

### **Purpose:**

The purpose of this assignment is to help you learn the Java environment and practice I/O instructions, assignment, and simple arithmetic operators.

### **Teams:**

The assignment can be done individually or in teams of two from the **same** section. Submit one assignment per team.

### **General Guidelines When Writing Programs:**

- Include the following comments at the top of your source codes  
// -----  
// Assignment (include number)  
// Question: (include question/part number, if applicable)  
// Written by: (include your name(s) and student ID(s))  
// -----
- In a comment, give a general explanation of what your program does. As the programming questions get more complex, the explanations will get lengthier.
- Include comments in your program describing the main steps in your program.
- Display a welcome message which includes your name(s).
- Display clear prompts for users when you are expecting the user to enter data from the keyboard.
- All output should be displayed with clear messages and in an easy to read format.
- End your program with a closing message so that the user knows that the program has terminated.

### **Part 1: MyFirstProgram**

In this part you are required to write a program (called MyFirstProgram.Java) that displays the following, depending on whether you work on this assignment alone or as a team.

If you work on the assignment alone, the program should display the following (*the name on the output must be replaced by your name; the date and time should also be updated to reflect the date and time you worked on the assignment; however this date and time are just fixed value and do not need to dynamically change to reflect the running time of the program; in other words, they just need to be hard-coded in your program.*)

Welcome to My First Java Program!

This Program was written by: David Miller.

The assignment was done individually on Monday January 18, 2016 at 4:28:12 PM.

End of Program!

If you work on the assignment as a team, the program should display the following (*the names on the output must be replaced by your names; the date and time should also be updated to reflect the date and time you worked on the assignment. The date/time however do not need to dynamically change to reflect the running time of the program; in other words, they just need to be hard-coded in your program.*)

Welcome to Our First Java Program!

This Program was written by: David Miller & Linda Peterson.

The assignment is a team work and was done on Monday January 18, 2016 at 4:28:12 PM.

End of Program!

## **Part 2: Online Music/Apps Store**

An online music and apps store offers all apps for 3\$ each and all songs for 7\$ each. The store requires members to prepay any amount of money they wish, and then download as many apps or as many songs accordingly. You are required to write a program that would ask the user for the amount that he/she will pay, then display two messages indicating:

- the maximum number of apps that can be downloaded, and how much funds will remain in the account after that, if any.
  - the maximum number of songs that can be downloaded, the number of apps that can be downloaded after that if funds allow, and how much funds will remain in the account after that, if any.
- ⇒ Notice the parenthesis in app(s) and song(s) in the output.

For this assignment, assume that the user will always enter a valid integer value that is  $\geq 0$ , and within the limit of the integer range.

Here is an example of how your program should behave (the value (*shown in **bolded italic** for clarification purpose only*) is entered by the user):

How much money do you wish to prepay?

**89**

With this amount, you will be able to purchase 29 app(s). You will then have 2\$ left as a credit on your account.

Alternatively, for this amount, you will be able to purchase 12 song(s) and 1 app(s). You will then have 2\$ left as a credit on your account.

Thanks for Shopping at Best Music Store!

Here is another example when the program executes:

How much money do you wish to prepay?

**70**

With this amount, you will be able to purchase 23 app(s). You will then have 1\$ left as a credit on your account.

Alternatively, for this amount, you will be able to purchase 10 song(s) and 0 app(s). You will then have 0\$ left as a credit on your account.

Thanks for Shopping at Best Music Store!

### **Submitting Assignment 1**

- **IMPORTANT:** You are allowed to work on a team of 2 students at most (including yourself!). Any teams of 3 or more students will result in 0 marks for all team members. If your work on a team, ONLY one copy of the assignment is to be submitted for both members.
- Zip together the source codes. (Please use WINZIP).
- Naming convention for zip file: Create one zip file, containing all source files for your assignment using the following naming convention:

The zip file should be called *a#\_studentID*, where # is the number of the assignment *studentID* is your student ID(s) number. For example, for the first assignment, student 1234567 would submit a zip file named *a1\_12345678.zip*. If you work on a team and your IDs are 12345678 and 34567890, you would submit a zip file named *a1\_1234567\_4567890.zip*.

- Submit your zip file at: <https://fis.encs.concordia.ca/eas/> as **Programming Assignment and submission #1**. Assignments submitted to the wrong directory would be discarded and no replacement submission will be allowed.
- Submit only ONE version of an assignment. If more than one version is submitted the first one will be graded and all others will be disregarded.

### Evaluation Criteria for Assignment 1 (10 points)

Each of the two parts carries a load of 5 points, divided as follows:

Comments/description of variables/description of the steps in code/purpose of program	1 point
Choice of variable names	0.5 points
Indentation and readability of program	0.5 points
Format/clarity/completeness/accuracy of output	1 point
Proper use of required Java concepts/correctness of program	2 points