Intro to Python – Lesson 34 and 35

Reports can come in all different shapes and sizes. Some of the most common are detailed reports and exception reports. Detailed reports print a detail line for each item in the file / table. Exception reports only print a detail line if the criteria defined is met – so not all items are displayed in the report.

Use the file called CustExtra.dat to produce the following reports. The file contains customers account information and includes the CustNum, CustName, Phone, BalDue, CredLimit, LastPurDate. LastPurAmt, LastPayDate, LastPayAmt, and the NextPayDateDue. A sample line appears as follows:

123456, John Smith, 709-345-9800, 359.40, 2000.00, 2023-11-12, 287.40, 2023-11-18, 200.00, 2023-12-15

The Customer listing is a **detailed report** that prints information about each customer account. Display the report for each customer with the following format.

```
          1         2         3         4         5         6         7         8
12345678901234567890123456789012345678901234567890123456789012345678901234567890
THE COMPANY NAME
CUSTOMER LISTING

CUSTOMER      CUSTOMER                        BALANCE      NEXT PAY
 NUMBER         NAME           PHONE            DUE          DATE
================================================================
XXXXXX XXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXX  $#,###.##    Mon dd, yyyy
:
:
XXXXXX XXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXX  $#,###.##    Mon dd, yyyy
================================================================
Total customers: ###                     $##,###.##
```

The **Over Credit Limit Report** is an **exception report** printed at regular intervals ands lists only customers over their credit limit. The information displayed allows the manager to call the customer and explain available options.

```
          1         2         3         4         5         6         7         8
123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456
THE COMPANY NAME
OVER LIMIT REPORT AS OF MM-DD-YYYY

CUSTOMER      CUSTOMER               PHONE       CREDIT    AMOUNT      NEXT      PAYMENT
 NUMBER         NAME                NUMBER       LIMIT      OVER     PAY DATE      DUE
========================================================================================
 XXXXXX XXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXX   $#,###.## $#,###.##  XXXXXXXXXX  $#,###.##
                                                   :
                                                   :
 XXXXXX XXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXX   $#,###.## $#,###.##  XXXXXXXXXX  $#,###.##
========================================================================================
Total customer over limit: ###                                                $##,###.##
```

The amount over is calculated as the amount that the customer has exceeded the credit limit. The payment due is calculated as 5% of the credit limit, plus the amount over the credit limit.

Here is another couple of report you can use as practise for the same data file (CustExtras.dat). This shows you that one data file can be used to create many different reports.

The following is a detailed report based on the customer purchase and payment dates.

```
            1         2         3         4         5         6         7         8         9
   1234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
   ABC COMPANY
   CUSTOMER ANALYSIS AS OF YYYY-MM-DD


   CUSTOMER     CUSTOMER          PHONE      BALANCE   MINIMUM    DAYS SINCE  DAYS SINCE   CUSTOMER
   NUMBER         NAME           NUMBER       DUE      PAYMENT    LAST  PUR   LAST PAY      STATUS
   ================================================================================================
    XXXX  XXXXXXXXXXXXXXXXXXXXXX  XXXXXXXXXX  $#,###.##  $#,###.##     ###         ###      XXXXXXXXXXXXXXX
                                                          :
                                                          :
    XXXX  XXXXXXXXXXXXXXXXXXXXXX  XXXXXXXXXX  $#,###.##  $#,###.##     ###         ###      XXXXXXXXXXXXXXX
   ================================================================================================
   CUSTOMERS LISTED: ###                          $##,###.## $##,###.##
   CUSTOMERS OVER LIMIT: ###
```

The minimum payment is 10% of the balance due iff the customer is below the credit limit, and 10% of the credit limit plus the amount over the credit limit otherwise. The days last purchase and the days last payment is the number of days since the last purchase and the number of days since the last payment.

The Status will be OK if the customer is under the credit limit, CHECK if they are within $200.00 of the credit limit, and OVER if they are over their credit limit. If the number of days since the last purchase is more than 60 days concatenate the word – PURCH (including the -) to the status. If the number of days since the last payment is more than 30 days add the text – PAY to the status. For a really bad customer the status may read OVER – PURCH – PAY.

How can you make the above report an exception report based on the following criteria:

- Customer is from NL – the area code in the phone number is 709.
- The customer has not made a purchase in the last 90 days.
- The customer has not made a payment in the last 60 days and has a balance due above 0.

Here are another couple of data files and some examples of reports that can be generated. The first is an employee file (Employee.dat) and the second is an inventory file (Inventory.dat).

The Employee Listings are based on data stored in the Employee.dat file. The first is a detailed report and the second is an exception report. The file contains the employee number, the employee's first name, last name, start date, current position, yearly salary, SIN, and the employee's birth date. A sample record appears below:

   37722, John, Smith, 2023-05-15, Junior Programmer, 53000.00, 116034876, 1989-01-10

The biweekly pay is the yearly pay divided by 26. The Years of service is found by subtracting the start year from the current year. The years to retire is found by adding 65 years to the birth year and subtracting the current year – this is assuming the retirement age is 65.

```
ABC COMPANY
EMPLOYEE LISTING AS OF YYYY-MM-DD

EMPLOYEE     EMPLOYEE             YEARLY    BIWEEKLY   YEARS OF  YEARS TO
NUMBER         NAME               SALARY    GROSS PAY  SERVICE   RETIRE
=======================================================================
XXXXX   XXXXXXXXXXXXXXXXXXXX    $##,###.##  $#,###.##    ##        ##
                                              :
                                              :
XXXXX   XXXXXXXXXXXXXXXXXXXX    $##,###.##  $#,###.##    ##        ##
=======================================================================
TOTAL EMPLOYEES LISTED: ##      $###,###.##
```

This second report is only for people hired within the last year so they can be offered the option of the company pension and benefits plan.

The medical benefits are based on a standard plan rate of $75.86 bi-weekly. The minimum pension contribution is based on 1% of the yearly salary, and the maximum pension contribution is based on 4.8% of the yearly salary.

```
ABC COMPANY
EMPLOYEE BENEFITS AND PENSION ELIBABILITY AS OF YYYY-MM-DD

EMPLOYEE     EMPLOYEE             YEARLY    MEDICAL    PENSION   PENSION
NUMBER         NAME               SALARY    BENEFIT     (MIN)     (MAX)
=======================================================================
XXXXX   XXXXXXXXXXXXXXXXXXXX    $##,###.##   $###.##   $###.##   $###.##
                                              :
                                              :
XXXXX   XXXXXXXXXXXXXXXXXXXX    $##,###.##   $###.##   $###.##   $###.##
=======================================================================
TOTAL EMPLOYEES LISTED: ##      $###,###.## $#,###.##  $#,###.## $#,###.##
```

The **Inventory Listing** is a detailed report based on the items on file. The Inventory.dat file contains data about each item that the company sells to its customers and includes the product number, description, manufacturer, product 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, and the number of items on order. A sample record is:

    4536, Toaster - 2 slice, Proctor-Silex, 34.95, 59.95, 16, 4, 24, Y, Y, Y, Y, 28, 72, 2023-02-04, 0

The Product margin is the difference between the Retail Price and the Product cost. The Gross Profit is based on the remaining items on hand and is the QOH multiplied by the product margin.

```
 ABC COMPANY
 INVENTORY LISTING AS OF DD-MON-YY

 PRODUCT       PRODUCT           PRODUCT   RETAIL   PRODUCT QUANTITY  GROSS
 NUMBER         NAME              COST      COST     MARGIN  ON HAND   PROFIT
 =======================================================================
 XXXX     XXXXXXXXXXXXXXXXXXXX   $###.##   $###.##   $###.##    ###    $###.##
                                    :
                                    :
 XXXX     XXXXXXXXXXXXXXXXXXXX   $###.##   $###.##   $###.##    ###    $###.##
 =======================================================================

 Total inventory items:     ####
 Items to order:             ###
```