INCEPTION

C++ Foundation & Data Structures

Lecture 16 : Time Complexity Analysis

Sunday, 8 October 17

Any Doubts in Assignments

Order Complexity Analysis

Amount of time/space taken by the algorithm to run as a function of the input size

Experimental Analysis

- Selection Sort vs. Merge Sort

Theoretical Analysis

- Bubble Sort
- Selection Sort
- Insertion Sort
- Linear Search

Theoretical Analysis

- Binary Search
- Merge Sort
- Factorial
- Fibonacci

Complexity Analysis Examples

```
for (i=0; i<=n-1; i++){
   for (j=i+1; j<=m; j++){
       constant number of operations.
   }
}
```

Complexity Analysis Examples

```
for (i=0; i<=n-1; i++){
   for (j=i+1; j<=n; j++){
       constant number of operations.
   }
}
```

Complexity Analysis Examples

```
for (i=0; i<=n-1; i++){
   for (; i<=n; i++){
       constant number of operations.
   }
}
```

Complexity Analysis Examples

```
for (i=0; i<=n; ){
   for (j = 0; j<=m-1; j++){
       constant number of operations.
   }
   i = i + j;
}
```

What is space complexity?

What in case of recursion?

THANK YOU

CODING NINJAS

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