Lab 5

# Objectives

Practice C# code writing that involves operators and casts.

# Instructions

* Install Visual Studio 2017 or Visual Studio 2019 to your computer.<https://visualstudio.microsoft.com/>
* For each question below submit your C # and also screenshots showing how your program compiles and executes (sample outputs)- You can upload your C# project but alternatively create a document with your C# code **text** copied and pasted and your screenshots pasted and then upload the document to Blackboard for submission. Prof. Aydin should be able to run your submitted code.
* Your name should appear on the screenshots for receiving full credit.
* **Academic Integrity:** If you are stuck when working in this lab you can collaborate with a couple of classmates. In that case, make sure to write/submit the name of your collaborators and any web site you used as a resource to understand the concepts and lab questions and to complete your code to prevent plagiarism and breach of academic integrity.
  + You are *not* allowed to directly copy code from the Internet, your friends, and other resources without spending any effort in completing the work. Make sure to review the academic integrity policy in the syllabus and ask for clarification, if needed.

1. Hint: Review [Week 6-7 (Chapter 6) slides](https://drive.google.com/drive/folders/1-voMzBRitOdXiBNl8SrMm_WM-CbnhxQD?usp=sharing)

Take a look at the code piece below. **Class ComplexNumbe**r represents a complex number with real and imaginary parts. (See this link [What is a complex number?](https://en.wikipedia.org/wiki/Complex_number))

The main method does not compile since C# does not know how to add and compare two ComplexNumber objects. Your job is to override the operator +, operator == and operator != for class ComplexNumber.

You can then use the same main method to test your updates.

using System;

namespace LearnCSharp

{

public class ComplexNumber

{

public double RealPart { get; set;}

public double ImaginaryPart { get; set; }

public ComplexNumber(double r = -1, double i = -1)

{

RealPart =r;

ImaginaryPart = i;

}

public override string ToString() => $"{RealPart} + {ImaginaryPart}i";

}

class Program

{

static void Main()

{

var complexNumber1 = new ComplexNumber(10, 20);

var complexNumber2 = new ComplexNumber(100, 200);

ComplexNumber result;

Console.WriteLine("First complex number is " + complexNumber1);

Console.WriteLine("Second complex number is " + complexNumber2);

result = complexNumber1 + complexNumber2;

Console.WriteLine("Adding the two complex numbers we get " + result);

if (complexNumber1 == complexNumber2)

{

Console.WriteLine("The two numbers are the SAME");

}

else

{

Console.WriteLine("The two numbers are NOT the SAME");

}

}

}

}