MAFD 4202 Lab #3 – 2018

## Preamble

Unlike lab 1 and 2, this lab is quite a bit more complex and will cover two weeks’ worth of content. To help in your development efforts, you will want to consider writing it in stages. Write the program to print the Invoice Number only to prove the data file is ok. Then add the Extended Price calculation, etc. and progressively more pieces of code.

## Input Data

You can download the required data file (lab3.dat) from DC Connect. Lab3.dat is represents a single invoice with multiple lines. Each data record is **27** characters long with the following format:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Columns | 1-4 | 5 | 6-18 | 19-21 | 22-27 |
| Field Name | Item Number | Product Class | Description | Qty | Price Per Unit |
| Example data | 2047  1742 | B  A | Typewriter  Handle | 105  10 | 800.00  10.00 |

## Detailed Program Specifications

Throughout this lab you:

* **MUST** use the appropriate arithmetic verbs (ADD, MULTIPLY, etc)
* **MUST NOT** use the COMPUTE verb.

1. Print out the following on the detail line data for each invoice, **double spaced.**
   1. Item Description, Extended Price (Quantity \* Per Unit Price), Discount Amount, Net Price, Product Class, Transportation % (print in percent form, i.e. 11.5) and Transportation Charge.
   2. See my attached sample output. Note, only the Item Number and Product Class are from the input, all other fields are calculated.
   3. OUTPUT NUMERIC EDITING for the detail line INVOICE DATA: use Z, 9 and ‘,’ (comma). Leave 1 digit to the left of the decimal point (i.e. 0.09) for small values.
2. A discount of 5% is allowed for

* For product class A - only if the extended Price is greater than the $199
* For product class D - only if the quantity is greater than 10
* All other product classes - no discount is allowed.   
  If no discount is allowed, the DISCOUNT AMOUNT field is to be printed as 0.00.

1. The transportation charges are calculated as follows:

* For Product Class A - it is 11.5% of the Extended Price.
* For Product Class B - it is 3.5% of the Extended Price.
* For all other classes, if the quantity is 144 or less, the transportation charge is 8.5% of the Extended Price, otherwise it's a flat $65.00. For the flat charge print the transportation % as 0.0. In all cases **DO NOT** add the transportation charge to the net price.

1. Headings:

* Print your name & LAB 3 at the top as shown on the sample output. Use an 01 in Working-Storage for these headings.
* Print the column headings shown on the attached. Use an 01 in working-storage for this heading.
* **Leave 2 blank lines before and after the column heading lines.**

1. Accumulate and print (WITHOUT TITLES) under their respective columns, the totals of the extended prices, net prices and transportation charges. Use floating $ and ‘,’ (comma) Editing. **Leave 2 blank lines between the last data line and this line.**  Use an 01 in working-storage for this total line.
2. Calculate the percent number of invoices that did not received a discount, correct to 1 place of decimal. Print the answer on a separate line (after #6) with the label “PERCENT OF ITEMS WITHOUT A DISCOUNT = ” Use an 01 in working-storage for this total line.

## Submission Requirements

Turn in to the drop box in your DC Connect Lab Section: - A zip or 7z archive containing the VS2017 project and solution files.

## Text References

**Headings**: Murach Structured Cobol, Murach, Ch. 3. Sample code from simple Report Preparation program

**IF**: Mastering Cobol, Baroudi, Ch. 4 – The IF statement

**Arithmetic Verbs**: Mastering Cobol, Baroudi, Ch. 4 – Arithmetic Statements

**Totals**: Murach Structured Cobol, Murach, Ch. 3. Sample code from simple Report Preparation program

YOUR NAME HERE, Lab 3

ITEM EXTENDED DISCOUNT NET PRICE CLASS TRANS TRANSPORTATION

PRICE AMOUNT % CHARGE

1ST PLACE MDL 1.11 0.00 1.11 A 11.5 0.13

TYPEWRITER 84,000.00 0.00 84,000.00 B 3.5 2,940.00

HANDLE 100.00 0.00 100.00 A 11.5 11.50

USB DRIVE 180,000.00 0.00 180,000.00 C 0.0 65.00

TAPE 25,000.00 0.00 25,000.00 D 8.5 2,125.00

\*\*\*\*\*\*\* more detail lines from here removed \*\*\*

LOW BALL 0.01 0.00 0.01 G 11.5 0.00

LAST RECORD 9.99 0.00 9.99 A 29.0 0.90

$99,999,999.99 $9,999,999.99 $9,999,999.99

ITEMS WITH OUT A DISCOUNT = ZZ9.9%