# Department of Computer Science

# 420-101-VA Programming 1

### Teacher: Nagat Drawel

## Week 6 part 1: `while` and `do..while` Loop Statements

### Requirements:

1. **Keep your code clean** (indent, right spacing, appropriate identifier, camel case). Each part that is not clean will get -2 paneity.
2. Add appropriate comments if it is necessary.
3. Please demonstrate your working programs to your teacher. Failing to explain your own code will be heavily panelized.
4. The lab must be submitted on Omnivox (Lea) before the end of the class.

### What to do:

1. Write an application that displays all even numbers from 2 to 100, and that starts a new line after every multiple of 20 (20, 40, 60, and 80).

**Sample output:**

```
2  4  6  8  10  12  14  16  18  20
22  24  26  28  30  32  34  36  38  40
42  44  46  48  50  52  54  56  58  60
62  64  66  68  70  72  74  76  78  80
82  84  86  88  90  92  94  96  98  100
BUILD SUCCESSFUL (total time: 0 seconds)
```

2. Write a java program that prompts the user to read a sequence of integers, and it will print out the average of those integers. The user is prompted to enter one integer at a time. The user must enter a 0 to mark the end of the data. (The zero is not counted as part of the data to be averaged.) The program does not check whether the user's input is positive, so it will add up both positive and negative input values.

**Sample output:**

```
Enter your first positive integer: 34
Enter your next positive integer, or 0 to end: 67
Enter your next positive integer, or 0 to end: 89
Enter your next positive integer, or 0 to end: 0

You entered 3 positive integers.
Their average is 63.333.
BUILD SUCCESSFUL (total time: 16 seconds)
```

3. The process of finding the largest value is used frequently in computer applications. For example, a program that determines the winner of a sales contest would input the number of units sold by each salesperson. The salesperson who sells the most units win the contest. Write a pseudocode program, then a Java application that inputs a series of 10 integers and determines and prints the largest integer. Your program should use at least the following three variables:
    - counter: A counter to count to 10 (i.e., to keep track of how many numbers have been input and to determine when all 10 numbers have been processed).
    - number: The integer most recently input by the user.
    - largest: The largest number found so far.

**Sample output:**

```
Enter number: 34
Enter number: 8
Enter number: 9
Enter number: 7
Enter number: 90
Enter number: 2
Enter number: -1
Enter number: 0
Enter number: 5
Enter number: 2
Largest number is 90
BUILD SUCCESSFUL (total time: 33 seconds)
```

4. Develop a Java application that determines whether any of several department-store customers has exceeded the credit limit on a charge account. For each customer, the following facts are available:
    a. account number
    b. balance at the beginning of the month
    c. total of all items charged by the customer this month
    d. total of all credits applied to the customer's account this month
    e. allowed credit limit.

The program should input all these facts as integers, calculate the new balance (= beginning balance + charges – credits), display the new balance and determine whether the new balance exceeds the customer's credit limit. For those customers whose credit limit is exceeded, the program should display the message "Credit limit exceeded".

5. Alex just graduated college and has been offered his first real job as a widget designer at Widgets Canada, Inc. He is disappointed in the offered beginning salary; only $20,000 per year. But he is promised a 10% raise each year. Other job opportunities offer more to start but have no promised raises. To help Alex decide, print out a table of his new salary each year until his salary reaches or exceeds $50,000. (How many years will it take?) The table looks as follows.

```
 Year       Salary

----------------------

1           $ 20,000.00

2           $ 22.000.00

….....
```