a visual tool for prioritizing studies, rest, and co-curriculars. Students learn spreadsheet navigation and formatting. Practical for academic success and balance. This project is also scalable for hostel duty rosters or team schedules. Encourages independence and ownership of time.

- Abirami K, Madhumitha A, Saminabanu M, Sivasree R (I-CSBS)

GOAL SETTING & HABIT TRACKER

This project tracks daily habits and goals over weeks. Students set targets and mark daily completion. Built in Excel or Word as a grid or checklist. Encourages discipline and self-monitoring. Promotes motivation and consistency. Easy to personalize and update. Ideal for developing strong habits.

The habit tracker project enables students to monitor personal goals like reading, exercise, or sleep. A grid is built with days of the month on the x-axis and habits on the y-axis. As each task is completed, students tick or color the corresponding cell. This builds accountability and discipline over time. Tools like conditional formatting or auto-counting in Excel make the task visually rewarding. The project supports the development of healthy academic and personal habits. It enhances design thinking, layout creation, and self-assessment. Easy to implement and modify. A powerful life skill project that nurtures positive behavior through technology.

-Naveen B , Naveen Prasath K , Haridharshan R, Hari Prasath S (I-ECE)

PASSWORD GENERATOR USING PYTHON

This project creates random secure passwords using Python. Uses character libraries to build strong combinations. Helps users avoid weak passwords. Introduces random functions and strings. Enhances security awareness. Fun way to learn programming logic. Encourages safe digital practices.

The password generator is a mini project in Python that helps users create strong, random passwords. Students use string and random modules to generate combinations of uppercase, lowercase, numbers, and special characters. The project introduces concepts like loops, lists, and user-defined length. It teaches security best practices and encourages the use of secure login credentials. A simple yet functional coding exercise that boosts confidence in logic building. This project also promotes awareness about cyber security. Ideal for beginners looking to build console-based applications. Easily extendable to include a graphical interface later. Engaging and empowering for tech-savvy students.

- Thison S, Chijon S, Aswin Bebido C, Kathires N (I-ECE)

DIGITAL DIARY IN WORD

This project involves maintaining a digital diary in MS Word. Students write daily or weekly entries. Builds reflection and emotional clarity. Encourages regular writing habits. Teaches formatting and consistency. Safe space for self-expression. Combines creativity with digital tools.

The digital diary project gives students a platform to record their thoughts, ideas, and experiences. Using MS Word, they can structure entries by date, insert images, and use formatting tools like headers, italics, and colors. It promotes mental well-being and expressive writing. The project helps improve typing speed and document navigation. Students can optionally password-protect their diary or add journal prompts. Encourages creativity, honesty, and reflection. Serves as a stress-relief outlet while also improving digital literacy. A personal, introspective project that fits any student. Simple to start and rich in personal impact.

- Aishwarya R, Sivadharshini V, Deepika Shree G K, Gayathri M (I-ECE)

UNIT CONVERTER USING PYTHON

This project allows users to convert between units like meters to feet, Celsius to Fahrenheit, etc. Built in Python using conditional statements. Teaches logic building and arithmetic functions. Helps in understanding unit systems. Useful for science and engineering students. Promotes problem-solving skills. Simple and interactive for beginners.

The unit converter project provides a simple Python interface to convert between different measurement units. Users select conversion types (length, weight, temperature) and input values, then get results using predefined formulas. The project uses conditionals, input/output, and mathematical operations. It's a great way to apply real-world use cases while learning programming. Students gain fluency with basic syntax and function structuring. Can be extended with GUI or more unit categories. This project also promotes accuracy and logical thinking. A practical and fun introduction to coding for first-year students.

- Rathinapriya C, Pavithra K, Mathan Kumar M, Manikandan P (I-ECE)

PERSONAL LIBRARY CATALOG IN EXCEL

This project helps students catalog their books using Excel. Fields include title, author, genre, and read status. Encourages reading and organization. Teaches sorting and filtering data. Helps with tracking reading progress. Customizable and personal. Enhances database thinking using spreadsheets.

The personal library catalog project lets students maintain a record of the books they own or read. The sheet includes columns like title, author, genre, rating, and completion date. They apply Excel tools like data validation, filters, and conditional formatting. The project encourages reading while teaching data management. Students improve their spreadsheet navigation and record-keeping habits. It's a gentle way to explore database-like logic in a non-coding format. The system is useful for tracking academic books, novels, or e-books. Helps instill discipline in information handling. A great bridge to future data or inventory projects.

- Dharanedharan S, Mathesh M, Karthick P, Sanjith K (I-ECE)

DAILY PLANNER SHEET IN EXCEL

This project helps students organize daily tasks using a planner in Excel. Includes sections for tasks, priority, deadlines, and completion status. Promotes productivity and time management. Teaches checklist formatting and table usage. Encourages goal tracking. Useful for academic and personal planning. Strengthens routine and discipline.

The daily planner project enables students to design a digital task tracker with sections for dates, task descriptions, status, and time slots. Excel functions such as data validation, checkboxes (via form controls), and conditional formatting are used to enhance usability. Students learn to structure workflows and manage time effectively. The planner is adaptable for academic or extracurricular schedules. It develops habits of accountability and reflection. The design improves organization skills and visual planning. This project encourages daily review and efficient time usage. A must-have tool for academic success and personal growth.

- Kanish D, Mathan Kumar M, Sandeep K, Uthaya Kumar S (I-ECE)