**King Fahd University of Petroleum & Minerals**

**College of Computer Sciences and Engineering**

**Information and Computer Science Department**

**ICS 108: Object Oriented Programming (3-3-4)**

Assignment 2 – Spring Semester 222

Deadline: Tuesday, February 11, 2023

**Instructions:**

* Please submit only one java file.
* DO NOT compress your file.

**Late submission policy:**

Submissions received within 24 hours after the deadline will be graded out of 60% of the overall grade.

No submissions will be accepted after 24 hours of the original deadline.

## Problem 1 (50 points)

The game starts with a list of random positive integer numbers such that their sum 45. In each round, you subtract one from each number in the list and remove it if it becomes zero, add the sum of the subtracted numbers to the end of the list. The game is over when the list has 1, 2, 3, 4, 5, 6, 7, 8, and 9, in some order. In your program, print the list after each round.

Here is a sample run of the program:

[18, 10, 7, 2, 4, 4]

[17, 9, 6, 1, 3, 3, 6]

[16, 8, 5, 2, 2, 5, 7]

[15, 7, 4, 1, 1, 4, 6, 7]

[14, 6, 3, 3, 5, 6, 8]

[13, 5, 2, 2, 4, 5, 7, 7]

[12, 4, 1, 1, 3, 4, 6, 6, 8]

[11, 3, 2, 3, 5, 5, 7, 9]

[10, 2, 1, 2, 4, 4, 6, 8, 8]

[9, 1, 1, 3, 3, 5, 7, 7, 9]

[8, 2, 2, 4, 6, 6, 8, 9]

[7, 1, 1, 3, 5, 5, 7, 8, 8]

[6, 2, 4, 4, 6, 7, 7, 9]

[5, 1, 3, 3, 5, 6, 6, 8, 8]

[4, 2, 2, 4, 5, 5, 7, 7, 9]

[3, 1, 1, 3, 4, 4, 6, 6, 8, 9]

[2, 2, 3, 3, 5, 5, 7, 8, 10]

[1, 1, 2, 2, 4, 4, 6, 7, 9, 9]

[1, 1, 3, 3, 5, 6, 8, 8, 10]

[2, 2, 4, 5, 7, 7, 9, 9]

[1, 1, 3, 4, 6, 6, 8, 8, 8]

[2, 3, 5, 5, 7, 7, 7, 9]

[1, 2, 4, 4, 6, 6, 6, 8, 8]

[1, 3, 3, 5, 5, 5, 7, 7, 9]

[2, 2, 4, 4, 4, 6, 6, 8, 9]

[1, 1, 3, 3, 3, 5, 5, 7, 8, 9]

[2, 2, 2, 4, 4, 6, 7, 8, 10]

[1, 1, 1, 3, 3, 5, 6, 7, 9, 9]

[2, 2, 4, 5, 6, 8, 8, 10]

[1, 1, 3, 4, 5, 7, 7, 9, 8]

[2, 3, 4, 6, 6, 8, 7, 9]

[1, 2, 3, 5, 5, 7, 6, 8, 8]

[1, 2, 4, 4, 6, 5, 7, 7, 9]

[1, 3, 3, 5, 4, 6, 6, 8, 9]

[2, 2, 4, 3, 5, 5, 7, 8, 9]

[1, 1, 3, 2, 4, 4, 6, 7, 8, 9]

[2, 1, 3, 3, 5, 6, 7, 8, 10]

[1, 2, 2, 4, 5, 6, 7, 9, 9]

[1, 1, 3, 4, 5, 6, 8, 8, 9]

[2, 3, 4, 5, 7, 7, 8, 9]

[1, 2, 3, 4, 6, 6, 7, 8, 8]

[1, 2, 3, 5, 5, 6, 7, 7, 9]

[1, 2, 4, 4, 5, 6, 6, 8, 9]

[1, 3, 3, 4, 5, 5, 7, 8, 9]

[2, 2, 3, 4, 4, 6, 7, 8, 9]

[1, 1, 2, 3, 3, 5, 6, 7, 8, 9]

[1, 2, 2, 4, 5, 6, 7, 8, 10]

[1, 1, 3, 4, 5, 6, 7, 9, 9]

[2, 3, 4, 5, 6, 8, 8, 9]

[1, 2, 3, 4, 5, 7, 7, 8, 8]

[1, 2, 3, 4, 6, 6, 7, 7, 9]

[1, 2, 3, 5, 5, 6, 6, 8, 9]

[1, 2, 4, 4, 5, 5, 7, 8, 9]

[1, 3, 3, 4, 4, 6, 7, 8, 9]

[2, 2, 3, 3, 5, 6, 7, 8, 9]

[1, 1, 2, 2, 4, 5, 6, 7, 8, 9]

[1, 1, 3, 4, 5, 6, 7, 8, 10]

[2, 3, 4, 5, 6, 7, 9, 9]

[1, 2, 3, 4, 5, 6, 8, 8, 8]

[1, 2, 3, 4, 5, 7, 7, 7, 9]

[1, 2, 3, 4, 6, 6, 6, 8, 9]

[1, 2, 3, 5, 5, 5, 7, 8, 9]

[1, 2, 4, 4, 4, 6, 7, 8, 9]

[1, 3, 3, 3, 5, 6, 7, 8, 9]

[2, 2, 2, 4, 5, 6, 7, 8, 9]

[1, 1, 1, 3, 4, 5, 6, 7, 8, 9]

[2, 3, 4, 5, 6, 7, 8, 10]

[1, 2, 3, 4, 5, 6, 7, 9, 8]