Daniyal Khan

3765942

CS-2263

Assignment #1

Exercise 1:

```
#include <stdio.h>

#include <stdlib.h>


void printArray (char array[], int length);


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

    char array[] = {'H','e','l','l','o',' 
','W','o','r','l','d','!'};

    int length = sizeof(array);

    printArray(array, length);

    putchar('\n');

    return 0;

}


void printArray (char array[], int length) {

    for (int i = 0; i < length; i++) {

        putchar(array[i]);

    }

}
```


⌥⌘2
..ssignments/A1 (-zsh)
~/O/CS-XXXX/CS2263/Assignments/A1 main !5 ?2
05:31:26 PM
./a.out
Hello World!
~/O/CS-XXXX/CS2263/Assignments/A1 main !5 ?2
05:31:32 PM

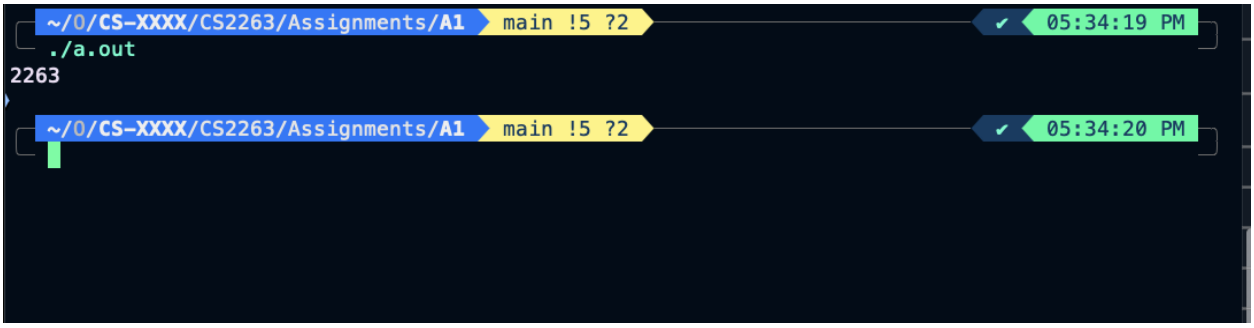
Exercise 2:

```
#include <stdio.h>
#include <stdlib.h>

void printEachNumber(unsigned int x);

int main (int argc, char ** argv) {
    unsigned int x = 2263;
    printEachNumber(x);
    putchar('\n');
    return EXIT_SUCCESS;
}

void printEachNumber(unsigned int x) {
    if (x == 0) {
        return;
    }
    int r = x % 10;
    printEachNumber(x/10);
    putchar(r + '0'); // Convert digit to char
}
```



Exercise 3:

```
#include <stdio.h>

#include <stdlib.h>

#include <string.h>


void printArray(char prompt[], int length);

void printEachNumber(unsigned int x);

void convertToDecimal(char binaryArr[], int length);


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

    char prompt[] = {

        'E','n','t','e','r',' ','a','
','b','i','n','a','r','y',' ',

        't','o',' ','b','e','
','c','o','n','v','e','r','t','e','d',' ',

        't','o',' ','d','e','c','i','m','a','l',':'

    };

    int promptLength = sizeof(prompt);

    printArray(prompt, promptLength);
```

```
    int i = 0;
    int ch;
    char binaryArr[32];
    while ((ch = getchar()) != '\n' && i < 31) {
        binaryArr[i] = ch;
        i++;
    }

    convertToDecimal(binaryArr, i);

    putchar('\n');
    return EXIT_SUCCESS;
}

void convertToDecimal(char binaryArr[], int length) {
    unsigned int result = 0;
    for (int i = 0; i < length; i++) {
        result = result * 2 + (binaryArr[i] - '0');
    }
    printEachNumber(result);
}

void printArray (char array[], int length) {
    for (int i = 0; i < length; i++) {
        putchar(array[i]);
    }
```

```
}


void printEachNumber(unsigned int x) {
    if (x == 0) {
        return;
    }
    int r = x % 10;
    printEachNumber(x/10);
    putchar(r + '0'); // Convert digit to char
}
```