



ROEVER ENGINEERING COLLEGE
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ELAMBALUR, PERAMBALUR – 621 220



Department of Computer Science and Engineering

Pedagogical Initiatives - 2024-25

Date: 20.03.2025

Name of the faculty : Dr.A.Sathish
Course / Sub. Code / Title : C213 / CS3401- Algorithms
Class / Sem / Dept : II YR - B / IV SEM / CSE

S.No.	Type of pedagogical initiative		Course outcomes
1.	Faculty Centric	Socratic Method	CO1
		Problem-Based Learning (PBL)	CO2

Reason for Faculty - Centric approach:

Faculty-centric methods are more suitable for this course because:

- Guidance for Complex Topics:** Instructors provide structured support to help students understand intricate algorithm concepts.
- Instant Feedback:** These methods allow for immediate clarification and correction of misunderstandings.
- Increased Engagement:** Engaging teaching techniques motivate students and make learning more enjoyable.

In Faculty-centric methods, the following two approaches have been implemented this semester for effective learning:

- Socratic Method:** Encourages critical thinking and engagement in complex algorithm concepts.
- Problem-Based Learning (PBL):** Connects theory to real-world problems, enhancing relevance and collaboration.

Work Flow and Steps Taken:

1. Teaching Method: Socratic Method

- **Task:** Engage in a discussion analyzing the time complexity of Dijkstra's and Kruskal's algorithms, focusing on their efficiency, strengths, and weaknesses.
- **Interactive Polls:** Tools like Quizizz to gather real-time analysis about their understanding on the topic.
- <https://quizizz.com/admin/reports/67e7a7f422569e6ca6b45105/questions>
- <https://quizizz.com/join?gc=23874692&autostart=true>

2. Teaching Method: Problem-Based Learning (PBL)

- **Task:** Design a network using minimum spanning trees (MST) to connect cities cost-effectively. Work in groups to apply Kruskal's or Prim's algorithm to find the MST, and present your network designs, justifying your algorithm choice.
- **Collaborative Software:** Tools like Google Workspace or Miro for group collaboration and brainstorming.
- <https://visualgo.net/en>
- <https://classroom.google.com/u/3/w/NjE0ODk4MDEwOTI0/t/all>
- **Simulation Software:** Network simulation tools to visualize and test their designs.

Outcome:

- Students will enhance their problem-solving skills by effectively using algorithms to address real-world challenges.
- Students will improve their teamwork and communication abilities through collaborative group work, enabling them to share ideas clearly.
- Students will develop a clearer understanding of algorithms, gaining insights into how they function and when to apply them in practical situations.

Photo Proof:

Interactive Polls: Tools like Quizz to gather real-time analysis about their understanding of the topic.

The screenshot shows the 'Student Preview' of a Quizizz quiz. At the top, there are navigation buttons: 'Edit', 'Save', 'Share', 'Worksheet', 'Preview', 'Assign', and a play button. The main area is divided into two columns. The left column, titled 'Student Preview', shows a question: 'What is the time complexity of accessing an element in an array by its index?'. Below the question are four buttons representing different time complexities: $O(n)$, $O(\log n)$, $O(1)$, and $O(n \log n)$. The right column, titled '10 QUESTIONS', lists the remaining questions with their respective point values and time limits. The questions are:

- 3. MULTIPLE CHOICE (30 sec • 1 pt): What is the space complexity of a recursive algorithm that makes a recursive call each time it executes?
- 4. MULTIPLE CHOICE (30 sec • 1 pt): In Big O notation, $O(n^2)$ represents which type of complexity?
- 5. MULTIPLE CHOICE (30 sec • 1 pt): Which algorithm uses a divide and conquer approach?
- 6. MULTIPLE CHOICE (30 sec • 1 pt): What is the worst-case time complexity of binary search on a sorted array?
- 7. MULTIPLE CHOICE (30 sec • 1 pt): Which of the following is NOT a characteristic of a greedy algorithm?
- 8. MULTIPLE CHOICE (30 sec • 1 pt): What is the main drawback of Dijkstra's algorithm?

At the bottom left, there is a 'Share this activity with your class' section with 'Assign' and 'Play' buttons. A 'greenfoc' logo is visible in the bottom left corner.

The screenshot shows the 'Quizizz' teacher interface for an 'Algorithm Analysis Quiz'. The top navigation bar includes 'QUIZZZ basic', 'Algorithm Analysis Quiz', 'Running', 'Edit Questions', and 'Edit Settings'. A '+ Create' button is visible. On the left, there is a sidebar menu with options: 'Explore', 'Library', 'Reports', 'Classes', 'Accommodations', and 'Quizizz AI'. The main area displays 'Invite participants' with a 'Show less' button. Below this, there are two columns for joining the quiz:

- Join using game code:** STEP 1: Use any device to open joinmyquiz.com. STEP 2: Enter join code **6626 0100**. A 'QR code' button is also present.
- Join using link:** Game link: <https://quizizz.com/join?gc=66260100>. A 'Copy' button is next to the link. Below the link, there are social sharing icons for WhatsApp, Telegram, Facebook, Messenger, Email, and Print.

My library

Published (1) Drafts (0) Archived (0)

All Most Recent

- Created by me 1 / 20
- Activities created
- Previously used 1
- Liked by me 0
- Shared with me 0
- Standards Tagged 0
- All my content 1



ASSESSMENT
Algorithm Analysis Quiz
10 Questions University Other
Dr. A. Sathish 18 hours ago

Share Play

My teams

New team

My collections

New Collection

Dr.SATHISH.A

II YEAR

Class code
y7gzehy

Announce something to your class

Upcoming
No work due soon
View all

Dr.A. Sathish
Jun 22, 2023
Dear students,
Hope all are doing well. I'm excited to introduce you to this powerful online platform that will greatly enhance your learning experience. Google Classroom is designed to streamline communication, organization, and collaboration between students and teachers. In this guide, we will walk you through the steps to effectively use Google Classroom for your digital assignments, materials, and other subject-related activities

Classroom > Dr.SATHISH.A
II YEAR

Home Stream Classwork People Grades

Calendar Explore new lessons and activities to teach responsible use of AI!

Teaching

+ Create

To review

VISUAL WORK OF ALGORITHMS

Dr.SATHISH.A
II YEAR

Dear Students, here You can check the link to view the visual flow of algorithms

Enrolled

visualising data structur...
<https://visualgo.net/en>

To-do

AI&ML

IQAC

REC

FDP

Siddhartha Institute of Science & Te...

Archived classes

View material

QUIZZ BASIC

+ Create

Explore

Library

Reports

Classes

Accommodations

Quizizz AI

Completed

Reopen assignment

needs

View all Accommodations →

Remind me later

Participants

Questions

Accommodatic

Showing Best attempt Sort by: Accuracy


Correct Incorrect Unattempted

Name Accuracy ↑

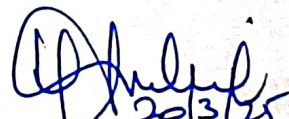
Sowmiya
Non-logged in ✓ 10 100%

Surya D (Surya D) ✓ 9 90%
x 1

S. Elayaraja ✓ 7 70%
Non-logged in


Course in Charge 20/3/25

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HOD / CSE

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