Practising if and switch

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1 Mastering switch statement

Copy-and-paste the following code in a Main method:

```
Console.WriteLine("Please, enter the day of the week.");
string string_day = Console.ReadLine();
int num_day;
switch (string_day) {
    case ("Monday"):
       num_day = 1;
        break;
    case ("Tuesday"):
       num_day = 2;
        break;
    case ("Wednesday"):
        num_day = 3;
        break;
    case ("Thursday"):
        num_day = 4;
        break;
    case ("Friday"):
        num_day = 5;
        break;
    case ("Saturday"):
        num_day = 6;
        break;
    case ("Sunday"):
        num_day = 7;
        break;
```

```
default:
    num_day = -1; // This is an error code.
    break;
}
Console.WriteLine("The number corresponding to " + string_day + " is " + num_day + ".");
```

Now, do the following:

- 1. Test the program with various values and make sure it behaves as expected.
- 2. Comment the **default**: case along with the two lines below it, and compile your program. Why is the compiler complaining?
- 3. Restore the code to its original state.
- 4. Change the code so that "monday" would make the value 1 being assigned to num_day.
- 5. Change the code so that the days of the week would start on Sunday¹, i.e., "Sunday" trigger the value 1 to being assigned to num_day, "Monday" trigger the value 2 to being assigned to num_day, etc.
- 6. Finally, change the last message if the code is in error: use an if statement to display a different message if the user input did not matched one of the literals in your switch statement.

2 Practicing if and switch

This exercise will ask you to write a rather abstract program that performs simple manipulations on a few variables. The main goal is to have you practise "transforming" if statements into switch statements, and reciprocally. This will help you in memorizing both, and in chosing the most convenient to perform certain task.

Create a new project and do the following in Main.

- 1. Initialize a string variable named "day," an int variable named "myVar," a char variable named "initial," and a Boolean variable named "flag."
- 2. Set and change the value of these variables to make good tests as you progress through this problem.
- 3. You can also display them on the screen to help you in making sure that your statements behave as they are supposed to.

2.1 From switch to if-else

- 1. Write a switch statement that sets flag to true if the value of day is "Mon.", "Tue.", "Wed.", "Thu." or "Fri.", and to false otherwise.
- 2. Rewrite the previous statement as an if-else statement.

2.2 From if-else to switch

- 1. Write a if-else statement that doubles the value of myVar if myVar is 3, 5 or 7.
- 2. Can you rewrite the previous statement as a switch statement? If so, do it. If not, explain why not.

¹https://en.wikipedia.org/wiki/Names_of_the_days_of_the_week#Days_numbered_from_Sunday

2.3 Deciding Between Condition Types

- 1. Write a statement that doubles the value of myVar and sets initial to 'M' if day is equal to "Sat". What is the appropriate kind of statement to do this?
- 2. Write a statement that displays "Hello" on the screen if the value of initial is 'E' or 'e', "Bonjour" if the value of initial is 'F' or 'f', "Guten Tag" if the value of initial is 'D' or 'd'. What is the appropriate kind of statement to do this?

2.4 Complex Conditions

- 1. Write a statement that doubles the value of myVar if day is "Sun.", triples the value of myVar if day is not "Sun." and initial is 'a', and sets myVar to 0 otherwise.
- 2. Write a statement that sets myVar to 0 if initial is an upper-case letter, and to 1 otherwise. You will need to understand how to use the IsUpper method, and the documentation² can help you with that.

 $^{^2} https://docs.microsoft.com/en-us/dotnet/api/system.char.isupper?view=net-5.0$