Module Guide for Students

DSA 4: Prominent Algorithms and Data Structures

Hi learners. Congratulations on making it to DSA 4: Prominent Algorithms and Data Structures

DSA 4 is the most important in your journey to becoming a software engineer. This module is designed in order to make sure you have appropriate understanding of intermediate DSA concepts. This module consists of topics that are very frequently asked in the interviews. All the topics that will be covered in this module are very important for your overall understanding and success in this course.

Once you have completed this module, you will be entering into the DSA Placement training module so just 1 step away from your goal. Make sure you give your best!!

Who is your instructor?

DSA 4 is taught by **Rohan Sharma**. Mentor at AccioJob for the past 1 year. One of the best Instructors to teach Intermediate and Advanced Dsa. Apart from this he has also worked at AccioJob in the Technical content creation team.

Here is the week-wise topic distribution of DSA 4:

WEEK 1

- Introduction
- BST 1
- BST 2
- BST 3
- Prefix Sum and kadanes 1

WEEK 2

- Prefix Sum and kadanes 2
- Sliding Window and 2-Pointers 1

- Sliding Window and 2-Pointers 2
- Bit Manipulations 1
- Bit Manipulations 2

WEEK 3

- Graphs 1
- Graphs 2
- Graphs 3
- Graphs 4
- Graphs 5
- Greedy Algorithm 1
- Greedy Algorithm 2

WEEK 4 (Hiatus Period)

- Revision Session 1
- Revision Session 2
- Revision Session 3
- Module Test

<u>Assignments:</u>

With every lecture, you will be getting a set of questions about the topic covered in the lecture. Some of these questions will be solved in the lecture while the remaining ones will be given as homework that you need to solve on your own. The instructor will be taking the homework question in the next day's lecture.

It is very crucial that you solve these questions every day, just attending the lecture will not be enough for your understanding of the topic. Implementing the concepts that you have learned in class will help you strengthen your overall logic.

<u>Gym:</u>

The gym section is an integral part of your course, once you are done with the assignment questions on a certain topic you can further strengthen that topic by solving questions from the gym section. You will find a variety of questions in the gym on all the topics that are there in DSA. We have included a lot of company-asked questions as well. So, it will be a plus point for you if you are solving gym questions regularly.

Before you go to some other platform make sure you solve all the assignment and gym questions on that topic, we have seen that students who are solving gym questions eventually perform better than the students who are just solving assignment questions.

Important topics

All the topics that are there in DSA 4 are important. Developing an intermediate understanding of programming.

BST, Prefix Sum, Kadanes, and Graphs are critical to develop the intermediate logic that is required to become a developer of any kind.

BST(Binary Search Trees) is a node-based binary tree data structure that you will be learning in this module. Apart from this, the module comprises a lot of algorithms such as prefix sum, kadane's algorithm which may be the most important concepts that you will be learning in this module. Make sure you grasp it to the core.

Similarly, Graphs is a non-linear data structure consisting of vertices and edges that is crucial. It is used behind a lot of apps you use daily, one of the examples being Google maps. Make sure that you understand it thoroughly as it is frequently asked in the interviews of product based companies.

DSA 3 Mock Interview:

All the students are required to give the DSA 3 mock interview at least once in this module. Remember, giving mocks will enable you to solidify all the concepts that we had covered in DSA 3 and without clearing this mock you can't officially clear DSA 3 which is a requirement to enter the placement training module. So, make sure you give the mock interview and clear it too.

You can always take multiple mocks if you do not clear it the first time or are not satisfied with your performance. **The passing score for the mock is greater than or equal to 6.**

DSA Placement Readiness Eligibility:

It is mandatory to clear the **Module Test** of **DSA 4:Prominent Algorithms and Data Structures** & **Mock Interview of DSA 1, 2, 3 & 4** to enter the placement readiness module. So, please ensure if you haven't given any mocks till now or given but not cleared the mock you do so. You will be getting some extra time to give DSA 4 mock after the completion of the syllabus of this module before we start with the placement prep module so that you get appropriate time to clear the mock for DSA 4.

Weekly Contests:

Weekly contests are an essential part of your course as they will prepare you to be ready to solve problems in a timely manner which is important for the future coding tests that you will be giving while sitting for placements. We will have a contest every Saturday after the 1st week before the module test.

Following this, a contest discussion will happen in the lecture on Sunday. You should attempt all the contest questions and attend the contest discussion in order to understand how to approach a question in a given time. And even if you have solved the problems, you might learn a different approach to solving them.

In the previous batches, we have seen a direct correlation between the number of contests attempted and final module test performance. Therefore it is mandatory for every student to attempt at least one weekly contest throughout the month in order to move to the next module.

Live chat and doubt Sessions:

It'll often not be possible to address the doubts of every student or cover all the approaches by the instructor in the lecture session.

For all your doubts that can not be cleared in the lecture, you should utilise the live chat and doubt sessions where a team of dedicated mentors will help you by catering specifically to your questions directly. While solving problems on your own you might have a lot of doubts, make sure you are solving these doubts as soon as possible.

One-on-one mentorship sessions:

Besides live chat and doubt sessions you also have the option to book a one-on-one session with a mentor where you can directly talk to a mentor for 1 hour. The mentorship sessions should be utilised if you feel like you do not understand any fundamental concepts or you are struggling with basics like how to approach a problem, what techniques should preferably be used to achieve a particular goal, how you can solve a problem through multiple approaches etc. You can directly ask your batch manager to open a slot for you then you can book your session according to your availability.

AccioJob Community Platform:

We have our own community platform where you will receive all the important information about the course, lectures, contests, etc. Also, it is the place where you can connect with your peers in the course. AccioJob strongly encourages

peer-to-peer learning so we will suggest you talk to your peers, ask doubts, and try to solve their doubts, when you solve someone's doubts you become more confident in your concepts. You can even take each other's mock interview. This will help you enhance your collaboration skills which are very important in the long run.

Module test:

Just like all other modules you will have a final test at the end of this module which will act as a clearing criterion to enter the next module except placement modules along with clearing the mocks of DSA 1, 2, 3, & 4. The module test will be very similar to the weekly contests. All the topics that modules can be asked in the module test. So prepare well for the endgame and stay ready to show your coding skills.

To pass the module test your score should be greater than equal to 60% and get a score greater than or equal to 6 in the mocks of DSA 1, 2, 3, & 4.

Your best friends….

- **Your instructor**
- **Your batch manager**
- **Live chat**
- **Live doubt**
- **Mentorship sessions**