

## Student Portfolio

**Nirmal Kumar Akkinapalli**



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**Department: CSE-Data Science**

**Year / Sem/ Section: 2/3/AL1**

**Subject Title: 21CSC201J Data Structures and Algorithms**

**Handled By: Dr. K.Rajkumar**

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**GitHub: [github.com/nirmalkumar047](https://github.com/nirmalkumar047)**

# ELab Completion Status

eLab

Role: Student

Name: Nirmal Kumar

Id: 862564214308

Dept: Data Science And Business Systems

October 10th 2024, 10:26:22 Am

Logout

User ID

862564214308

Name

NIRMAL KUMAR

Programs Solved

53 / 600


247 more programs to get next star!

Rank : 36

18%

DASHBOARD

DATA STRUCTURE



LEVEL 1

LEVEL 2

LEVEL 3


45%

8%

0%

CONTINUE PRACTICE

JAVA PROGRAMMING



LEVEL 1

LEVEL 2

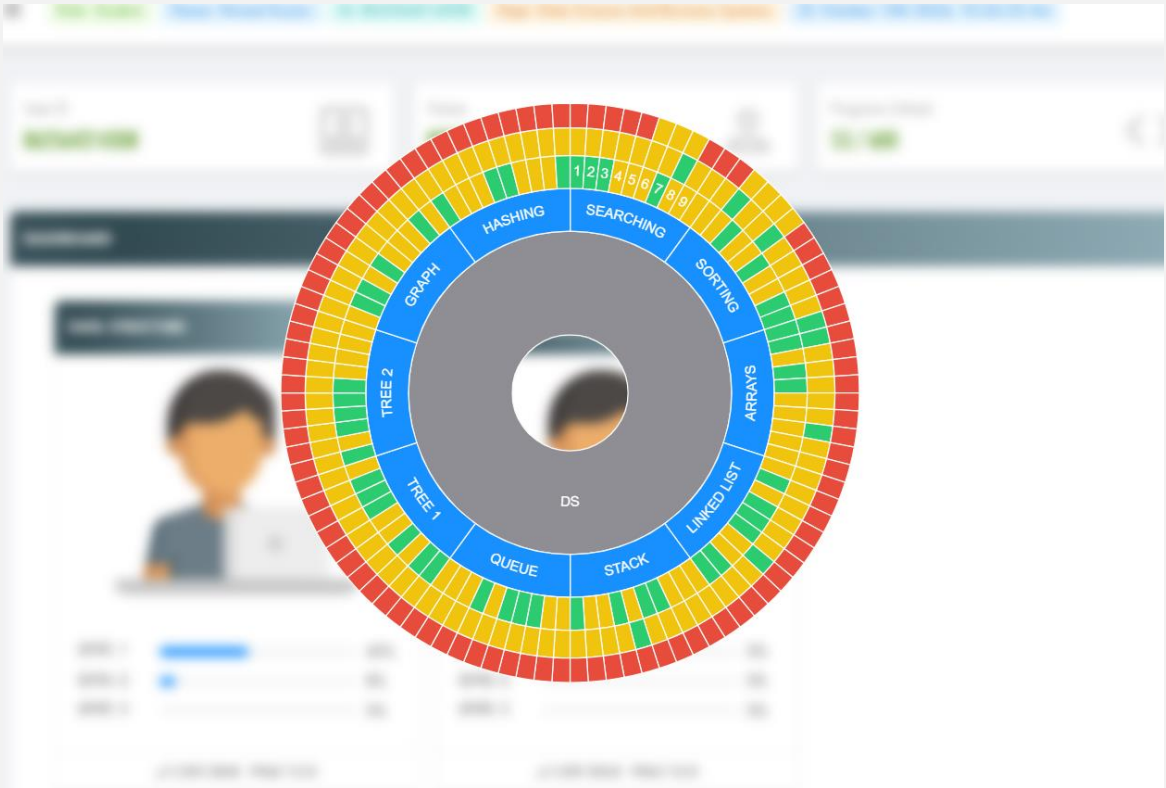
LEVEL 3

0%

0%

0%

CONTINUE PRACTICE



## Lab Experiment Completion status

Name of the student	A. Nirmal Kumar
Reg. Number	PA231056010036
Name of Section	AI1
Year & Semester	2 <sup>nd</sup> & 3

21CSC201J - DATA STRUCTURES AND ALGORITHMS LABORATORY

[illegible]

## SOLVED REAL WORLD PROBLEM / CONCEPTUAL TASK

### N -Queens problem using Stack

- **Stack:**

The stack is used to manage the placement of queens on the board. It follows the Last In, First Out (LIFO) principle, making it suitable for backtracking.

- **2D Array / List of Lists:**

To represent the chessboard and queen placements.

- **Tracking Arrays:**

To efficiently check column and diagonal conflicts  
**Algorithmic Design:** Choosing and implementing appropriate data structures based on operational needs (insertion, deletion, sorting).

- **Backtracking Approach:**

Backtracking is a systematic method for exploring all possible configurations by incrementally building a solution and undoing (backtracking) decisions when they lead to dead ends.

In the N-Queens problem, we place queens one by one in each row and check if the current placement is valid.

**Report link :**

<https://docs.google.com/document/d/1ChXW5p8ZfyFmcAlsFzJmP7pZYAbtZUON/edit?usp=drivesdk&oid=114956001730272846701&rtpof=true&sd=true>

```
Enter the number of queens (N): 4
```

```
Solutions for 4 queens:
```

```
. Q . .  
. . . Q  
Q . . .  
. . Q .  
  
. . Q .  
Q . . .  
. . . Q  
. Q . .
```

```
Process returned 0 (0x0)    execution time : 2.510 s
```

```
Press any key to continue.
```

```
|
```

## CERTIFICATIONS (Coursera/edX/etc.)

**Include any online courses, workshops, or certifications related to Data Structures and algorithms, problem-solving**



Certificate no: UC-f3b3faa2-e6fa-463d-95f7-36b472f7c0fc  
Certificate url: ude.my/UC-f3b3faa2-e6fa-463d-95f7-36b472f7c0fc  
Reference Number: 0004

CERTIFICATE OF COMPLETION

# Data Structures in C++

Instructors **Raja Mehmood**

**Nirmal Kumar Akkinapalli**

Date **March 30, 2024**

Length **14.5 total hours**

## CODING COMPETITIONS

Any notable rankings or achievements in coding contests  
(e.g., LeetCode, CodeChef, HackerRank, Codeforces, ICPC)

The screenshot shows a HackerRank profile for Nirmal Kumar (RA2311056010036). The profile includes a header with the name and a 20% progress indicator for completing the profile. Below the header, there are sections for Personal Information (email, phone, location), My Badges (Problem Solving, C++, Java), My Resume, and My Certifications. The profile is dark-themed with a blue accent color.



Skill Tests

### Data structures and Algorithms in C test

NIRMAL KUMAR (RA2311056010036) scored

**1300** /2800 points

13 Correct Answers 06 Wrong Answers 09 Unattempted



46%

SKILL SCORE

Signature of the Student

A. Nirmal Kumar