CE205 Data Structures Week-7

Linear, Binary and Fibonacci Search, Hashing and Hash Tables with Perpect Hashing

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# CE205 Data Structures

# Week-7

### Linear, Binary and Fibonacci Search, Hashing and Hash Tables with Perpect Hashing

Download [DOC](ce205-week-7-search-hashing.md_doc.pdf), [SLIDE](ce205-week-7-search-hashing.md_slide.pdf), [PPTX](ce205-week-7-search-hashing.md_slide.pptx)

### Outline-1

* Linear Search
* Binary Search
* Binary Search vs Linear Search
* Interpolation Search
* Interpolation search vs Binary search
* Fibonacci Search

### Outline-2

* Hashing and Hash Tables
* Direct-Address Tables
  + Hash Tables
  + Hash Functions
  + Open Adressing
  + Perfect Hashing

### Linear Search

* http://www.btechsmartclass.com/data\_structures/linear-search.html
* https://www.geeksforgeeks.org/linear-search/

### Binary Search

* http://www.btechsmartclass.com/data\_structures/binary-search.html
* https://www.geeksforgeeks.org/binary-search/
* https://visualgo.net/en/bst

### Binary Search vs Linear Search

* https://www.geeksforgeeks.org/linear-search-vs-binary-search/?ref=rp

### Interpolation Search

* https://www.geeksforgeeks.org/interpolation-search/

### Interpolation search vs Binary search

* https://www.geeksforgeeks.org/g-fact-84/?ref=rp

### Fibonacci Search

* https://www.geeksforgeeks.org/fibonacci-search/

### Hashing and Hash Tables

* https://www.hackerearth.com/practice/data-structures/hash-tables/basics-of-hash-tables/tutorial/
* http://www.btechsmartclass.com/data\_structures/hashing.html

#### Direct-Address Tables

* https://www.geeksforgeeks.org/direct-address-table/

#### Hash Tables

* https://www.tutorialspoint.com/data\_structures\_algorithms/hash\_data\_structure.htm

#### Hash Functions

* https://www.geeksforgeeks.org/what-are-hash-functions-and-how-to-choose-a-good-hash-function/
* https://www.tutorialspoint.com/cryptography/cryptography\_hash\_functions.htm
* https://www.cs.hmc.edu/~geoff/classes/hmc.cs070.200101/homework10/hashfuncs.html

#### Open Adressing

* https://www.geeksforgeeks.org/hashing-set-3-open-addressing/

#### Perfect Hashing

* https://en.wikipedia.org/wiki/Perfect\_hash\_function#:~:text=In%20computer%20science%2C%20a%20perfect,constant%20worst%2Dcase%20access%20time.