GUEST LECTURE REPORT

Department: Artificial Intelligence & Data Science
Institution: Chaitanya Bharathi Institute of Technology (CBIT), Hyderabad
Topic: Design and Analysis of Algorithms **-**
Date of Lecture: 15-04-2025
Speaker: Mr. Abdul Bari – Professional Programmer and Educator
Mode: Offline
Venue: Assembly Hall
organizing faculty members:

1. Dr. Sheena Mohammed, Assistant Professor, AI & DS
2. Dr. S Shoba Rani, Assistant Professor, AI & DS

Participants: B.E IV Sem AI&DS/IT/CET students of all the sections.

Objective of the Guest Lecture:

- Introduce participants to reduction techniques for transforming complex computational problems, enabling efficient problem classification and analysis.
- Develop a clear understanding of NP-Completeness, equipping participants to identify NP-complete problems and apply reductions to demonstrate computational intractability.

Speaker Profile:

Mr. Abdul Bari is a renowned educator with over 20 years of experience in teaching and programming. He is widely followed for his instructional videos on algorithms, which are highly rated and followed by students worldwide. He is also an instructor partner at Udemy with more than 399,000 learners and over 117,000 reviews.

Key Highlights of the Session:

- Simplified explanation of classifications: P, NP, NP Hard, NP Complete.
- Real-time examples of Clique and Vertex Cover Problems.
- Guidance on how to write non-deterministic algorithms for writing NP Complete Solutions.
- Interaction with students through Q&A and conceptual quizzes.

Student Feedback:

The session was highly appreciated by the students for its clarity, depth, and the engaging teaching style of Mr. Abdul Bari. Many students expressed that the lecture helped them develop a better understanding of algorithms and its practical implications in coding and development.

Outcome of the Lecture:

- Enhance Understanding: To impart a clear understanding of reduction techniques and NP-completeness, including their significance in classifying computational problems.
- Develop Analytical Skills: To strengthen participants' ability to perform polynomial-time reductions and analyze the computational complexity of decision problems.
- Promote Problem-Solving: To encourage algorithmic thinking in identifying NP-complete problems and evaluating the feasibility of their solutions.

- Expert Insight: To provide exposure to real-world applications and research directions related to intractable problems through insights from an experienced professional.

Acknowledgment:

We extend our heartfelt thanks to Mr. Abdul Bari for taking the time to share his knowledge, to Dr. P.V Narsimhulu - the Principal, and Dr. K. Radhika - Head of the Department AI&DS for approving and supporting the organization of this lecture.

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