Switching branches

The **if** and **else** keywords, introduced on the previous page, allow programs to branch in a particular direction according to the result of a test condition, and can be used to repeatedly test a variable to match a value. For example, testing for an integer:

```
if ( num == 1 ) { Console.Write( "Monday" ) ; }
else
if ( num == 2 ) { Console.Write( "Tuesday" ) ; }
else
if ( num == 3 ) { Console.Write( "Wednesday" ) ; }
else
if ( num == 4 ) { Console.Write( "Thursday" ) ; }
else
if ( num == 5 ) { Console.Write( "Friday" ) ; }
```

The program will branch in the direction of the match.

Avoid writing lengthy **if-else** statements like the one shown here – where possible, use a **switch** statement instead.

Conditional branching with long **if-else** statements can often be more efficiently performed using a **switch** statement instead, especially when the test expression evaluates just one variable.

The **switch** statement works in an unusual way. It takes a given variable value, or expression, then seeks a matching value among a number of **case** statements. Statements associated with the matching **case** statement by a : colon will then be executed.

When no match is found, no **case** statements will be executed, but you may add a **default** statement after the final **case** statement to specify statements to be executed when no match is found. The syntax of a typical switch statement looks like this:

```
switch( variable-name )
{
  case value1 : statement ; break ;
  case value2 : statement ; break ;
  case value3 : statement ; break ;
  default : statement ; break ;
}
```

Missing **break** keywords in C# **case** statements are syntax errors.

It is important to follow each case statement with the **break** keyword. Unlike other programming languages, C# does not allow fall-through from one **case** statement to another – each **case** statement must allow control to be handed back in order to exit the **switch** block.

1. Start a new **Console Application**, then name the project and Console.**Title** as "Switch"

2. Type this statement to create and initialize an integer variable
```
int num = 3 ;
```

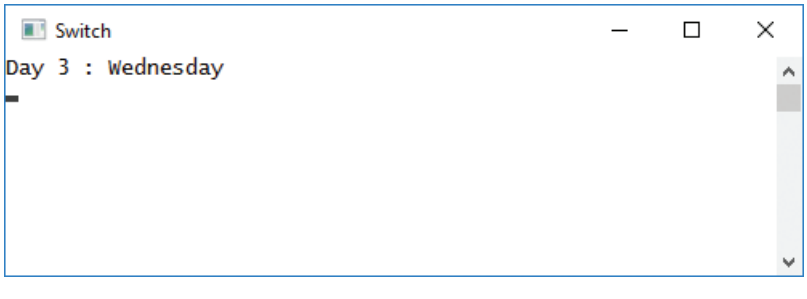
3. Next, add a statement to declare a **string** variable
```
string day ;
```

4. Now, add a statement to initialize the **string** variable according to the value of the integer variable
```
switch( num )
{
  case 1 : day = "Monday" ; break ;
  case 2 : day = "Tuesday" ; break ;
  case 3 : day = "Wednesday" ; break ;
  case 4 : day = "Thursday" ; break ;
  case 5 : day = "Friday" ; break ;
  // Default statement to be inserted here (Step 5).
}
```

5. Then, insert a final statement into the **switch** block to initialize the **string** variable when no match is found
```
default : day = "Weekend Day" ; break ;
```

6. Finally, add statements to output the assigned value
```
Console.WriteLine( "Day " + num + " : " + day ) ;
Console.ReadKey( ) ;
```

7. Press **Start** or **F5** to run the application and see the **string** result of the **switch** block assignment



Switch

A **case** statement can also try to match against a **string** value. For example: **case** : **"ABC"**.