

CS326-02 User Memory

Lab02/Lab03 Q&A

write() vs fprintf() vs printf()

Similar
but fprintf() allows
you to specify the
output file descriptor

write() is a system call

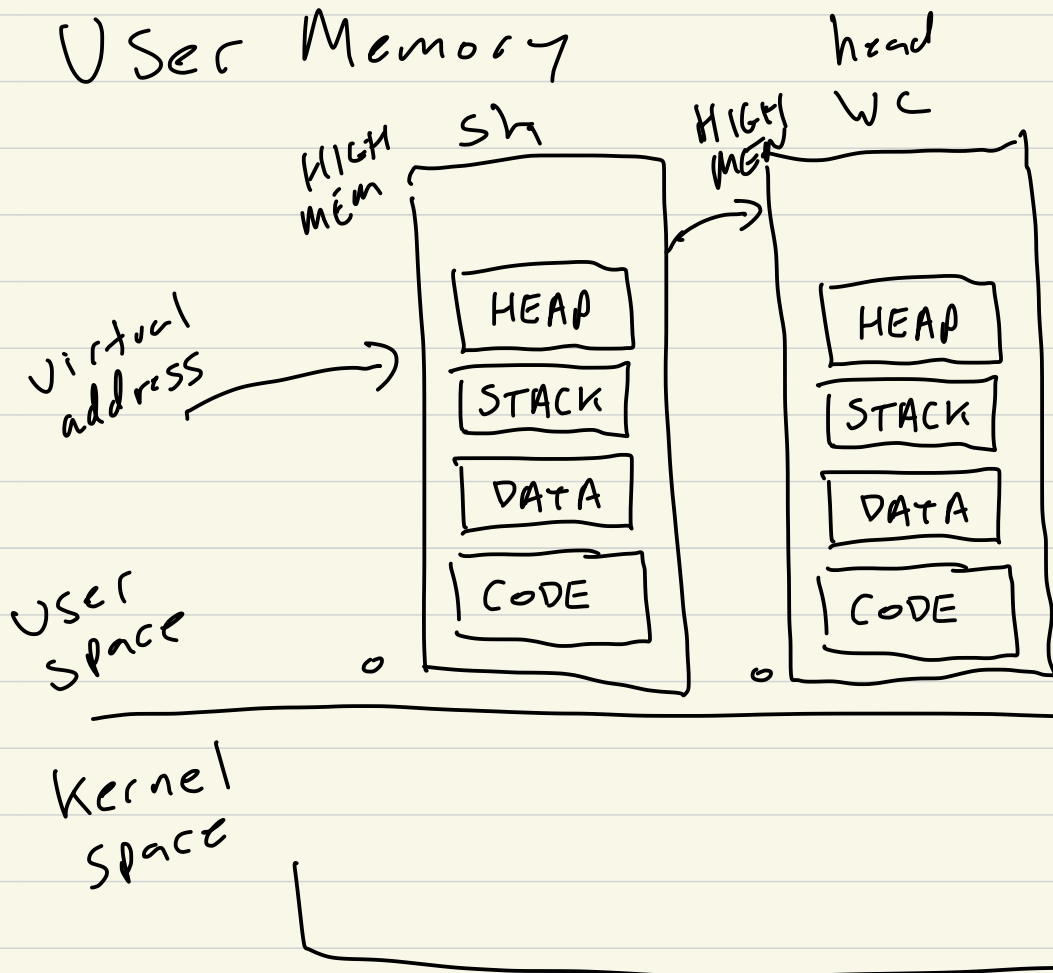
int write(int fd, char *buf, int n)

```
char buf[512];  
.  
.  
.
```

```
write(fd, buf, sizeof(buf));
```

512

strlen(buf)



Mem. C

```
int x = 3;  
int y = 4;
```

```
int  
foo(int d)  
{  
    [int z;  
    z = 9;  
    return d + z;  
}
```

3

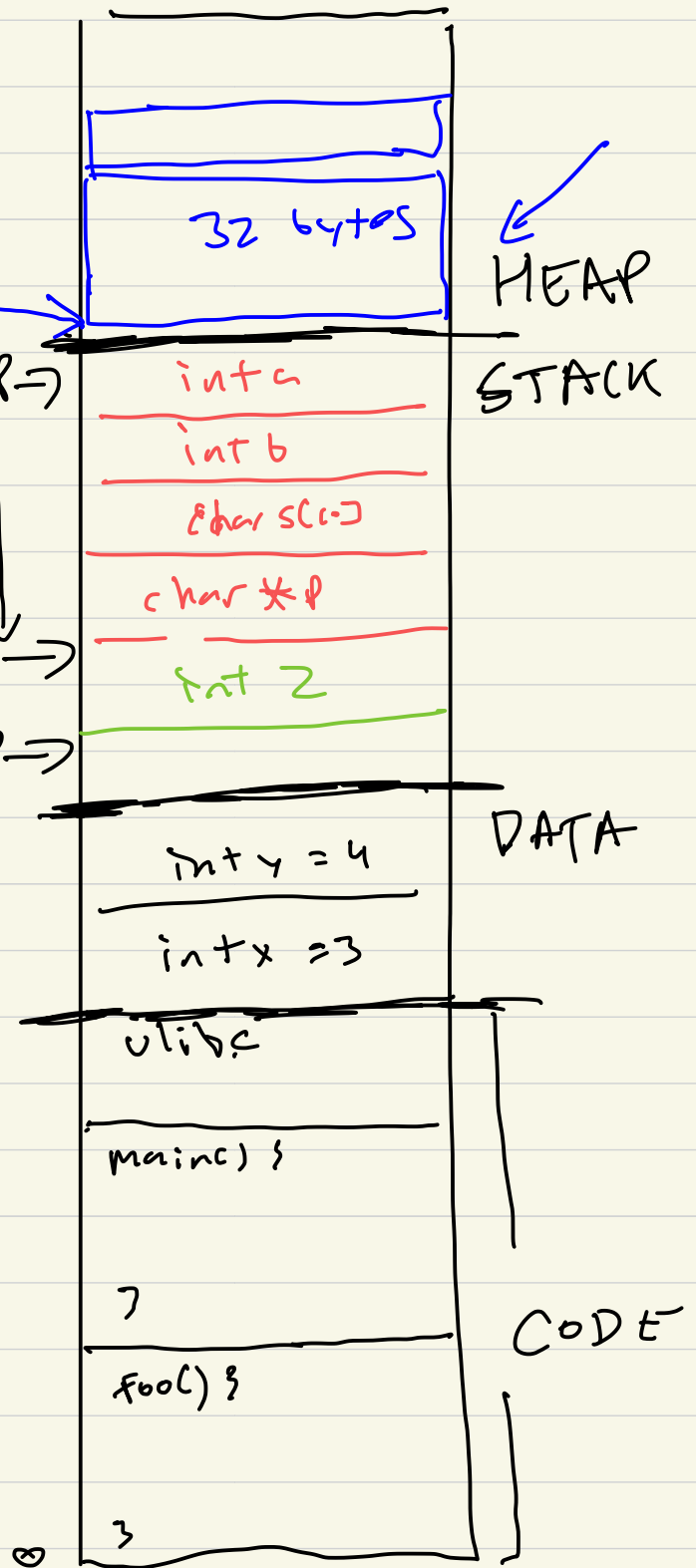
```
int  
main(int argc, char** argv)  
{
```

```
    int a;  
    int b;  
    char s[6];  
    char *p;
```

```
    p = (char*) malloc(32);
```

```
    d = foo(11);
```

```
    p[3] = 'A';
```



```
int *ap ;  
char *p ;
```

```
ap = (int *) malloc (10 * sizeof(int));
```

```
p = (char *) malloc (32);
```

```
ap[3] = 4;
```

```
p[3] = 'A';
```

Heap

xv6 system call

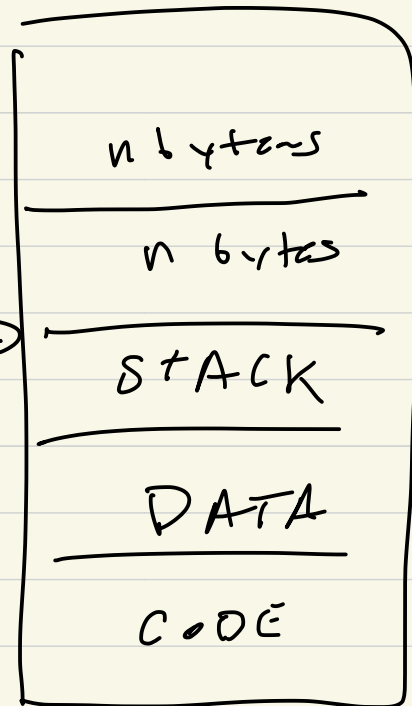
```
p = sbrk(n)
```

```
p2 = sbrk(n)
```

p2 break

break

p →



a = malloc()

b = malloc()

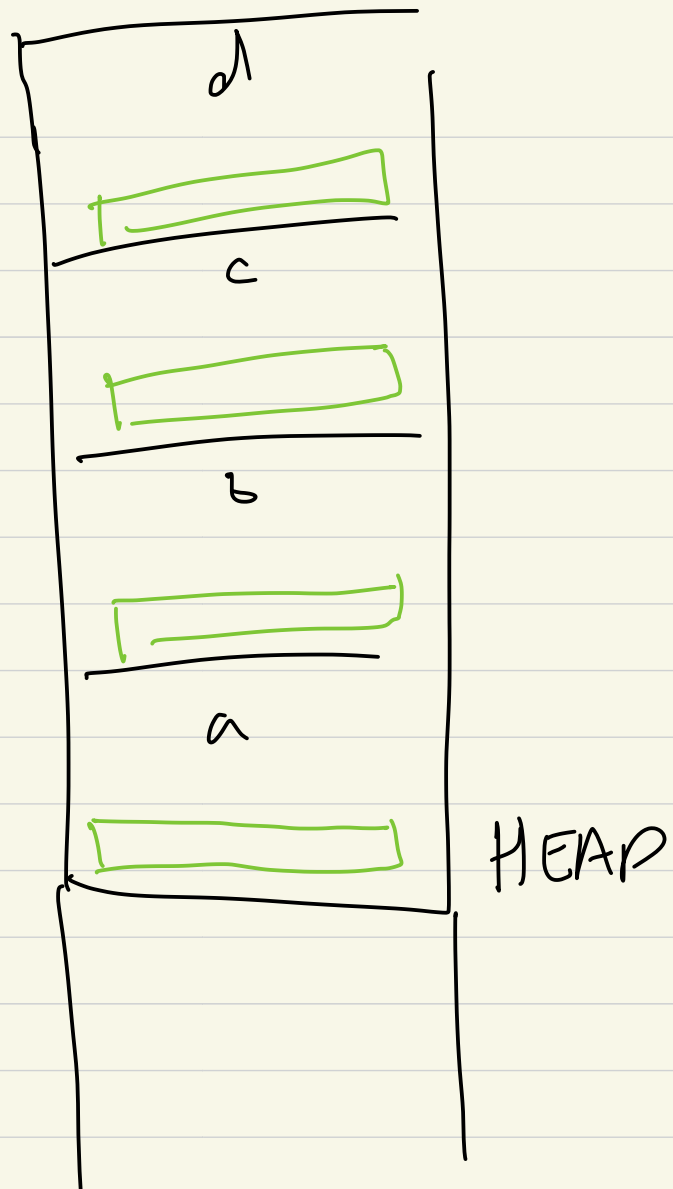
c = malloc()

d = malloc()

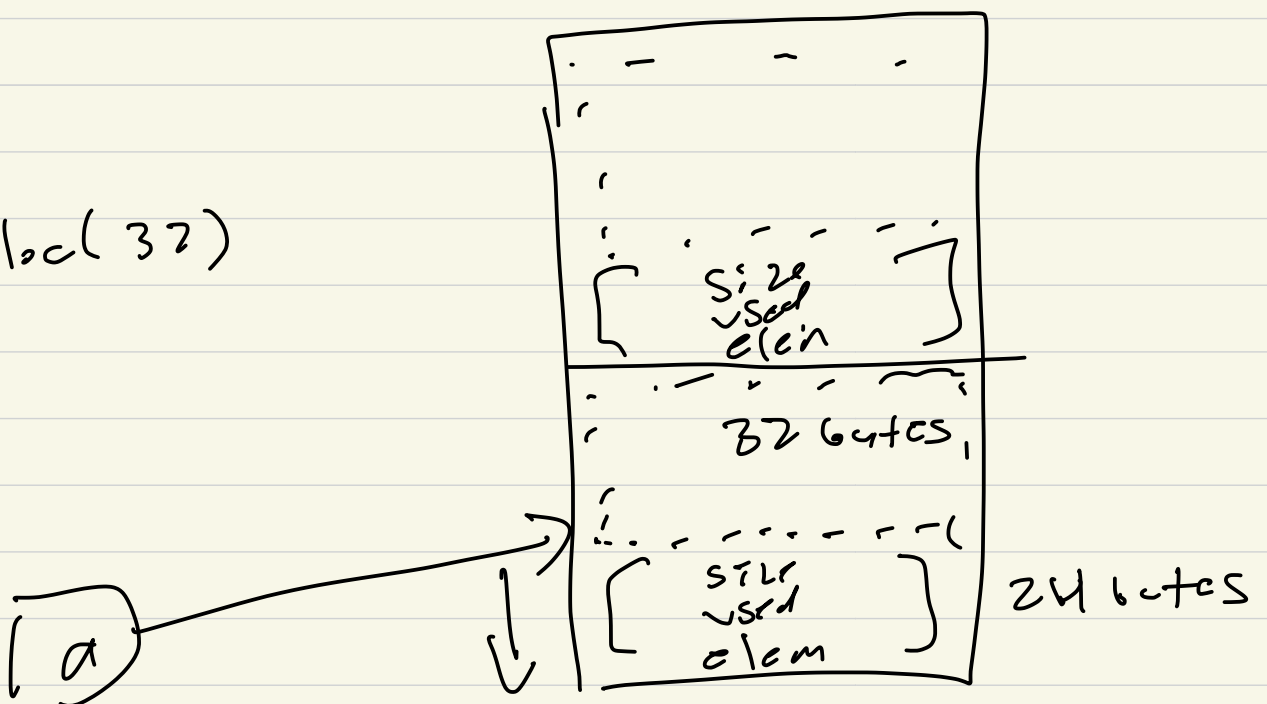
struct block_hdr {

struct list_elem elem;
int used;
int size;

}



a = malloc(32)



free(1)