

# Sorting Algorithms Report

## 1. Insertion Sort Asamaları

Baslangic: [22, 27, 16, 2, 18, 6]

1. adim: 27 zaten dogru yerde

[22, 27, 16, 2, 18, 6]

2. adim:  $16 < 27$  ve 22 sola kayar

[16, 22, 27, 2, 18, 6]

3. adim: 2 en kucuk en sola kayar

[2, 16, 22, 27, 18, 6]

4. adim:  $18 < 27$  ve 22 sola kayar

[2, 16, 18, 22, 27, 6]

5. adim:  $6 < 27, 22, 18, 16$  sola kayar

[2, 6, 16, 18, 22, 27]

Sonuc: [2, 6, 16, 18, 22, 27]

## 2. Big-O Gosterimi

Insertion Sort:

- Best Case:  $O(n)$

- Average Case:  $O(n^2)$

- Worst Case:  $O(n^2)$

Bu ornekte Big-O:  $O(n^2)$

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### 3. 18 Sayisi Hangi Case?

Sirali dizi: [2, 6, 16, 18, 22, 27]

18 sayisi dizinin ortalarinda yer aliyor.

Bu nedenle: Average Case

### 4. Selection Sort İlk 4 Adim

Baslangic: [7, 3, 5, 8, 2, 9, 4, 15, 6]

1. adim: 2 en kucuk 7 ile yer degistir

[2, 3, 5, 8, 7, 9, 4, 15, 6]

2. adim: 3 zaten dogru yerde

[2, 3, 5, 8, 7, 9, 4, 15, 6]

3. adim:  $4 < 5$  yer degistir

[2, 3, 4, 8, 7, 9, 5, 15, 6]

4. adim:  $5 < 8$  yer degistir

[2, 3, 4, 5, 7, 9, 8, 15, 6]

Sonuc: [2, 3, 4, 5, 7, 9, 8, 15, 6]