



Softcrayons

JAVA DSA

**Empowering minds
shaping futures**



PROFESSIONAL CERTIFICATION IN

JAVA DSA

PROSPECTUS



Key Advantages of Choosing Softcrayons

FOR STUDENTS

Supplemental Learning Resources: Softcrayons offers offline and online courses, educational materials, and additional resources that can complement and enhance college students' learning.

Skill Development: Softcrayons offer courses and certifications focused on developing specific skills that are in high demand in the job market.

Career Exploration: Softcrayons offer a wide range of courses across various disciplines, enabling college students to explore different fields and potential career paths.

Industry Relevance: Softcrayons frequently collaborates with industry professionals and experts to ensure that the knowledge and skills imparted are relevant and aligned with current industry practices and trends.

FOR FREELANCER & JOB SEEKER

Flexibility: Softcrayons offers online courses and programs that can be accessed from anywhere.

Skill Development: To acquire in-demand skills according to the latest industry trends and technologies to stay competitive in the job market.

Key Advantages of Choosing Softcrayons

Certifications: Softcrayons provides you with Professional Certifications and helps you with Resume Enhancement.

Career Support: Softcrayons also offers career counseling and job placement assistance, which can be invaluable for freelancers seeking new projects or job seekers looking for employment.

FOR ENTREPRENEURS AND BUSINESS OWNER

Upskilling and Reskilling: As the business landscape evolves rapidly, Softcrayons ensure that you stay up-to-date with the latest trends, technologies, and best practices.

Flexible Learning: Online courses offered by Softcrayons allow you to learn at your own pace, fitting your studies around your busy schedules.

Entrepreneurial Skills Development: Softcrayons offers courses and programs specifically designed to help entrepreneurs develop essential skills.

Cost-effective: Softcrayons provides more affordable learning options that help you invest in your professional development without straining your budget.

About The Program



Softcrayons being a leader and considered as the best in IT training courses, offers comprehensive training in Java Full Stack Development with a focus on Data Structures and Algorithms (DSA). This course is designed to equip learners with the skills necessary to excel in the competitive field of software development. Softcrayons provide the best training in Java Full Stack in Noida.



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TRAINING CURRICULUM

1 Module 1: Introduction to Programming

- Types of languages
- Memory management
- Flow of the program
- Flowcharts
- Pseudocode

2 Module 2: Introduction to Java

- Introduction
- How it works
- Setup Installation
- Input and Output in Java
- Conditionals & Loops in Java
- if-else
- loops
- Switch statements
- Data-types

3 Module 3: Coding best practices

4 Module 4: Pattern questions

5 Module 5: Functions

- Introduction
- Scoping in Java
- Variable Length Arguments
- Overloading

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TRAINING CURRICULUM

6 Module 6: Arrays

- Introduction
- Memory management
- Input and Output
- Array Programs
- ArrayList Introduction

7 Module 7: Recursion

- Introduction
- Flow of recursive programs - stacks
- Why recursion?
- Tree building of function calls
- Tail recursion
- Backtracking
 - N-Queens
 - N-Knights
 - Sudoku Solver
 - Maze problems

8 Module 8: Searching

- Linear Search
- Binary Search
- Modified Binary Search
- Binary Search on 2D Arrays

9 Module 9: Sorting

- Insertion Sort
- Selection Sort

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TRAINING CURRICULUM

- Introduction
- Memory management
- Input and Output
- Array Programs
- ArrayList Introduction

10 Module 10: Subarray Questions:

- Sliding window,
- Two Pointer,
- Kadane's Algorithm

11 Module 11: Strings

- Introduction
- How Strings work
- Comparison of methods
- Operations in Strings
- StringBuilder in Java
- String Buffer
- String Internal Pool

12 Module 12: Maths for DSA

- Introduction
- Complete Bitwise Operators
- Range of numbers
- Prime numbers
- Sieve of Eratosthenes
- Newton's Square Root Method
- Factors
- Modulo properties

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TRAINING CURRICULUM

13 Module 13: Space and Time Complexity Analysis

- Sliding window,
- Two Pointer,
- Kadane's Algorithm
- Solving Linear Recurrence Relations
- Solving Divide and Conquer Recurrence Relations
- Big-O, Big-Omega, Big-Theta Notations
- Little Notations
- Get equation of any relation easily - best and easiest approach
- Complexity discussion of all the problems we do
- Space Complexity
- NP-Completeness Introduction

14 Module 14: Object Oriented Programming

- Introduction
- Classes & its instances
- this keyword in Java
- Properties
- Inheritance
- Abstraction
- Polymorphism
- Encapsulation
- Overloading & Overriding
- Static & Non-Static
- Packages
- Access Control
- Interfaces
- Abstract Classes

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TRAINING CURRICULUM

15 Module 15: Linked List

- Introduction
- Singly + Doubly + Circular LinkedList
- Fast and slow pointer
- Cycle Detection
- Reversal of LinkedList
- Linked List + Recursion

16 Module 16: Stacks & Queues

- Introduction
- Push efficient
- Pop efficient
- Queue using Stack and vice versa
- Circular Queue

17 Module 17: Trees

- Introduction
- Generic Tree
- Binary Trees
- Binary Search Trees
- AVL Trees
- Segment Tree
- Fenwick Tree / Binary Indexed Tree

18 Module 18: Heaps

- Introduction
- Theory

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- Priority Queue
- Heapsort
- Two Heaps Method
- k-way merge
- Top k elements
- Interval problems

19 Module 19: HashMap

- Introduction
- Theory - how it works
- Comparisons of various forms
- Limitations and how to solve
- Map using LinkedList
- Map using Hash
- Chaining
- Probing
- Huffman Coding
- Karp-Rabin String matching algorithm

20 Module 20: Graphs

- Introduction
- BFS
- DFS
- Working with graph components
- Minimum Spanning Trees
- Kruskal Algorithm
- Prims Algorithm
- Dijkstra's shortest path algorithm
- Topological Sort
- Bellman ford

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A* pathfinding Algorithm

21 Module 21: Dynamic Programming

- Introduction
- Recursion + Recursion DP + Iteration + Iteration Space Optimized
- Complexity Analysis
- 0/1 Knapsack
- Subset Questions
- Unbounded Knapsack
- Subsequence questions
- String DP

22 Module 22: Greedy Algorithms Tries

Testimonials of Students



Sukhpreet Kaur

2 reviews

★★★★★ 2 weeks ago **NEW**

Hlo mam I'm Sukhpreet your Softcrayons taining institute in student my training is digital marketing course 😊 I'm very becoz I'm digital marketing beginner but my experience to much becoz my trainer is very intelligent and supportive and nature is very friendly 😊



Manish Malik

1 review

★★★★★ 2 weeks ago **NEW**

I'm new student in softcrayons my starting classes all gud my softcrayons experience to much better becoz my trainer is very experienced



Aman Bhardwaj

2 reviews

★★★★★ 5 months ago

I am Aman Bhardwaj, Recently I completed a Digital Marketing course from Softcrayons. After completing my course I got a placement at SNVA Ventures with a good salary package. If you want to do a course and boost your career in the Digital Marketing field. I will recommend you visit Softcrayons. If I talk about the environment and faculty then Softcrayons have a very good and friendly environment and their faculty is highly experienced in the Digital Marketing field. Specifically, Yashvant sir is one of the best trainer and they have great experience in the Digital Marketing field. Thank you Softcrayons and all staff who helped me boost my career in the Digital Marketing field.



Shivam Sharma

1 review

★★★★★ 2 months ago

I got the chance to study with the best teacher and they provided me a good career guidance. a veryb great place to learn programming and start your career.



Lalita Tiwari

1 review

★★★★★ 5 months ago

I hearded about softcrayons through friends and I enroll myself here, and done my course. I suggest you all to join softcrayons. Hope you do great.



Tanish Chandrawal

5 reviews

★★★★★ 5 months ago

It is good institute, practical oriented practice is very good. This institute is very useful for graduate students to make carrier in IT. 100% job guarantee is available for all students. Very good Institute for Cloud Computing like Azure, AWS, GCP.



Aman Vishwakarma

2 reviews

★★★★★ 2 months ago

Hie guys I'm aman softcrayons institute students for AutoCAD.. softcrayons institute is best training institute sarfaraz sir is best teacher for softcrayons. And best institute softcrayons

PLACEMENT COMPANIES





SOFTCRAYONS®



GHAZIABAD

693, Sector 14-A, Vasundhara,
Ghaziabad, UP (201012)

NOIDA

B-132, Sector 2, Near Sector 15
Metro Station, Noida UP (201301)