

JAVA PROGRAMMING (45)

Regional – 2013

START TIME _____ END TIME _____

TOTAL POINTS _____ (435)

Failure to adhere to any of the following rules will result in disqualification:

- 1. Contestant must hand in this test booklet and all printouts. Failure to do so will result in disqualification.***
- 2. No equipment, supplies, or materials other than those specified for this event are allowed in the testing area. No previous BPA tests and/or sample tests or facsimile (handwritten, photocopied, or keyed) are allowed in the testing area.***
- 3. Electronic devices will be monitored according to ACT standards.***

Complete and submit as directed by National Advisor

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**JAVA PROGRAMMING TECHNICAL TASK
REGIONAL 2013
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Note to Contestant:

The rubric for this event grants points for each minor task completed. That being the case, the contestant should strive to complete as many of the rubric items as possible. The contestant should have received a flash drive from the proctor. A text file, Orders.txt, must be stored on the flash when you receive it.

Create a folder named with your contestant id number (ex. xx-xxxx-xxxx). Make certain all of the files associated with your program are contained in the folder and that the program will compile/run from the folder. Failure to do so will result in the loss of points under the “Application/Execution” rubric section.

Order Processing

You are to write a program that processes incoming orders. The orders will be read in from a text file (Orders.txt). The processed order data will be written to a text file (OrdersProcessed.txt). A message indicating the order processing has started (Start processing orders.) and finished (Finished processing orders.) will be written to the console.

Each line of the input file will contain the order information delimited by a pipe “|” character. The first row in the input order file will be a header record and will be read but ignored. The remaining records, if any, will follow for processing.

The input and output file names will be passed into the OrderProcessor constructor. A default constructor will be defined containing hard coded file names. All constructors will attempt to open both files. If either of the files cannot be opened a message will be written to the console and processing will not continue. You are to read each record and parse each order row into the specific order elements. Those elements will then be passed to a method, as individual parameters, which will calculate tax, shipping, and total order cost based on a constant tax rate of 2% and a constant shipping rate of 5%. Each rate is to be declared and initialized as a constant. The tax and shipping amounts are calculated by multiplying the rates by the product of quantity times price.

Example:

Sample input file

```
ORDER_ID|PART_NUM|PRICE|QUANTITY  
1|111|4.99|3
```

Sample output

Console

Start processing orders.

Finished processing orders

Output file

```
Order Id:    1  
Part Num:   111  
Price:      4.99  
Quantity:   3  
Tax:        0.2994  
Shipping:   0.7485  
Total:      16.0179
```

Your application will be graded on the following criteria:

Application/Execution

• Application reads from the Orders.txt file	_____ 30 pts
• Applications correctly writes to the OrdersProcessed.txt file ...	_____ 40 pts
• Application correctly calculates tax, shipping and total order cost (3@15 ea)	_____ 45 pts
• Application displays Start/Finished messages to the screen ...	_____ 10 pts
• Application reads the entire file	_____ 30 pts
Tax and Shipping constants are defined	_____ 10 pts
OrderProcessor Class is implemented	_____ 50 pts
OrderProcessor Class has appropriate constructor(s)	_____ 20 pts
OrderProcessor Class has method to open input/output files	_____ 20 pts
OrderProcessor Class has method to close input/output files	_____ 10 pts
OrderProcessor Class has method to read/process input orders	_____ 50 pts
OrderProcessor Class has method to calculate tax, shipping, and write orders processed data to the output file	_____ 50 pts
I/O error handling is done if files cannot be opened	_____ 10 pts
JavaDoc comments are used	_____ 10 pts
Code is modularized	_____ 20 pts
Methods are commented	_____ 10 pts
OrderProcessor class is properly commented	_____ 10 pts
Code copied to USB drive and program runs from USB	_____ 10 pts
Total Points:	_____ 435 pts