



# ARMY INSTITUTE OF TECHNOLOGY, PUNE



## RESEARCH AND DEVELOPMENT CELL

### Club Report : 2023-24

#### VISION

To become a globally renowned technical Institute to promote research in newly emerging frontiers of science and technology including multidisciplinary domains

#### MISSION

To promote multidisciplinary academic and industry-oriented research.  
To promote research activities of students and faculty.  
To enable knowledge creation and technology transfer through collaboration with R&D Institutes and industries.  
To promote the growth of the Nation's R&D ecosystem.

<b>Name of faculty in-charge</b>	Dr. Surekha KS (July 2023-Nov 2023) Dr. Seema Tiwari ( Dec 2023- June 2024)
<b>Name of Student Secretaries</b>	Gaurav Singh Malra ,TE Mech Harshit Choudhary ,TE IT
<b>Budget Allocated by Institute</b>	Rs. 15,00,000
<b>Sponsorship received</b>	nil

<b>Name of activities/events conducted</b>
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<b>Sr. No.</b>	<b>Name of Activity</b>	<b>Type ( Inter / Intra College )</b>
1	AVISHKAR 2023	Intra college
2	IIT BOMBAY TECHFEST ZONALS	Inter college
3	HOSTING MR. THANOS PERSCHOS	Intra College
4	IXEL AND TELEGRAM BOT COMPETITION	Intra College
5	FUSION	Intra College
6	FOY DETECTING DRONE	Inter College

## REPORT OF ALL ACTIVITIES/ EVENTS

1)

### AVISHKAR 2023

REQUIRED FILLED	INFORMATION TO BE FILLED
Link for publicity on social media	<a href="https://avishkar.unipune.ac.in/">https://avishkar.unipune.ac.in/</a>
Academic Year	2023-24
Program driven by	AIT R&D Cell , SPPU
Program/Activity	Competition
Mode of Event (offline/online)	Offline
Date of Event	05th Sept. 2023
Number of Students Participated	40
Number of Teams Participated	05
Amount	Rs 10,000
Remark	Event Conducted by SPPU
Faculty Name (Faculty involved in organizing event)	Dr. Surekha KS ( Dean R&D Cell )
Student Name (Students involved in organizing event)	AIT R&D Cell TEAM
Benefits of Event	<ul style="list-style-type: none"><li>● <b>Encourages Innovation and Creativity:</b> Students are motivated to think outside the box and come up with novel solutions to real-world challenges through project-based learning.</li><li>● <b>Hands-on Learning Experience:</b> By developing and presenting their ideas or prototypes, students gain practical skills, enhancing their understanding of how concepts are applied in real scenarios.</li></ul>

	<ul style="list-style-type: none"> <li>● <b>Networking Opportunities:</b> Participants can connect with industry experts, academic professionals, and fellow students, fostering collaboration and potentially opening doors for future opportunities.</li> <li>● <b>Constructive Feedback from Experts:</b> Students receive valuable input from experienced judges, helping them refine their ideas and improve their approach for future projects and innovations.</li> <li>● <b>Recognition and Awards:</b> The event provides a platform for students to gain recognition for their hard work and creativity, with awards that can boost their academic and professional profiles.</li> </ul>
Objective of Event	<ol style="list-style-type: none"> <li>1. Inspire students to think critically and develop innovative ideas that address pressing challenges across various domains through creative problem-solving.</li> <li>2. Encourage practical application of theoretical knowledge by motivating students to design projects or prototypes that can have real-world impact and relevance.</li> <li>3. Promote interdisciplinary collaboration, fostering a culture of teamwork among students from diverse academic backgrounds to solve complex issues together.</li> <li>4. Cultivate entrepreneurial skills by encouraging students to explore potential applications of their ideas, preparing them for future ventures or research opportunities.</li> <li>5. Enhance student confidence and communication skills by providing a platform to present ideas and interact with experts from industry and academia.</li> </ol>

Photographs



## Overview of the Event :

**AVISHKAR** is an annual event conducted by **SPPU**, that provides a competitive environment for students to showcase their innovative project ideas and prototypes. This event encourages students from various disciplines to think creatively and come up with solutions to real-world challenges by working on themed projects.

Participants are required to come up with and present their project ideas in front of a panel of esteemed judges. Students can also display working prototypes if available, adding practical value to their presentations. The event promotes interdisciplinary collaboration, critical thinking, and problem-solving, providing a platform for students to gain recognition for their innovative approaches.



  
Principal  
Army Institute of Technology  
Dighi Hillis, Pune - 411015

2)

**IIT BOMBAY TECHFEST ZONALS**

REQUIRED FILLED	INFORMATION TO BE FILLED
Link for publicity on social media	<a href="https://techfest.org/">https://techfest.org/</a>  <a href="https://www.instagram.com/research_and_development_cell?utm_source=ig_web_button_share_sheet&amp;igsh=ZDNIZDc0MzIxNw==">https://www.instagram.com/research_and_development_cell?utm_source=ig_web_button_share_sheet&amp;igsh=ZDNIZDc0MzIxNw==</a>
Academic Year	2023-24
Program driven by	AIT R&D Cell , IIT Bombay
Program/Activity	Competition by IIT Bombay
Mode of Event (offline/online)	Offline
Date of Event	08th Oct. 2023
Number of Students Participated	40
Number of Teams Participated	05
Amount	
Remark	AIT Team Won the Zonals
Faculty Name (Faculty involved in organizing event)	Dr. Surekha KS ( Dean R&D Cell )
Student Name (Students involved in organizing event)	AIT R&D Cell TEAM
Benefits of Event	<ul style="list-style-type: none"> <li>● <b>Encourages Innovation and Creativity:</b> TECH FEST at IIT Bombay motivates students to push the boundaries of technology and come up with innovative solutions for current technological challenges, fostering a spirit of creativity and out-of-the-box thinking.</li> </ul>

- **Hands-on Learning Experience:**  
Participants have the opportunity to work on projects that involve real-world problems, developing prototypes and showcasing them. This hands-on experience helps students apply theoretical knowledge in practical contexts, enhancing their skills.
- **Networking Opportunities:**  
The event provides a platform for students to interact with professionals from the tech industry, researchers, and like-minded peers. These interactions often lead to collaborations and open doors for internships, research opportunities, and job placements.
- **Constructive Feedback from Experts:**  
Participants receive valuable feedback from a panel of seasoned industry experts and academicians, guiding them on how to improve their projects and offering insights into future technological trends.
- **Recognition and Awards:**  
TECH FEST recognizes and rewards innovative ideas and exceptional talent. Winning projects gain visibility, providing students with accolades that enhance their resumes and professional profiles, while also potentially attracting sponsorships and investors.

Objective of Event

1. **Promote Technological Innovation:**  
To inspire students to explore new technological advancements, apply innovative solutions to real-world problems, and foster a culture of creativity and problem-solving.
2. **Encourage Skill Development:**  
To provide students with hands-on opportunities to build, experiment, and refine their technical skills by working on projects and prototypes, thereby bridging the gap between theoretical knowledge and practical application.
3. **Facilitate Networking:**  
To create an interactive platform where students can connect with industry leaders, entrepreneurs, researchers, and fellow innovators, encouraging knowledge exchange and potential collaborations.
4. **Provide Exposure to Cutting-edge Technologies:**  
To expose students to the latest developments in

technology through workshops, lectures, and exhibitions, helping them stay updated with trends and advancements in the tech world.

**5. Foster a Competitive Spirit:**

To motivate students to push their limits by participating in competitions that challenge their technical abilities and creativity, ultimately leading to innovative breakthroughs.

**6. Offer Recognition and Incentives:**

To provide a prestigious platform where students can showcase their talent and hard work, gaining recognition, awards, and potential opportunities for future growth in their academic or professional careers.

**7. Encourage Collaboration and Teamwork:**

To promote a collaborative environment where students work in teams, exchanging ideas, sharing knowledge, and building a sense of teamwork and community in the tech space.

Photographs





## Overview of the Event :

**TECH FEST** at **IIT Bombay** is one of the most prestigious and eagerly awaited technology festivals in India, attracting students from across the country. It serves as a platform for showcasing innovative projects, cutting-edge technological developments, and problem-solving through competitions, workshops, and exhibitions. Participants engage in a range of events that test their creativity, technical skills, and teamwork.

Our team recently participated in the zonal rounds of the IIT Bombay Techfest, competing in two highly challenging events. We are proud to share that we won one of the competitions, a remarkable achievement for our team, reflecting the hard work, collaboration, and technical excellence that went into our projects. The experience not only gave us valuable insights into the latest trends in technology but also offered opportunities to network with industry experts and fellow students from diverse backgrounds. This success has further motivated us to continue pushing the boundaries of innovation.



  
Principal  
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3)

**HOSTING MR. THANOS PERSCHOS**

REQUIRED FILLED	INFORMATION TO BE FILLED
Link for publicity on social media*	<a href="https://www.instagram.com/research_and_development_cell?utm_source=ig_web_button_share_sheet&amp;igsh=ZDNIZDc0MzIxNw==">https://www.instagram.com/research_and_development_cell?utm_source=ig_web_button_share_sheet&amp;igsh=ZDNIZDc0MzIxNw==</a>
Academic Year	2023-24
Program driven by	AIT R&D Cell , Mr. Thanos Perschos
Program/Activity	Visit at AIT
Mode of Event (offline/online)	Offline
Date of Event	21th Oct. 2023
Number of Students Participated*	40
Number of Teams Participated*	05
Amount	00
Remark	
Faculty Name (Faculty involved in organizing event)	Dr. Surekha KS ( Dean R&D Cell )
Student Name (Students involved in organizing event)	AIT R&D Cell TEAM
Benefits of Event	<ul style="list-style-type: none"> <li>● <b>Encourages Innovation and Creativity:</b> Mr. Thanos Perschos' visit inspired us to think creatively and explore new perspectives in our R&amp;D projects. His fresh insights encouraged us to consider innovative approaches to solving complex challenges.</li> <li>● <b>Hands-on Learning Experience:</b></li> </ul>

During his visit, we had the chance to discuss our ongoing projects and receive direct input from his extensive experience. This real-time interaction gave us practical feedback on how to improve our prototypes and processes.

- **Networking Opportunities:**  
Hosting Mr. Perschos provided us with a unique opportunity to establish a meaningful connection with an expert in the field. His knowledge and connections in the industry have broadened our professional network, which could lead to future collaborations or opportunities.
- **Constructive Feedback from an Expert:**  
Mr. Perschos offered invaluable feedback on our current projects, suggesting ways to enhance their effectiveness and impact. His guidance helped us refine our approach, strengthening our future research and development endeavors.
- **Recognition and Growth:**  
Being able to engage with an expert like Mr. Perschos is a testament to the quality of work being done at our R&D lab. His visit brought positive recognition to our team's efforts, boosting our confidence and reputation in the field.

Objective of Event

1. **Gain Expert Insights:**  
To leverage Mr. Thanos Perschos' extensive knowledge and experience in the field to enhance our research and development processes, and inspire innovative thinking within the team.
2. **Enhance Project Development:**  
To receive practical feedback on our ongoing projects and prototypes, helping us refine and improve their design, functionality, and overall impact.
3. **Foster Innovation and Creativity:**  
To encourage our team to think outside the box by engaging in discussions with Mr. Perschos on innovative ideas, leading to new approaches and solutions for existing challenges.
4. **Expand Professional Network:**  
To build a strong professional connection with Mr. Perschos, fostering potential future collaborations,

partnerships, or mentorship opportunities for our team.

5. **Encourage Knowledge Sharing:**

To facilitate an open exchange of ideas and experiences, allowing us to learn from Mr. Perschos' expertise while also showcasing our work and gaining valuable exposure.

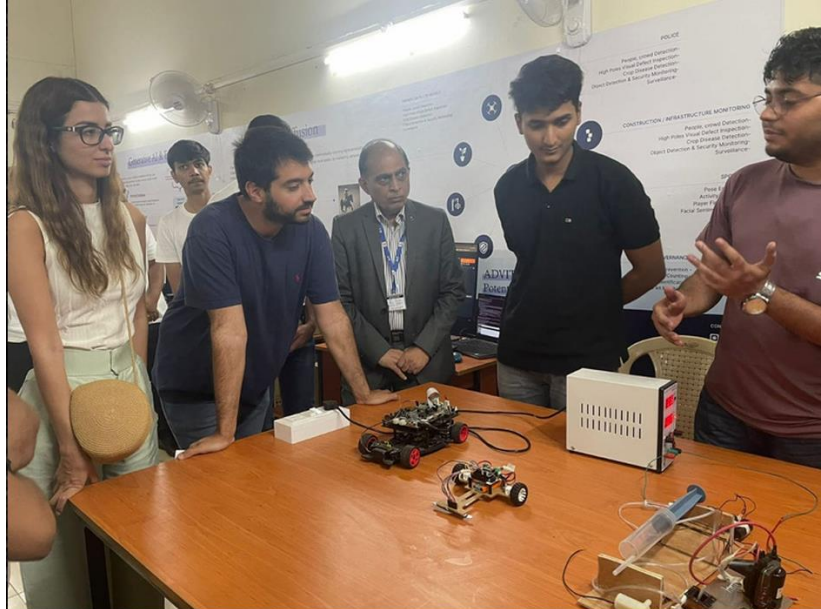
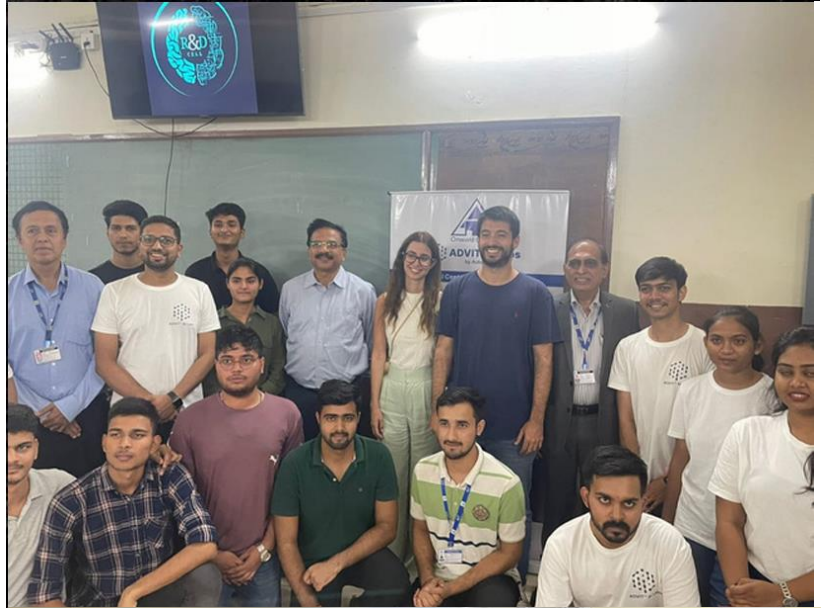
6. **Strengthen Team Confidence and Recognition:**

To enhance the reputation of our R&D lab by hosting a well-regarded expert, providing recognition for our efforts and reinforcing our position in the research community.

7. **Inspire Future Growth:**

To use the insights gained from Mr. Perschos' visit to motivate our team, driving future growth in our projects and elevating the overall quality of research and development within the lab.

Photographs



## Overview of the Event :

We had the privilege of hosting **Mr. Thanos Perschos** at our **R&D Lab**, an experience that proved immensely valuable for our team. Mr. Perschos is an expert in his field, and his visit provided us with a unique opportunity to gain insights from his wealth of knowledge. Our team engaged in productive discussions, presenting our current projects and receiving constructive feedback that has already begun to shape the future direction of our research.

His visit fostered an environment of creativity and innovation, inspiring us to explore new solutions to ongoing challenges. Beyond the technical discussions, the event also helped expand our professional network, establishing a meaningful connection with an industry leader. The experience has not only enriched our projects with new ideas but also reinforced our team's confidence and reputation in the field. Mr. Perschos' visit was a major milestone for our R&D efforts, contributing significantly to both our short-term goals and long-term aspirations for growth and innovation.



4)

**PIXEL AND TELEGRAM BOT COMPETITION**


<b>REQUIRED FILLED</b>	<b>INFORMATION TO BE FILLED</b>
Link for publicity on social media*	<a href="https://www.instagram.com/research_and_development_cell?utm_source=ig_web_button_share_sheet&amp;igsh=ZDNIZDc0MzlxNw==">https://www.instagram.com/research_and_development_cell?utm_source=ig_web_button_share_sheet&amp;igsh=ZDNIZDc0MzlxNw==</a> <a href="https://www.instagram.com/p/C0GIUE2Mk8s/?utm_source=ig_web_copy_link&amp;igsh=MzRIODBiNWFIZA==">https://www.instagram.com/p/C0GIUE2Mk8s/?utm_source=ig_web_copy_link&amp;igsh=MzRIODBiNWFIZA==</a> <a href="https://www.instagram.com/p/C0gT7tGMNJm/?utm_source=ig_web_copy_link&amp;igsh=MzRIODBiNWFIZA==">https://www.instagram.com/p/C0gT7tGMNJm/?utm_source=ig_web_copy_link&amp;igsh=MzRIODBiNWFIZA==</a> <a href="https://www.instagram.com/p/C010JYCsj8Y/?utm_source=ig_web_copy_link&amp;igsh=MzRIODBiNWFIZA==">https://www.instagram.com/p/C010JYCsj8Y/?utm_source=ig_web_copy_link&amp;igsh=MzRIODBiNWFIZA==</a>
Academic Year	2023-24
Program driven by	AIT R&D Cell
Program/Activity	BOT Competition
Mode of Event (offline/online)	Online    Offline
Date of Event	09th Dec. 2023
Number of Students Participated*	40
Number of Students Qualified for Round II	10
Amount	Rs 42,380
Remark	Event conducted collaboration with Trinity Club
Faculty Name (Faculty involved in organizing event)	Dr. Seema Tiwari ( Dean R&D Cell )
Student Name (Students involved	AIT R&D Cell TEAM

in organizing event)

Benefits of Event

- **Practical Programming Experience:** Competitors enhance their coding skills, especially in languages like Python, JavaScript, or Node.js, by building functional bots that interact with users through Telegram’s API.
- **Problem-Solving and Innovation:** Creating bots for specific use cases fosters innovative thinking and problem-solving skills, pushing participants to design creative solutions to real-world challenges.
- **Understanding APIs and Integrations:** Telegram bots require working with APIs, allowing participants to gain practical experience in integrating third-party services, data handling, and network communication.
- **Automation and Efficiency Skills:** Bots are often built to automate tasks, and through competition, participants gain insights into workflow automation, task scheduling, and streamlining repetitive processes, which can be useful in various industries.
- **Career and Entrepreneurship Opportunities:** Winning or excelling in a bot-making competition can demonstrate technical proficiency, project management, and innovative thinking, which are appealing qualities to employers and can also inspire entrepreneurial ventures based on bot technology.



<p>Objective of Event</p>	<ol style="list-style-type: none"> <li>1. Encourage participants to apply programming skills to develop interactive bots on the Telegram platform</li> <li>2. Foster innovation by challenging participants to create functional and user-friendly bots for various tasks.</li> <li>3. Provide hands-on experience with APIs and bot integration, helping participants understand real-world applications.</li> <li>4. Enhance problem-solving and teamwork skills by designing creative solutions within the competition environment.</li> <li>5. Showcase participants' technical abilities and promote the development of automation technologies.</li> </ol>
<p>Photographs</p>	

**Overview of the Event :**

The Telegram Bot Making competition is a collaborative event organized by the **Trinity Club** in association with the **R&D Cell**. This competition is designed to offer participants a hands-on opportunity to develop and deploy functional bots on the Telegram platform. It focuses on fostering innovation, enhancing technical skills, and offering real-world problem-solving challenges.

5)

**FUSION**

REQUIRED FILLED	INFORMATION TO BE FILLED
Link for publicity on social media*	<a href="https://www.instagram.com/research_and_development_cell?utm_source=ig_web_button_share_sheet&amp;igsh=ZDNIZDc0MzlxNw==">https://www.instagram.com/research_and_development_cell?utm_source=ig_web_button_share_sheet&amp;igsh=ZDNIZDc0MzlxNw==</a>  <a href="https://www.instagram.com/p/C25PU4dBHoC/?utm_source=ig_web_copy_link&amp;igsh=MzRIODBiNWFIZA==">https://www.instagram.com/p/C25PU4dBHoC/?utm_source=ig_web_copy_link&amp;igsh=MzRIODBiNWFIZA==</a>  <a href="https://www.instagram.com/p/C56dl68hUkn/?utm_source=ig_web_copy_link&amp;igsh=MzRIODBiNWFIZA==">https://www.instagram.com/p/C56dl68hUkn/?utm_source=ig_web_copy_link&amp;igsh=MzRIODBiNWFIZA==</a>  <a href="https://www.instagram.com/p/C6EoHLPhF2p/?utm_source=ig_web_copy_link&amp;igsh=MzRIODBiNWFIZA==">https://www.instagram.com/p/C6EoHLPhF2p/?utm_source=ig_web_copy_link&amp;igsh=MzRIODBiNWFIZA==</a>
Academic Year	2023-24
Program driven by	AIT R&D Cell
Program/Activity	Fusion
Mode of Event (offline/online)	Offline
Date of Event	20th , 21th Dec. 2023
Number of Students Participated*	
Amount	Rs. 23,640
Remark	
Faculty Name (Faculty involved in organizing event)	Dr. Seema Tiwari ( Dean R&D )
Student Name (Students involved in organizing event)	AIT R&D Cell TEAM

Benefits of Event

- **Diverse Challenges:** The event offers a variety of competitions, from quizzes that test your knowledge to pixel-perfect design challenges and word wizardry, catering to participants with different skills and interests.
- **Skill Enhancement:** By participating in multiple categories, contestants can sharpen their problem-solving abilities, creativity, and attention to detail across various disciplines.
- **Fun and Engaging Experience:** The combination of mind-bending puzzles, creative challenges, and competitive tasks makes the event both fun and intellectually stimulating, ensuring a memorable experience for all.
- **Networking Opportunities:** Participants get a chance to engage with like-minded individuals, exchanging ideas and learning from one another, which helps build connections within a dynamic community.
- **Boosted Confidence and Recognition:** Excelling in different challenges boosts confidence, and the event provides a platform for participants to gain recognition for their unique talents and skills.

Objective of Event

1. Provide a platform for participants to explore and engage in a variety of exciting challenges across multiple domains.
2. Encourage participants to showcase their talents in problem-solving, design, quizzes, and language mastery.
3. Foster a competitive yet fun environment that promotes learning, creativity, and skill development.
4. Nurture diverse skill sets by offering challenges that appeal to a wide range of interests and expertise.
5. Promote intellectual curiosity and innovation through interactive and engaging competitions.

## Photographs



### Overview of the Event :

The **Fusion** event is an exciting multi-disciplinary competition designed to challenge participants across a wide spectrum of activities. Organized with the aim of bringing together individuals with diverse skills, the event features mind-bending quizzes, pixel-perfect design challenges, and creative word games, ensuring there is something for everyone. Whether you're a trivia enthusiast, a design expert, or a wordsmith, Fusion promises a dynamic experience where participants can showcase their talents, learn new skills, and engage in friendly competition.

6)

**FOY DETECTING DRONE**

REQUIRED FILLED	INFORMATION TO BE FILLED
Link for publicity on social media*	<a href="https://www.instagram.com/research_and_development_cell?utm_source=ig_web_button_share_sheet&amp;igsh=ZDNIZDc0MzIxNw==">https://www.instagram.com/research_and_development_cell?utm_source=ig_web_button_share_sheet&amp;igsh=ZDNIZDc0MzIxNw==</a>
Academic Year	2023-24
Program driven by	AIT R&D Cell
Program/Activity	Drone Exhibition
Mode of Event (offline/online)	Offline
Date of Event	30 <sup>th</sup> Jan 2024
Number of Students Participated	4
Amount	Rs 68,000
Remark	
Faculty Name (Faculty involved in organizing event)	Dr. Seema Tiwari ( Dean R&D Cell )
Student Name (Students involved in organizing event)	AIT R&D Cell TEAM
Benefits of Event	<ul style="list-style-type: none"> <li>● <b>Hands-On Drone Technology Experience:</b> Participants gain practical exposure to designing, building, and flying drones, enhancing their understanding of aerodynamics, sensors, and control systems.</li> <li>● <b>Problem-Solving and Innovation:</b> The event challenges participants to develop drones capable of detecting and navigating obstacles, fostering creative problem-solving and technical innovation.</li> </ul>

- **Skill Development in Electronics and Programming:** Participants improve their skills in electronics, programming, and automation by integrating components such as cameras, sensors, and software for object detection.
- **Team Collaboration and Communication:** Building and operating a drone typically involves teamwork, helping participants enhance collaboration, communication, and project management skills.
- **Real-World Application and Career Boost:** The event simulates real-world challenges in drone technology, providing participants with experience that can be highly relevant to industries such as defense, logistics, and environmental monitoring, boosting career prospects.

Objective of Event

1. Provide participants with hands-on experience in drone technology, including design, building, and flying.
2. Encourage innovation by challenging participants to create drones capable of detecting and navigating obstacles.
3. Enhance technical skills in electronics, programming, and automation through practical applications.
4. Foster teamwork, communication, and project management by promoting collaborative drone development.
5. Simulate real-world applications of drone technology, offering participants valuable experience for career development in industries like defense, logistics, and environmental monitoring.

Photographs



### Overview of the Event :

The **FOY Detecting Drone** event is a dynamic and hands-on competition that challenges participants to design and build drones capable of detecting obstacles and navigating through complex environments. This event combines the principles of aerodynamics, electronics, programming, and automation to offer a comprehensive learning experience. Participants will not only enhance their technical knowledge but also develop problem-solving skills and teamwork as they work in groups to create innovative drone solutions.



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