

Computer Science 121

Lab 7 100 Points

In this lab, you have three questions. You will be using string methods to manipulate strings and printf method to print formatted output.

You need to finish question 1 and 2 in the lab and demonstrate to your instructor. You need to submit question 3 in e-campus before the next lab and you can demonstrate during the next lab.

Also include the following comment at the beginning of your code:

```
/*  
* Your Name  
* Submission Date  
* CS 121 Lab  
* Name of Program  
*  
* Describe what the program does in one to two sentences.  
*/
```

Q1. (25 Points)

Write a program that prompts the user to enter two strings, and reports whether one of the string is the substring of another. Assume that the case of the strings can be either upper or lower case. Also report if they are not substring of each other.

Hint: you can solve this problem using “toLowerCase” and “contains” instance methods of String class

Here are some sample runs:

```
> run CheckSubString  
Enter string s1:   
Enter string s2:   
Da is a substring of adabaDA  
|
```

```
> run CheckSubString
Enter string s1: I love WVUTECH
Enter string s2: wvu
wvu is a substring of I love WVUTECH

> run CheckSubString
Enter string s1: Text1
Enter string s2: Text2
There is no subtring of each other.
```

Q2. (25 Points)

Write a program that creates a nicely formatted receipt. Assume there are only 3 items in the receipt. Price of each are given as follows:

Orange : \$1.59/lb

Apple : \$1.99/lb

Onion : \$0.50/lb

User will input the amount for each item. Program will calculate and print cost per item subtotal, tax(7%) and total.

- Requirements: User can input 0 to 10000 lbs.
- Dollar sign (\$), units and decimal part must always be aligned in all rows.
- Comma separation should be applied for currency amounts

Here is a sample run:

```

> run Receipt
Enter the amount of oranges
10000
Enter the amount of apples
0.1
Enter the amount of onions
50

Item      Price/lb   weight      Price
Orange   : $1.59/lb 10000.00 lb $15,900.00
Apple    : $1.99/lb   0.10 lb $    0.20
Onion     : $0.50/lb  50.00 lb $    25.00

Subtotal:                                $15,925.20
Tax       :                                $ 1,114.76
Total     :                                $17,039.96

```

Hint:

Here is a sample formatting code segment

```

double orangeAmount = 1000;

double orangePrice = 1.5;

System.out.println("Item   Price/lb   weight   Price ");

System.out.printf ("Orange : $%4.2f/lb %9.2f lb $%,9.2f\n\n",orangePrice,
orangeAmount, orangeAmount* orangePrice);


double subtotal = 10000;

double tax = 2000;

System.out.printf ("Subtotal:\t\t\t\t$%,9.2f\n",subtotal);

System.out.printf ("Tax   :\t\t\t\t$%,9.2f\n",tax);

```

Q3. (50 Points) : Write a program that reads the address of a user as a single string in the following format: 123 Main Street, City, State, ZipCode. From the input string you need to extract the main street, city, state and zipcode and print them out.

Hint: You can solve this problem using “indexOf” and “substring” instance methods of String class.

Here is a sample run:

```
> run AddressParser
Enter your address in the following form: 123 Main Street, City, State, ZipCode
410 Neville Street, Beckley, WV, 25801
Main street: 410 Neville Street
City: Beckley
State: WV
zip: 25801
```

Submitting your Code

When you are done, you will need to submit your code for both questions on eCampus. When logging onto eCampus, be sure to select your corresponding lab session instead of T01. When you actually submit your code, be sure to submit the .java file, not the .java~ or .class files.