

comp1511 week 5

flex week next week!

announcements

- no tute/labs next week (flex week)
- assignment 1 exists :)

what's happening today?

- 2D arrays
- arrays and functions
- strings revision

2D arrays

- Warm Up: [Tic-Tac-Toe](#)
- Code Demo: tictactoe.c

	0	1	2	3
0				
1				
2				
3				

arrays and functions

modifying parameters & using functions with return values

Write the following function: `void square(int x);` which

- Takes in an integer `x`
- Modifies `x` so that it equals `x * x`

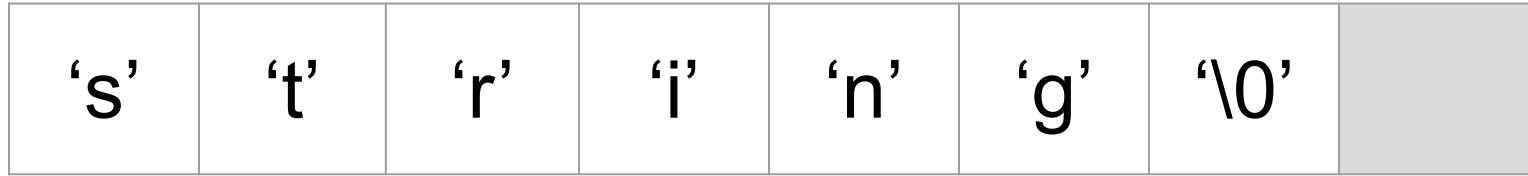
arrays and functions

modifying arrays

Write a function called `square_array`, which

- Takes in array (called `array`) of size `length`.
- Squares all elements inside the array.

what is a “string”



↑
NULL
terminator

why do we care about strings?

what's the difference about this code vs looping through a regular array?

```
#include <stdio.h>

// Manually prints out a string, one character at a time.
// Should behave like printf("%s\n");
void print_string(char *string) {
    int i = 0;
    while (string[i] != '\0') {
        printf("%c", string[i]);
        i++;
    }
    printf("\n");
}

int main (void) {
    char my_string[] = "Many chars";

    print_string(my_string);
    return 0;
}
```


strings practice:

given some functions related to chars, implement one of the following functions related to strings :)

```
// Functions to implement:

// 1.
// returns the number of lowercase letters in `char *string`
int count_lowercase(char *string);

// 2.
// modifies `char *string` by converting all its vowels to uppercase
void make_vowels_uppercase(char *string);

// 3..
// shortens a string so that it ends after the first word
// e.g. "This is a sentence" should turn into:
//      "This"
//
// (hint. what defines when a string ends?)
void delete_following_words(char *string);
```

helper functions

```
int is_lowercase(char c);
int is_uppercase(char c);
int is_letter(char c);
char to_lowercase(char c);
char to_uppercase(char c);
int is_vowel(char c);
```

see their implementation:

<https://cgi.cse.unsw.edu.au/~cs1511/22T3/tut/05/questions>