



Atria Institute of Technology
Bengaluru - 560024

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Department of Computer Science and Engineering

Date: 2/3/2023

DETAILS OF THE INNOVATIVE TEACHING METHODS USED BY THE FACULTY

Academic Year	2022-23
Subject Name and Subject code	21 CS32-Data Structures and Applications
Faculty Name	Devi kannan, Farhana Kausar
Semester	3
Name of the Innovative Teaching Methods used	Virtual Labs
Short Description Innovative Teaching Activity	Data Structures Lab - II developed at IIT Hyderabad. Data Structures (also called Data Structures and Algorithms in some places) is a core course in all computer science undergraduate curricula. The course is the basis for understanding several data structures and also algorithms that operate on them. Students embarking on the task of writing programs, however, often have difficulty visualizing how operations and algorithms modify a data structure. As a result students are often unable to understand or show the execution of an algorithm on a given data structure and write code effectively. Furthermore, students are unable to visually reason about the time and space complexities associated with an algorithm running on a data structure. The interactive experiments in this lab will give the students an opportunity for learning and better understanding of using algorithms.
Number of students got benefited	68
Number of students involved in the activity.	68
Venue of the Activity	Class room
Date of the Event	Odd sem
Whether the work can be Reproduced and Reviewed	Yes
Details are available in the college website.	Yes



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<p align="center">Photograph for the event</p>	<p align="center">Stacks and Queues</p> <p>1. What will be the front and rear of an initially empty queue after the following operations - enqueue(1), enqueue(2), enqueue(3), dequeue(), enqueue(4), dequeue(), enqueue(5), dequeue(), enqueue(6)</p> <p><input type="radio"/> 1 2 3 4 <input type="radio"/> 2 3 4 <input type="radio"/> 3 4 <input type="radio"/> 4 5 6</p> <p>2. You are given a simple queue with elements 1, 2, 3, 4, 5, 6, 7 where 1 is the front of the queue. The elements are dequeued one-by-one and pushed into a stack, until the queue becomes empty. The elements are again popped from the stack one-by-one and enqueued into the original queue. What is the final arrangement of elements in the queue?</p> <p><input type="radio"/> 1 2 3 4 5 6 7 <input type="radio"/> 1 3 2 4 5 6 7 <input type="radio"/> 4 3 2 1 5 6 7 <input type="radio"/> 7 6 5 4 3 2 1</p> <p>3. What is the maximum number of stacks needed to implement a queue?</p> <p><input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4</p> <p align="right">3 out of 3</p>
<p align="center">Contents of the Event</p>	<p align="center">Queues, Linked list, Stack, Trees</p>
<p align="center">Impact Analysis after using this Innovative Teaching Methods used.</p>	<p align="center">Students got better understanding of the subject</p>
<p align="center">Feedback from the students</p>	<p align="center">Excellent Understood the concepts</p>
<p align="center">Relevance to PO and PSO</p>	<p align="center">PO5, PO10, PO12, PSO3</p>
<p align="center">Any comments or Suggestions from the Programme Coordinator</p>	

<p>Signature of the Faculty</p>	<p>Signature of the HOD</p>
<p align="center"></p>	<p align="center"> Dr. Aishwarya P Professor & Head CSE Atria Institute of Technology Bangalore - 560 024 </p>