

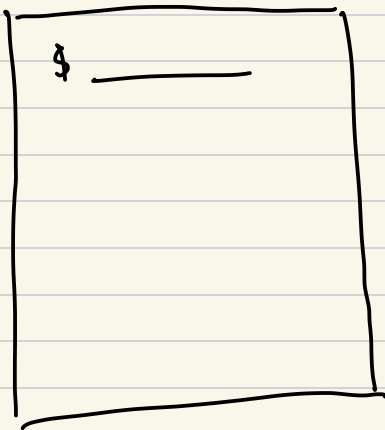
# CS 315-02 C Review

Setup Help Today

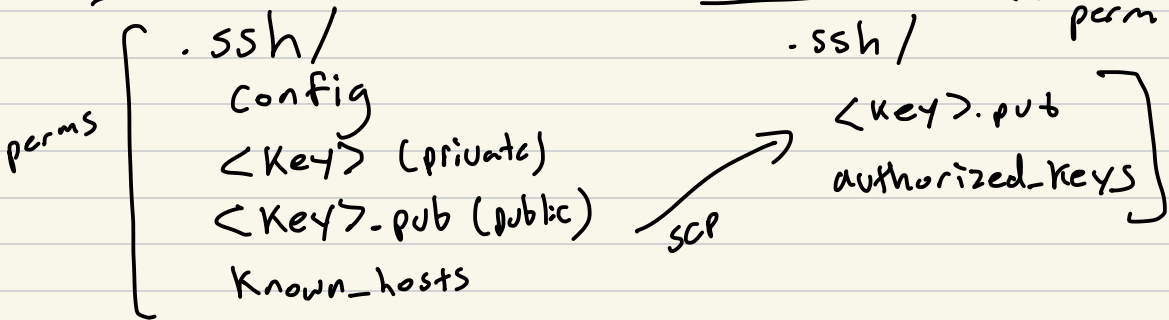
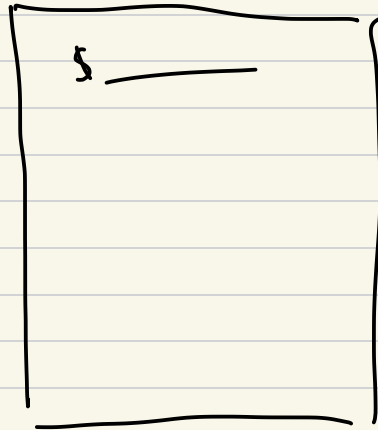
Office 4:30 pm - 5:00 pm HP 412A

ssh

laptop



stargate



# C Programming Language

## compiled

gcc -o hello hello.c

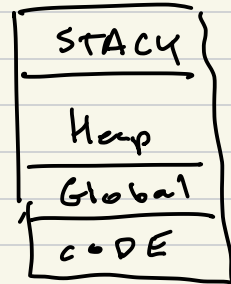
                  ↑                  ↑  
                 executable          source

---

## C constructs

Functions

↑  
code



Data - variables

global

Stack (local vars)

Statements

heap

malloc()  
free()

x = 3; assignment

printf("hi\n"); function statement

```
if (x > 0) {  
    x = x - 1;  
}
```

```
for (i = 0; i < 10; i++) {  
    printf("i = %d\n", i);  
}
```

```
while (c)
```

```
switch ( )
```

Expressions

```
3  
x + 1  
x > 0
```

Functions

```
int add_2 (int x) {  
    return x+2;  
}
```

return value type      parameter      body

}

Statically typed.

a = 1;

Strings

```
char str[] = "hello";
```

string literal

String are null terminated

# Data Types

primitive (scalar)

`int`      -2, -1, 0, 1, 2, ...  
                9  
4 bytes

Char 'a', '#', '0', '9' byte  
8 bits

float 3.14

double 3.14

## derived types

array      int a[]

structs

pointers

foo (int \*p)

p  
\*p

[address]  
qi

address

Stack

~~X~~ (1)

main ( ) {

int x

foo(x)

}