## 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 GroceryItem: 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)

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.

```
COMP3602 - Assignment 04 - A00123456                    —    □    ✕
Natural Order:
Item                                    Price   Expires
------------------------------------------------------------------
4L Milk                                  3.87   Mon Oct 14, 2019
500g Cottage Cheese                      4.28   Sat Nov 09, 2019
1 Tin Mushroom Soup                      0.99   <Never>
SuperValu QuickWash                    499.99   <N/A>
15kg Dog Food                           29.99   Fri Feb 19, 2021
RayMag Crystal Clean Dishwasher        649.99   <N/A>
RayMag Crystal Clean Dishwasher (Sale) 449.99   <N/A>
------------------------------------------------------------------
Total:                               1,639.10


Sorted Order: [Price Descending]
Item                                    Price   Expires
------------------------------------------------------------------
RayMag Crystal Clean Dishwasher        649.99   <N/A>
SuperValu QuickWash                    499.99   <N/A>
RayMag Crystal Clean Dishwasher (Sale) 449.99   <N/A>
15kg Dog Food                           29.99   Fri Feb 19, 2021
500g Cottage Cheese                      4.28   Sat Nov 09, 2019
4L Milk                                  3.87   Mon Oct 14, 2019
1 Tin Mushroom Soup                      0.99   <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)

Please Hand In:

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