

Programming Assignment #2
Inventory Management

Data files can easily be used to maintain an inventory of parts, products, measurements, or other quantities. An inventory of parts will be considered in this programming assignment. Four data files are available on the instructor's web page. They are arranged as follows:

- each line will correspond to a single part
- there is an unspecified number of lines in each file (read until the *end-of-file marker* is encountered)
- each line in the data file contains 7 quantities that are separated by at least one *white space*:
 - 1) 5 digit part number from 10000 to 99999
 - 2) expiration date in the form month-year (for example, 1-2009 or 10-2012)
 - 3) number of items in stock (< 10000)
 - 4) minimum number of items required before additional items are ordered
 - 5) cost of the item
 - 6) wholesale price of the item
 - 7) retail price of the item

An example inventory is shown below (the file is named A:INVENT1.DAT):

10672	1-2010	127	100	.97	1.29	1.49
11345	1-2010	59	75	1.15	1.49	1.79
11346	1-2006	7	4	75.00	89.99	99.99
20202	3-2013	120	100	.49	.75	.89
25000	6-2008	345	300	1.00	1.25	1.39
36798	6-2009	1215	1000	.98	1.25	1.35
80888	12-2010	802	1000	.79	1.00	1.10
99990	9-2007	16	25	12.55	15.00	16.50

Program Requirements:

1. The user should be given the choice of using one of four data files (available on the instructor's web page).
 - A:INVENT1.DAT (shown on page 1)
 - A:INVENT2.DAT
 - A:INVENT3.DAT
 - A:INVENT4.DAT

Change drive A: to the drive letter and path that you will use on the memory device that you submit with your program (for example: F:\EGR125\P2\INVENT1.DAT).

The user should be allowed to choose again if an incorrect selection is made.

2. A menu should be displayed that gives the user five options:

- 1) **Find a specific part number in the inventory:**
- 2) **Display a table of expired products:**
- 3) **Display a table of products to be reordered:**
- 4) **Display a summary of the inventory:**
- 5) **Rerun the program:**

More detailed information as well as examples for the first four options is provided below. In all outputs add dollar signs (\$) to monetary values.

- 1) **Find a specific part number in the inventory:**

Request the part number from the user and either display the 7 inventory items corresponding to the part number or display an error message if the part number is not available in the inventory. A sample output for A:INVENT1.DAT is shown below:

Filename: A:INVENT1.DAT (use your drive and path)

Part Number requested: 11346

Part Number	Expiration Date	Number In Stock	Reorder Level	Cost	Wholesale Price	Retail Price
-----	-----	-----	-----	-----	-----	-----
11346	1-2006	7	4	\$75.00	\$89.99	\$99.99

- 2) **Display a table of expired products:**

Request the current date from the user and display the 7 inventory items corresponding to each item that has expired. A sample output for A:INVENT1.DAT is shown below:

Current date: 7-2008

Filename: A:INVENT1.DAT (use your drive and path)

Summary of expired parts:

Part Number	Expiration Date	Number In Stock	Reorder Level	Cost	Wholesale Price	Retail Price
-----	-----	-----	-----	-----	-----	-----
11346	1-2006	7	4	\$75.00	\$89.99	\$99.99
25000	6-2008	345	300	\$1.00	\$1.25	\$1.39
99990	9-2007	16	25	\$12.55	\$15.00	\$16.50

3) **Display a table of products to be reordered:**

A sample output for A:INVENT1.DAT is shown below:

Filename: A:INVENT1.DAT (use your drive and path)

Summary of parts to be reordered:

Part Number	Expiration Date	Number In Stock	Reorder Level	Cost	Wholesale Price	Retail Price
-----	-----	-----	-----	-----	-----	-----
11345	1-2010	59	75	\$1.15	\$1.49	\$1.79
80888	12-2010	802	1000	\$.79	\$1.00	\$1.10
99990	9-2007	16	25	\$12.55	\$15.00	\$16.50

Total cost to bring inventory to minimum level: \$287.77

(Note: $(75-59)(1.15)+(1000-802)(.79)+(25-16)(12.55) = \287.77 (not part of the output))

4) **Display a summary of the inventory:**

The summary should include the following 4 items:

- The total cost of the inventory
- The wholesale value of the inventory
- The retail value of the inventory
- The total number of parts in the inventory

A sample output for A:INVENT1.DAT is shown below:

Filename: A:INVENT1.DAT (use your drive and path)

Total cost of the inventory: \$3144.92

Wholesale value of the inventory: \$3963.67

Retail value of the inventory: \$4367.57

Total number of parts in the inventory: 2691

5) **Rerun the program:**

Report: Your report should consist of the following items:

- Follow the guidelines in **Format for Programming Projects** on the instructor's web page.
- Include printouts of the results for menu options 2, 3, and 4 for each of the data files (use the date 7-2008 for option 2)
- The memory device that you submit should include the entire project, the executable file, and the data files.

Extra Credit Suggestions: (for a maximum of 10 additional points on the program grade)

1. Add additional menu items. Examples might include displaying information on all part numbers within a given range, displaying information on all part numbers that have costs within a given range, displaying information on all part numbers due to expire in a specified month, etc.
2. Allow the user to select one of the 4 data files provided or to enter the drive, path, and name of any file (this will require the use of strings).
3. Use various functions in the program. For example, you might use a separate function for each of the options in the main menu.
4. Give the user the option of sending the results to a data file.
5. Use your imagination!