

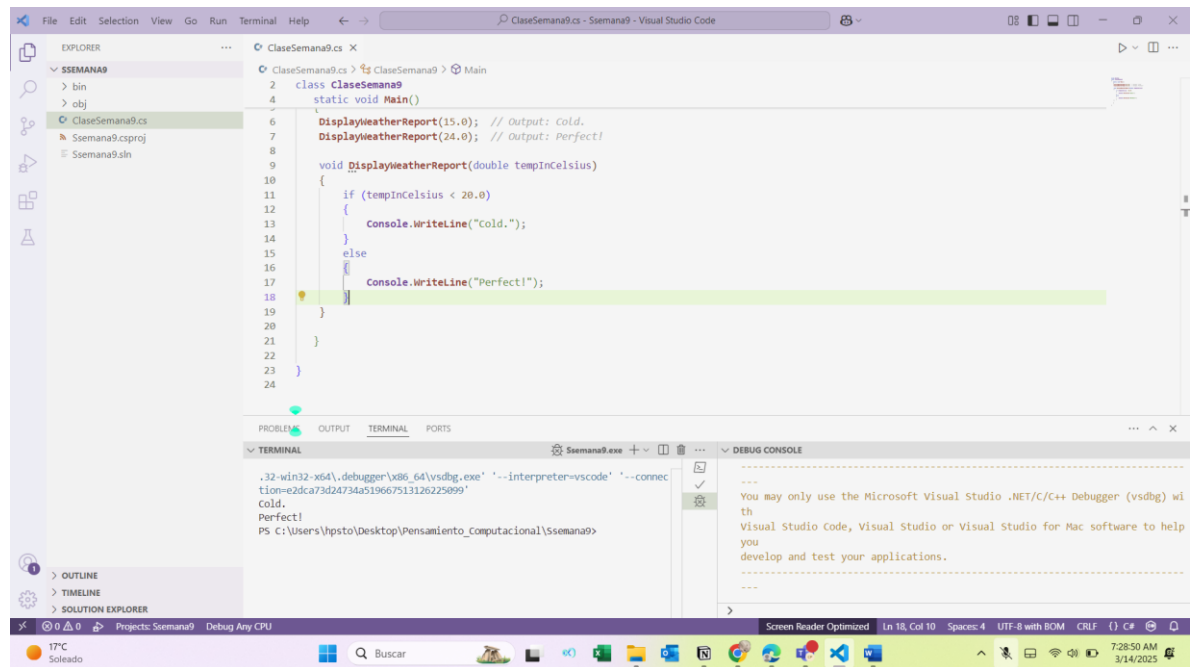
Universidad Rafael Landívar
Facultad de Ingeniería
Ingeniería en informática y sistemas.
Pensamiento Computacional
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Actividad 3 - Semana 9

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Guatemala, 14 de marzo de 2025

1. Instrucción if selección



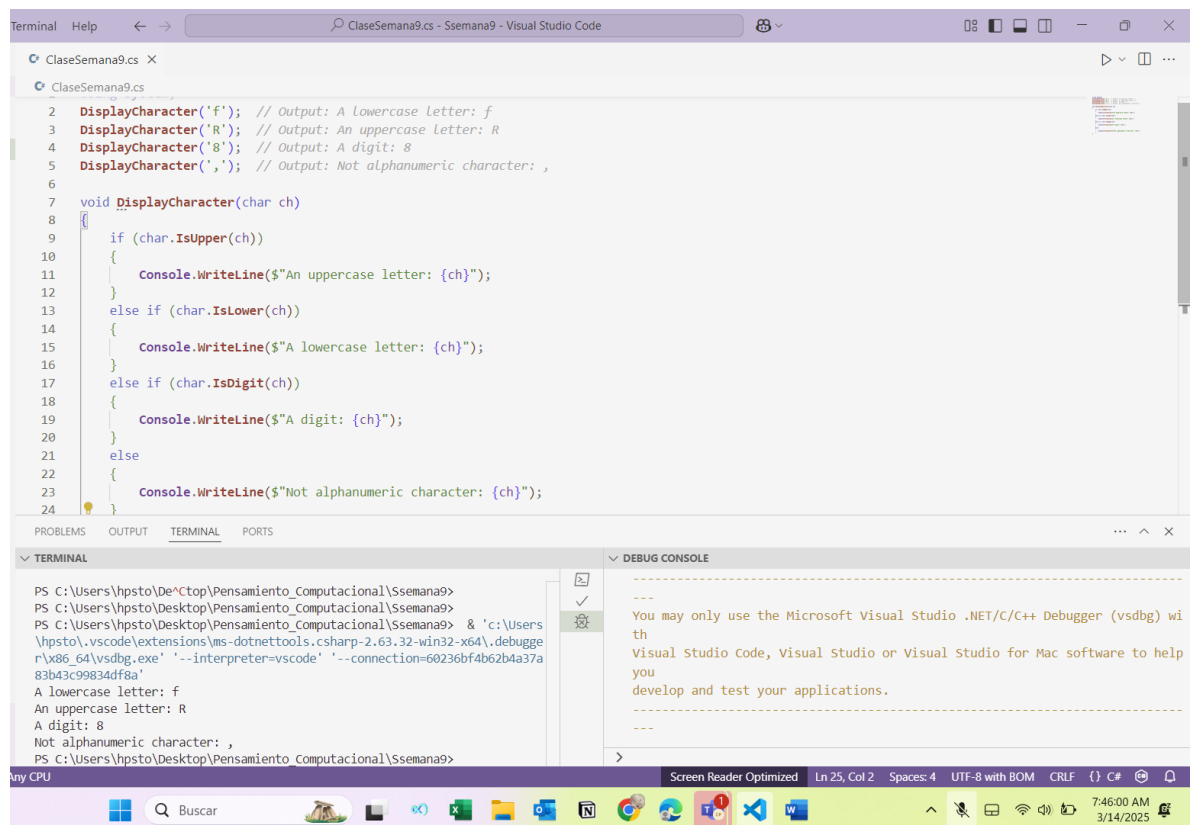
The screenshot shows the Visual Studio Code editor with a C# file named `ClaseSemana9.cs`. The code defines a `Main` method that calls `DisplayWeatherReport` with two different temperature values. The `DisplayWeatherReport` method uses an `if` statement to check if the temperature is below 20.0 degrees Celsius. If true, it prints "Cold."; otherwise, it prints "Perfect!". The terminal output shows the execution results: "Cold." and "Perfect!".

```
1  class ClaseSemana9
2  {
3      static void Main()
4      {
5          DisplayWeatherReport(15.0); // Output: Cold.
6          DisplayWeatherReport(24.0); // Output: Perfect!
7      }
8
9      void DisplayWeatherReport(double tempInCelsius)
10     {
11         if (tempInCelsius < 20.0)
12         {
13             Console.WriteLine("Cold.");
14         }
15         else
16         {
17             Console.WriteLine("Perfect!");
18         }
19     }
20 }
21
22
23
24
```

Terminal Output:

```
.32-win32-x64\debugger\x86_64\vdbg.exe' '--interpreter=vscode' '--connec-
tion=e2dca73d24734a519667513126225899'
Cold.
Perfect!
PS C:\Users\hpsto\Desktop\Pensamiento_Computacional\Ssemana9>
```

2. Else – if



The screenshot shows the Visual Studio Code editor with a C# file named `ClaseSemana9.cs`. The code defines a `Main` method that calls `DisplayCharacter` with four different character values. The `DisplayCharacter` method uses an `else if` statement to check if the character is an uppercase letter, a lowercase letter, a digit, or not alphanumeric. If none of these conditions are met, it prints "Not alphanumeric character:". The terminal output shows the execution results: "A lowercase letter: f", "An uppercase letter: R", "A digit: 8", and "Not alphanumeric character: ,".

```
1  class ClaseSemana9
2  {
3      static void Main()
4      {
5          DisplayCharacter('f'); // Output: A lowercase letter: f
6          DisplayCharacter('R'); // Output: An uppercase letter: R
7          DisplayCharacter('8'); // Output: A digit: 8
8          DisplayCharacter(','); // Output: Not alphanumeric character: ,
9      }
10
11     void DisplayCharacter(char ch)
12     {
13         if (char.IsUpper(ch))
14         {
15             Console.WriteLine($"An uppercase letter: {ch}");
16         }
17         else if (char.IsLower(ch))
18         {
19             Console.WriteLine($"A lowercase letter: {ch}");
20         }
21         else if (char.IsDigit(ch))
22         {
23             Console.WriteLine($"A digit: {ch}");
24         }
25         else
26         {
27             Console.WriteLine($"Not alphanumeric character: {ch}");
28         }
29     }
30 }
31
32
33
34
```

Terminal Output:

```
PS C:\Users\hpsto\Desktop\Pensamiento_Computacional\Ssemana9>
PS C:\Users\hpsto\Desktop\Pensamiento_Computacional\Ssemana9>
PS C:\Users\hpsto\Desktop\Pensamiento_Computacional\Ssemana9> & 'c:\Users\
hpsto\vscode\extensions\ms-dotnettools.csharp-2.63.32-win32-x64\debugge-
r\x86_64\vdbg.exe' '--interpreter=vscode' '--connection=60236bf4b62b4a37a
83b43c99834df8a'
A lowercase letter: f
An uppercase letter: R
A digit: 8
Not alphanumeric character: ,
PS C:\Users\hpsto\Desktop\Pensamiento_Computacional\Ssemana9>
```

3. Switch

The screenshot shows the Visual Studio Code editor with a file named `ClaseSeman9.cs`. The code defines a `DisplayMeasurement` method that uses a `switch` statement to handle different measurement values. The `switch` statement has three cases: `case < 0.0:`, `case > 15.0:`, and `case double.NaN:`. Each case calls `Console.WriteLine` with a specific message and then `break;`. A `default:` case also calls `Console.WriteLine`. The `main` method calls `DisplayMeasurement` with four arguments: `-4`, `5`, `30`, and `double.NaN`. The `TERMINAL` panel at the bottom shows the output of the program, which matches the comments in the code. The `DEBUG CONSOLE` panel shows a message from the Microsoft Visual Studio .NET/C++ Debugger (vsdbg).

```
1 DisplayMeasurement(-4); // Output: Measured value is -4; too low.
2 DisplayMeasurement(5); // Output: Measured value is 5.
3 DisplayMeasurement(30); // Output: Measured value is 30; too high.
4 DisplayMeasurement(double.NaN); // Output: Failed measurement.
5
6 void DisplayMeasurement(double measurement)
7 {
8     switch (measurement)
9     {
10        case < 0.0:
11            Console.WriteLine($"Measured value is {measurement}; too low.");
12            break;
13
14        case > 15.0:
15            Console.WriteLine($"Measured value is {measurement}; too high.");
16            break;
17
18        case double.NaN:
19            Console.WriteLine("Failed measurement.");
20            break;
21
22        default:
23            Console.WriteLine($"Measured value is {measurement}.");
24    }
```

61729174a298ca6844bce571caa'
Measured value is -4; too low.
Measured value is 5.
Measured value is 30; too high.
Failed measurement.
PS C:\Users\hps\o\Desktop\Pensamiento_Computacional\Ssemana9>

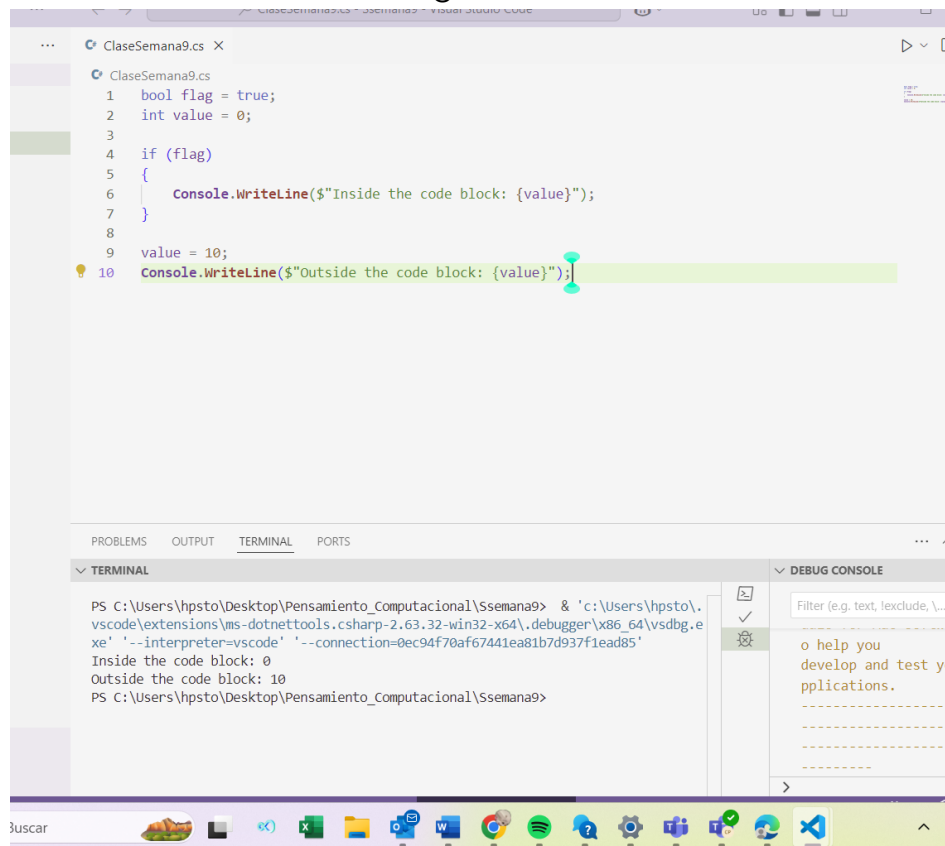
4. Intento fallido al acceder a una variable no local.

The screenshot shows the Visual Studio Code editor with a file named `ClaseSeman9.cs`. The code defines a `main` method that sets a `bool` flag to `true` and enters an `if` block. Inside the `if` block, an `int` variable `value` is declared and assigned the value `10`. The `if` block contains two `Console.WriteLine` statements: one inside the block and one outside. The `if` block is not closed with a closing brace. The `TERMINAL` panel at the bottom shows the output of the program, which matches the comments in the code. The `DEBUG CONSOLE` panel shows a message from the Microsoft Visual Studio .NET/C++ Debugger (vsdbg).

```
1 bool flag = true;
2 if (flag)
3 {
4     int value = 10;
5     Console.WriteLine($"Inside the code block: {value}");
6 }
7 Console.WriteLine($"Outside the code block: {value}");
```

PS C:\Users\hps\o\Desktop\Pensamiento_Computacional\Ssemana9> dotnet run
Measured value is -4; too low.
Measured value is 5.
Measured value is 30; too high.
Failed measurement.
PS C:\Users\hps\o\Desktop\Pensamiento_Computacional\Ssemana9>

5. Variable local con valor asignado



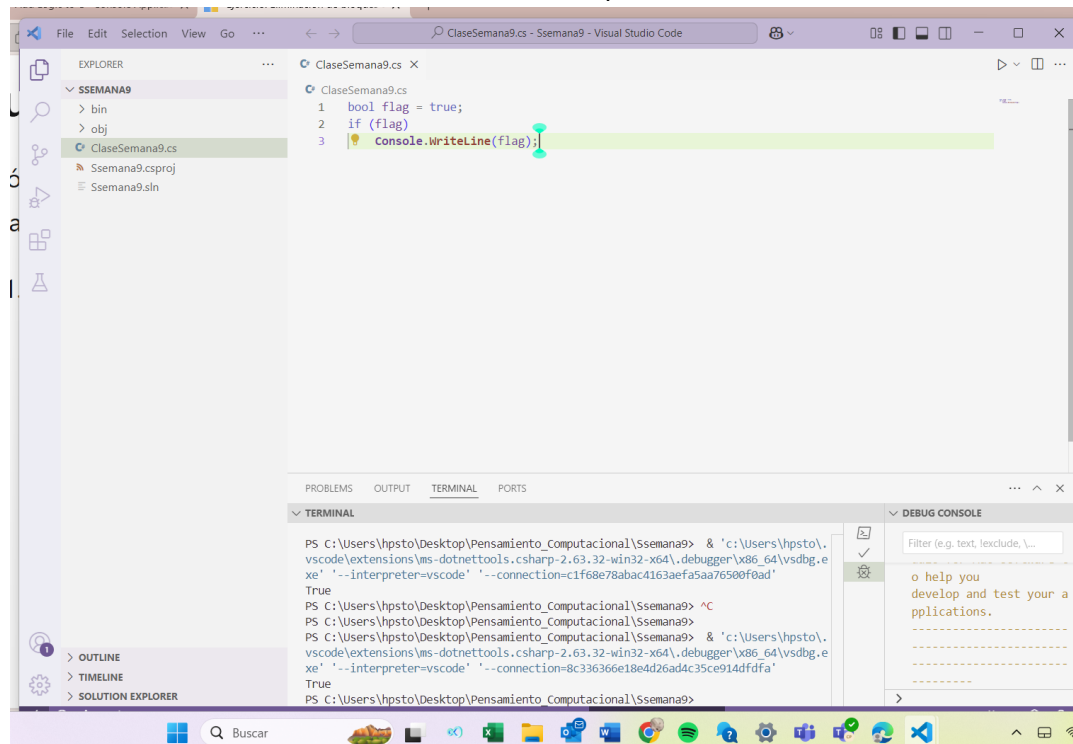
The screenshot shows the Visual Studio Code editor with a file named `ClaseSemana9.cs`. The code defines a `bool` variable `flag` and an `int` variable `value`. An `if` statement checks the `flag` and prints the value of `value` inside the block. After the block, `value` is assigned the value 10, and another `Console.WriteLine` statement prints the value outside the block. The terminal at the bottom shows the execution output: "Inside the code block: 0" and "Outside the code block: 10".

```
1 bool flag = true;
2 int value = 0;
3
4 if (flag)
5 {
6     Console.WriteLine($"Inside the code block: {value}");
7 }
8
9 value = 10;
10 Console.WriteLine($"Outside the code block: {value}");
```

Terminal Output:

```
PS C:\Users\hpsto\Desktop\Pensamiento_Computacional\Semana9> & 'c:\Users\hpsto\vscode\extensions\ms-dotnettools.csharp-2.63.32-win32-x64\debugger\x86_64\vsdbg.exe' '--interpreter=vscode' '--connection=0ec94f70af67441ea81b7d937f1ead85'
Inside the code block: 0
Outside the code block: 10
PS C:\Users\hpsto\Desktop\Pensamiento_Computacional\Semana9>
```

6. If eficiente carente de llaves de inicio y cierre



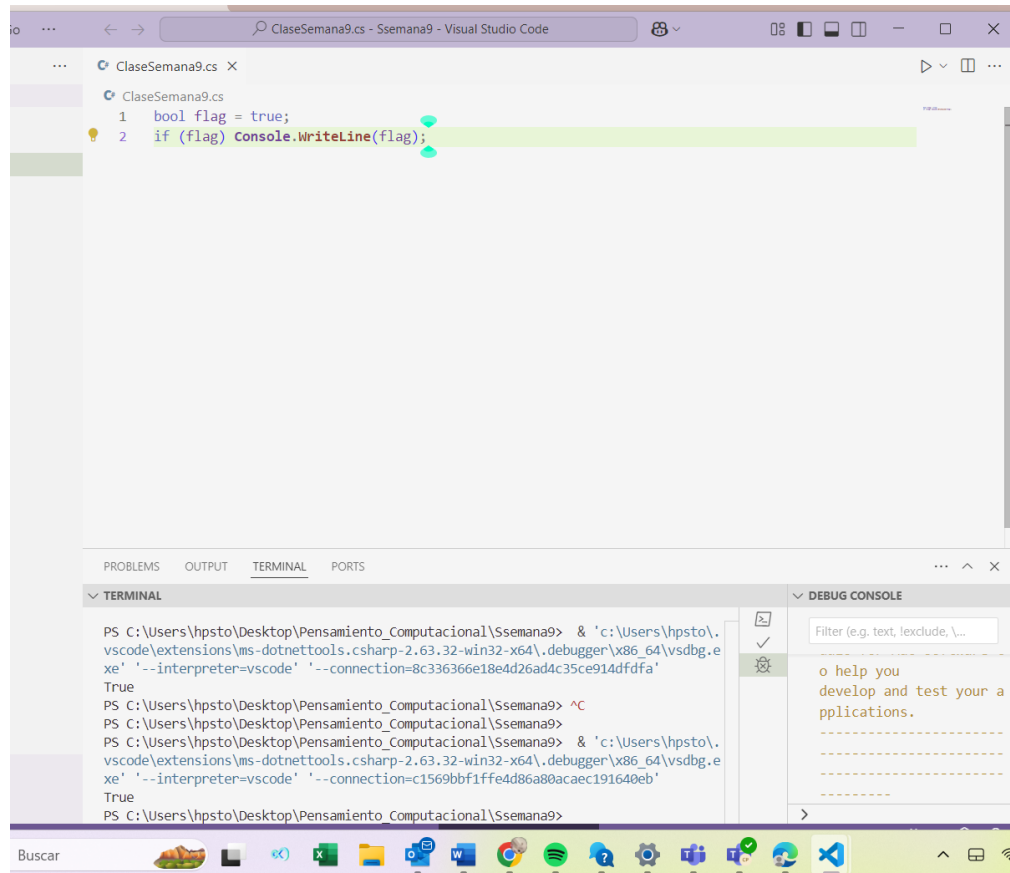
The screenshot shows the Visual Studio Code editor with the same file `ClaseSemana9.cs`. The code now uses a concise `if` statement without curly braces: `if (flag) Console.WriteLine(flag);`. The terminal output shows the program running successfully, printing `True` when the `flag` is `true`.

```
1 bool flag = true;
2 if (flag)
3     Console.WriteLine(flag);
```

Terminal Output:

```
PS C:\Users\hpsto\Desktop\Pensamiento_Computacional\Semana9> & 'c:\Users\hpsto\vscode\extensions\ms-dotnettools.csharp-2.63.32-win32-x64\debugger\x86_64\vsdbg.exe' '--interpreter=vscode' '--connection=c1f68e78abac4163aef5aa76500f0ad'
True
PS C:\Users\hpsto\Desktop\Pensamiento_Computacional\Semana9> ^C
PS C:\Users\hpsto\Desktop\Pensamiento_Computacional\Semana9> & 'c:\Users\hpsto\vscode\extensions\ms-dotnettools.csharp-2.63.32-win32-x64\debugger\x86_64\vsdbg.exe' '--interpreter=vscode' '--connection=8c336366e18e4d26ad4c35ce914dfdfa'
True
PS C:\Users\hpsto\Desktop\Pensamiento_Computacional\Semana9>
```

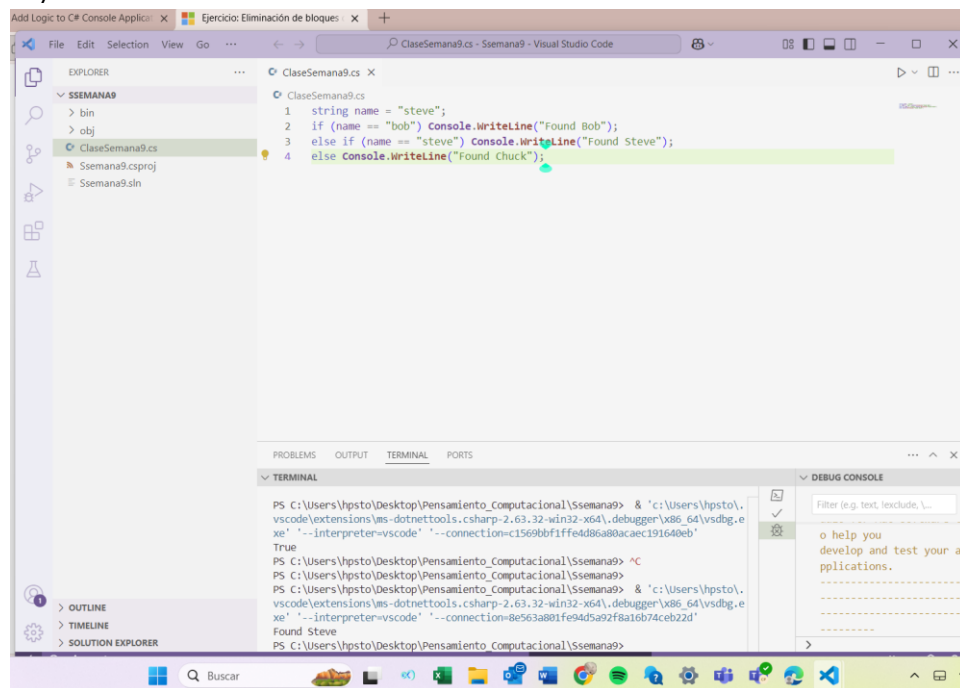
7. Combinación de if con la instrucción Console.WriteLine



```
ClaseSeman9.cs
1 bool flag = true;
2 if (flag) Console.WriteLine(flag);
```

```
PS C:\Users\hpsto\Desktop\Pensamiento_Computacional\Ssemana9> & 'c:\Users\hpsto\vscode\extensions\ms-dotnettools.csharp-2.63.32-win32-x64\debugger\x86_64\vsdbg.exe' '--interpreter=vscode' '--connection=8c336366e18e4d26ad4c35ce914dfdfa'
True
PS C:\Users\hpsto\Desktop\Pensamiento_Computacional\Ssemana9> ^C
PS C:\Users\hpsto\Desktop\Pensamiento_Computacional\Ssemana9>
PS C:\Users\hpsto\Desktop\Pensamiento_Computacional\Ssemana9> & 'c:\Users\hpsto\vscode\extensions\ms-dotnettools.csharp-2.63.32-win32-x64\debugger\x86_64\vsdbg.exe' '--interpreter=vscode' '--connection=c1569bbf1ffe4d86a80acaec191640eb'
True
PS C:\Users\hpsto\Desktop\Pensamiento_Computacional\Ssemana9>
```

8. If y else-if sin el uso de cadenas



```
ClaseSeman9.cs
1 string name = "steve";
2 if (name == "bob") Console.WriteLine("Found Bob");
3 else if (name == "steve") Console.WriteLine("Found Steve");
4 else Console.WriteLine("Found Chuck");
```

```
PS C:\Users\hpsto\Desktop\Pensamiento_Computacional\Ssemana9> & 'c:\Users\hpsto\vscode\extensions\ms-dotnettools.csharp-2.63.32-win32-x64\debugger\x86_64\vsdbg.exe' '--interpreter=vscode' '--connection=c1569bbf1ffe4d86a80acaec191640eb'
True
PS C:\Users\hpsto\Desktop\Pensamiento_Computacional\Ssemana9> ^C
PS C:\Users\hpsto\Desktop\Pensamiento_Computacional\Ssemana9>
PS C:\Users\hpsto\Desktop\Pensamiento_Computacional\Ssemana9> & 'c:\Users\hpsto\vscode\extensions\ms-dotnettools.csharp-2.63.32-win32-x64\debugger\x86_64\vsdbg.exe' '--interpreter=vscode' '--connection=8e563a801fe94d5a92f8a16b74ceb22d'
Found Steve
PS C:\Users\hpsto\Desktop\Pensamiento_Computacional\Ssemana9>
```