

CodeShows

Module - 2

Topics

- Sorting
- Searching
- Prefix Arrays
- Difference Arrays

Sorting

1) Bubble Sort

2) Insertion

3) Sort Quick

4) Sort Merge Sort 5) Heap

Sort

6) Library Implementations

Sorting Algorithms

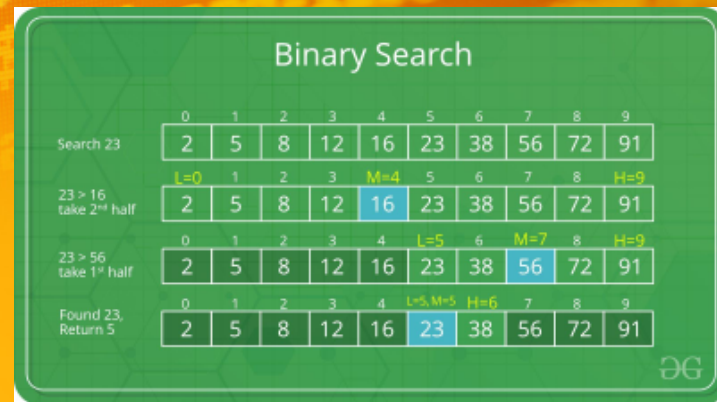
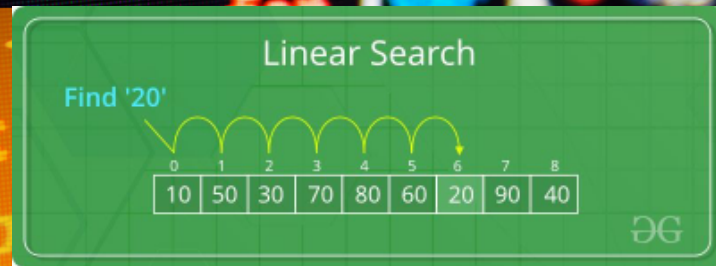


Sorting – Related Tasks

- Sort elements by frequency
- Count all distinct pairs with difference equal to k
- Find number of pairs (x, y) in an array such that $x^y > y^x$
- Count Inversions in an array (Merge Sort)

Searching

- ✓ Linear Search
- ✓ Binary Search
- ✓ Binary Search (Video)
- ✓ Binary Search Implementations
- ✓ Ternary Search

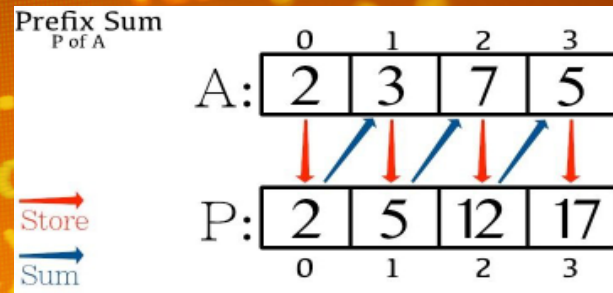


Searching – Related Tasks

- [Painter's Partition Problem](#)
- [Matrix Median](#)
- [Square Root of an Integer](#)
- [Search in Rotated Sorted Array](#)
- [CF1440A - Buy the String](#)
- [CF1408C - Discrete Acceleration](#)
- [ABC172C - Tsundoku](#)
- [SPOJ AGGRCOW](#)

Prefix Array

- ✓ Prefix Sum Array 1
- ✓ Prefix Sum Array 2
- ✓ Prefix Product Array
- ✓ Prefix Max Array
- ✓ Range Sum Queries
- ✓ Submatrix Sum Queries



Prefix Array - Related Tasks

- Subarray with Given Sum
- CF433B - Kuriyama Mirai's Stones
- CF363B - Fence
- CF1443C - The Delivery Dilemma
- CF835C - Star Sky

Difference Array

Difference Array - Range Updates

Difference Array

```
for i in range(len(A)):  
    if i==0:  
        diff[i] = A[i]  
    else:  
        diff[i] = A[i] - A[i-1]
```


Difference Array – Related Tasks

- [CF295A - Greg and Array](#)
- [CF816B - Karen and Coffee](#)
- [CF276C - Little Girl and Maximum Sum](#)
- [CF602B - Approximating a Constant Range](#)
- [CF1355C - Count the Triangles](#)

```
print("Thank You")
```

