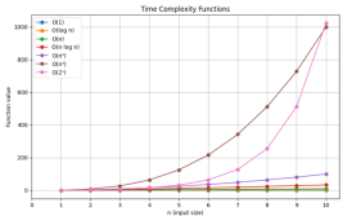
1027期中review

2025年10月27日　上午 09:08

Basic Concept

DS　　ADT：specification of operation for a data structure

complexity < Time performance evaluation
space



Pointer Manipulation

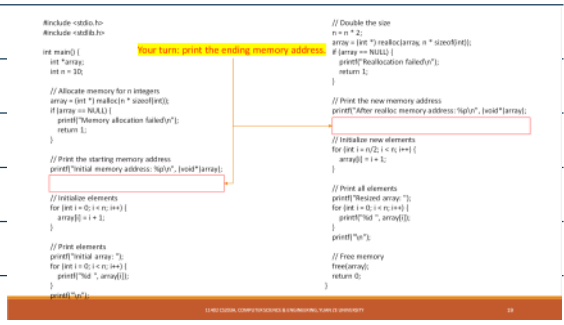
Data Structure

- Array

get value by index [0][1][2][3][4][5]　memory continuous
↓
random access

create < dynamic malloc realloc　　# temp
static → int a[5]

realloc(array, size)
↓ pointer

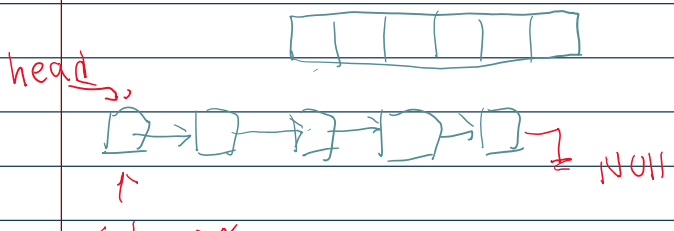


insertion O(1)

deletion O(1)　algorithm < selection sort
bubble sort
insertion sort

search O(n)

- Linked list



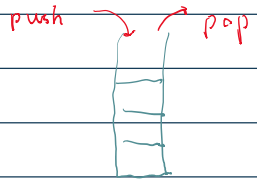
start → head　　data
pointer to next

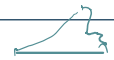
end → NULL

	array	Linked list	
insertion	O(n)	→ O(1)	random access
deletion	O(n)	→ O(1)	

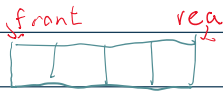
(due to data shiftity)

- Stack

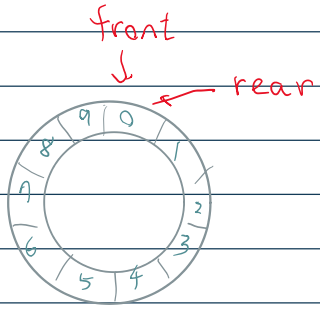




- Quene



linear → circular



ADT

basic { create, push, pop

status { isEmpty, isFull

basic { create, enquene, dequene

status { isEmpty, isFull