ECE220 Computer Systems and Programming

Lab 4

1 After this week's lectures, you should be able to...

1. List 3 advantages of using functions in C.
2. Describe every step involved in building, using and tearing down a run-time stack.
3. Translate a piece of C code that involves function calls into LC-3.

2 After today's lab, you should be able to...

1. Write and implement functions in C.
2. Invoke functions in C with correct syntax and necessary arguments.
3. Capture and check return values of functions.

3 Exercises

1. In C, the ***break*** and ***continue*** keywords are commonly used in loops. When a ***break*** keyword is encountered inside a loop, the loop is immediately terminated and the program control resumes at the next statement following the loop. When a ***continue*** keyword is encountered inside a loop, it forces the next iteration of the loop to take place, skipping any code in between. Take a look at the two code snippets below. What are their outputs?

Code Snippet 1

```
int i;
for(i = 1; i < 15; i++){
  if(i % 2 == 0){
    continue;
  }
  if(i % 3 == 0 && i % 4 == 0){
    break;
  }
  printf("%d ", i);
}
```

1 3 5 7 9 11 13

Code Snippet 2

```
int i;
for(i = 1; i < 15; i++){
  if(i % 3 == 0 && i % 4 == 0){
    break;
  }
  if(i % 2 == 0){
    continue;
  }
  printf("%d ", i);
}
```

1 3 5 7 9 11