

Objectives - Tue 3/26/2019

- Const
- Homework - backwards file reader

Const

equivale
const char * s = "m";
char const * s = "m";

OK

Do not change * s

address of a
constant char

char * const s = "m";

Do not change s

constant
address
of a
char

const

```
int *addr;  
// *addr is an address of an integer  
  
int const *addrOfConst;  
// *addrOfConst is a constant value  
  
int * const constAddr;  
// constAddr is a constant address  
  
int const * const constAddrOfConst;  
// constAddrOfConst is a constant address  
// *constAddrToConst is a constant integer
```

const - * *

```
int** addr;
```

```
// address of an address of an integer
```

```
int const** addr
```

```
// address of an address of a constant integer value
```

```
int* const* addr
```

```
// address of a constant address of an integer value
```

```
int** const addr
```

```
// constant address of an address of an integer value
```

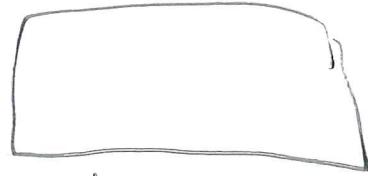
```
int const** const addr
```

```
// constant address of an address of a constant integer value
```

Const

- Protects you from your (and your collaborators' / users') mistakes
- Enables some optimizations.
- May lead to gcc errors
- Will not cause runtime errors (eg. Seg fault)
- Is "sticky" with addresses,

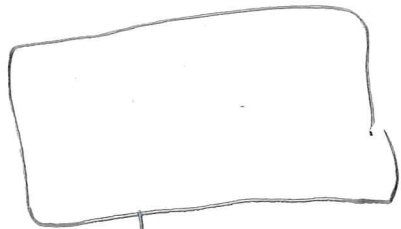
const



type



interchangeable



type

const

const - order

```
int const* addrOfConst;  
const int* addrOfConst;  
// *addrOfConst is a constant value
```

```
int const* const constAddrOfConst;  
const int* const constAddrOfConst;  
// constAddrOfConst is a constant address -AND-  
// *constAddrToConst is a constant value
```


const - order

```
int** addr;
```

// address of an address of an integer

```
int const** addr
```

// address of an address of a constant integer value

```
int* const* addr
```

// address of a constant address of an integer value

```
int** const addr
```

// constant address of an address of an integer value

```
int const** const addr
```

// constant address of an address of a constant integer value

*Do not modify addr
or **addr*

What may I NOT modify?

char const* s

Thinking

~~char~~ const* s



char* const s

~~char*~~ const s

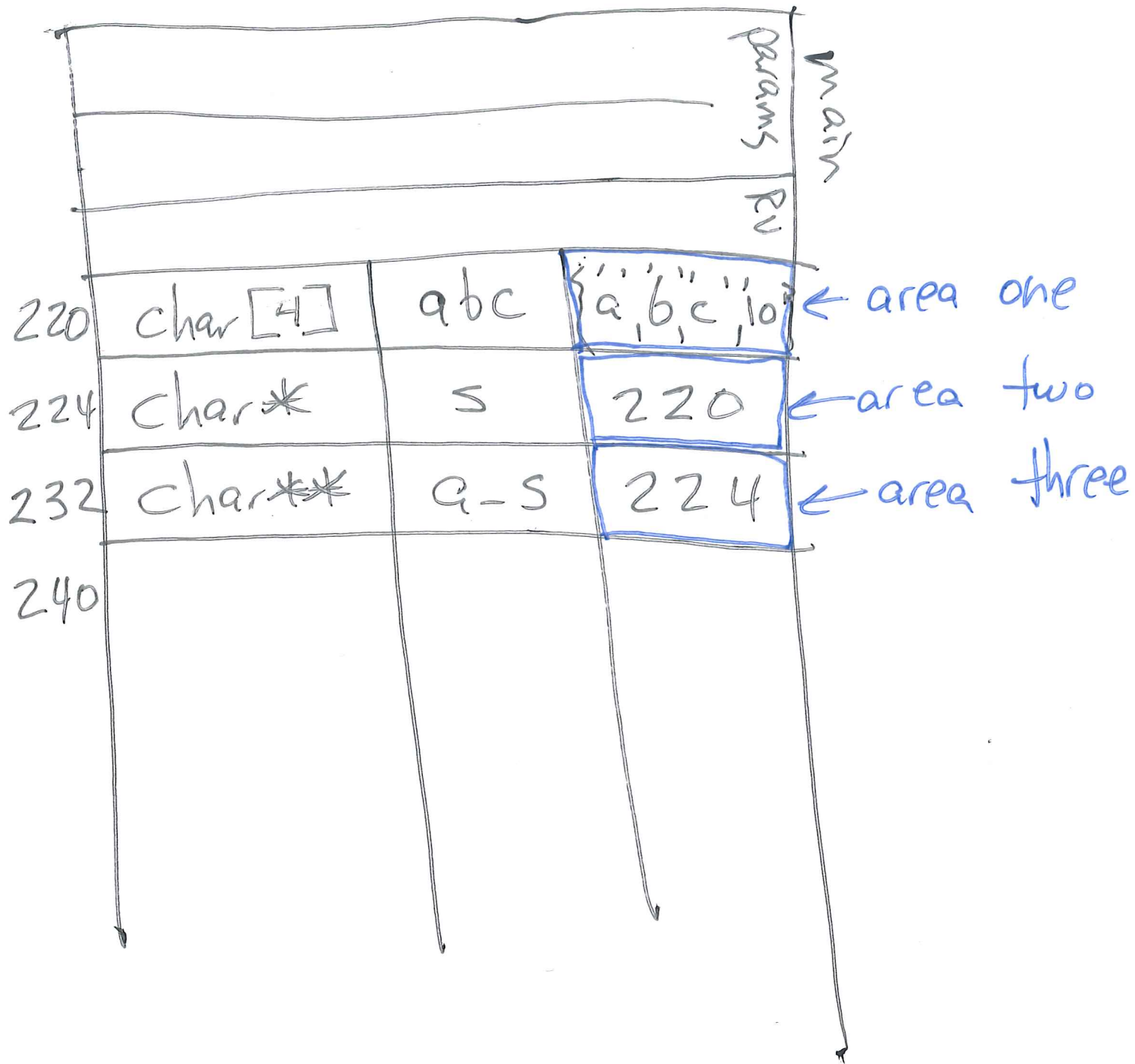


The part after ~~after~~ const is what must not be modified

int const ** a ;

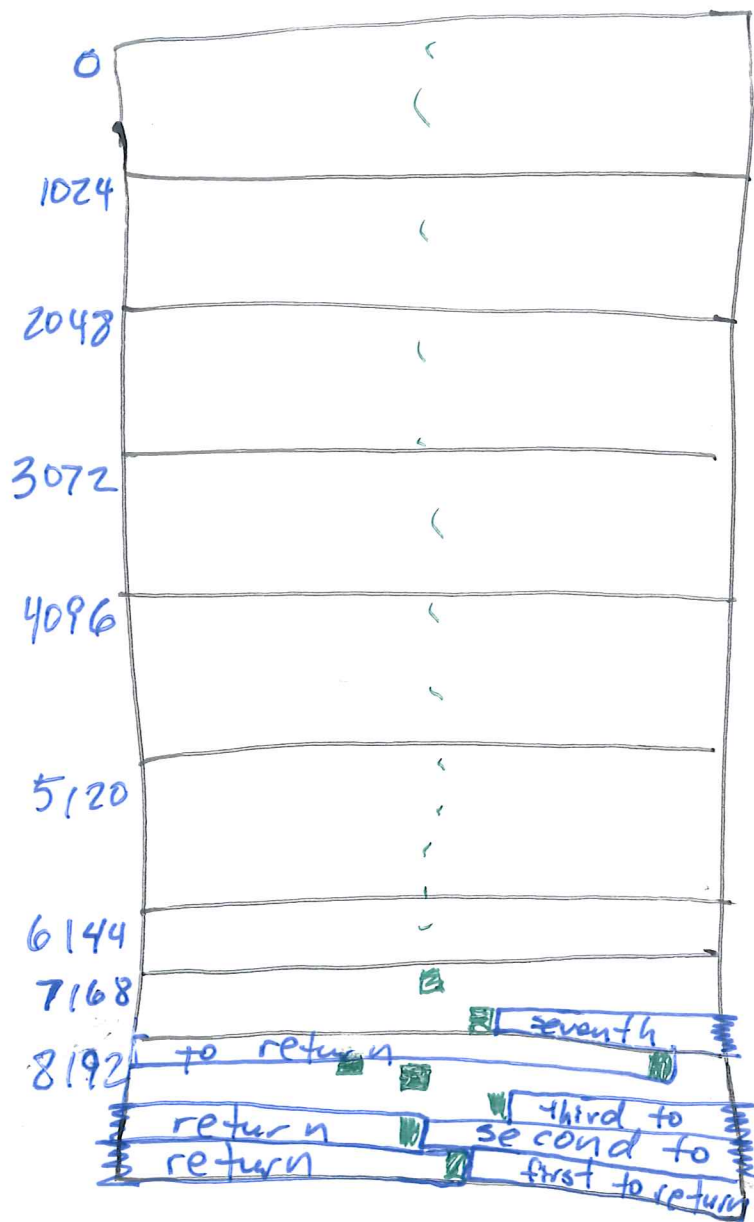
int* const * a ;

int** const a ;



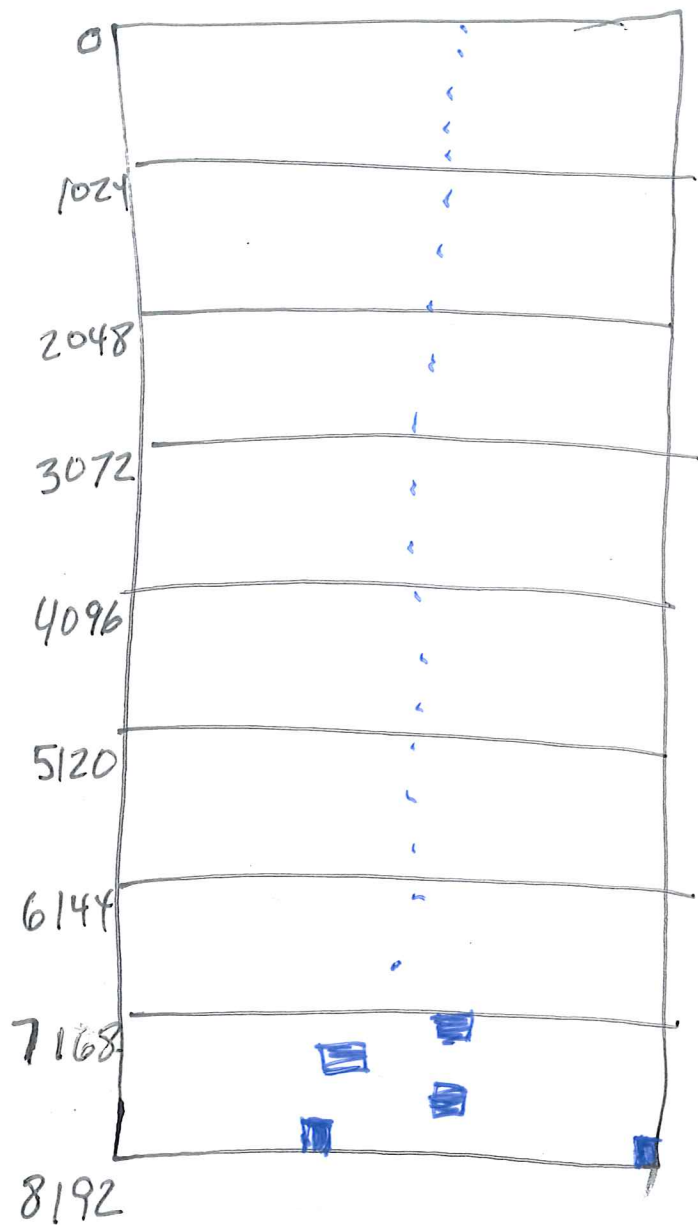
200	int	argc		params	main
204	char*[]	argv			
212	void*	 		RA	
220	char[4]	abc	a b c \0		
224	char*	s	220		
232					

```
int main (...) {
    FileWrapper * fw = create_file_wrapper("input1.txt");
    while (true) {
        char * error = NULL;
        char * s = read_line(fw, &error);
        if (s == NULL) {
            if (error != NULL) {
                fprintf(stderr, "%s", error);
            }
            break;
        }
        printf("%s", s);
    }
    free_wrapper(fw);
}
```



Suppose
 file is 8K (8192 bytes)

you designated
 your buffer-size
 as 1024 bytes.



8K (8192 bytes)

Assume:
buffer-size
is 1024
bytes

For you:
Try 128 bytes
for easy
testing



means '\n'

