

## C# Application Development

# **Assignment Four Requirements**

**Assignment Date**: Week 5

**Due Date:** The day before next class @ 11:59 PM

### Assignment Objective

The purpose of this assignment is to practice flexible design, read a csv file from disc, store the data in a collection of objects and print the results in natural and sorted order.

## Your Task

- 1. Name your project COMP3602Assign04
- 2. Define an abstract class named Item
- 3. Implement the following public property methods in class Item: (use appropriate datatypes)

Description (read-write)
Price (read-write)
Sku (read-only)

- 4. Include the necessary code to support sorting by Price descending in Item
- 5. Define a class named GroceryItem in a separate source file that inherits from Item
- 6. Ensure that the following public property methods are available for Groceryltem: objects (use appropriate datatypes):

Description (read-write)
Price (read-write)
Sku (read-only)
ExpirationDate (read-only)

- 7. Declare class GroceryItem's ExpirationDate as a DateTime type
- 8. Define a class named ApplianceItem in a separate source file that inherits from Item
- 9. Ensure that the following public property methods are available for ApplianceItem: objects (use appropriate datatypes):

Description (read-write)
Price (read-write)
Sku (read-only)
ApplianceType (read-only)

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10. ApplianceType should be of an enum type that you create with the following labels:

Washer,

Dryer,

Dishwasher,

Oven,

Range,

Refrigerator

11. Define a class named ItemList (derived from List<Item>) in a separate source file Implement the following calculated property method in class ItemList:

**TotalPrice** 

12. Read the included file (items.csv), parse the data and populate a collection of Objects, being sure to note whether they are groceries or appliances.

#### groceries.csv file contents:

4L Milk,345345,3.87,2019/10/14
500g Cottage Cheese,452255,4.28,2019/11/9
1 Tin Mushroom Soup,744566,0.99
SuperValu QuickWash, 997546, 499.99, Washer
15kg Dog Food,234434,29.99,2021/2/19
RayMag Crystal Clean Dishwasher, 993442, 649.99, Dishwasher
RayMag Crystal Clean Dishwasher (Sale), 993442, 449.99, Dishwasher

- 13. Obtain the file path from a command line argument. Display error messages for missing argument or file not found.
- 14. Display a summary in natural and sorted order by iterating through the populated collection. Use interpolated strings to format the output. Place your output code in a static method in a dedicated output class. For full marks, make your output look exactly like the screenshot at the end of the requirements.
- 15. In a block comment at the top of Program.cs, write a few sentences about some pros and some cons of the design of this application.

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|--|----------|-----------------|-----|------|---|
| Natural Order:                         |          |                 |     |      |   |
| Item                                   | Price    | Expires         |     |      |   |
|  |          |                 |     |      |   |
| 4L Milk                                | 3.87     |                 |     |      |   |
| 500g Cottage Cheese                    | 4.28     |                 | 09, | 2019 |   |
| 1 Tin Mushroom Soup                    | 0.99     | <never></never> |     |      |   |
| SuperValu QuickWash                    | 499.99   | ,               |     |      |   |
| 15kg Dog Food                          | 29.99    |                 | 19, | 2021 |   |
| RayMag Crystal Clean Dishwasher        | 649.99   | <n a=""></n>    |     |      |   |
| RayMag Crystal Clean Dishwasher (Sale) | 449.99   | <n a=""></n>    |     |      |   |
| Total:                                 | 1,639.10 |                 |     |      |   |
|  |          |                 |     |      |   |
|  |          |                 |     |      |   |
| Sorted Order: [Price Descending]       |          |                 |     |      |   |
| Item                                   | Price    | Expires         |     |      |   |
| RayMag Crystal Clean Dishwasher        | 649.99   | <n a=""></n>    |     |      |   |
| SuperValu QuickWash                    | 499.99   | <n a=""></n>    |     |      |   |
| RayMag Crystal Clean Dishwasher (Sale) | 449.99   | <n a=""></n>    |     |      |   |
| 15kg Dog Food                          | 29.99    |                 | 19, | 2021 |   |
| 500g Cottage Cheese                    | 4.28     |                 |     |      |   |
| 4L Milk                                | 3.87     | Mon Oct         | 14, | 2019 |   |
| 1 Tin Mushroom Soup                    | 0.99     | <never></never> |     |      |   |
|  |          |                 |     |      |   |
| Total:                                 | 1,639.10 |                 |     |      |   |
|  |          |                 |     |      |   |
|  |          |                 |     |      |   |
|  |          |                 |     |      |   |

# For all your code, be sure to:

• Comment your code intelligently (no need to comment the obvious)

## Marking Criteria (20 marks total)

- Design and data classes follows requirements;implements IComparable<T>; (7 marks)
- Data file path uses command line arguments; Displays error messages (2 marks)
- File handling / parsing (3 marks)
- Output matches sample; correct info; output code is in appropriate location (6 marks)
- Code quality/follows class standards (2 marks)

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## Please Hand In:

Zip your entire project and upload the zipped file to the Assign04 Dropbox in the Learning Hub

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