ECE220 Computer Systems and Programming

Lab 2B

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

1. Identify problems suitable to be solved using stacks and implement their solutions.
2. Differentiate between polling and interrupt-driven I/O.
3. Describe the life of an interrupt (initiated->serviced->returned).
4. Compare and contrast interrupt service routines and subroutines.

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

1. Describe the algorithm to print values in decimal format.
2. Explain how the stack is used in printing values in decimal format.
3. Implement the DIVISION subroutine and use it in both the lab and MP2.

3 Exercises

1. Read the algorithm provided in the lab write-up on how to print values in decimal. How would you modify this algorithm to print values in base-8?

   Change dividing by 10 to dividing by 8

2. After executing the code below, what are the values in R4,R5 and R6?

```
.ORIG x3000 ;
LD R4, VALUE
LDI R5, ONEMORE
LDR R6, R4, #1
VALUE .FILL x5049
ONEMORE .FILL x504A
; more code omitted for simplicity
.FILL xECEB ; the address of this line is x504A
```

   R4 = 0x5049
   R5 = 0xECEB
   R6 = 0xECEB