C# Programming Essential

Tahaluf Training Center 2021

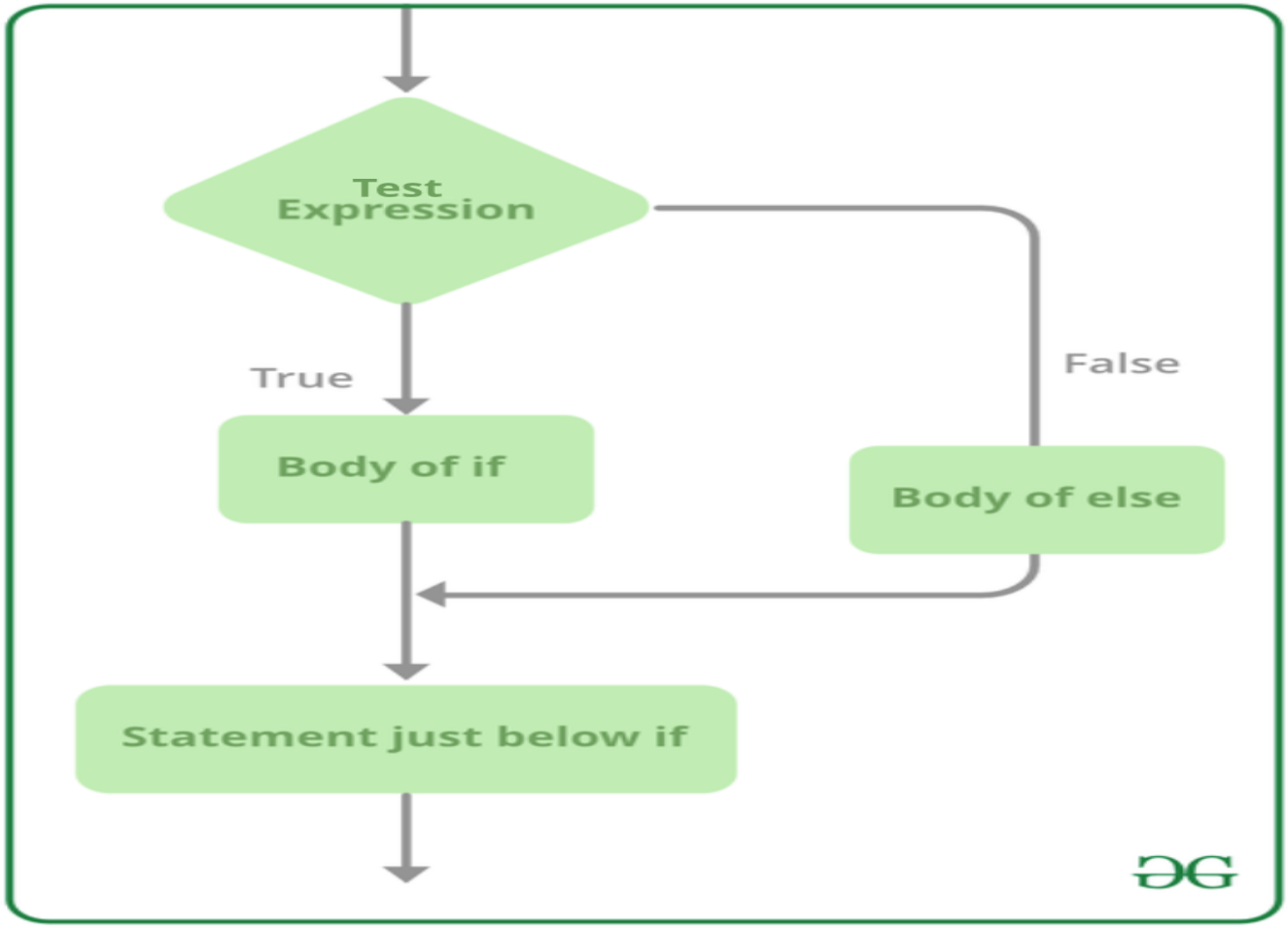
Day 3

1. **Conditions and If Statements**
2. Ternary Operator
3. Switch Statement

C# has the following conditional statements:

- Use if to specify a block of code to be executed, if a specified condition is true.
- Use else to specify a block of code to be executed, if the same condition is false.
- Use else if to specify a new condition to test, if the first condition is false.
- Use switch to specify many alternative blocks of code to be executed.

Conditions and If Statements



If Statement

شركة تحالف الإمارات للحلول التقنية ذ.م.م.
TAHALUF AL EMARAT TECHNICAL SOLUTIONS L.L.C.

Use the if statement to specify a block of C# code to be executed if a condition is True.

```
if (condition)
{
  // block of code to be executed if the condition
is True
}
```

If Statement


```
if (120 > 28)
{
Console.WriteLine("20 is greater than 18");
}
```

Exercise 1:

If the value is less than 1000, it is incremented by 50. print it after incremented.

Exercise Solution:

```
Console.WriteLine("Enter number value: ");
int number = Convert.ToInt32(Console.ReadLine());
if (number < 1000)
{
Console.WriteLine(number);
number += 50;
}
Console.WriteLine(number);
```

Exercise 2:

Enter two double numbers from the keyboard. If their sum is greater than 20, print a sentence explaining this.

شركة تحالف الإمارات للحلول التقنية ذ.م.م.
TAHALUF AL EMARAT TECHNICAL SOLUTIONS L.L.C.

Exercise Solution:

```
Console.WriteLine("Enter number1 value: ");
double number1 = Convert.ToDouble(Console.ReadLine());
Console.WriteLine("Enter number2 value: ");
double number2 = Convert.ToDouble(Console.ReadLine());
if (number1+number2 > 20)
{
Console.WriteLine(number1+ number2);
Console.WriteLine("The sum is greater than 20");
}
Console.WriteLine("The sum is less than 20");
```

if...else (if-then-else) Statement

The if statement in C# may have an optional else statement. The block of code inside the else statement will be executed if the expression is evaluated to false.

```
if (boolean-expression)
{
// statements executed if boolean-expression is true
}
else
{
// statements executed if boolean-expression is false
}
```

if...else (if-then-else) Statement


```
Console.WriteLine("Enter your work hours.");
int workhours = Convert.ToInt32(Console.ReadLine());
if (workhours <= 12)
{
Console.WriteLine("Good day.");
}
Else
{
Console.WriteLine("Not a good day.");
}
```

Exercise 3:

Enter a character from the keyboard, and the program uses a nested if statement to determine whether the input character is an alphabetic character. If the input character is an alphabetic character, the program checks whether the input character is lowercase or uppercase. A message appears for each case.

Exercise Solution:

```
Console.Write("Enter a character: ");
char character = Convert.ToChar(Console.ReadLine());
if (Char.IsLetter(character))
{
    if (Char.IsLower(character))
    {
        Console.WriteLine("The character is lowercase.");
    }
    else
    {
        Console.WriteLine("The character is uppercase.");
    }
}
```

Exercise Solution:

```
else
{
Console.WriteLine("The character isn't an alphabetic
character.");
}
}
```

Exercise 4:

Enter a number from the keyboard, if the number between 0 and 10, print Good Job. Otherwise, print The number should be 0 or more and 10 or less.

Exercise Solution:

```
Console.Write("Enter a number: ");
int number = Convert.ToInt32(Console.ReadLine());
if ((number < 10) && (number > 0))
{
Console.WriteLine("Good job!");
}
Else
{
Console.WriteLine("The number should be 0 or more
and 10 or less");

}
```

Day 3

1. Conditions and If Statements
2. **Ternary Operator**
3. Switch Statement

Ternary Operator

C# also provides a short-hand implementation of the if-else statement which is also known as **Ternary Operator(?:)** because it contains three operands. It is basically used to replace multiples lines of codes with a single line. And it will return one of two values depending on the value of a Boolean expression.

```
variable_name = (condition) ? TrueExpression :
FalseExpression;
```

Ternary Operator


```
Console.WriteLine("Enter value1: ");
string value1 = Convert.ToString(Console.ReadLine());
Console.WriteLine("Enter value2: ");
string value2 = Convert.ToString(Console.ReadLine());
string result = (value1 == value2) ? "Both strings are equal"
: "Not equal";
Console.WriteLine(result);
```

Exercise 5:

Enter two numbers from the keyboard, compare between it using comparison operators and ternary operator(without if statement).

Exercise Solution:

```
Console.WriteLine("Enter Number1: ");
int number1 = Convert.ToInt32(Console.ReadLine());
Console.WriteLine("Enter Number2: ");
int number2 = Convert.ToInt32(Console.ReadLine());
```

Exercise Solution:

```
string result = number1 > number2 ? "number1 is greater
than number2" :

number1 < number2 ? "number1 is less than numner2" :

number1 == number2 ? "number1 is equal to number2" :
"Invalid"
Console.WriteLine(result);
```

Day 3

1. Conditions and If Statements
2. Ternary Operator
3. **Switch Statement**

Switch Statement

Use the switch statement to select one of many code blocks to be executed.

```
switch(expression)
{
  case x:
    // code block
    break;
  case y:
    // code block
    break;
  default:
    // code block
    break;
}
```

Switch Statement

- ✓ The switch expression is evaluated once.
- ✓ The value of the expression is compared with the values of each case.
- ✓ If there is a match, the associated block of code is executed.
- ✓ When C# reaches a break keyword, it breaks out of the switch block.
- ✓ The default keyword is optional and specifies some code to run if there is no case match.

Switch Statement


```
Console.WriteLine("Enter Number: ");
int number = Convert.ToInt32(Console.ReadLine());
switch (number)
{
case 1:
Console.WriteLine("Case 1");
break;
case 2:
Console.WriteLine("Case 2");
break;
default:
Console.WriteLine("Default case");
break;
}
```

Exercise 6:

Using Switch statement print week days.

Exercise Solution:

```
Console.WriteLine("Enter a number: ");
int day = Convert.ToInt32(Console.ReadLine());
switch (day)
{
case 1:
Console.WriteLine("Sunday");
break;
case 2:
Console.WriteLine("Monday");
break;
case 3:
Console.WriteLine("Tuesday");
break;
```

Exercise Solution:

```
case 4:
Console.WriteLine("Wednesday");
break;
case 5:
Console.WriteLine("Thursday");
break;
case 6:
Console.WriteLine("Friday");
break;
case 7:
Console.WriteLine("Saturday");
break;
```

Exercise 7:

Generate random number from 0 to 3. using Switch statement represent each number with a color(red, green, blue).

Exercise Solution:

```
int num = new Random().Next(0, 3);
Console.WriteLine(num);
switch (num)
{
case 1:
Console.WriteLine("The color is
red");
break;
```

Exercise Solution:

```
case 2:
Console.WriteLine("The color is green");
break;
case 3:
Console.WriteLine("The color is blue");
break;
default:
Console.WriteLine("The color is unknown.");
break;
```

شركة تحالف الإمارات للحلول التقنية ذ.م.م.
TAHALUF AL EMARAT TECHNICAL SOLUTIONS L.L.C.

On The E-Learning Portal

Any Question?