**MODULE 4 Activity 5:**

**Question**:

Suppose that a client performs an intermixed sequence of (stack) push and pop operations. The push operations put the integers 0 through 9 in order onto the stack; the pop operations print out the return values. Which of the following sequence(s) 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

e. 1 2 3 4 5 6 9 8 7 0

f. 0 4 6 5 3 8 1 7 2 9

g. 1 4 7 9 8 6 5 3 0 2

h. 2 1 4 3 6 5 8 7 9 0

**Solution:**

a. 4 3 2 1 0 9 8 7 6 5 - POSSIBLE

b. 4 6 8 7 5 3 2 9 0 1 - NOT POSSIBLE - because 0 can't pop before

c. 2 5 6 7 4 8 9 3 1 0 - POSSIBLE

d. 4 3 2 1 0 5 6 7 8 9 - POSSIBLE

e. 1 2 3 4 5 6 9 8 7 0 - POSSIBLE

f. 0 4 6 5 3 8 1 7 2 9 - NOT POSSIBLE - because 1 can’t before 2

g. 1 4 7 9 8 6 5 3 0 2 - NOT POSSIBLE - because 0 can’t before 2

h. 2 1 4 3 6 5 8 7 9 0 - POSSIBLE