CHAROTAR UNIVERSITY OF SCIENCE AND TECHNOLOGY

OSArena – Master the Process State Diagram 2024-25

Date of Event: 25th February, 2025
Location: 514, First Floor A7 Building
Organized By: Eye Coders Club, CSE-CSPIT
Faculty Coordinators: Asst. Prof. Hemang Thakar, Asst. Prof. Abhishek Patel, Asst. Prof. Dharmendrasinh Rathod
Student Coordinator: Jayraj Lakkad(22CS033), Jay Bhagat(22CS008), Vishwajitsinh Chouhan(22CS014), Darsh Patel(22CS051)

Introduction

The **OSArena** event was organized by the Eye Coders Club on **25th February, 2025**, to provide students with an engaging and interactive experience related to **Operating System concepts**. The event focused on understanding the **Process State Diagram** and how processes transition between different states in an operating system. The competition aimed to enhance participants' knowledge and problem-solving skills through a gamified approach.

Objective

The primary objective of **OSArena** was to help students grasp the fundamental concepts of **Process Scheduling, State Transitions, and Resource Allocation** in an engaging manner. The event was designed to challenge participants' problem-solving abilities and practical understanding of operating systems through interactive tasks and problem statements.

Event Overview

The event witnessed an enthusiastic participation from students of 4th semesters, eager to test and enhance their **operating system knowledge**. Participants formed teams and competed in rounds, each designed to evaluate their conceptual understanding, analytical thinking, and coding skills related to process management.

Event Rules & Flow

The event was structured based on the **Process Scheduling Diagram**, which consists of five states: **New, Ready, Running, Blocked, and Terminate**. The flow of the event was as follows:

1. **New State:**
    - Each team consisted of **six members**.
    - Each participant was given **six MCQs** related to Operating Systems.
    - If all members of a team answered correctly, they moved to the **Ready** state.
2. **Ready State:**
    - Teams that successfully cleared the New state were placed in the Ready queue.
    - They awaited their turn to enter the **Running state**.
3. **Running State:**
    - Each participant was given a **theoretical question** to answer within **45 seconds**.
    - If the answer was correct, they moved to the **Terminate state**.
    - If incorrect, they were sent back to the **Running queue** for another attempt.
4. **Blocked State:**
    - If a participant failed to follow the event rules, they were moved to the **Blocked state**.
    - A team member in the Blocked state could not proceed until the entire team reached the Terminate state.
5. **Terminate State:**
    - Teams that successfully answered all questions and cleared the process flow

completed the event.

- **Parallel Gameplay:**
    - **Three teams** played at a time as **three separate diagrams** were set up.
    - A total of **17 teams** participated in the event.

Activities Performed

1. **Introduction and Briefing:**
    - **The event commenced with a short introductory session where faculty coordinators and student organizers briefed participants on the rules, objectives, and expectations of the competition.**
2. **Process State Simulation:**
    - **Teams progressed through different states as per the predefined rules.**
    - **Each phase required participants to answer MCQs, theoretical questions, and handle state transitions accurately.**

Event Schedule

- **12:15 AM: Gathering and introduction to the event**
- **12:30 AM: Start of the Event**
- **12:30 AM to 03:00 PM: Continuation of rounds**
- **03:00 PM: Result Announcement**
- **03:15 PM: Conclusion of the event**

Outcome and Impact

The **OSArena** event successfully enhanced students' knowledge of **operating systems** in a practical and engaging way. Participants gained a deeper understanding of **process management, scheduling algorithms, and system performance optimization**. The event fostered **collaborative learning** and encouraged students to apply theoretical concepts to **real-world scenarios**.

Additionally, students developed **critical thinking, teamwork, and problem-solving skills**, which are essential for careers in **system programming, software development, and OS research**.

Challenges

While the event was a great success, it came with certain challenges:

- **Coordinating multiple teams playing in parallel** required careful monitoring.
- **Ensuring fair assessment** across all rounds required meticulous evaluation and discussion among the judges.
- **Time management** was crucial to keep all rounds within the allotted schedule while maintaining an interactive and competitive environment.

Acknowledgements

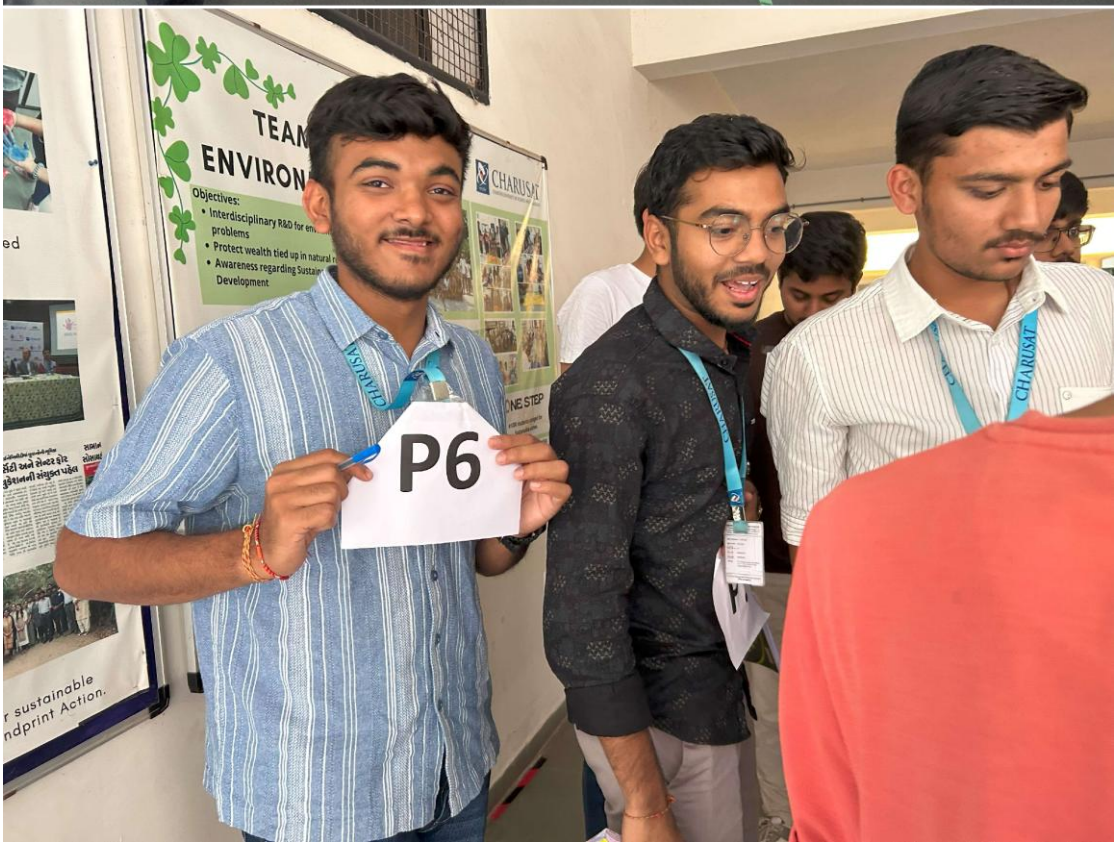
We extend our heartfelt gratitude to our faculty coordinators **Asst. Prof. Hemang Thakar, Asst. Prof. Abhishek Patel, and Asst. Prof. Dharmendrasinh Rathod** for their continuous support and guidance. We also thank all student organizers and volunteers for their dedication in making the event a success.

A special thanks to **Charotar University of Science and Technology** for providing the necessary infrastructure and resources to conduct this event smoothly.

Participation:

- **Total Teams Participated:** 17
- **Total Participants:** 102

Photos :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Environmental Engineering Laboratory
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Conclusion

The **OSArena** event left a lasting impact by strengthening students' foundational understanding of **Operating Systems** while fostering a spirit of innovation and problem-solving.

Student Coordinator:
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Jay Bhagat(22CS008)
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Faculty Coordinator:
Prof. Hemang Thakar
Prof. Abhishek Patel,
Prof. Dharmendra Rathod

Head of Department, CSE:
Dr. Amit Thakkar