```
Week 3.a
CS3650
01/22 2024
https://naizhengtan.github.io/24spring/

(continued from last time)
5. C strings
6. C arrays
7. struct and malloc
8. IO
9. main function
--------------------
```

Admin

- String   Q: What is a string?
                    ↳ a seq of char

```
  0 1 2 3 4
"hello"
```

len char index   mem

| 5 | 'e' | 1 | 'h' | 0 | 'l' | 3 | 'l' | 2 | 'o' | 4 |

hello

C:

| h | e | l | l | o | '\0' |

NULL
1B:
00000000 B
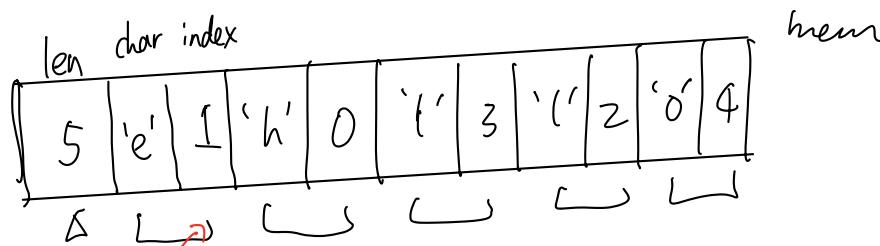
hello
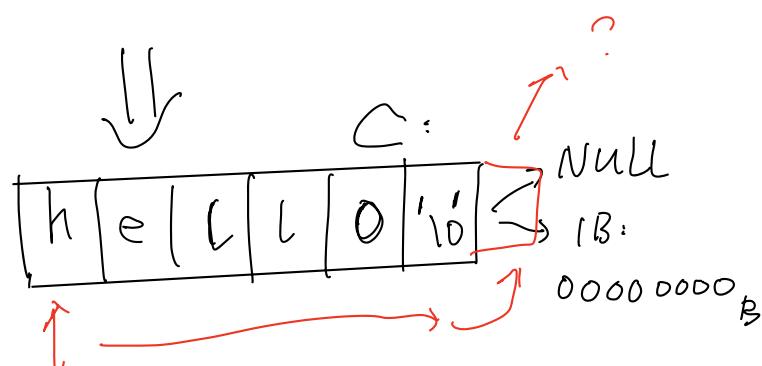
C

array:

↳ a seq of units.
→ a seq of units, in a contiguous piece of Mem

```
int
arr      4B 4B
```

| | | | |

char str[] = "abc";
char *str = "abc";

int a[] 0 1 2 Mem

| 1 | 2 | 3 |

&a → address

&a[2] → address

a+1
a+2
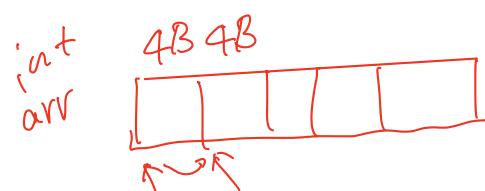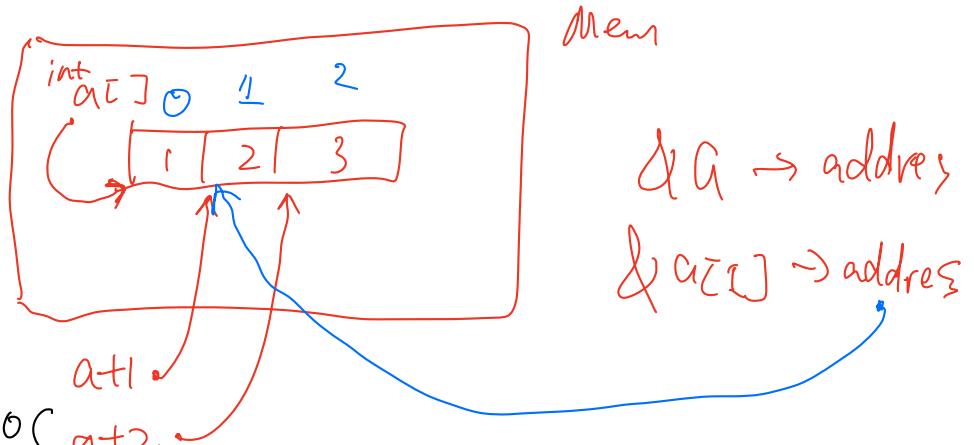
- struct & malloc
  ↳ a collection of different type.

Mem

12B
8B t id 4B int
    name char *
       1 1
&t = ADRESS

int * a;
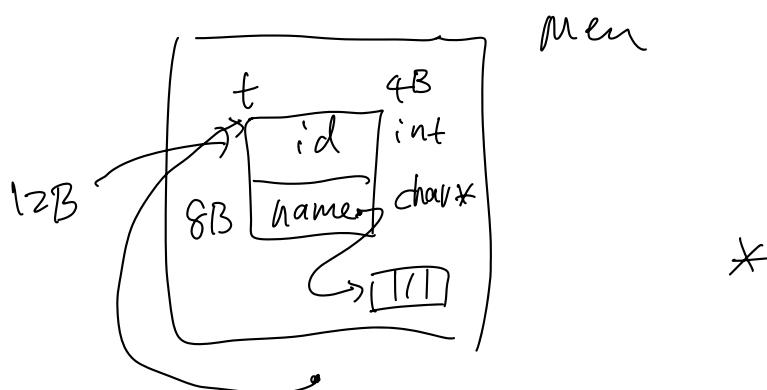
int ** Ptrptr;

X Address
Y Address
       a b E
       ∆
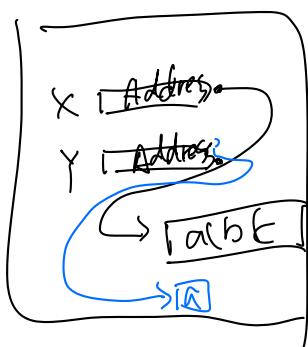
**Ptrptr * *a;

- malloc.

void * malloc (size_t size);

Studen
int
char *
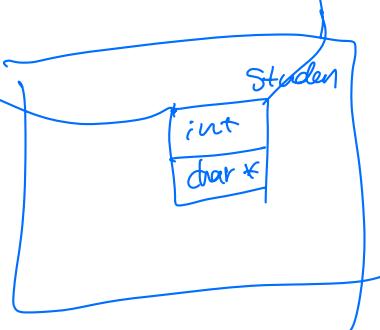
void free (Void * ptr);

- ZO
  - printf
  - file ZO : open/read/write/close

    syscalls