Arrays

Static | Dynamic Arrays

Static

→ fixed capacity

→ Determine the capacity, @ compile time

→ can't change the capacity later

Dynamic Arrays

→ has its own inner static array with the fixed size

→ Once this inner static array of our dynamic array reaches capacity our dynamic array will declare and instantiate a new array with an increased capacity.

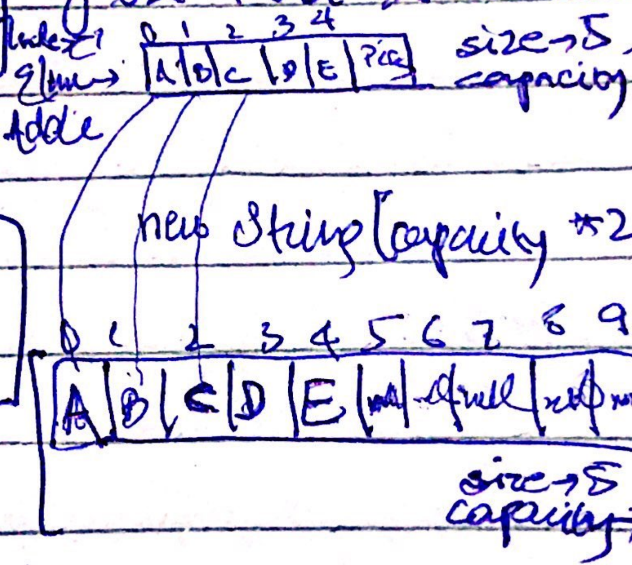
→ usually the increased capacity is (1.5 – 2) times of our inner static arr

e.g. new String[capacity]; elements occupied

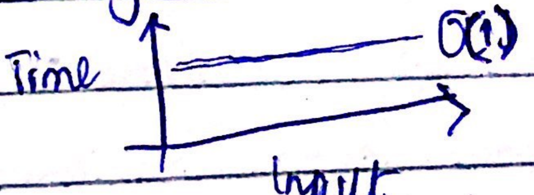
Index →	0	1	2	3	4	5
Element →	"A"	"B"	"C"	"D"	"E"	null
Memory Addr →	27 Str	29 Alpha Str	31 Brave Str	33 ...	35	37

size=5

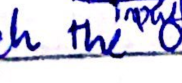
capacity=6



→ Randomly access elements O(1):



→ Searching for stored values: O(n)



→ we start from index zero

→ iterate over array until we reach the desired value or en

incase we don't find

Static Array

- → Insertion, Deletion is very time consuming.

Dynamic Array

- → Insertion and Deletion is similar to static array, where shifting takes time.

Adv	Disadv
→ Random access of elements O(1)	→ wastes more ~~time~~ memory
→ Good locality of reference and data cache utilization	→ shifting elements is time consuming O(n)
→ Easy to insert/delete at the end.	→ Expanding/Shrinking the array is time consuming