

❖ Complete Collections workshop - Course Content

- Need for Collection Framework.
- Collection hierarchy
- Collection vs Collections
- Internal Implementation of List
- Internal Implementation of Set
- Internal Implementation of Map
- How to create custom collection

➤ List

- Array List
- Vector
- Linked List

Copy on Write Array List

➤ Set

- Hash Set
- Linked Hash Set
- Copy on write Array Set

➤ Map

- Hash Map
- Linked Hash Map
- Concurrent hash Map
- How to sort hashmap by values ?
- How to sort hashmap by keys
- Why to over ride equals and hash code method in hashmap ?

- What is iterator and how to use the iterator ?
- What is List Iterator and how to use it ?
- Difference between iterator and List iterator ?
- What is concurrent modification exception and how to resolve it?
- Concurrency vs Synchronization ?
- Copy on write Array list , Copy on write array Set , Concurrent hash map
- How to create Custom collection (Custom Array List) ?

➤ Linked List

- Introduction
- Insert (Head/Tail/Middle)
- <https://www.hackerrank.com/challenges/insert-a-node-at-the-head-of-a-linked-list/problem>
- <https://www.hackerrank.com/challenges/insert-a-node-at-a-specific-position-in-a-linked->

[list/problem](#)

<https://www.hackerrank.com/challenges/insert-a-node-at-the-tail-of-a-linked-list/problem>

- Delete (Head/Tail/Middle)
- <https://www.hackerrank.com/challenges/delete-a-node-from-a-linked-list/problem>
- Print:
- <https://www.hackerrank.com/challenges/print-the-elements-of-a-linked-list-in-reverse/problem>
- <https://www.hackerrank.com/challenges/print-the-elements-of-a-linked-list/problem>
- <https://www.hackerrank.com/challenges/get-the-value-of-the-node-at-a-specific-position-from-the-tail/problem>

➤ Stack:

- What is Stack ?
- Basic Stack properties (Push, Pop, Peek)
- <https://www.hackerrank.com/challenges/java-stack/problem>
- Stack Implementation using Array
- Stack Implementation using Linked List
- Stack implementation using Queue

➤ Queue:

- What is Queue ?
- Basic Properties of Queue (Peek, poll)
- What is D Queue, Blocking Queue, Priority Queue ?
- What are the difference between Linked Blocking Queue verses Array Blocking Queue ?
- Queue Implementation using Array
- Queue Implementation using Linked List
- Queue implementation using Stack

➤ Trees

- Basic concepts
- In order traversal: <https://www.hackerrank.com/challenges/tree-inorder-traversal/problem>
- Post order traversal: <https://www.hackerrank.com/challenges/tree-postorder-traversal>
- Preorder traversal: <https://www.hackerrank.com/challenges/tree-preorder-traversal/problem>

➤ Tree Set

➤ Tree Map