

Lab: First Steps in Coding

Problems for exercise and homework for the "Programming Basics" course @ SoftUni Global

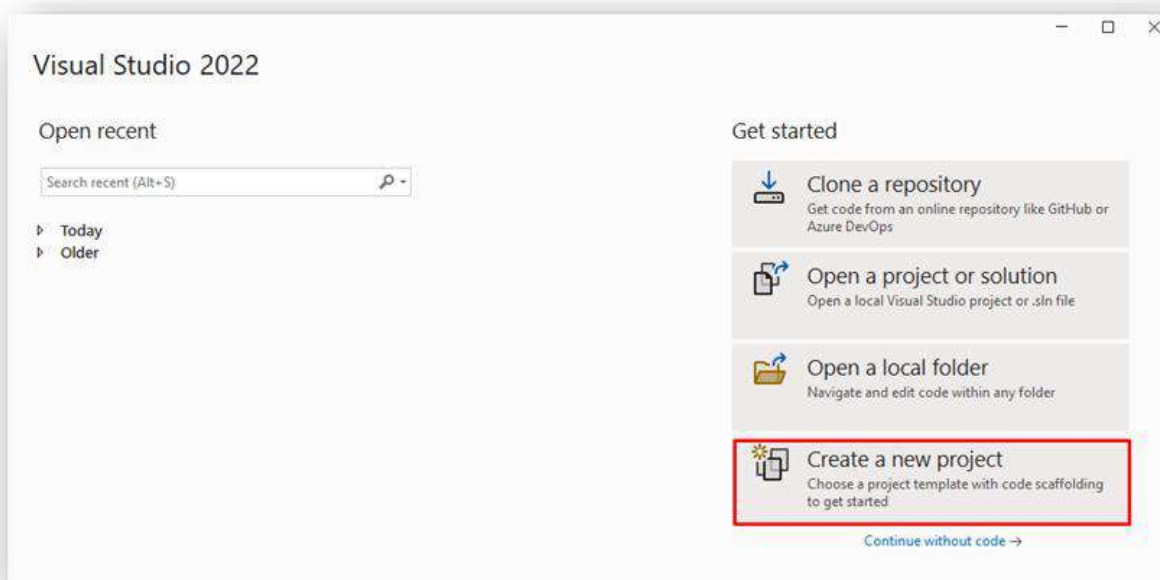
Submit your solutions to the SoftUni [Judge System](#)

1. Console Program "Hello SoftUni"

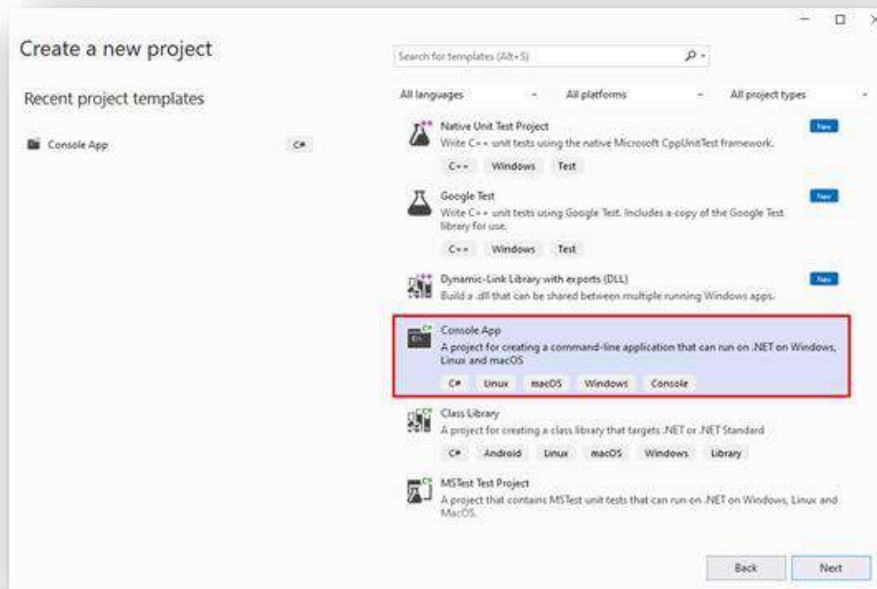
Write a **C#** program, which prints the text "Hello SoftUni".

Hints and Guidelines

1. Start **Visual Studio**
2. **Create a new project**



3. Select: **Console App (.NET Core)**



4. Enter an appropriate project name and select a directory in which to be created:

Configure your new project

Console Application C# Linux macOS Windows Console

Project name
HelloSoftUni

Location
C:\Users\User\source\repos

Solution name ⓘ
FirstStepsInCoding

☐ Place solution and project in the same directory

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Additional information

Console App C# Linux macOS Windows Console

Framework ⓘ
.NET 6.0 (Long Term Support)

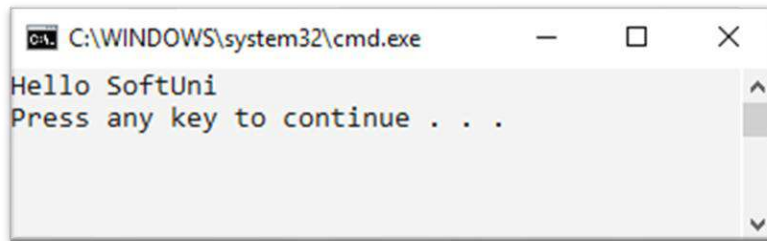
☐ Do not use top-level statements ⓘ

Back Create

- Write the following program code (command for printing "Hello SoftUni"):

```
Console.WriteLine("Hello SoftUni");
```

- Start** the program using **Ctrl+F5**. The following result will appear:



Testing in the Judge System

Test the solution to this problem in the online Judge system of SoftUni. To do this, open:

<https://judge.softuni.global/Contests/Compete/Index/5803#0>. Test the solution to this problem in the online judge system of SoftUni. To do this, open it first. Log in with your SoftUni username. A window for submitting solutions for the "Hello SoftUni" task will appear. Copy the entire source code from IntelliJ and paste it into the solution submission box:



7. Press the **"Submit"** button.
8. The result will appear in the window below. To see it, press the **"Refresh"** button:

Submissions			
Points	Time and memory used		Submission date
✓ 100 / 100	Memory: 7.38 MB	Time: 0.014 s	11:34:30 14.01.2016
✗ 0 / 100	Memory: 7.40 MB	Time: 0.016 s	11:34:19 14.01.2016

2. Nums 1...10

Write a C# console program, which **prints the numbers from 1 to 10** on separate lines on the console.

Hints and Guidelines

1. Create a C# console application with the name "Nums1To10".
2. Write 10 commands `Console.WriteLine()`, one after another, to print 1 to 10.

Testing in the Judge System

Test your solution in the Judge system: <https://judge.softuni.global/Contests/Compete/Index/5803#1>

3. Rectangle Area

Write a console program that calculates and prints the area of a rectangle with predefined sides a and b.

Sample Input and Output

Input	Output
5 7	35

Input	Output
6 8	48

Hints and Guidelines

1. **Initialize** two variables (a and b) and save the values entered by the console:

```
int a = int.Parse(Console.ReadLine());  
int b = int.Parse(Console.ReadLine());
```

Initialize a second variable area in which to write the value for the face of the rectangle obtained by the formula $a * b$. Print the result:

```
int a = int.Parse(Console.ReadLine());  
int b = int.Parse(Console.ReadLine());  
  
int area = a * b;  
Console.WriteLine(area);
```

Testing in the Judge System

Test your solution in the Judge system: <https://judge.softuni.global/Contests/Compete/Index/5803#2>

4. Inches to Centimeters

Write a program that reads a floating-point number from the console and converts it from inches to centimeters. To do this, multiply the inches by 2.54 (1 inch = 2.54 centimeters).

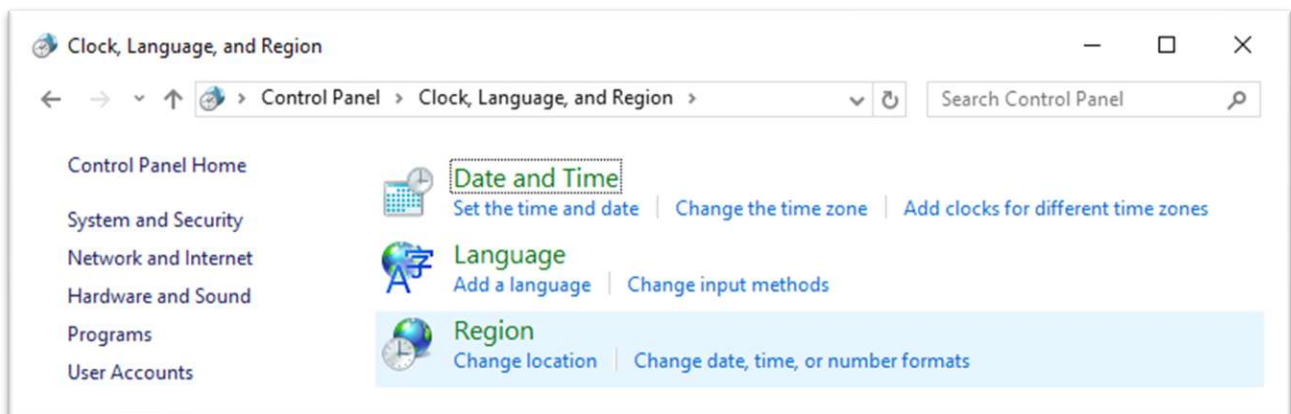
Sample Input and Output

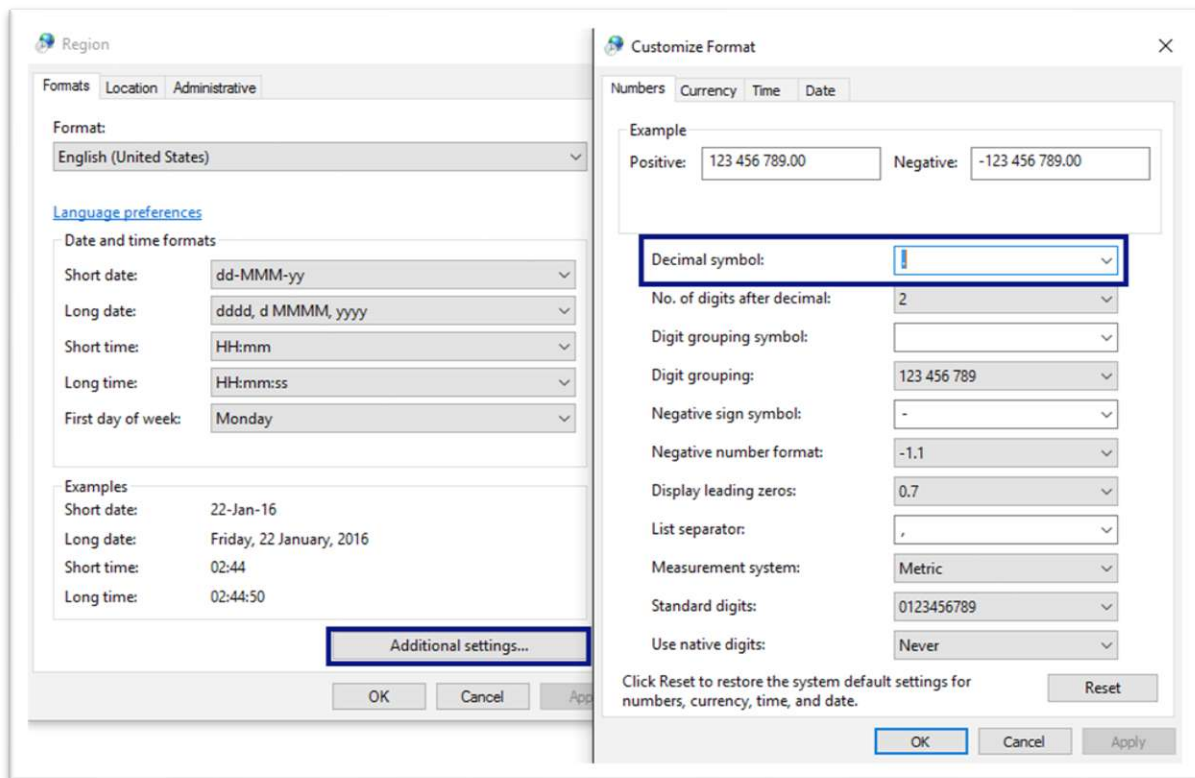
Input	Output
5	12.7

Attention: depending on the regional settings of the operating system, it is possible to use a decimal point (GB settings) instead of a decimal point (US settings). If the program expects a decimal point and a number with a decimal point is entered, or vice versa (a decimal point is entered when a decimal point is expected), the following error will occur:

```
Unhandled Exception: System.FormatException: Input string was not in a correct format.
   at System.Number.ParseDouble(String value, NumberStyles options, NumberFormatInfo numfmt)
   at System.Double.Parse(String s)
   at Inches_to_Centimeters.Program.Main(String[] args) in C:\Projects\Simple-Calculations\Inches-to-Centimeters\Program.cs:line 14
```

Warning: It is recommended that you change the settings on your computer to use a **decimal** point:





Testing in the Judge System

Test your solution in the Judge system: <https://judge.softuni.global/Contests/Compete/Index/5803#3>

5. Greeting by Name

Write a program that reads text (person's name) from the console and prints "Hello, <name>!", where <name> is the name entered from the console.

Hints and Guidelines

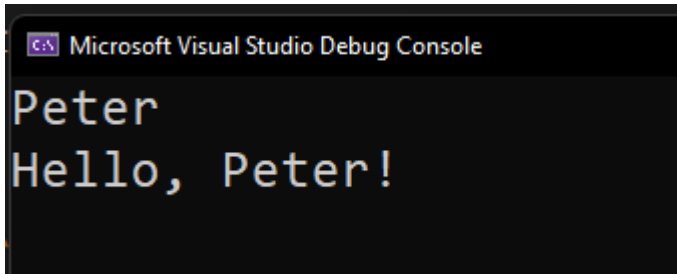
1. Create a **name** variable of type **string** and save in it the name, which you will receive by the console.

```
string name = Console.ReadLine();

Console.WriteLine("Hello, " + name + "!");
```

2. Print the result to the console using concatenation.

3. Start your program with **Ctrl + F5** and test with different input examples.



Testing in the Judge System

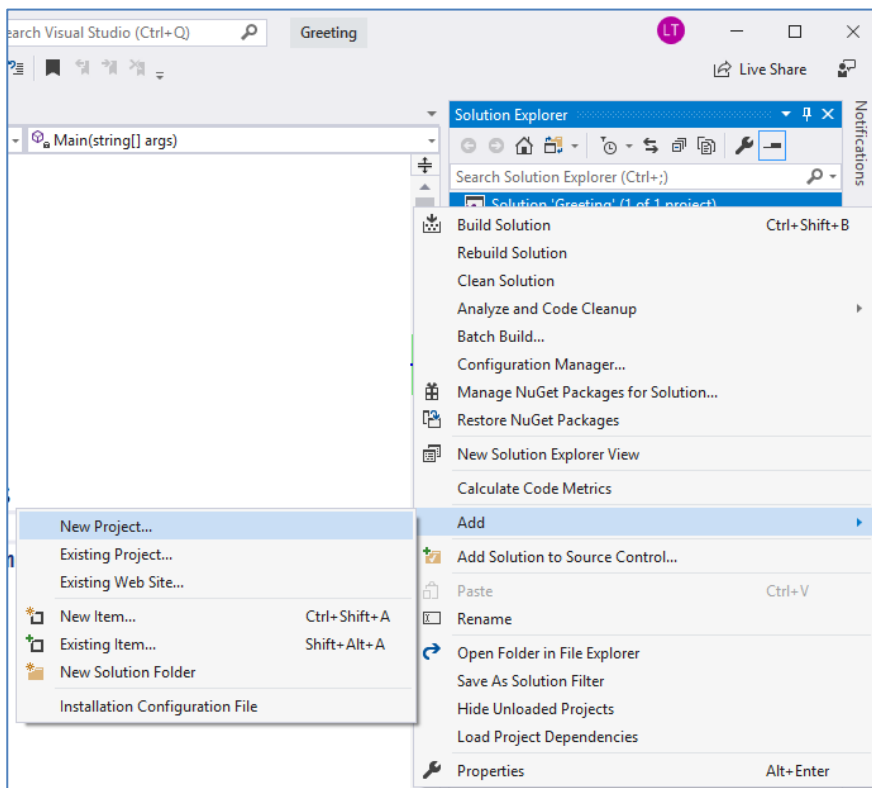
Test your solution in the Judge system: <https://judge.softuni.global/Contests/Compete/Index/5803#4>

6. Concatenate Data

Write a program that reads the name, surname, age, and city from the console and prints the following message:
"You are <firstName> <lastName>, a <age>-years old person from <town>."

Hints and Guidelines

1. Add a new project to the current Visual Studio solution by right clicking on the project and then **Add -> New Project...**



2. Enter the input data and save it in variables with the appropriate data type:

```
string firstName = Console.ReadLine();
string lastName = Console.ReadLine();
int age = int.Parse(Console.ReadLine());
string town = Console.ReadLine();
```

3. Display the formatted **output** on the console:

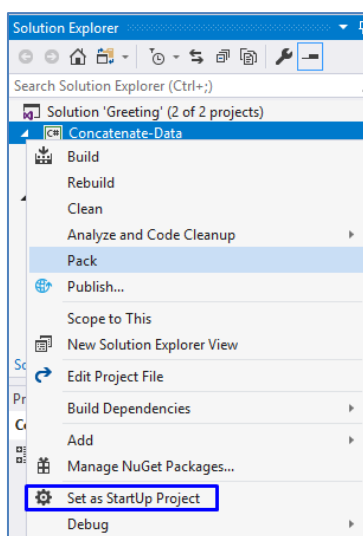
```
string firstName = Console.ReadLine();
string lastName = Console.ReadLine();
int age = int.Parse(Console.ReadLine());
string town = Console.ReadLine();

Console.WriteLine($"You are {firstName} {lastName}, a
    {age}-years old person from {town}.");
```

4. Start the program and test with different input example.

If you're still getting the output from the last task, it's because you haven't changed the starter project. How to deal with the problem?

As you can see the Greeting project is in bold black letters - this means that this is your starter project. To change the startup project, right-click on the desired project and select Set as StartUp Project.



```
Microsoft Visual Studio Debug Console
John
Smith
20
London
You are John Smith, a 20-year old person from London.
```

Testing in the Judge System

Test your solution in the Judge system: <https://judge.softuni.global/Contests/Compete/Index/5803#5>

7. Projects Creation

Write a program that **calculates how many hours** it will take for an architect to **design several construction projects**. The preparation of a project takes **three hours**.

Input Data

2 lines are read from the console:

1. **Name of the architect** – string
2. **Number of projects to be prepared** – an integer in the interval [0 ... 100]

Output Data

On the console print:

- "The architect {name of architect} will need {needed time} hours to complete {number of projects} project/s."

Sample Input and Output

Input	Output	Input	Output
George 4	The architect George will need 12 hours to complete 4 project/s.	John 9	The architect John will need 27 hours to complete 9 project/s.

Testing in the Judge System

Test your solution in the Judge system: <https://judge.softuni.global/Contests/Compete/Index/5803#6>

8. Pet Shop

Write a program that calculates the **cost of buying dog and cat food**. The food is bought from a pet store, as one package of dog food costs **2.50 USD**, and a package of cat food costs **4 USD**.

Input Data

2 lines are read from the console:

1. **Number of packages of dog food** - an integer in the range [0... 100]
2. **Number of packages of cat food** - an integer in the range [0... 100]

Output Data

On the console print:

"{Total sum} USD."

Sample Input and Output

Input	Output
5	28.5 USD.
4	

Input	Output
13	68.5 USD
9	.

Testing in the Judge System

Test your solution in the Judge system: <https://judge.softuni.global/Contests/Compete/Index/5803#7>

9. Yard Greening

Sophia has **several houses** on the Black Sea coast and **wants to green the yards of some of them**, thus creating a **cozy atmosphere and comfort** for its guests. She has hired a company for this purpose.

Write a program that calculates the amount needed for Sophie to pay to the project contractor. The price per square meter is **7.61 USD** including VAT. Because her yard is **quite large**, the contractor company offers an **18% discount on the final price**.

Input Data

One line is read from the console:

1. Square meters of the landscaped – a floating-point number in the range [0.00 ... 10000.00]

Output Data

Two lines are printed on the console:

- "The final price is: {final price of the service} USD."
- "The discount is: {discount} USD."

Sample Input and Output

Input	Output	Comments
550	The final price is: 3432.11 USD. The discount is: 753.39 USD.	We calculate the price for landscaping the whole yard: $550 * 7.61 = 4185.50$ USD. We deduct the discount (18% = 0.18) of the total: $0.18 * 4185.5 = 753.39$ USD. We calculate the final price of the service: $4185.50 - 753.39 \rightarrow 3432.11$ USD.
Input	Output	

150	<p>The final price is: 936.03 USD.</p> <p>The discount is: 205.47 USD.</p>	<p>We calculate the price for landscaping the whole yard:</p> <p>$150 * 7.61 = 1141.50$ USD.</p> <p>We deduct the discount (18% = 0.18) of the total:</p> <p>$0.18 * 1141.50 = 205.47$ USD.</p> <p>We calculate the final price of the service:</p> <p>$1141.50 - 205.47 \rightarrow 936.03$ USD.</p>
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Testing in the Judge System

Test your solution in the Judge system: <https://judge.softuni.global/Contests/Compete/Index/5803#8>