Name: _____ Group: _____ | **Shop**

Mandatory: the project should compile and run without any errors.

You are asked to develop a **Windows Forms** application for a **small shop**. The shop sells various **products** organized in several **categories**.

(2.5p)

- Define the **Category** class with the properties **Id** (int) and **Name** (string). Define the **Product** class with the properties **Id** (int), **Name** (string), **Units** (int), **Price** (double) and **CategoryId** (int). The classes should contain parametrized constructors.
- The categories will be loaded from the **Categories.txt** file. The text file should be created using a text editor at your choice and should contain 3 entries.

(2.5p)

- The instances of the **Product** class will be added using a secondary form, that will implement the necessary validations. The user will be able to choose the category of the product using a ComboBox control. The instances of the class will be stored in a **List<T>** collection and will be displayed in the main form using a **ListView** or a **DataGridView** control.
- The user will be given the possibility to either modify or delete the records.

(1p)

- Implement the **explicit** double cast operator for the **Product** class in order to calculate the price for all the units (**Price** * **Units**). Display the total price for all the products using a **MessageBox** when the user chooses the corresponding option in a **MenuStrip** control.

(2p)

- **(1p)** The list of products will be **automatically** loaded when the application starts with the values retrieved from a database (Access, SQLServer sau SQLite).
- **(1p)** All the operations (add, update, delete) will be persisted to the database.

(1p)

Implement the **IComparable<T>** / **IComparable** interface in order to sort the products in ascending order based on their Name. The list of products should be kept sorted all the time.

(1p)

- In a secondary form, draw a simple **chart** containing the number of products in each category.