

Data Structures

# Searching Technique - Introduction



CODE  
FOR THINGS

# Introduction

# Data Structure – Searching Techniques

## Introduction



What ?

Why ?

# Introduction



Mr A



Mr B



library

# Introduction



Mr A



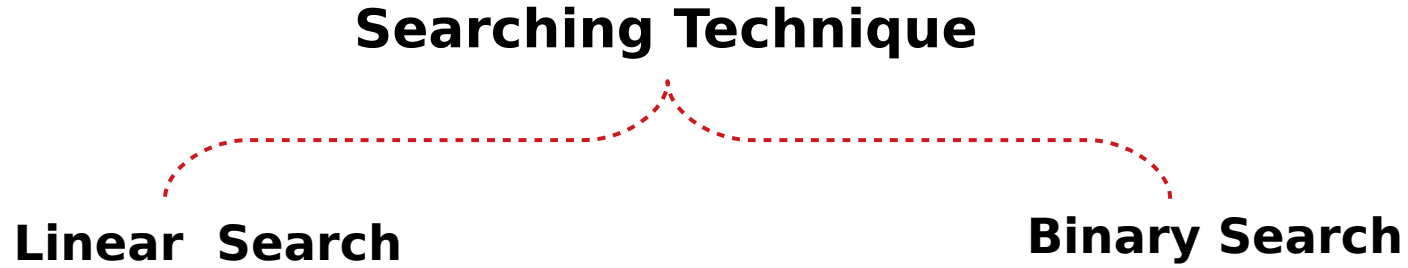
Mr B



library

A Search Algorithm is a method of locating a specific item of information in a larger collection of data

# Types



# Types

## Searching Technique

### Linear Search

- Simple
- Sorted /Unsorted
- $O(n)$

### Binary Search

# Types

## Searching Technique



### Linear Search

- Simple
- Sorted /Unsorted
- $O(n)$

### Binary Search

- Fast and Efficient
- Sorted
- $O(\log_2 n)$



# Linear Search

- arr[SIZE]

SIZE = 10



# Linear Search

- arr[SIZE]

SIZE = 10

Key = 6

2	3	10	22	5	6	9	12	34	88
arr[0]	arr[1]	arr[2]	arr[3]	arr[4]	arr[5]	arr[6]	arr[7]	arr[8]	arr[9]

# Linear Search

- arr[SIZE]

SIZE = 10

Key = 6

2	3	10	22	5	6	9	12	34	88
arr[0]	arr[1]	arr[2]	arr[3]	arr[4]	arr[5]	arr[6]	arr[7]	arr[8]	arr[9]

# Linear Search

- arr[SIZE]

SIZE = 10

Key = 6

2	3	10	22	5	6	9	12	34	88
arr[0]	arr[1]	arr[2]	arr[3]	arr[4]	arr[5]	arr[6]	arr[7]	arr[8]	arr[9]

# Linear Search

- arr[SIZE]

SIZE = 10

Key = 6

2	3	10	22	5	6	9	12	34	88
arr[0]	arr[1]	arr[2]	arr[3]	arr[4]	arr[5]	arr[6]	arr[7]	arr[8]	arr[9]

# Linear Search

- arr[SIZE]

SIZE = 10

Key = 25

2	3	10	22	5	6	9	12	34	88
arr[0]	arr[1]	arr[2]	arr[3]	arr[4]	arr[5]	arr[6]	arr[7]	arr[8]	arr[9]

# Linear Search

- arr[SIZE]

SIZE = 10

Key = 25

2	3	10	22	5	6	9	12	34	88
arr[0]	arr[1]	arr[2]	arr[3]	arr[4]	arr[5]	arr[6]	arr[7]	arr[8]	arr[9]

# Linear Search

- arr[SIZE]

SIZE = 10

Key = 25

2	3	10	22	5	6	9	12	34	88
arr[0]	arr[1]	arr[2]	arr[3]	arr[4]	arr[5]	arr[6]	arr[7]	arr[8]	arr[9]



# Linear Search

- arr[SIZE]

SIZE = 10

Key = 25

2	3	10	22	5	6	9	12	34	88
arr[0]	arr[1]	arr[2]	arr[3]	arr[4]	arr[5]	arr[6]	arr[7]	arr[8]	arr[9]

# Linear Search

- arr[SIZE]

SIZE = 10

Key = 25

2	3	10	22	5	6	9	12	34	88
arr[0]	arr[1]	arr[2]	arr[3]	arr[4]	arr[5]	arr[6]	arr[7]	arr[8]	arr[9]

# Linear Search

- arr[SIZE]

SIZE = 10

Key = 25

2	3	10	22	5	6	9	12	34	88
arr[0]	arr[1]	arr[2]	arr[3]	arr[4]	arr[5]	arr[6]	arr[7]	arr[8]	arr[9]

Time Complexity = No of Comparisions  
=  $O(n)$

# Algorithm -Linear Search