Mandatory Activity. Object Oriented Paradigm. Lab 02.

This activity must be autonomously done by the student. **It must be done prior to the following laboratory class**. It will be used as part of the following laboratory.

Activity

Extend the `List` class of the previous laboratory to implement a polymorphic (simply) linked list capable of collecting **any object**, implementing at least the following methods:

- `Add`
- `Remove`
- `Contains`
- `ToString`
- `GetElement`

And the `NumberOfElements` property

Think carefully about the signature of the methods and properties (read-only, write-only, or read and write).

Test its correct behavior by using the testing tool of Visual Studio. Test it with `String`, `Person`, `int` and `double` values.

Think carefully about how to use all the programming language features learned so far.

Optional Activity.

The following activity is not mandatory.

Activity

Using the previous class, implement a new `Set` class in a different assembly. A set is a collection that contains no duplicate elements.

Using operator overload, implement the following operators and methods:

- + operator to add elements
- - operator to remove elements
- [ ]operator to get the i^{th} element in a set
- | operator for the union operation
- & operator for the intersection operation
- - operator for the difference operation
- ^ operator to know whether an element is contained in a set
- The `NumerOfElements` property
- `ToString`

http://en.wikipedia.org/wiki/Set_theory