

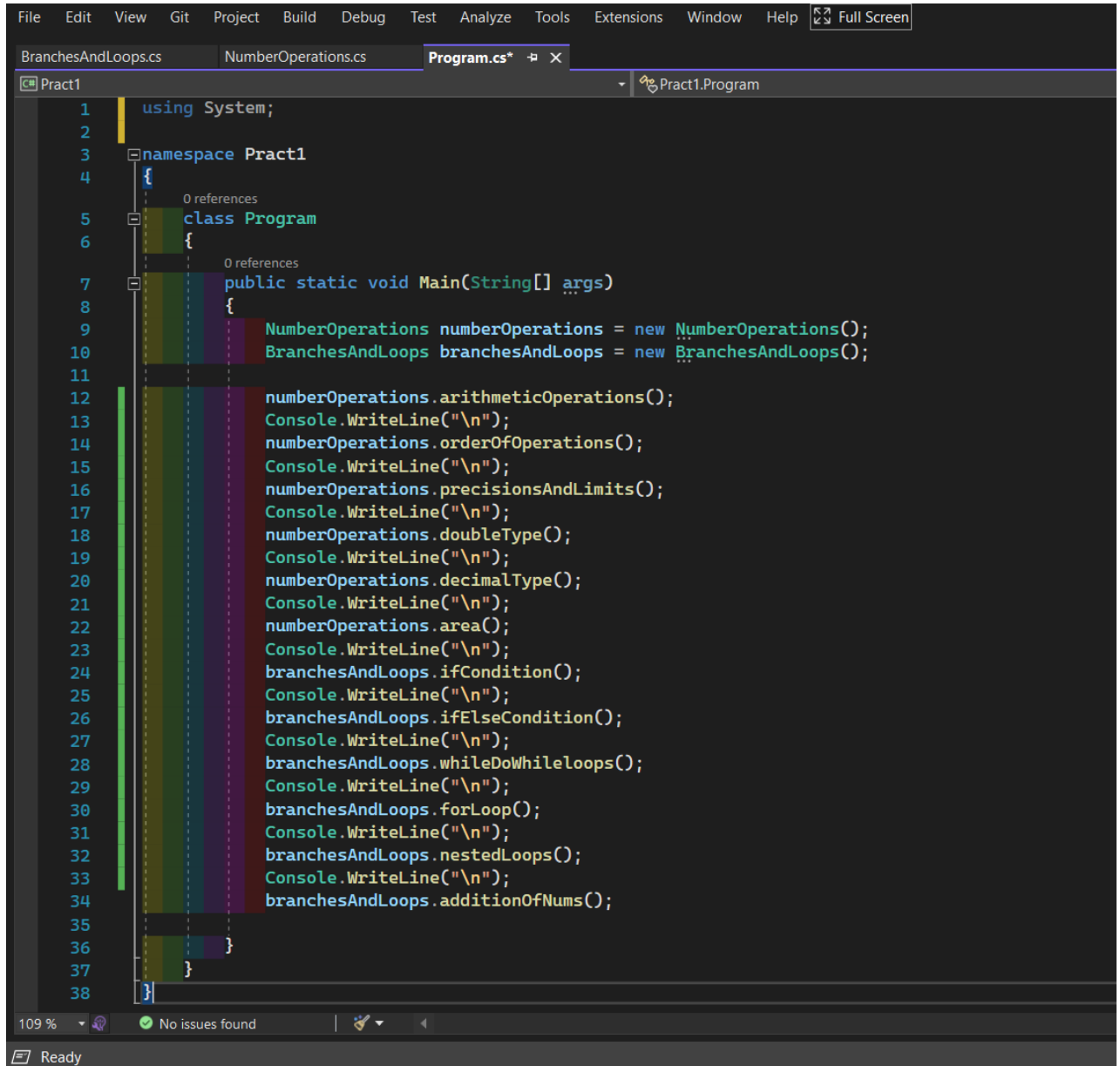
Practical – 2

C# Numbers and Branches & Loops

Github Repo: [Github](#)

Code:

1. Program.cs



```
1  using System;
2
3  namespace Pract1
4  {
5      class Program
6      {
7          public static void Main(String[] args)
8          {
9              NumberOperations numberOperations = new NumberOperations();
10             BranchesAndLoops branchesAndLoops = new BranchesAndLoops();
11
12             numberOperations.arithmeticOperations();
13             Console.WriteLine("\n");
14             numberOperations.orderOfOperations();
15             Console.WriteLine("\n");
16             numberOperations.precisionsAndLimits();
17             Console.WriteLine("\n");
18             numberOperations.doubleType();
19             Console.WriteLine("\n");
20             numberOperations.decimalType();
21             Console.WriteLine("\n");
22             numberOperations.area();
23             Console.WriteLine("\n");
24             branchesAndLoops.ifCondition();
25             Console.WriteLine("\n");
26             branchesAndLoops.ifElseCondition();
27             Console.WriteLine("\n");
28             branchesAndLoops.whileDoWhileLoops();
29             Console.WriteLine("\n");
30             branchesAndLoops.forLoop();
31             Console.WriteLine("\n");
32             branchesAndLoops.nestedLoops();
33             Console.WriteLine("\n");
34             branchesAndLoops.additionOfNums();
35
36         }
37     }
38 }
```

2. NumberOperations.cs

```
1 using System;
2
3 namespace Pract1
4 {
5     public class NumberOperations
6     {
7         public void arithmeticOperations(){
8             int a = 18;
9             int b = 6;
10
11             int c = a + b;
12             Console.WriteLine(c);
13
14             c = a - b;
15             Console.WriteLine(c);
16
17             c = a * b;
18             Console.WriteLine(c);
19
20             c = a / b;
21             Console.WriteLine(c);
22         }
23
24         public void orderOfOperations()
25         {
26             int a = 5;
27             int b = 4;
28             int c = 2;
29
30             int d = a + b * c;
31             Console.WriteLine(d);
32
33             d = (a + b) * c;
34             Console.WriteLine(d);
35
36             d = (a + b) - 6 * c + (12 * 4) / 3 + 12;
37             Console.WriteLine(d);
38         }
39     }
40 }
```

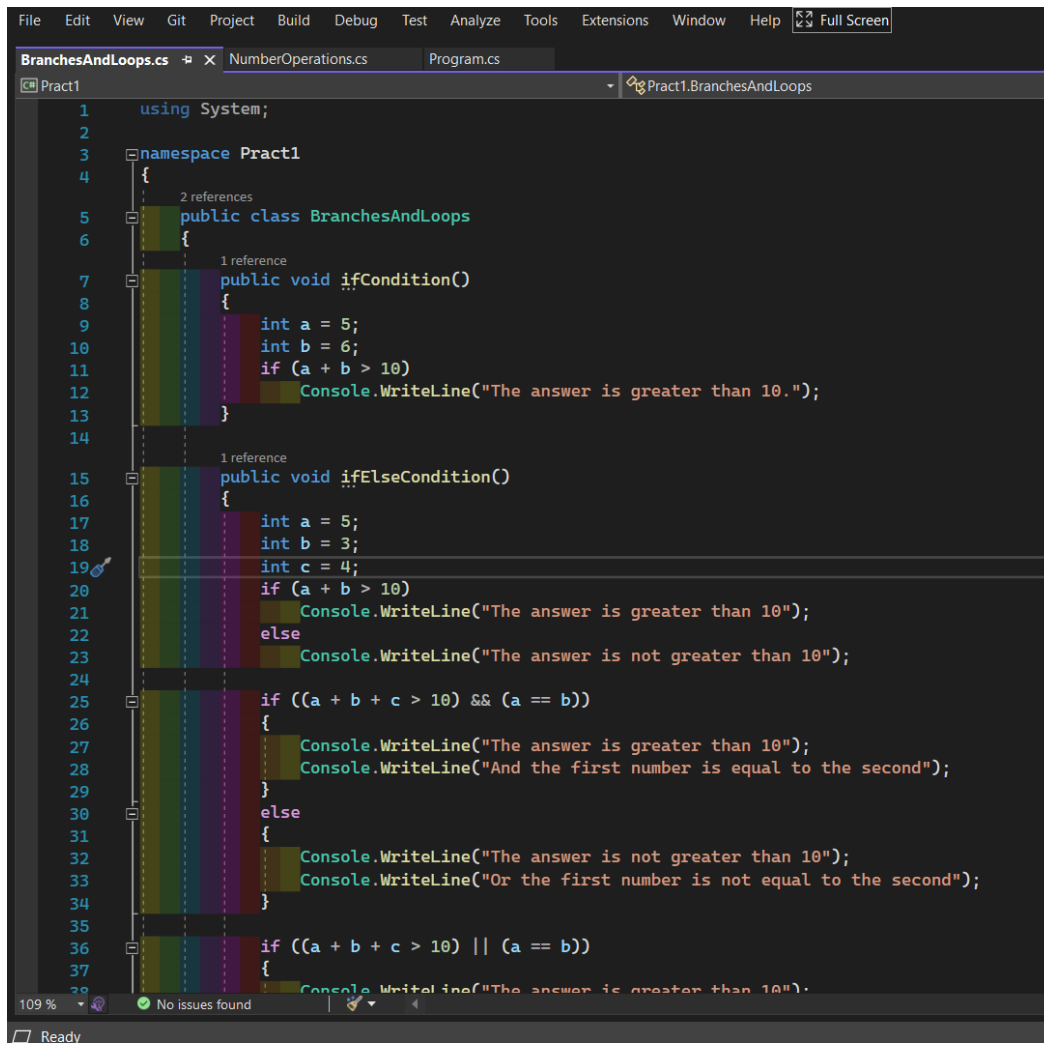
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Ready

```
File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help Full Screen
BranchesAndLoops.cs NumberOperations.cs* X Program.cs*
Pract1
38 }
39
40 1 reference
41 public void precisionsAndLimits()
42 {
43     int a = 7;
44     int b = 4;
45     int c = 3;
46     int d = (a + b) / c;
47     int e = (a + b) % c;
48     Console.WriteLine($"quotient: {d}");
49     Console.WriteLine($"remainder: {e}");
50
51     int max = int.MaxValue;
52     int min = int.MinValue;
53     Console.WriteLine($"The range of integers is {min} to {max}");
54
55     int what = max + 3;
56     Console.WriteLine($"An example of overflow: {what}");
57 }
58
59 1 reference
60 public void doubleType()
61 {
62     double a = 19;
63     double b = 23;
64     double c = 8;
65     double d = (a + b) / c;
66     Console.WriteLine(d);
67
68     double max = double.MaxValue;
69     double min = double.MinValue;
70     Console.WriteLine($"The range of double is {min} to {max}");
71
72     double third = 1.0 / 3.0;
73     Console.WriteLine(third);
74 }
75
76 1 reference
77 public void decimalType()
78 {
79     decimal min = decimal.MinValue;
80     decimal max = decimal.MaxValue;
81     Console.WriteLine($"The range of the decimal type is {min} to {max}");
82
83     double a = 1.0;
84     double b = 3.0;
85     Console.WriteLine(a / b);
86
87     decimal c = 1.0M;
88     decimal d = 3.0M;
89     Console.WriteLine(c / d);
90 }
91
92 1 reference
93 public void area()
94 {
95     double radius = 2.50;
96     double area = Math.PI * radius * radius;
97     Console.WriteLine(area);
98 }
```

```
File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help Full Screen
BranchesAndLoops.cs NumberOperations.cs* X Program.cs*
Pract1
74 public void decimalType()
75 {
76     decimal min = decimal.MinValue;
77     decimal max = decimal.MaxValue;
78     Console.WriteLine($"The range of the decimal type is {min} to {max}");
79
80     double a = 1.0;
81     double b = 3.0;
82     Console.WriteLine(a / b);
83
84     decimal c = 1.0M;
85     decimal d = 3.0M;
86     Console.WriteLine(c / d);
87 }
88
89 1 reference
90 public void area()
91 {
92     double radius = 2.50;
93     double area = Math.PI * radius * radius;
94     Console.WriteLine(area);
95 }
96
97 }
98 }
```

3. BranchesAndLoops.cs



```
1  using System;
2
3  namespace Pract1
4  {
5      2 references
6      public class BranchesAndLoops
7      {
8          1 reference
9          public void ifCondition()
10         {
11             int a = 5;
12             int b = 6;
13             if (a + b > 10)
14                 Console.WriteLine("The answer is greater than 10.");
15         }
16
17         1 reference
18         public void ifElseCondition()
19         {
20             int a = 5;
21             int b = 3;
22             int c = 4;
23             if (a + b > 10)
24                 Console.WriteLine("The answer is greater than 10");
25             else
26                 Console.WriteLine("The answer is not greater than 10");
27
28             if ((a + b + c > 10) && (a == b))
29             {
30                 Console.WriteLine("The answer is greater than 10");
31                 Console.WriteLine("And the first number is equal to the second");
32             }
33             else
34             {
35                 Console.WriteLine("The answer is not greater than 10");
36                 Console.WriteLine("Or the first number is not equal to the second");
37             }
38
39             if ((a + b + c > 10) || (a == b))
40             {
41                 Console.WriteLine("The answer is greater than 10");
42             }
43         }
44     }
45 }
```

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Ready

```
File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help Full Screen
BranchesAndLoops.cs x NumberOperations.cs Program.cs
Pract1
37 Console.WriteLine("The answer is greater than 10");
38 Console.WriteLine("Or the first number is equal to the second");
39 }
40 }
41 else
42 {
43 Console.WriteLine("The answer is not greater than 10");
44 Console.WriteLine("And the first number is not equal to the second");
45 }
46 }
47
48 1 reference
49 public void whileDowWhileLoops()
50 {
51 int counter = 0;
52 while (counter < 10)
53 {
54 Console.WriteLine($"Hello World! The counter is {counter}");
55 counter++;
56 }
57
58 counter = 0;
59 do
60 {
61 Console.WriteLine($"Hello World! The counter is {counter}");
62 counter++;
63 } while (counter < 10);
64
65 1 reference
66 public void forLoop()
67 {
68 for (int counter = 0; counter < 10; counter++)
69 {
70 Console.WriteLine($"Hello World! The counter is {counter}");
71 }
72
73 1 reference
74 public void nestedLoops()
75 {
```

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```
File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help Full Screen
BranchesAndLoops.cs x NumberOperations.cs Program.cs
Pract1
72
73 1 reference
74 public void nestedLoops()
75 {
76 for (int row = 1; row < 11; row++)
77 {
78 for (char column = 'a'; column < 'k'; column++)
79 {
80 Console.WriteLine($"The cell is ({row}, {column})");
81 }
82 }
83
84 1 reference
85 public void additionOfNums()
86 {
87 int sum = 0;
88 for (int number = 1; number < 21; number++)
89 {
90 if (number % 3 == 0)
91 {
92 sum = sum + number;
93 }
94 Console.WriteLine($"The sum is {sum}");
95 }
96 }
97
98
```

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Output:

Microsoft Visual Studio Debug Console

24
12
108
3

13
18
25

```
quotient: 3
remainder: 2
The range of integers is -2147483648 to 2147483647
An example of overflow: -2147483646
```

```
5.25
The range of double is -1.7976931348623157E+308 to 1.7976931348623157E+308
0.3333333333333333
```

```
The range of the decimal type is -79228162514264337593543950335 to 79228162514264337593543950335  
0.3333333333333333  
0.33333333333333333333333333333333
```

19.634954084936208

The answer is greater than 10.

```
The answer is not greater than 10
The answer is not greater than 10
Or the first number is not equal to the second
The answer is greater than 10
Or the first number is equal to the second
```

```

Hello World! The counter is 0
Hello World! The counter is 1
Hello World! The counter is 2
Hello World! The counter is 3
Hello World! The counter is 4
Hello World! The counter is 5
Hello World! The counter is 6
Hello World! The counter is 7
Hello World! The counter is 8
Hello World! The counter is 9
Hello World! The counter is 0
Hello World! The counter is 1
Hello World! The counter is 2
Hello World! The counter is 3
Hello World! The counter is 4
Hello World! The counter is 5
Hello World! The counter is 6
Hello World! The counter is 7
Hello World! The counter is 8
Hello World! The counter is 9

```

```
Hello World! The counter is 0
Hello World! The counter is 1
Hello World! The counter is 4
Hello World! The counter is 5
Hello World! The counter is 6
Hello World! The counter is 7
Hello World! The counter is 8
Hello World! The counter is 9
```

The cell is (1, a)
The cell is (1, b)
The cell is (1, c)
The cell is (1, d)
The cell is (1, e)
The cell is (1, f)
The cell is (1, g)
The cell is (1, h)
The cell is (1, i)
The cell is (1, j)
The cell is (2, a)
The cell is (2, b)
The cell is (2, c)
The cell is (2, d)
The cell is (2, e)
The cell is (2, f)
The cell is (2, g)
The cell is (2, h)
The cell is (2, i)
The cell is (2, j)
The cell is (3, a)
The cell is (3, b)
The cell is (3, c)
The cell is (3, d)
The cell is (3, e)

```
The cell is (3, f)
The cell is (3, g)
The cell is (3, h)
The cell is (3, i)
The cell is (3, j)
The cell is (4, a)
The cell is (4, b)
The cell is (4, c)
The cell is (4, d)
The cell is (4, e)
The cell is (4, f)
The cell is (4, g)
The cell is (4, h)
The cell is (4, i)
The cell is (4, j)
The cell is (5, a)
The cell is (5, b)
The cell is (5, c)
The cell is (5, d)
The cell is (5, e)
The cell is (5, f)
The cell is (5, g)
The cell is (5, h)
The cell is (5, i)
The cell is (5, j)
The cell is (6, a)
The cell is (6, b)
The cell is (6, c)
The cell is (6, d)
The cell is (6, e)
The cell is (6, f)
The cell is (6, g)
The cell is (6, h)
The cell is (6, i)
The cell is (6, j)
The cell is (7, a)
The cell is (7, b)
The cell is (7, c)
The cell is (7, d)
The cell is (7, e)
The cell is (7, f)
The cell is (7, g)
The cell is (7, h)
The cell is (7, i)
The cell is (7, j)
The cell is (8, a)
The cell is (8, b)
The cell is (8, c)
The cell is (8, d)
The cell is (8, e)
The cell is (8, f)
The cell is (8, g)
The cell is (8, h)
The cell is (8, i)
The cell is (8, j)
The cell is (9, a)
The cell is (9, b)
The cell is (9, c)
The cell is (9, d)
The cell is (9, e)
The cell is (9, f)
The cell is (9, g)
The cell is (9, h)
The cell is (9, i)
The cell is (9, j)
The cell is (10, a)
The cell is (10, b)
The cell is (10, c)
The cell is (10, d)
The cell is (10, e)
The cell is (10, f)
The cell is (10, g)
The cell is (10, h)
The cell is (10, i)
The cell is (10, j)

The sum is 63
```