

# CSCI 1312 (Introduction to Programming for Engineering), Fall 2018

## Quiz 6 Solution

1. (5 points) Consider the following C program:

```
#include <stdio.h>
#define R 4
#define C 6
int main(void) {
    char chars[R][C];
    for (int r = 0; r < R; ++r) {
        for (int c = 0; c < C; ++c) {
            chars[r][c] = '.';
        }
    }
    chars[1][1] = '+';
    chars[1][C-2] = '+';
    chars[R-2][1] = '+';
    chars[R-2][C-2] = '+';
    for (int r = 0; r < R; ++r) {
        for (int c = 0; c < C; ++c) {
            putchar(chars[r][c]);
        }
        putchar('\n');
    }
    return 0;
}
```

If you compile and run it, what does it print?

**Solution:** The following lines will be printed.

```
.....
.+...+
.+...+
.....
```

2. (5 points) The C program below is meant to define and test a function that modifies a string by replacing everything except letters with periods.

```
#include <stdio.h>
void replace_all_but_letters(char * string);
int main(void) {
    char s[] = "Hello! Testing 1 2 3 4!";
    printf("Original line:\n");
    printf("%s\n", s);
    replace_all_but_letters(s);
}
```

```
    printf("Modified line:\n");
    printf("%s\n", s);
    return 0;
}
```

So, it should print the following line:

Original line:

Hello! Testing 1 2 3 4!

Modified line:

Hello...Testing.....

Write code for a function `replace_all_but_letters` so that it works as desired.

**Solution:** Here is one solution:

```
#include <string.h>
#include <ctype.h>
void replace_all_but_letters(char * string) {
    for (char * p = string; *p != '\0'; ++p) {
        if (!isalpha(*p)) {
            *p = '.';
        }
    }
}
```