**ESE 124: Homework Week 6**

1. Write a program that reads in a sequence of characters, and determines whether its parentheses, braces, and curly braces are "balanced."

Use stacks and cry and use arrays

Parse through input of expression, skipping spaces, so for every open (, {, [ there must be the closing equivalent (USE ASCII TABLE) further on in the array.

1. Write a program that reads in a positive integer and prints the binary representation of that integer. Hint: divide the integer by 2.
2. Suppose that an intermixed sequence of push and pop operations are performed. The pushes push the integers 0 through 9 in order; the pops print out the return value. Which of the following sequences could not occur?

(a) 4 3 2 1 0 9 8 7 6 5

(b) 4 6 8 7 5 3 2 9 0 1

(c) 2 5 6 7 4 8 9 3 1 0

(d) 4 3 2 1 0 5 6 7 8 9

B should not occur. The question states that “it pushes the integers 0 through 9 in order”. Choice A has the first 5 inputs in the numerical order ( descending), starting from 4 and prints out the last 5 in descending order, starting from 9. Choice B prints the composite numbers (ascending), then prints the prime numbers, leaving 0 and 1 last. Choice D uses the same first half of Choice A, with it descending from 4, but the last 5 prints are in ascending order now, starting with 5. Choice C is the only one without a logical pattern with pushing and pop from a stack and has no logical/mathematical formula to its arrangement. However, the stacks are in numerical order so Choice B cannot happen, as the last two outputs are 0 and 1 in that order, which is illegal since 1 is larger.