Data Structures & Algorithms – Team-11

[Team11-ds11]

Mentor:

Amit Khandelwal
Mail id: amit88khandelwal@gmail.com

Moderator:

Vani Gupta
Mail id: topcoder69@gmail.com

Members information:

Name	Role	Email	Proficiency in DS	Proficiency in Algo
Swarnima Shishodia	Mentee	swarnima.18bcs1004@abes.ac.in	Good(3/5)	Good(3/5)
Srilekha Vinjamara	Mentee	srilekha1912@hotmail.com	Good (3/5)	Okay-good(3/5)
Kritika kanojia	mentee	kritikakanojia790@gmail.com	good (3/5)	good (3/5)
Swarina Jaiswal	Mentee	swarinajaiswal@gmail.com	okay-good (2/5)	good(3/5)
Suchit Kumar	mentee	surajsuchit1999@gmail.com	Average(2.5/5)	Average(2.5/5)
Tejaswi	Participant	2018ucs0090@iitjammu.ac.in	Average (2/5)	Average (2/5)
Sumit Pandey	Participant	sumitp2398@gmail.com	Average(2/5)	Average(2/5)
Tapan Mehta	Particiant	tapanmanishmehta@gmail.com	Good(3/5)	Good(2/5)
Sonali Shakya	Participant	sonalishakya111@gmail.com	Average (2.5/5)	Good (3/5)
Amay Saxena	Participant	saxenaamay00147@gmail.com	Average(2.5/5)	Average(2/5)
Yash kumar Bandhiye	Participant	yk267164@gmail.com	Beginner(0/5)	Beginner(0/5)
Tarun agarwal	participant	tarunagarwal27.99@gmail.com	Average(2/5)	Average(2/5)
Tannu Kumari	Participant	tannuchoudhary10@gmail.com	Average(2.5/5)	Average(2.5/5)

Week 1 [June 7 – June 13]

Basic & fast I/O Techniques, Printing Practices, Basic Maths Problems

Week 2 [June 14 - June 20]

Arrays, Strings, Recursion, Maths Problems

- Examples: Infix, postfix, prefix representation, Conversions, Applications, Recursion, Searching Algorithms: Straight Sequential Search, Binary Search

Week 3 [June 21 – June 27]

Linked Lists, Stacks & Queues

- Array based implementation of Queues / Lists,
- Linked List implementation of Queues / Lists,
- Circular implementation of Queues and Singly linked Lists,
- Straight / circular implementation of doubly linked Queues / Lists,
- Priority Queues, Applications
- The Stacks: Definition, Array based implementation of stacks, Linked List based implementation of stacks,

Week 4 [June 28 – July 4]

Dynamic programming

- Longest Common Subsequence
- Shortest Common Subsequence
- Knapsack
- Rode cutting
- Matrix chain multiplication

Week 5 [July 5 – July 11]

Searching, sorting Algos, implementation using above learnt data structures

- Introduction,
- Sorting by exchange, selection, insertions, Bubble sort, Selection sort, Efficiency of these algorithms.
- Shell sort, Performance of shell sort,
- Merge sort, Merging of sorted arrays & Algorithms.
- Quick sort Algorithm analysis,
- Heap sort: Heap Construction, Heap sort, bottom – up, Top – down Heap sort approach.

Week 6 [July 12 – July 25]

Maps (Dictionaries/Hash Maps), Trees

- Definition of trees and Binary trees,
- Properties of Binary trees and Implementation,
- Binary Traversal pre-order, post order, In- order traversal,
- Trees,

Week 7 [July 25 – August 1]

Graphs || Traversals- BFS, DFS

- Definition of Undirected and Directed Graphs and Networks,
- The Array based implementation of graphs,
- Adjacency matrix,

- Path matrix implementation,
- The Linked List representation of graphs,
- Shortest path Algorithm,
- Graph Traversal – Breadth first Traversal, Depth first Traversal,
- Tables: Definition, Hash function,
- Implementations and Applications of the above.

Week 8 [August 2 - August 15]

Heaps, AVL Tree, BSTs & Other Algos

- AVL Trees,
- Implementations of the above
- Heap,

Week 9 [August 16 - August 22]

Company wise practice

Week 10 [August 23 - August 29]

Company wise practice