Arrays

Definition of an Array

List of Elements of the same type

placed in a contiguous memory location

Operation in Arrays

- Create
- Input
- Output
- Update

Creating an Array

dateType arrayName[ ] = new dataType[size]

Input/Output

Passing arrays as argument

Linear Search

find the **index** of element in a given array

key = 10

| 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 |

Largest Number

find the largest number in a given array

1	2	6	3	5

Binary Search

prerequisite – sorted arrays

key = 10

| 2 | 4 | 6 | 8 | 10 | 12 | 14 |

Pseudo Code

2	4	6	8	10	12	14

start=0, end=n-1

while(start <= end)

    find mid

    compare mid & key

        mid == key   FOUND

        mid > key   LEFT

        mid < key   RIGHT

Time Complexity

2	4	6	8	10	12	14

Iteration 1

Iteration 2

Iteration 3

Iteration 4

Reverse an Array

2	4	6	8	10

Pairs _in an Array_

| 2 | 4 | 6 | 8 | 10 |

(2, 4) (2, 6) (2, 8) (2, 10)

(4, 6) (4, 8) (4, 10)

(6, 8) (6, 10)

(8, 10)

Print Subarrays

2	4	6	8	10

a continuous part of array