

## **Midterm 20%**

### **Part 1:**

#### **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!

### **Evaluation Criteria for Part1 (10 points)**

Comments/description of variables/description of the steps in code/purpose of program	2 point
Choice of variable names	1 points
Indentation and readability of program	1 points
Format/clarity/completeness/accuracy of output	2 point
Proper use of required Java concepts/correctness of program	3 points

### **Part 2: 10 Points**

Write a Java program that requires the user to enter a single character from the alphabet. Print Vowel or Consonant, depending on user input. If the user input is not a letter (between a and z or A and Z), or is a string of length > 1, print an error message.

#### *Test Data*

Input an alphabet: p

Input letter is Consonant