CE205 Data Structures Week-2

Linked Lists, Arrays, Matrix

Author: Asst. Prof. Dr. Uğur CORUH

# CE205 Data Structures

# Week-2

### Linked Lists and Related Algorithms Arrays and Matrices

Download [DOC](ce205-week-2-linkedlist.md_doc.pdf), [SLIDE](ce205-week-2-linkedlist.md_slide.pdf), [PPTX](ce205-week-2-linkedlist.md_slide.pptx)

## Resources

[WilliamFiset - YouTube](https://www.youtube.com/c/WilliamFiset-videos/playlists)

[GitHub - williamfiset/Algorithms: A collection of algorithms and data structures](https://github.com/williamfiset/Algorithms)

[Data Structures Tutorials - Introduction to Algorithms](http://www.btechsmartclass.com/data_structures/introduction-to-algorithms.html)

[Data Structure and Types](https://www.programiz.com/dsa/data-structure-types)

[Array Data Structure - GeeksforGeeks](https://www.geeksforgeeks.org/array-data-structure/?ref=ghm)

Single Linked List

1. [Data Structures Tutorials - Single Linked List with an example](http://www.btechsmartclass.com/data_structures/single-linked-list.html)
2. https://visualgo.net/en/list

Circular Linked List

1. [Data Structures Tutorials - Circular Linked List with an example | Implementation](http://www.btechsmartclass.com/data_structures/circular-linked-list.html)
2. [Circular Linked List | Set 1 (Introduction and Applications) - GeeksforGeeks](https://www.geeksforgeeks.org/circular-linked-list/)
3. [Circular Linked List | Set 2 (Traversal) - GeeksforGeeks](https://www.geeksforgeeks.org/circular-linked-list-set-2-traversal/)

Double Linked List

1. [Data Structures Tutorials - Double Linked List with an example program](http://www.btechsmartclass.com/data_structures/double-linked-list.html)
2. [Doubly Linked List | Set 1 (Introduction and Insertion) - GeeksforGeeks](https://www.geeksforgeeks.org/doubly-linked-list/)
3. [Linked List (Single, Doubly), Stack, Queue, Deque - VisuAlgo](https://visualgo.net/en/list)

XOR Linked List

1. [XOR linked list - Wikipedia](https://en.wikipedia.org/wiki/XOR_linked_list)
2. [XOR Linked List - A Memory Efficient Doubly Linked List | Set 1 - GeeksforGeeks](https://www.geeksforgeeks.org/xor-linked-list-a-memory-efficient-doubly-linked-list-set-1/)
3. [XOR Linked List – A Memory Efficient Doubly Linked List | Set 2 - GeeksforGeeks](https://www.geeksforgeeks.org/xor-linked-list-a-memory-efficient-doubly-linked-list-set-2/)

Skip List

1. [Skip list - Wikipedia](https://en.wikipedia.org/wiki/Skip_list)
2. [Skip List | Set 1 (Introduction) - GeeksforGeeks](https://www.geeksforgeeks.org/skip-list/)
3. [Skip List | Set 2 (Insertion) - GeeksforGeeks](https://www.geeksforgeeks.org/skip-list-set-2-insertion/)
4. [Skip List | Set 3 (Searching and Deletion) - GeeksforGeeks](https://www.geeksforgeeks.org/skip-list-set-3-searching-deletion/)

Strand Sort

1. [Strand Sort - GeeksforGeeks](https://www.geeksforgeeks.org/strand-sort/)

Arrays

1. [Array Data Structure - GeeksforGeeks](https://www.geeksforgeeks.org/array-data-structure/)
2. [Data structures Tutorials - Arrays](http://www.btechsmartclass.com/data_structures/arrays.html)
3. [Circular array - GeeksforGeeks](https://www.geeksforgeeks.org/circular-array/)

Array Rotations

1. [Program for array rotation - GeeksforGeeks](https://www.geeksforgeeks.org/array-rotation/)

Arrangement Rearrangement

1. [Array Rearrangement - GeeksforGeeks](https://www.geeksforgeeks.org/array-data-structure/array-rearrangement/)

Searching and Sorting

1. [Difference between Searching and Sorting Algorithms - GeeksforGeeks](https://www.geeksforgeeks.org/difference-between-searching-and-sorting-algorithms/)

Optimization Problems

Matrix

1. [Matrix Archives - GeeksforGeeks](https://www.geeksforgeeks.org/matrix/?ref=ghm)

Sparse Matrix

1. [Data Structures Tutorials - Sparse Matrix with an example](http://www.btechsmartclass.com/data_structures/sparse-matrix.html)