

CS202 Review Session 2

1. Recording + Attendance.

2. C review

a. Stack and heap memory

b. Array and string

c. String concatenation

d. Struct.

3. Lab 2 overview

a. Motivation

b. File definition

c. File permission

d. Flags

e. Functions

f. Helper functions

g. Test output.

4. Q&A

concurrency.

2. C review The C Programming Lang. K&R

a. stack and heap.

stack:

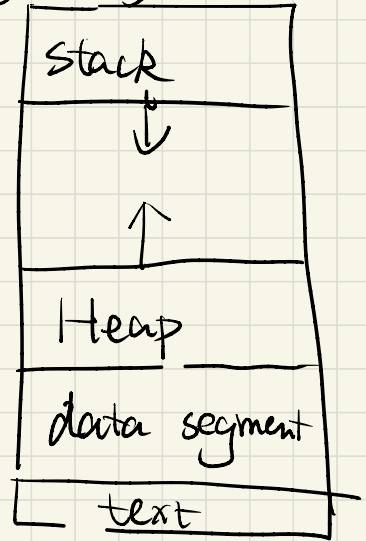
features: temporary.

example: $\{$
int a=0;
 $\}$

heap

features: dynamic.

examples: malloc
free.



$\{$ malloc
 $\}$



data segment.

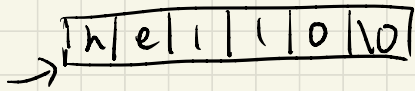
features static
global

examples

int i;
main
 $\{$
 $\}$

b. Array & string K & R Chap 5.

"hello"



```
int a[2];  
int *b;  
*a b[1]
```

4 ways to initialize string

① char a[b] = "hello";

② char *b = (char *) malloc (sizeof(char)

③ char c[] = "hello"; *b);

④ char *d = "hello";
*d[1] = 'b';

c. String concatenation

sprintf (s, " ") ← ;

printf (

d. Struct Chap 6. K & R.

```
struct student {  
    int age  
    char * name  
};
```

} *

```
struct student alice;
```

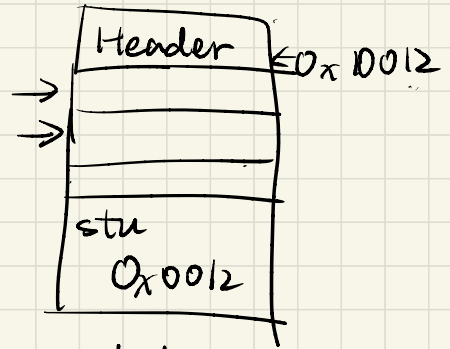
```
struct student *stu;
```

```
stu = &alice
```

```
alice.age
```

```
stu -> name;
```

```
(*stu).name; // def.
```



```
typedef * str_stu;
```

```
str_stu Jack;
```

```
#define A B.
```

```
struct student * get_student ();
```

3. Lab 2 overview

a. Motivation

①

② man

b. File definition

" .. "

ls. .. ← parent
file.c
text.tx
← correct dir

c. File permission

~/home : current location
../home
.. : ~/

rwX. r-- ls -l.

—	—	—						
↑	↑	↑	read	write	execute			
user	group	everyone	111	100				
			7	4.			110	
							or 100	
							—	
							110	

perm = perm | 0b100. ;

(or)

d. Flags -a -n ls -l
-n

getopt()

[see demonstration].

e. Functions
opendir.
readdir.

f. Helper functions

g. Test output.

diff text1.txt text2.txt.