LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
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DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

GUEST LECTURE REPORT ON "DATA STRUCTURES"

Event Type	: **Data Structures**
Date& Time	: 8th & 9th May 2026, 9AM to 4PM
Venue	: Data Science Lab, 1st Floor, Admin Block
Resource Person	: Sri Prasanta Roy, Development Engineer, Microsoft, Hyd.,
Participated Students	: BTECH 1st Year Students
Name of the Convenor	: Dr. P. Bhagath, Head of the Department, AI&DS
Name of the Coordinator(s)	: Mr. S. Siva Ramakrishna, Sr. Assistant Professor, AI&DS Mrs. K. Vinaya Sree Bai, Sr. Assistant Professor, AI&DS
Total No. of Students	: 125 Students (Individual Participation)

About the Event

The Department of Artificial Intelligence & Data Science organized a **Guest Lecture** on **"Data Structures"** for B.Tech I Year students with the objective of introducing them to the fundamental concepts of data organization and problem-solving in programming. The session provided an overview of linear and non-linear data structures, including arrays, linked lists, stacks, queues, trees, and graphs, emphasizing their importance in developing efficient and optimized software solutions. The resource person explained how choosing appropriate data structures improves program performance and forms the foundation for advanced computer science subjects.

The lecture also highlighted the practical applications of data structures in software development, database management, artificial intelligence, and real-world computing systems. Through simple examples and interactive discussions, students gained an understanding of algorithm efficiency, basic time and space complexity, and the significance of data structures in coding interviews and competitive programming. The session motivated the students to build a strong foundation in programming and analytical thinking from the beginning of their engineering education.

Learning Outcomes of the Guest Lecture on Data Structures:

- Acquired a fundamental understanding of data structures and their role in efficient problem-solving.
- Enhanced the ability to identify and select appropriate data structures for different computational problems.
- Gained awareness of algorithm efficiency through the concepts of time and space complexity.
- Developed knowledge of linear and non-linear data structures, including arrays, linked lists, stacks, queues, trees, and graphs.
- Strengthened analytical thinking and programming skills through exposure to real-world examples and problem-solving techniques.

- Built a strong foundation for advanced programming courses, coding interviews, and competitive programming.



Speech by Dr. P. Bhagath, Professor, HOD AI&DS



Participants of the Guest Lecture (B.Tech I Year Students)

Description of the Event:

The **Guest Lecture on Data Structures** was organized by the Department of Artificial Intelligence & Data Science for **B.Tech I Year students** with the objective of providing a strong foundation in one of the core subjects of computer science. The session was delivered by **Mr. Prasanta Roy**, an experienced technical expert, who emphasized the importance of data structures in developing efficient software applications and solving real-world computational problems. The lecture introduced students to the concepts of **linear and non-linear data structures**, including arrays, linked lists, stacks, queues, trees, graphs, and hashing, while explaining their characteristics, advantages, and practical applications in modern computing. The resource person also highlighted how selecting an appropriate data structure directly influences algorithm efficiency and software performance.

During the session, Mr. Prasanta Roy explained various operations performed on different data structures, such as insertion, deletion, searching, sorting, and traversal, and discussed the **time and space complexity** associated with each operation. The concepts of **Big-O notation**, best-case, average-case, and worst-case analysis were presented through simple examples, enabling students to understand the importance of algorithm analysis in software development. The

lecture also included comparisons between different data structures based on their efficiency, memory utilization, and suitability for specific problem domains, helping students build a strong conceptual understanding of data organization and management.



To make the learning experience more interactive and engaging, the resource person conducted several **hands-on problem-solving activities** based on linear and non-linear data structures. Students were encouraged to analyze different scenarios, identify the most suitable data structure, and determine the corresponding time complexities for various operations. These activities promoted logical reasoning, analytical thinking, and collaborative learning while allowing students to apply the concepts discussed during the lecture. The resource person guided students through each task by explaining multiple solution approaches and clarifying common misconceptions, thereby enhancing their confidence in problem-solving.

As part of the interactive session, a **live quiz** was conducted to assess students' conceptual understanding, analytical thinking, and quick decision-making abilities. The quiz generated enthusiastic participation from the students and created a healthy competitive learning environment. Mr. Prasanta Roy actively interacted with the participants, encouraged them to ask questions, and addressed their queries with practical examples from software development and coding interviews. His engaging teaching methodology and real-world illustrations motivated students to actively participate throughout the session and develop a deeper interest in learning data structures and algorithms. The guest lecture successfully enhanced students' programming aptitude, problem-solving skills, and awareness of the significance of data structures as a foundation for advanced programming, competitive coding, and technical interview preparation.

Feedback from Participants:







Honouring the Resource Person:



The resource person, **Sri Prasanta Roy**, Development Engineer, Microsoft, Hyderabad, was felicitated by the Department in recognition of his valuable contribution and for delivering an insightful guest lecture on Data Structures. A memento was presented as a token of appreciation for sharing his expertise and inspiring the students.

HOD
Dr. P. Bhagath