

Assignment: Building a Simple Console Application in C#

Objective

Create a basic C# console application that demonstrates fundamental concepts of the C# programming language, including variables, control structures, and basic input/output operations.

Requirements

Microsoft Visual Studio (Community Edition is sufficient)

Step-by-Step Instructions

1. Setting Up Your Environment:

- Install Microsoft Visual Studio from the official Microsoft website.
- Open Visual Studio and select 'Create a new project'.
- Choose 'Console App' under C# and .NET. Click 'Next'.

2. Configuring Your Project:

- Name your project (e.g., `BasicCSharpApp`).
- Choose a suitable location for your project.
- Ensure the target framework is set to .NET Core or .NET 5/6 (latest version).
- Click 'Create'.

3. Understanding the Structure:

- Visual Studio will create a file named `Program.cs`. This is your main C# file.
- Notice the `Main` method – this is the entry point of your C# application.

4. Writing Your First C# Code:

Inside the `Main` method, write code to output a message. Type in:

```
Console.WriteLine("Hello, world!");
```

- This line of code will print "Hello, world!" to the console.

5. Adding Variables and User Input:

- Declare a string variable to store the user's name.

```
string name;
```

- Ask the user for their name and store the input.

```
Console.WriteLine("Enter your name: ");
```

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

- Use the variable to personalize the output.

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

6. ****Implementing Control Structures****:

- Use an `if-else` statement to add a simple condition.

```
if (name == "Alice")  
{  
    Console.WriteLine("Welcome, Alice!");  
}  
else  
{  
    Console.WriteLine("You are not Alice.");  
}
```

7. Building and Running Your Application:

- Press `Ctrl + F5` to build and run your application without debugging.
- The console window will open, run your program, and wait for your input.
- Enter your name and observe the output.

8. Experimenting Further:

- Try adding more variables of different types (e.g., `int`, `bool`).
- Implement a simple loop, like a `for` or `while` loop, to repeat an action.
- Explore more complex conditions or multiple `if-else` statements.

Assignment Task

Create a console application that asks the user for their favorite number, checks if the number is even or odd, and prints a personalized message based on the result. Additionally, include a loop that allows the user to repeat the process until they enter a specific exit code (e.g., 0).

Deliverables

- Source code of the completed C# console application.
- A brief write-up explaining the logic implemented and any challenges faced during the development.
- Create a repo for this project called "Favorite Number Generator"

This assignment is designed to provide hands-on experience with the basics of C# programming. It focuses on fundamental concepts that are crucial for developing more complex applications in the future.

