# Introduction to .NET – lab. no. 1

## **Summary**

* Tools and IDE’s => VS Code
* OOP principles, best practices
* Unit testing
* OOP design
* Data types

**Free discussion: (20-25 minutes)**

1. Defensive coding approach
2. Unit tests -> general approach : SUT, naming conventions for testing
3. Nuget packages
4. Starting from a blank solution and using a Class Library (.NET Core) create a class called **Product** and expose the following properties:
   1. **Id**

**Name**

**Description**

**StartDate**

**EndDate**

**Price**

**VAT**

* 1. Expose the following behaviour:

**IsValid** -> taking into account StartDate and EndDate

**ComputeVAT**

* 1. Create unit tests using FluentAssertions (can be found into nuget packages )to have **100% line coverage.**
  2. Add unit tests to have **100% code coverage.**
  3. Using refactoring techniques to remove all the redundancies

1. Create a class called **Manager** and expose the following properties:
   1. **Id**

**FirstName**

**LastName**

**StartDate**

**EndDate**

**Salary**

* 1. Expose the following behaviour:

**GetFullName**

**IsActive**

1. Create a class called **Architect** and expose properties/behaviour described above.
2. Using the inheritance principle extract a base class called **Employee**.
   1. Create unit tests to have 100% code coverage for all the classes.
   2. Change the base class to an abstract class.
3. **Homework :**

**Use another testing framework and re-write/refactor all the tests accordingly**