

4/26/19

Ex 3 Mon 4/29

make up exam 5/1

(for anyone who missed an exam only)

Topics

Array sorting (1D arrays)

Array processing (1D & 2D arrays)

File IO

strings

sprintf/sscanf

Short answer / multiple choice

Predict the output (or value of some variable(s))

Write a function to ...

- strings

- call by value & call by address

Sorting arrays

main

```
int x[] = { 30, 40, 10, 50, 20 };
```

```
int size = sizeof(x) / sizeof(int);
```

I will write →

```
sort(x, size);
```

```
for (i=0; i < size; i++)
```

```
    printf("%d \n", x[i]);
```

```
void sort(int a[], int n)
```

```
{
    int i, j, t;
```

```
    for (i=0; i < n-1; i++)
```

```
    {
```

```
        for (j=0; j < n-1; j++)
```

```
        {
```

```
            if (x[j] > x[j+1])
```

```
            {
```

```
                t = x[j];
```

```
                x[j] = x[j+1];
```

```
                x[j+1] = t;
```

```
            }
```

```
        }
```

```
    }
```

```
}
```

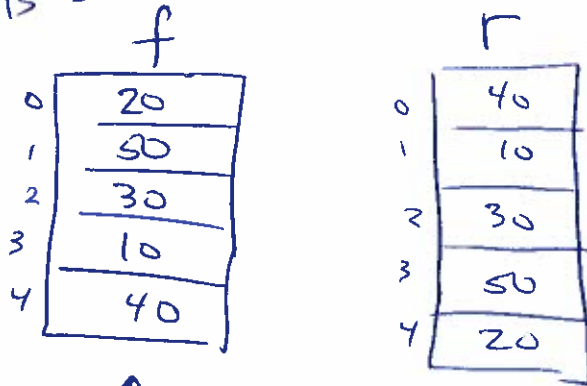
```
}
```

X	0	30	10 ^a
	1	40 10	30
	2	10 40	20
	3	50 20	40
	4	20 50	



// given arrays $f[]$ & $r[]$, each
 // n elements long write the reversed
 // $f[]$ array to $r[]$. Do NOT change
 // any locations of $f[]$

say n is 5



↑
 initial \Rightarrow WANT a

$$r[4] = f[0];$$

$$r[3] = f[1];$$

$$r[2] = f[2];$$

$$r[1] = f[3];$$

$$r[0] = f[4];$$

$$y = 4 - x \quad (\text{in this case})$$

in general

$$y = (n-1) - x$$

for ($i=0; i < n; i++$)

$$r[n-1-i] = f[i];$$

↑
 i

```
char s[] = { "ECE 160" },
```

```
printf( "%s", s ); // ECE 160  
s[4] = '2';
```

```
printf( "%s", s ); // ECE 260
```

```
gets_s( buf, size )
```

char array

size - 1

```
// write function with prototype
// int countupper(char s[]);
// This function should return the
// number of upper case characters
// in string
```

```
int countupper(char s[])
{
    int cnt;
    for (i=0; i < strlen(s); i++)
    {
        if ((65 <= s[i]) && (s[i] <= 90))
            cnt++;
    }
    return cnt;
}
```

S | T | h | e | | T | h | r | e | e | \0 |

version 2 ~~if~~ if (('A' <= s[i]) && (s[i] <= 'Z'))

version 3 if ((isupper(s[i])))

Some string functions

isupper()

islower()

isdigit()

isxdigit()

isalpha()

isalnum()

ispunct()

isspace()

var = toupper()

var = tolower()

↙ this does not
change