Lab 1

# Objectives

Warming up with Visual Studio, .NET environment, and C# by writing basic C# .NET Core console apps to process numbers and strings that require no object oriented programming.

# 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) Write a C# .NET Core Console App that asks the user to enter a character and line number and then displays a triangle of that size with the given character. For example, if the user entered \* as a character and 3 as line number then you display the following triangle on the console window.

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(2) Modify your program above to display a diamond shape rather than a triangle. For example, if the user entered \* as a character and 3 as line number then you display the following diamond on the console window.

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(3) Write a C# .NET Core Console App that asks the user to enter a number and then displays a string with the original number followed by the reverse of the number. For example, if the user entered 123 as an int you program should create a string "123321" and display it on the screen

(4) Write a C# Core Console App that validates a password string entered by the user to conform to the following rules:

* Length between 6 and 15 characters.
* At least one uppercase letter (A-Z).
* At least one lowercase letter (a-z).
* At least one digit (0-9).
* At least one supported special character such as ! @ # $ % ^ & \* ( ) + = \_ - { } [ ] : ; " ' ? < > , .

5) Comment about this lab and how easy/hard/appropriate you found it for this course as a first lab.