CS 3/5 01

- Balancing Lab sections
- SD card reader/writer
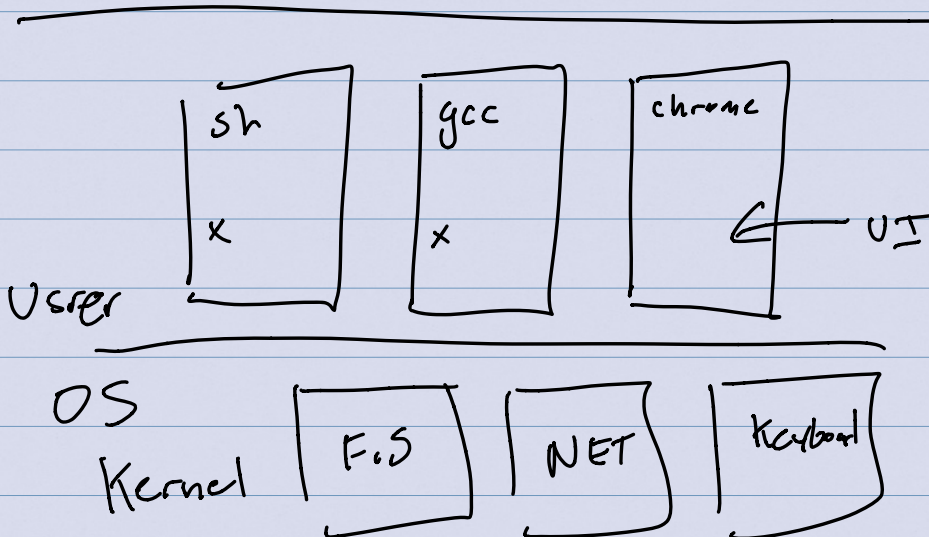- command line /shell basics
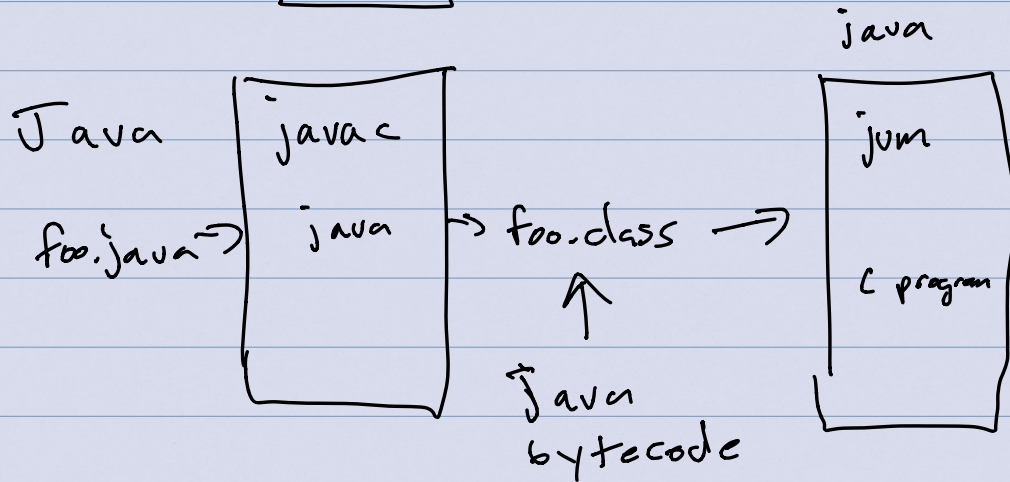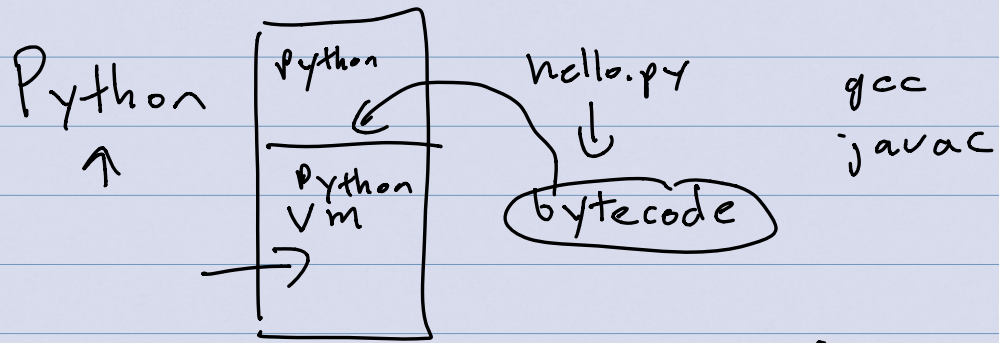- ssh
- C program memory layout
- File I/o with FILE struct
  - Cat, cp, word count

Python

↑

Python
Python Vm

hello.py

↓

(bytecode)

gcc
javac

Java

foo.java →

| javac |
| java |

→ foo.class →

↑

Java bytecode

java

| jvm |
| |
| C program |

C code

.c

```
main() {
  int x=1;
  int y=2;

  x = x+y
}
```

→ gcc → .o
machine code

↙ 2GB

n

.c

```
int foo (int x)
  {
    retur x+1;
  }
```

STACK

↓

DATA HEAP ← ———— malloc/free

DATA STATIC

CODE

0

(int x;)

```
int foo (int x ) {
      int a;
      int b;          local
      a = 1;
      b = 2;
  →  return a + b + x;
  }
```

start

```
main ( )    {
      int x = 3;
      int y;

      y = foo(x);
  }
```

n

main

SP

SP

STACh

x

Y

a

b

X

activation frame
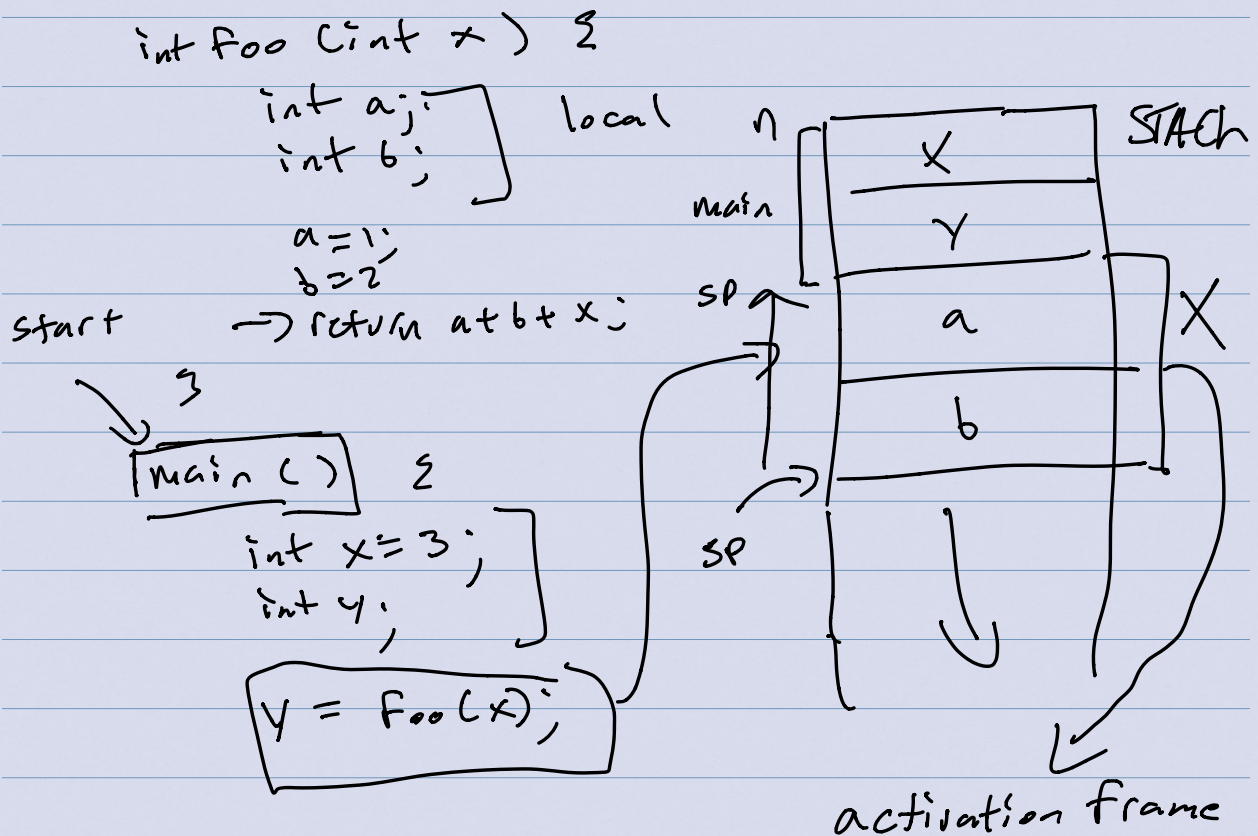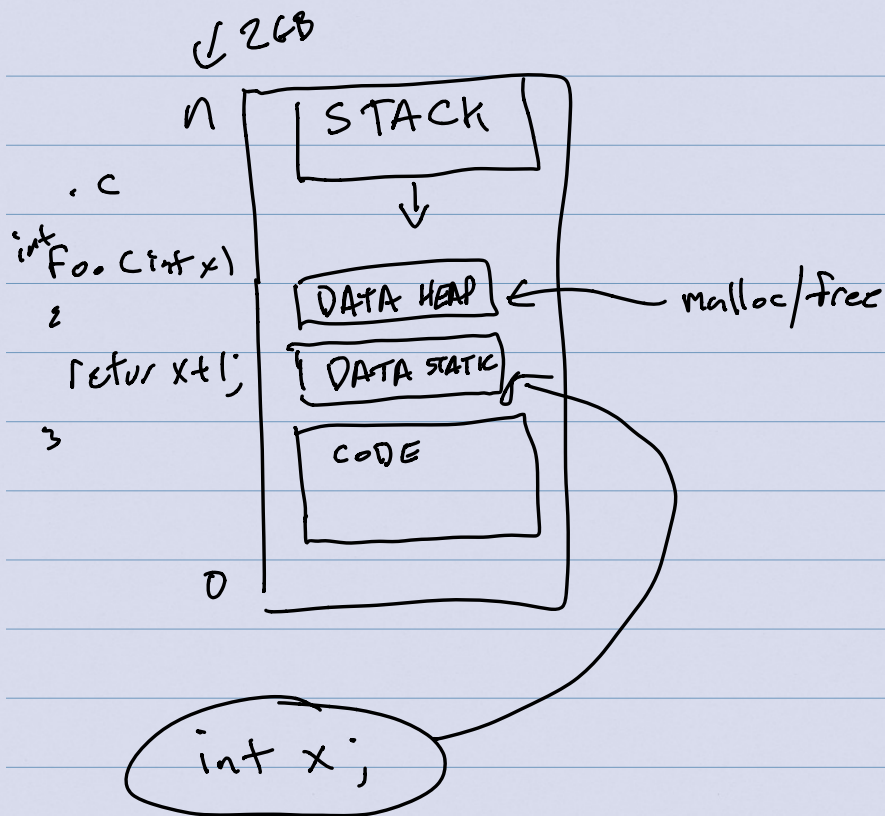
FILE I/O

replace <u>input</u> <u>output</u> Kayl valvel

<u>bytes</u>   8 bit   0-255   256

arral

| h | e | l | l | o | \n | | |
0   1   2
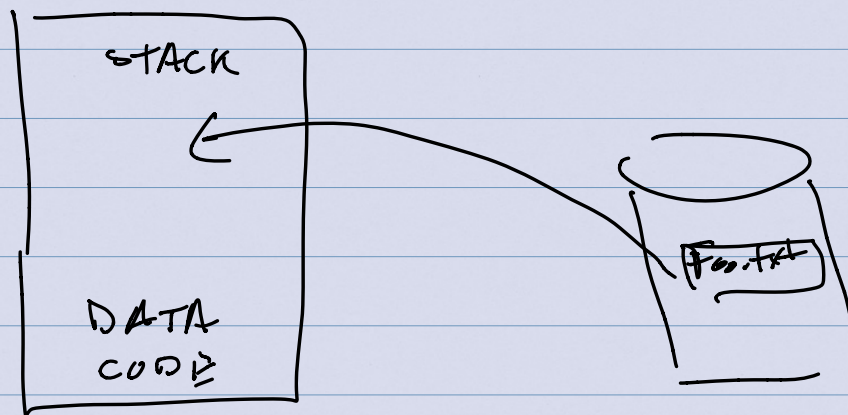
FILE

[FIRST] ⟶ Greg

wcount input
↑

count the number of words

| The | quick | brown | fox. | \n |

↑ ↑

4 words

whitespace '␣' '\t' '\n'

Foo\n
Goo