

Secure Your Dream Job with **DSA Training**

From  Grras



JOIN GRRAS FOR
JOB READY SKILLS

Why Should You Master DSA in Today's Era?

Mastering Data Structures and Algorithms (DSA) is crucial in computer science. It helps you write efficient, optimized code, solve complex problems, and design strong software solutions.



Foundation Concepts of Coding

Build a strong base in coding. Understand key concepts that are essential for any programming task.

- Master the basics of coding principles.
- Develop skills for writing robust software.
- Equip yourself with essential programming knowledge.

Required for Advanced Development

Learn the skills to create advanced programs. See how data structures and algorithms are vital in software development.

- Grasp the importance of DSA in programming.
- Enhance your ability to solve complex problems.
- Design efficient and optimized code solutions.



Highly Important for Jobs and Internships

Become an asset in the job market. Gain in-demand skills that top employers look for.

- Increase your chances of getting hired.
- Develop the expertise needed for top roles.
- Stay competitive in the tech industry.

How to Master Data Structures?

Like any new skill, mastering DSA involves a series of steps you should take to ensure you get the most out of your efforts. As such, GRRAS suggests students follow this roadmap to master DSA



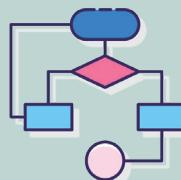
Understand the Fundamentals

Begin by learning the core data structures—arrays, linked lists, stacks, queues, trees, graphs, and hash tables. Understand how they work, their properties, and when to use them. Knowing the strengths and weaknesses of each data structure is crucial for mastering them.



Practice Regularly

Mastery comes with practice. Solve a variety of problems on platforms like LeetCode, HackerRank, or Codeforces. Regular coding practice helps reinforce concepts and makes you more comfortable with different types of data structures.



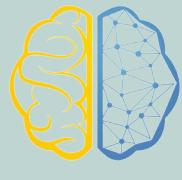
Study Algorithms

Pair your knowledge of data structures with algorithms that use them, such as sorting, searching, and traversal algorithms. Understanding how algorithms interact with different data structures is key to solving complex problems efficiently.



Work on Projects

Apply your knowledge by building projects that incorporate various data structures. Whether it's creating a simple text editor, a social network, or a game, real-world applications help solidify your understanding.



Learn from Others

Study solutions from experienced programmers. Online communities, coding bootcamps, and open-source projects offer invaluable insights into how others approach problems and optimize their code.

Mastering Data Structures and Algorithms in C++ is a journey that builds your problem-solving skills, sharpens your coding abilities, and prepares you for technical challenges in real-world applications. With persistence and the right strategies, you can achieve mastery and excel in the field.

Is the Data Structures and Algorithms Course Difficult to Learn?

The difficulty of a Data Structures and Algorithms (DSA) course can vary depending on your prior experience and the approach you take to learning. For those new to programming, the concepts may seem challenging at first. DSA involves understanding abstract concepts, mathematical logic, and problem-solving techniques, which can be intimidating. However, with a structured learning plan, consistent practice, and a willingness to tackle challenges, the course becomes much more manageable.

Many students find that while DSA is not easy, it's highly rewarding. As you progress, the satisfaction of solving complex problems and understanding how things work behind the scenes can make the journey worth it. Remember, persistence and patience are key—every programmer, no matter how skilled, once struggled with these concepts too.

Who Should take up this course?

At GRRAS, we take pride in designing our courses to be accessible to everyone. We carefully craft our modules and teaching methods to ensure that your experience level is never a barrier to learning with us.

This Data Structures and Algorithms course is tailored for:



Beginners

who are just starting their journey in programming and want to build a strong foundation.



College Students and Freshers

who are eager to master a critical skill that is highly valued in the tech industry.



Working Professionals

who are aiming to advance their careers and secure those sought-after salary increases.

Our approach guarantees a smooth and rewarding learning experience!

What is the future scope of DSA using C++

Market Demand and Growth for Data Structures and Algorithms (DSA) Using C++

As one of the foundational skills in software development, DSA is critical for solving complex problems, optimizing code, and building efficient systems. C++ remains a preferred language for mastering these concepts due to its performance and control over system resources.

Choosing DSA is the right option because of the following reasons:



Industry Growth

Expanding Opportunities: As industries increasingly rely on sophisticated algorithms and efficient data handling, the importance of DSA skills continues to rise.

Global Demand: This growth isn't limited to any one region—companies around the world are seeking skilled professionals.

Future-Proof Skillset

Long-Term Relevance: As technology evolves, the core principles of DSA remain relevant. Learning these skills in C++ not only prepares you for current job markets but also equips you with a long-lasting foundation that can adapt to future developments in the field.

Innovation and Research: For those interested in pushing the boundaries of what's possible in computing, a deep understanding of DSA is crucial.



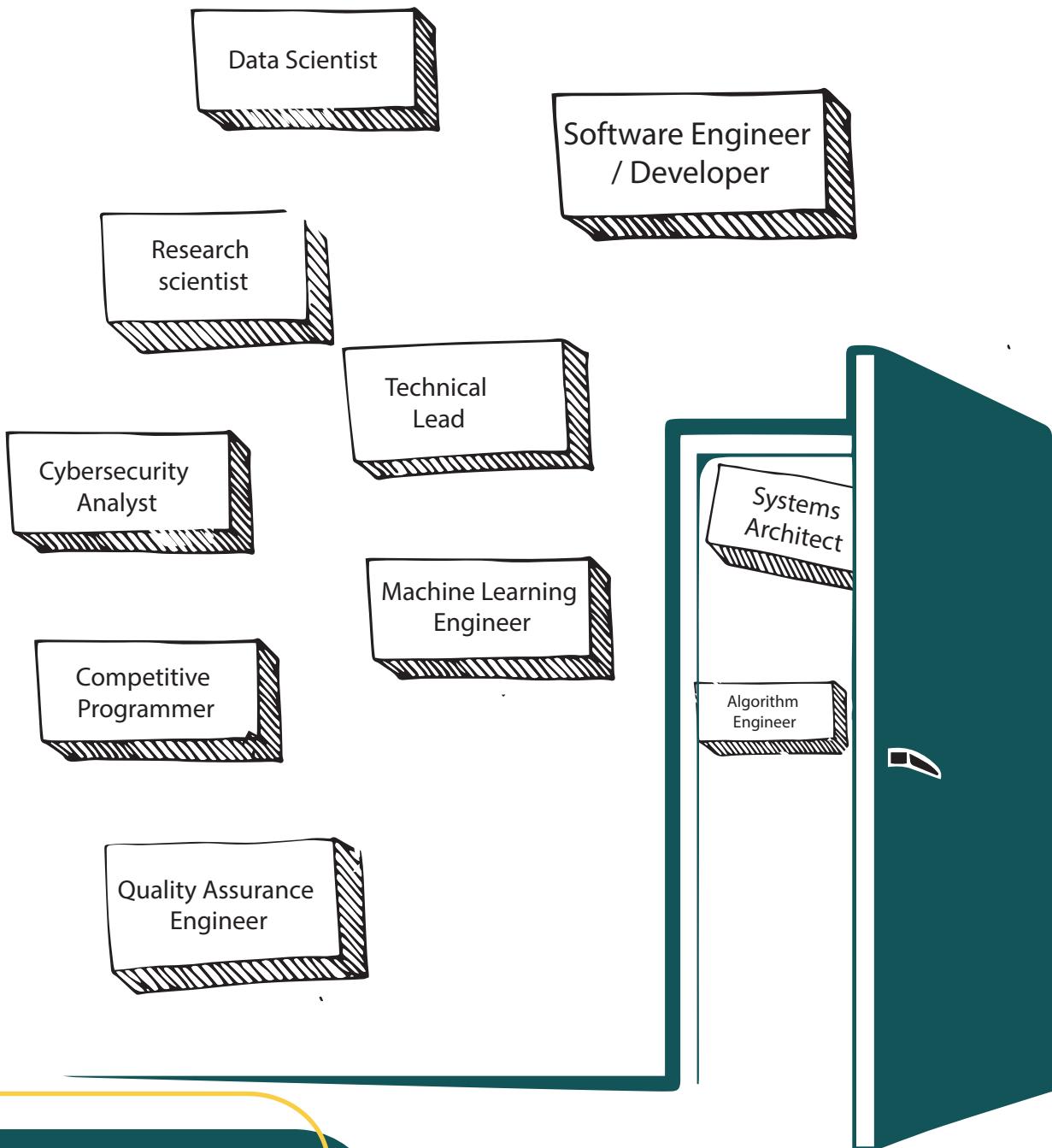
Mastering Data Structures and Algorithms using C++ is more than just an academic exercise—it's a gateway to numerous career opportunities and a skillset that will continue to be in high demand as the tech industry grows. By investing in this knowledge, you're positioning yourself at the forefront of a rapidly expanding field, ensuring a competitive edge in the job market and a robust, future-proof career.



Open Doors To Top Tech Jobs



Companies like Google, Facebook, and other tech giants prioritize candidates with strong DSA skills. Unlock lucrative job opportunities and salary packages by showcasing your proficiency in problem-solving and algorithmic thinking. Here are some common roles and career paths related to DSA



Why C++ For DSA



Efficiency

C++ is known for its low-level manipulation and efficient memory management, making it an ideal choice for implementing complex data structures and algorithms.

- Provides fast and efficient execution
- Allows precise control over system resources
- Supports optimization of algorithm performance



Versatility

The extensive Standard Template Library (STL) in C++ provides a rich set of pre-built data structures and algorithms, offering a solid foundation for DSA concepts.

- Includes a wide range of useful tools
- Facilitates quick implementation of DSA
- Enhances code reusability and efficiency



Industry Relevance

C++ is widely used in the software industry, especially in competitive programming and algorithmic interviews.

- Valued by top tech companies
- Essential for technical interviews
- Broadens career prospects in tech industry



DSA Syllabus

Module 1

Introduction to Programming

Flowcharts and Pseudocode

- * Introduction to visual representations of algorithms.
- * Writing pseudocode for problem solving.

Basics of Programming in C++

- * Overview of C++ syntax and structure.
- * Variables, data types, and control flow.

Operations in C++

- * Understanding fundamental operations in C++
- * Arithmetic, logical, and relational operations.

Functions

- * Creating and calling functions.
- * Understanding function parameters and return types.

Arrays

- * Declaring and manipulating arrays.
- * Solving problems using arrays.

Module 2

Data Structures and Algorithms

Character Arrays and Pointers

- * Handling character arrays and pointers in C++.
- * Memory management and manipulation.

Algorithms and STL

- * Introduction to basic algorithms and their implementation.
- * Utilising the C++ Standard Template Library (STL) for efficient coding.

Bit Masking and Strings

- * Understanding bit masking techniques.
- * String manipulation and algorithms.

Recursion Basics

- * Introduction to recursion and its role in problem-solving.
- * Understanding function parameters and return types.

Module 3

Recursion and Backtracking

Deep Dive into Recursion

- * Advanced recursion concepts and applications.

- * Dynamic programming as a form of recursive optimization.

Recursion on Subsets

- * Solving problems involving subsets using recursion.

- * Dynamic programming on subsets.

Backtracking

- * Understanding and implementing backtracking algorithms.

- * Solving problems with recursive backtracking.

Time and Space Complexity

- * Analysing time and space complexity of algorithms.

- * Big O notation and its practical applications.

Module 4

Searching And Sorting

Searching

- * Linear Searching and Binary Search

- * Practice Problems

Sorting

- * Bubble Sort, Selection Sort, Insertion Sort & Merge Sort

- * Practice Problems

- * Quick Sort, bucket Sort, Heap Sort, & Cycle Sort, Radix Sort

Module 5

Matrix

- * Introduction to Matrix in C++
- * Learning Multidimensional Matrix, Pass Matrix as Arguments
- * Understanding Printing Matrix in a snake pattern

- * Transposing, Rotating a matrix
- * Spiral Traversal & Matrix Multiplication
- * Practice Problems

Module 6

Object-Oriented Programming (OOP) and Advanced Data Structures

OOPs Programming

- * Principles of Object-Oriented Programming.
- * Implementing OOP concepts in C++.

Functions

- * Detailed study and implementation of linked lists.
- * Stack and queue operations and applications

Module 7

- * Introduction and Application
- * Implementation In C++ STL
- * Practice Problems

Module 8

Tree

- * Introduction, Application
- * Learning Binary Tree
- * Understanding Tree Traversal
Inorder, Preorder, Postorder, Level Order, Spiral

Binary Search Tree (BST)

- * Background, Introduction and Application
- * Implementation of Search in BST
- * Understanding Insertion in BST , Deletion in BST & Searching in BST
- * Practice problems

Module 9

Matrix

Heap, Hashmap, and Graphs

- * Understanding heap data structure and its applications.
- * Implementation of hashmap and graph algorithms.

Tries and Dynamic Programming

- * Exploring trie data structure.
- * Solving problems using dynamic programming techniques.

Module 10

Greedy Algorithms

- * Principles and applications of greedy algorithms.
- * Problem-solving using the greedy approach.

Tries and Dynamic Programming

- * Exploring trie data structure.
- * Solving problems using dynamic programming techniques.

Module 11

Interview Questions and Experience

- * Commonly asked interview questions in data structures and algorithms.
- * Mock interviews and real-world problem solving scenarios.



Choose Excellence, Choose GRRAS



Expert Mentorship

- * Learn from top industry professionals, gaining real-world insights.
- * Get guidance from experienced professionals and tech experts.



Industry-Aligned Curriculum

- * Access industry-vetted curriculum, acquiring in-demand skills.
- * Stay updated with the latest industry trends for real-world experience.



Hands-On Learning

- * Engage in project-based learning, applying theory to real-life scenarios.
- * Develop practical skills, preparing for future career endeavours.

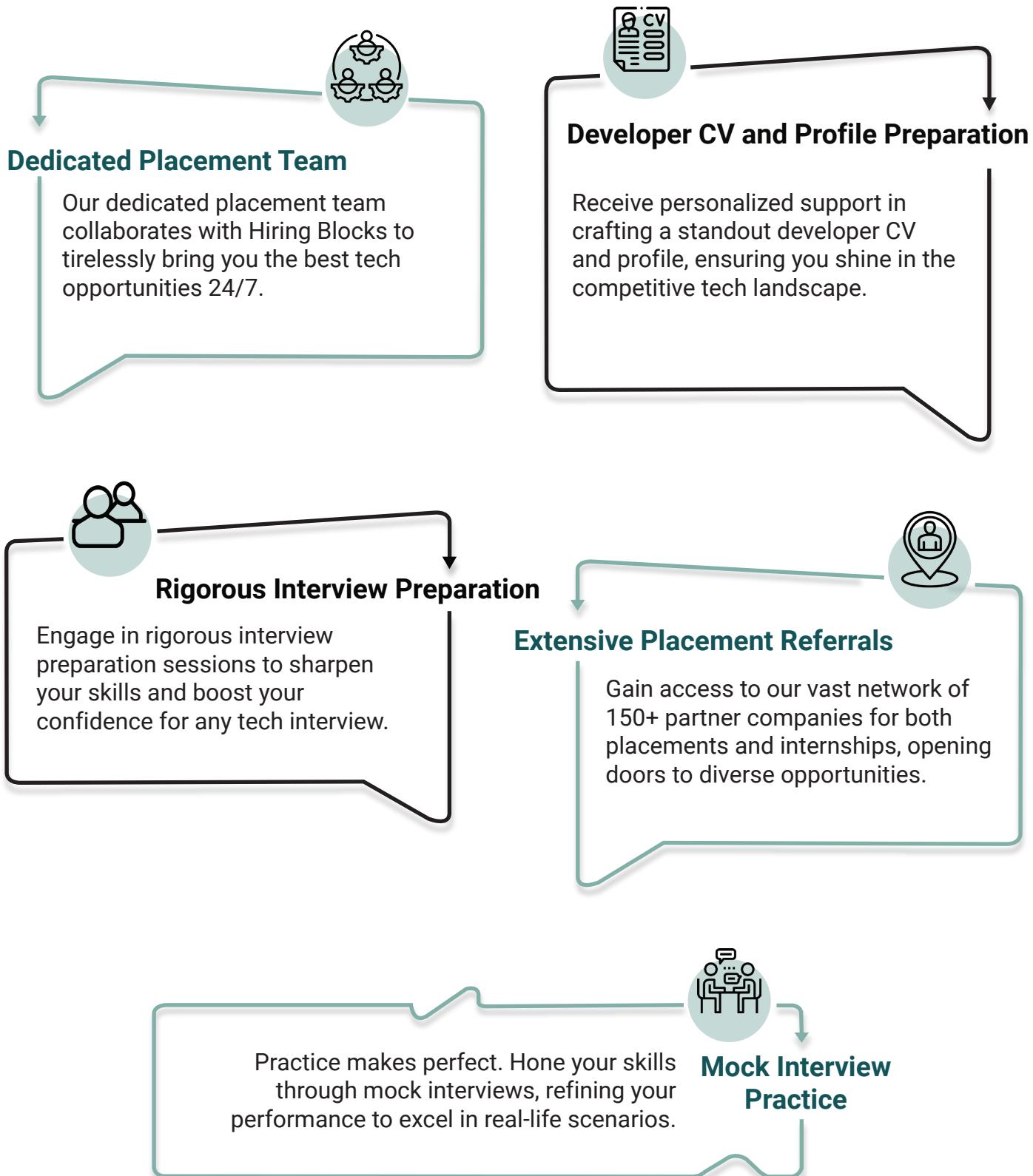


Outstanding Placements

- * Secure placements in top tech companies looking for experts like you.
- * Benefit from our strong career advancement support and job placements.

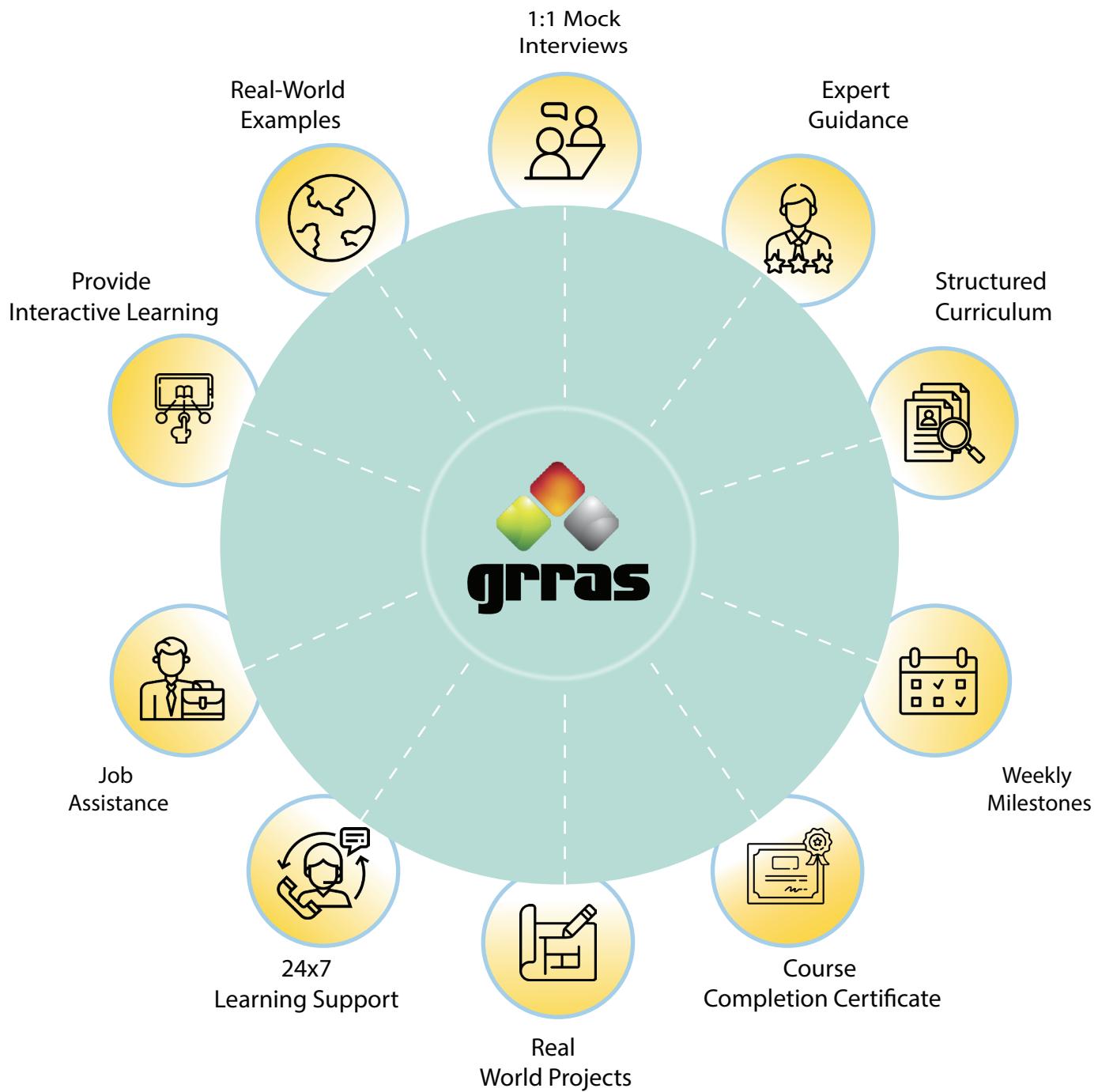


Empowering Your Success



Why Choose GRRAS To Master DSA?

Learning DSA from GRRAS Solutions equips you with industry- and job-ready skills. It enhances your chances of getting placed in top organizations, opening numerous opportunities for career growth.



100% Job Assistance

Yes, you heard it right! Our course not only offers expert learning but also guarantees 100% job assistance. With a dedicated team of job coordinators and 500+ hiring partners, we're committed to ensuring your success in landing your dream job.

CERTIFICATION

Get an Accredited and Recognized Certificate upon successful completion of this course.



CERTIFICATE *of* TRAINING

This certificate is *Awarded* to

YOUR NAME

for successfully completing the

at

GRRAS Solutions Pvt. Ltd. from _____ to _____

We commend your dedication and hard work. We're confident that the skills and knowledge you have acquired will greatly contribute to your future success!

Unique Certificate No.

GD-635023

A handwritten signature in blue ink, appearing to read "Rajiv" or "Rajiv Singh".

DIRECTOR



DATE

WWW.GRRAS.COM

2nd Floor, 36 Basant Bahar, Gopal Pura Mode,
Jaipur, Rajasthan 302018



When Our Students Succeed, We Succeed!

Where Our Proud Alumni SHINE



राजस्थान पत्रिका



J.P.Morgan



and 600+ companies

Hear It Directly From Our Students!



This is very good and perfect place to make your career they can fully guide and the trainers are also industrial experienced.



Sarthak Vijay |



My experience at the Grras solution Pvt. Ltd institute is so positive and it's a great institute for the IT training and one of the best thing I like about this institute that the trainer's are very supportive and so understanding and the course material is also easy to understand with the explanation of trainer's...



Aftab Ansari |



Grass Solution Pvt Ltd is undoubtedly one of the best training companies I've come across. Their comprehensive and hands-on approach to learning ensures that students are well-prepared for the challenges of the professional world. The knowledgeable instructors,



Kunal Sharma |



If you wanna upgrade your skills then grass solution is the best palace for you..I done my internship from beginner to advance level from this institute.. it was a great experience.. The faculty has very well behavior and they supports in all ways...I love every minute of study and gained

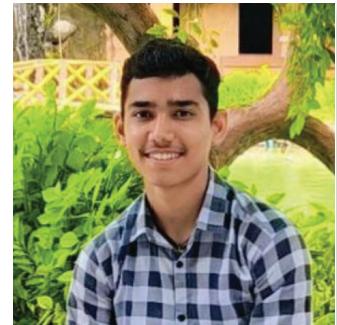


Ramiz Khan |



I recently completed the internship in Data Science and Machine Learning using Python at GRRAS Solutions Pvt Ltd, and I couldn't be more satisfied with my experience. The curriculum was comprehensive, covering essential concepts and practical applications of data science and machine learning, which have immensely

Nikhil Pathak |



I had an amazing learning experience. And made my dream come true by getting placed as a graphic designer just after completing my course of graphic designing. Teachers are very helpful and friendly here they helped me with each and every doubt by taking one-on-one sessions and resolving all my doubts work on

Arbaj Khan |



My name is Danish Ansari. I have done my Data analytics training from Grras Solutions pvt. Ltd in Jaipur. The faculty of Grras Solutions is experienced and well versed with all the tools faculty helped me a lot by making the topics easy to understand and clear the concepts and the faculty are Industrial specialists.

Danish Ansari |



If you wanna upgrade your skills then grass solution is the best palace for you..I done my internship from beginner to advance level from this institute.. it was a great experience.. The faculty has very well behavior and they supports in all ways...I love every minute of study and gained

Shalu Sharma |



I've been attending coaching sessions at GRRAS Coaching Center for the past THREE months, and I must say, it has been an incredibly enriching experience. Trainer, our coach, has been instrumental in guiding me through various challenges and helping me achieve my goals.

Himanahu Rasganiya |



More about Us



Grras IT Solutions

Most Trusted IT Training Provider - India



FOLLOW US NOW



@grras-solutions-p-ltd



@grrasofficial



9001997178



trainings@grras.com



www.grras.com



36, Basant bahar, Gopalpura Bypass Rd
Tonk Road, Muktanand Nagar, Gopal
Pura Mode, Jaipur, Rajasthan 302018