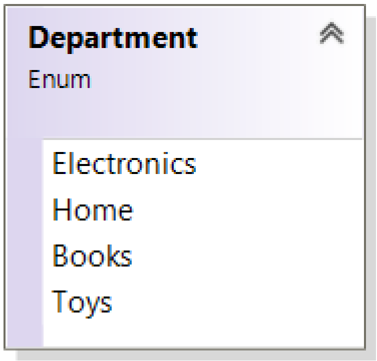
Assignment 4

In this assignment you will be managing a catalog of products using a windows forms application. The application will be able to load and save the entire catalog from a text file (you may choose any format you like).
Make sure your program is created to be user friendly. This will require you to ensure your program does not throw any unhandled exceptions and also don't forget about tab order.

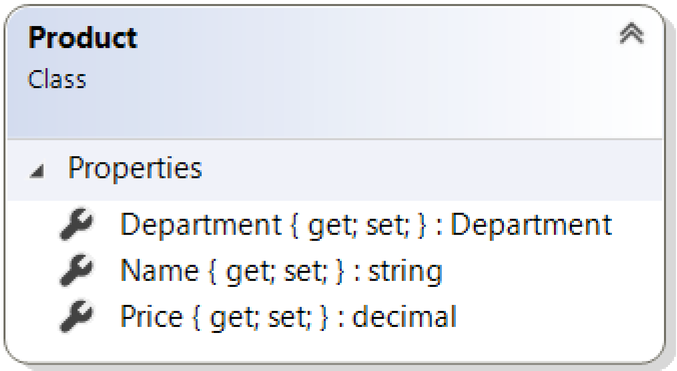
Here is a brief description of the required types:



Department
Enum

Electronics
Home
Books
Toys

- An enum containing the different departments that a product could belong to

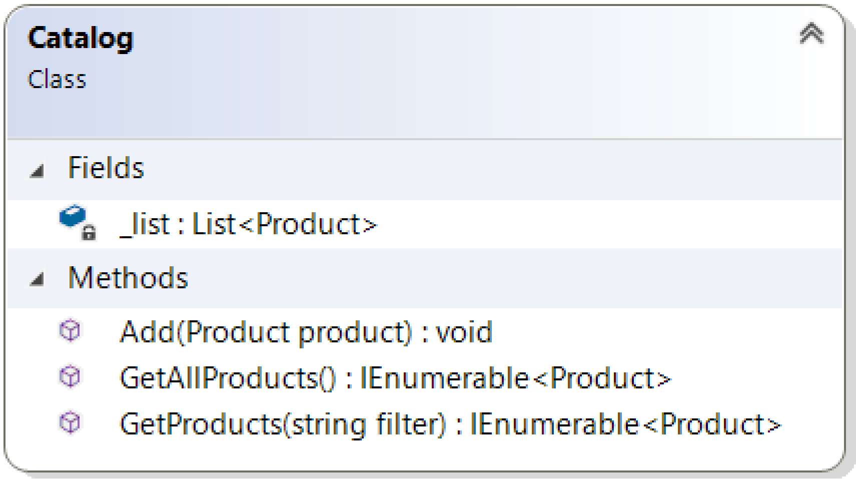


Product
Class

Properties

Department { get; set; } : Department
Name { get; set; } : string
Price { get; set; } : decimal

- A class describing a products basic properties

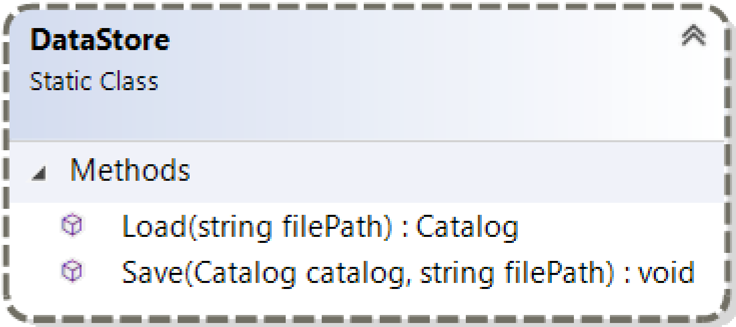


Catalog
Class

Fields
_list : List<Product>

Methods
Add(Product product) : void
GetAllProducts() : IEnumerable<Product>
GetProducts(string filter) : IEnumerable<Product>

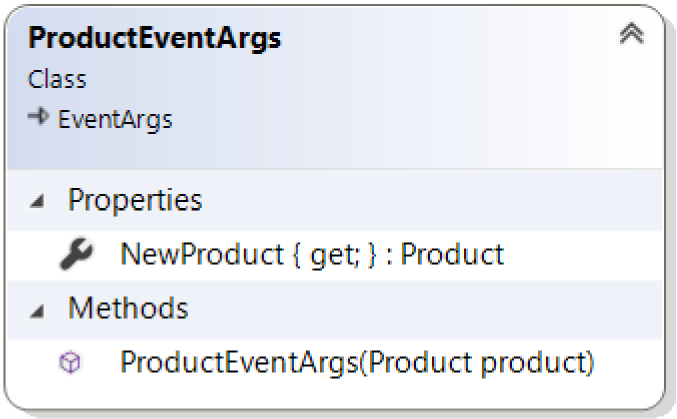
- A class containing a list of products
  - New products can be added
  - A full list of products can be retrieved
  - A filter list of products can be retrieved



DataStore
Static Class

Methods
Load(string filePath) : Catalog
Save(Catalog catalog, string filePath) : void

- A static class that handles persistent storage of a catalog
  - An entire catalog can be loaded from a file path
  - An entire catalog can be saved to a file path



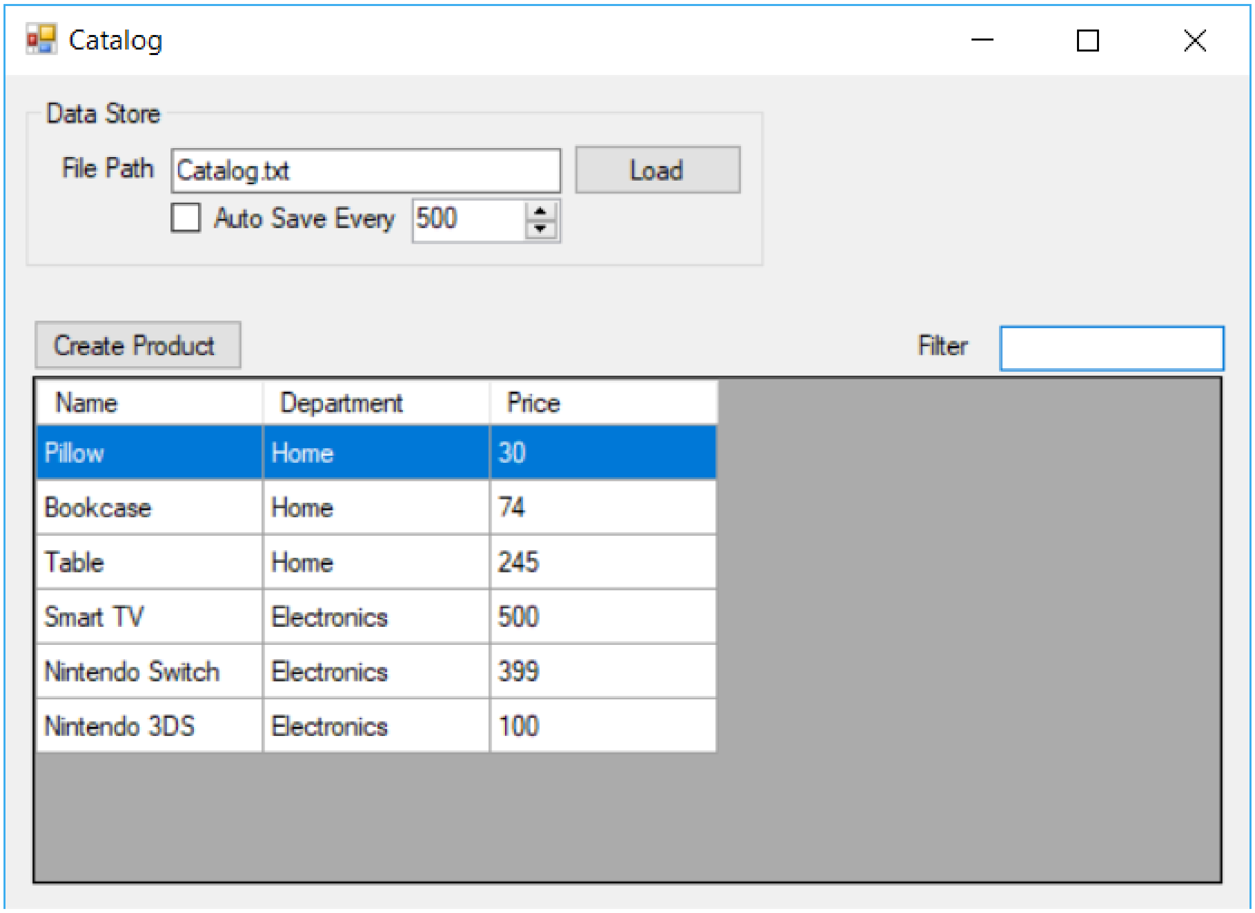
ProductEventArgs
Class
→ EventArgs

Properties
NewProduct { get; } : Product

Methods
ProductEventArgs(Product product)

- A class to handle product based event arguments

Here is an example of what the forms should look like:



File Path Catalog.txt

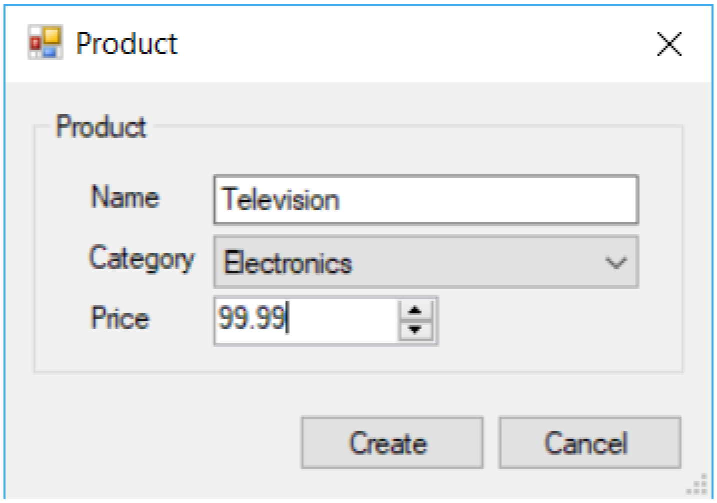
□ Auto Save Every 500

Filter

Name	Department	Price
Pillow	Home	30
Bookcase	Home	74
Table	Home	245
Smart TV	Electronics	500
Nintendo Switch	Electronics	399
Nintendo 3DS	Electronics	100

- Loading a Catalog
    - The load button should load a catalog of products from the file path specified in the textbox and display the results in the datagridview
- Saving a Catalog
    - If the auto save is checked, then saving the catalog to the file path will happen automatically
    - The frequency of the save can be configured using the numeric control
- Creating a New Product
    - When the create product button is clicked a new form will appear for creating a new product
- Displaying Products
    - When a catalog is loaded then it will be displayed in the datagridview
    - When a product is added to the catalog then it will be displayed in the datagridview

    - If there is something typed in the filter textbox then only products the contain the value in their name will be shown



Product

Product

Name: Television

Category: Electronics

Price: 99.99

- Enter the product name in a textbox
- Select the category in a drop down
- Enter the price in a numeric control
- When the create button is clicked, the form should raise an event that other components can listen to and the close the form
- When the cancel button is clicked, the form should close

Unit Tests

- Write enough tests to fully cover the Catalog and Product classes