Intro to Python – Lesson 36 and 37

There are many reasons to use a data file in a program(s). Remember that text / data files must be processed sequentially from the first record to the last record. For that reason, text files are not used that much for storing records – that will be done in a database tables - but still commonly used for default / constants values used in a program.

As a first requirement for this lesson, come up with other ways that a data file could be processed based on things that a user can perform – or the program can when they hit the proper buttons.

Come up with at least **3 things** that we can do to a data file other than creating a report. HINT – there is one reason in the next section but try not to peek.

Other reasons to process a file – **producing summary data** based on the information in a file.

Generating summary data is another common reason to process a file. This is also the basics of data analytics. Based on the data in a file, what summary data can we generate for the user. This data can then be used for decision making and even short- and long-term planning.

The main difference in this scenario is that as you process the file in the loop, you do not print any detail lines, you just input numeric values as required and generate totals. Then you print out all the results after the loop has been processed.

```
# Initialize any counters or accumulators
InvCtr = 0
InvReorderCtr = 0
     :
      :
f = open("SummaryInv.dat", "r")

for InventoryData in f:
      InvLine = InventoryData.split(",")

      ProdCost = float(CustLine[3].strip())
                       :
                       :
      LastRecDate = CustLine[15].strip()

      InvCtr += 1
      If QOH < ReorderPt:
            InvReorderCtr += 1
            :
            :
f.close()

# Now print out the results
print()
```

Based on the data in the SummaryInv.dat file, generate the following summary data. The file includes the product number, description, manufacturer, cost, retail price, QOH, reorder point, maximum level, 4 values for Winter, String, Summer or Fall, number sold this year, number sold last year, the last order date, the expected delivery date, and the actual delivery date.

```
ABC COMPANY - SUMMARY INVENTORY DATA AS OF DD-MON-YY

Total inventory items:      ####    Total inventory cost:     $##,###.##
Items to order:              ###    Total inventory retail:   $##,###.##
Items with 0 on hand:        ###    Potential profit margin:  $##,###.##
Items currently on order:    ###

Winter: ###          Spring: ###          Summer: ###          Fall: ###

Biggest sales gain from last year:               XXXXXXXXXXXXXXXXXXX ##
Biggest sales loss from last year:               XXXXXXXXXXXXXXXXXXX ##

Items to reorder: ###

                  XXXX   XXXXXXXXXXXXXXXXXXX   ###
                  XXXX   XXXXXXXXXXXXXXXXXXX   ###
                  XXXX   XXXXXXXXXXXXXXXXXXX   ###

Press any key to continue …
```

Total inventory cost is based on the product cost times the QOH and the total inventory retail is the QOH times the retail price. Potential profit margin is the difference between the two values. The biggest sales gain / loss is based on the number sold this year and last year – keep the name of the item and the total gain / loss. For the items to reorder, track each number, name, and the number to order which is the maximum number less the current QOH.

Another example of summary data.

This report is a Revenue Report based on specific records in the file, with summary data at the end of the report based on all categories. Start by prompting the user for the type of report – have the enter A for All Revenues, P for Physio Only, M for Massage Therapy Only, F for Fitness Pro Only, or D for Membership Dues only.

```
  Enter the category you want displayed (P, M, F or D): X
```

Based on the selection made print the report with the appropriate headings and records as shown below. Line two in the headings will read – All Revenues, Physio Only, Massage Therapy Only, Fitness Prop Only or Membership Dues Only. Also generate the summary data at the end of the report as indicated.

Generate the report as shown on the next page.

```
The Gym
Revenue Report for XXXXXXXXXXXXXXX as of dd-Mon-yy

Invoice  Invoice     Appointment      Employee        Revenue
Number    Date          Type           Name          Amount
============================================================
 ####   dd-Mon-yy  XXXXXXXXXXXXXXX XXXXXXXXXXXXXXXX  $###.##
                          :
                          :
 ####   dd-Mon-yy  XXXXXXXXXXXXXXX XXXXXXXXXXXXXXXX  $###.##
============================================================
Revenues listed: ####                               $##,###.##

HST:                                                  $$###.##
Total Revenue plus HST:                             $##,###.##
```

** Display the number from each category and revenue total of each category on the lines below.
** These lines are explanation only – not printed.

```
Physio revenue:           ###     $##,###.##
Massage revenue:          ###     $##,###.##
Fitness revenue:          ###     $##,###.##
Membership revenue:       ###     $##,###.##
-----------------------------------------
Total revenues on file:  ####     $##,###.##
```

Come up with another value or two that could be generated and displayed in the summary section at the end of the report.

See you at 1.