



Name of the Department: - Computer Science & Engineering Department

Name of the event:	Industry Visit at C-Dac Pune.
Date of the event:	13 th June 2025.
Participants	Students of SY Computer Science & Engineering.
Name of organizer (s) of the event:	Prof. A. G. Kadam, Prof. M. K. Jadhav, Prof. N. Z. Patel
Summary of the event:	<p>The Second Year students of the Computer Science and Engineering Department visited Centre for Development of Advanced Computing (C-DAC), Pune, as part of an industrial visit aimed at enhancing their practical understanding of supercomputing systems. During the visit, the students were introduced to India's cutting-edge Supercomputing Infrastructure. The session provided valuable insights into the architecture and working of Supercomputers. Key highlights of the visit include:</p> <ul style="list-style-type: none">• A Supercomputer is essentially a powerful system comprising 83 interconnected servers, each equipped with 40 GB RAM.• The entire system operates on a high-speed Leaf-Spine Network Architecture, which ensures fast and scalable data communication. All computing nodes are connected through this structure.• Students learned about two access levels:<ul style="list-style-type: none">◦ Login Nodes – used for initial access and code submission.◦ Compute Nodes – where actual computation and data processing happen.• Notably, the supercomputers at C-DAC can be accessed only from within India to ensure data security and sovereignty. <p>Three distinct supercomputing systems were explained in detail:</p> <ol style="list-style-type: none">1. AIrawat (Param AI System): A specialized supercomputer dedicated to Artificial Intelligence projects. It supports large-scale machine learning and deep learning workloads.2. Param Bioinferno:- A high-performance system focused on Biomedical Research, particularly used for bioinformatics and computational biology tasks. It comprises 27 servers dedicated to life sciences research.3. Paramrudra: This is a fully indigenous supercomputer system developed entirely by C-DAC under the Make in India initiative. It is significant

achievement showcasing India's capability in supercomputing technology.

The visit concluded with an interactive Q&A session, where students clarified their doubts regarding system operations, applications in various domains, and career opportunities in high-performance computing.

This industrial visit offered the students a rare opportunity to experience real-world applications of their academic curriculum and understand the scale, speed, and complexity of India's national supercomputing mission.

Outcome(s):

- Understanding Supercomputing Architecture:**
 Students gained practical knowledge of supercomputer architecture, particularly the **leaf-spine network design**, which enhances high-speed connectivity and scalability.
- Exposure to Real-World Infrastructure:**
 Students observed how **multiple high-RAM servers** (each with 40 GB RAM) are interconnected to form a supercomputer and understood the operational structure of such systems.
- Knowledge of Access Mechanisms:**
 The students learned about **login nodes and compute nodes**, and the secure access policies that restrict operations within the Indian network boundary for national security.
- Awareness of Indigenous Technology:**
 The visit highlighted India's capabilities in **developing indigenous supercomputers** like **Paramrudra**, developed fully by C-DAC under the "Make in India" initiative.
- Insight into Domain-Specific Supercomputers:**
 Students explored the functionalities of:
 - **AIrawat** for Artificial Intelligence research,
 - **Param Bioinferno** for Biomedical and Bioinformatics research,
 - **Paramrudra** as a general-purpose high-performance computing system.
- Inspiration for Future Research and Careers:**
 The visit encouraged students to pursue careers in **high-performance computing (HPC)**, **AI**, and **bioinformatics**, and motivated them to explore research opportunities in these domains.
- Industry-Academia Interaction:**
 The visit bridged the gap between theoretical learning and practical applications, giving students a real-time exposure to **India's advanced computing infrastructure**.



Photographs of the Event:



“Students of Second Year Computer Science & Engineering department ready to depart for an industrial visit to C-DAC, Pune to explore India's supercomputing excellence.”



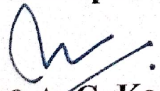
“Excited faces of CSE students onboard the bus as they begin their educational journey to C-DAC, Pune for an insightful exposure to supercomputing technology.”

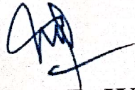


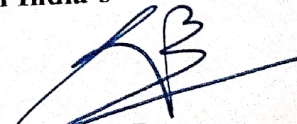
"Second Year CSE students along with faculty members during their visit to C-DAC, Pune. Mr. Yogesh Sir from C-DAC shared valuable insights on India's supercomputing advancements including PARAM series, Leaf-Spine architecture, and compute node structures."



"Students of Computer Science & Engineering visited the Centre for Development of Advanced Computing (C-DAC), Pune, to explore the architecture and applications of India's supercomputers."


Prof. A. G. Kadam
Activity coordinator


Dr. M. B. Wagh
HOD


Dr. G. B. Dongre
Principal