

CE205 Data Structures

Week-2

Linked Lists and Related Algorithms Arrays and Matrices

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Outline-1

- Resources
- ASN.1 C Workshop
- Single Linked List
- Circular Linked List
- Double Linked List
- XOR Linked List
- Skip List
- Strand Sort

Outline-2

- Arrays
 - Array Rotations
 - Arrangement Rearrangement
 - Array Searching and Sorting
- Matrix
- Sparse Matrix

Resources

- WilliamFiset
 - [WilliamFiset - YouTube](#)
 - [GitHub - williamfiset/Algorithms: A collection of algorithms and data structures](#)
- Btech Smart Class
 - [Data Structures Tutorials - Introduction to Algorithms](#)
- Programiz
 - [Data Structure and Types](#)
- GeeksforGeeks
 - [Array Data Structure - GeeksforGeeks](#)
- Visual Algo
 - <https://visualgo.net/en>

Workshop

- <https://github.com/ucoruh/asn1c-wsl-sample>

Single Linked List

- Btech Smart Class
 - [Data Structures Tutorials - Single Linked List with an example](#)
- Visual Algo
 - <https://visualgo.net/en/list>

Circular Linked List

- Btech Smart Class
 - [Data Structures Tutorials - Circular Linked List with an example | Implementation](#)
- Geeks for Geeks
 - [Circular Linked List | Set 1 \(Introduction and Applications\) - GeeksforGeeks](#)
- Geeks for Geeks
 - [Circular Linked List | Set 2 \(Traversal\) - GeeksforGeeks](#)

Double Linked List

- Btech Smart Class
 - [Data Structures Tutorials - Double Linked List with an example program](#)
- Geeks for Geeks
 - [Doubly Linked List | Set 1 \(Introduction and Insertion\) - GeeksforGeeks](#)
- Visual Algo
 - [Linked List \(Single, Doubly\), Stack, Queue, Deque - VisuAlgo](#)

XOR Linked List

- Wikipedia
 - [XOR linked list - Wikipedia](#)
- Geeks for Geeks
 - [XOR Linked List - A Memory Efficient Doubly Linked List | Set 1 - GeeksforGeeks](#)
- Geeks for Geeks
 - [XOR Linked List – A Memory Efficient Doubly Linked List | Set 2 - GeeksforGeeks](#)

Skip List

- Wikipedia
 - [Skip list - Wikipedia](#)
- Geeks for Geeks
 - [Skip List | Set 1 \(Introduction\) - GeeksforGeeks](#)
 - [Skip List | Set 2 \(Insertion\) - GeeksforGeeks](#)
 - [Skip List | Set 3 \(Searching and Deletion\) - GeeksforGeeks](#)

Strand Sort

- Geeks for Geeks
 - [Strand Sort - GeeksforGeeks](#)

Arrays

- Geeks for Geeks
 - [Array Data Structure - GeeksforGeeks](#)
 - [Data structures Tutorials - Arrays](#)
 - [Circular array - GeeksforGeeks](#)

Array Rotations

- Geeks for Geeks
 - [Program for array rotation - GeeksforGeeks](#)

Arrangement Rearrangement

- Geeks for Geeks
 - [Array Rearrangement - GeeksforGeeks](#)

Array Searching and Sorting

- Geeks for Geeks
 - [Difference between Searching and Sorting Algorithms - GeeksforGeeks](#)

Matrix

- Geeks for Geeks
 - [Matrix Archives - GeeksforGeeks](#)

Sparse Matrix

- Geeks for Geeks
 - [Data Structures Tutorials - Sparse Matrix with an example](#)

End – Of – Week – 2