Practical 1: Working with basic C# and ASP.NET

a) Create an application to print on screen the output of adding, subtracting, multiplying and dividing two numbers entered by the user in C#.

Code :

```
private void Button_Click(object sender, RoutedEventArgs e){
        try  {
           double number1 = Convert.ToDouble(txtNumber1.Text);
           double number2 = Convert.ToDouble(txtNumber2.Text);
           double addition = number1 + number2;
           double subtraction = number1 - number2;
           double multiplication = number1 * number2;
           double division = number2 != 0 ? number1 / number2 : double.NaN; // Check division by 0
          txtAddition.Text = addition.ToString();
           txtSubtraction.Text = subtraction.ToString();
           txtMultiplication.Text = multiplication.ToString();
           txtDivision.Text = division != double.NaN ? division.ToString() : "Error"; // Handle division by zero
        }     catch(Exception ex) {
           MessageBox.Show("Invalid input! Please enter valid numbers.");
        }
}
```

b) Create an application to print Floyd's triangle till n rows in C#.

Code :

```
private void Button_Click(object sender, RoutedEventArgs e)  {
        int numOfRows = Convert.ToInt32(NoOfRows.Text);
        int number = 1;
        StringBuilder sb = new StringBuilder();
        for(int i=1; i<=numOfRows; i++)  {
           for (int j=1; j<=i; j++)    {
              sb.Append(number + " ");
              number++;
           }       sb.Append("\n");
        }   Lawaris.Text = sb.ToString();
     }
 }
```

c) Create an application to demonstrate following operations

i) Generate Fibonacci series.

ii) Test for Prime numbers.

Code :

```
private void FibonacciSeries(object sender, RoutedEventArgs e)   {
            int a, b, c, i, n;
            a = 1;
            b = 1;
            FiboSeries.Content = a.ToString() + b.ToString();
            n = Convert.ToInt32(Number.Text);
            for(i=2; i<n; i++)     {
                c = a + b;
                FiboSeries.Content = FiboSeries.Content + c.ToString();
                a = b;
                b = c;
            }
        }

        private void PrimeNumbers(object sender, RoutedEventArgs e){
            int n, i, s = 0;
            n = Convert.ToInt32(Number.Text);
            if (n == 0 || n == 1)
                s = 1;
            for(i=2; i<=n/2; i++)        {
                if (n % i == 0)  {
                    s = 1;
                    break;
                }
            }
            if (s == 0)
                PrimeNo.Content = "The given number is Prime. ";
            else
                PrimeNo.Content = "The given number is not Prime. ";
        }
```

Practical 2: Working with basic C# and ASP.NET

a) Create a simple application to demonstrate the concepts boxing and unboxing

Code :

```
private void Button_Click(object sender, RoutedEventArgs e)    {
            int valueType = Convert.ToInt32(NumberTxt.Text);
            object boxed = valueType; //The value type 'valueType' is boxed
            Label1.Content = "Boxed value: " + boxed;
            int unboxed = (int)boxed;
            Label2.Content = "Unboxed value: " + unboxed;
        }
```

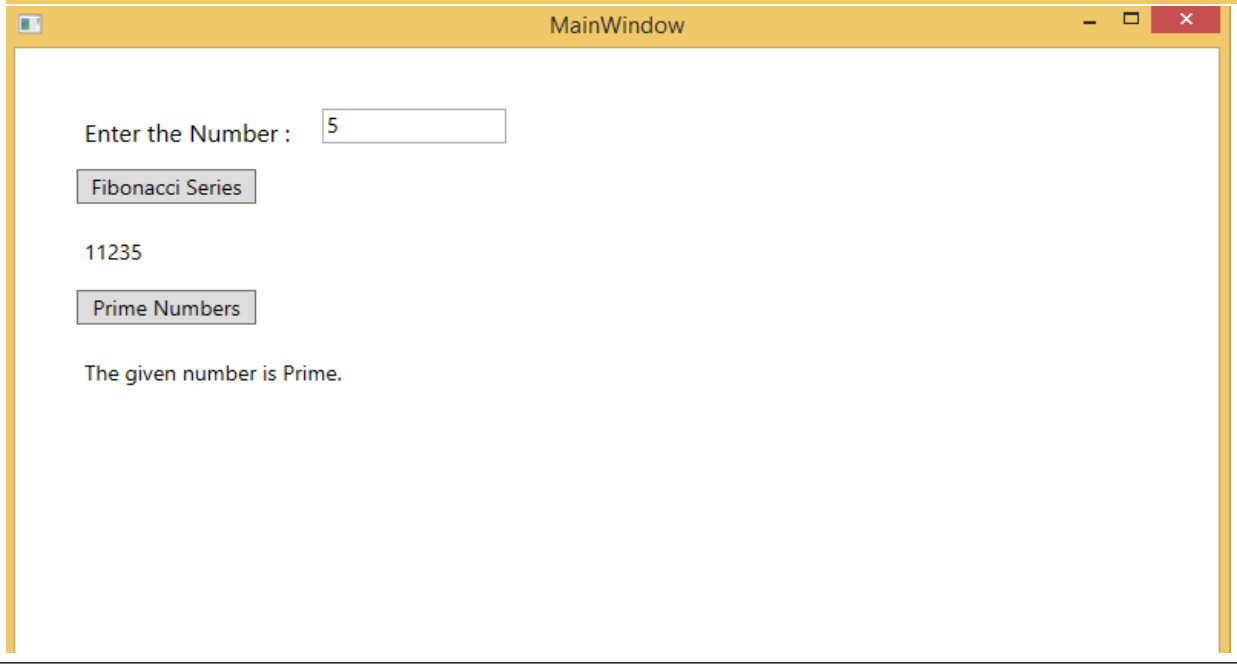
b) Create a simple application to perform addition and subtraction using delegate.

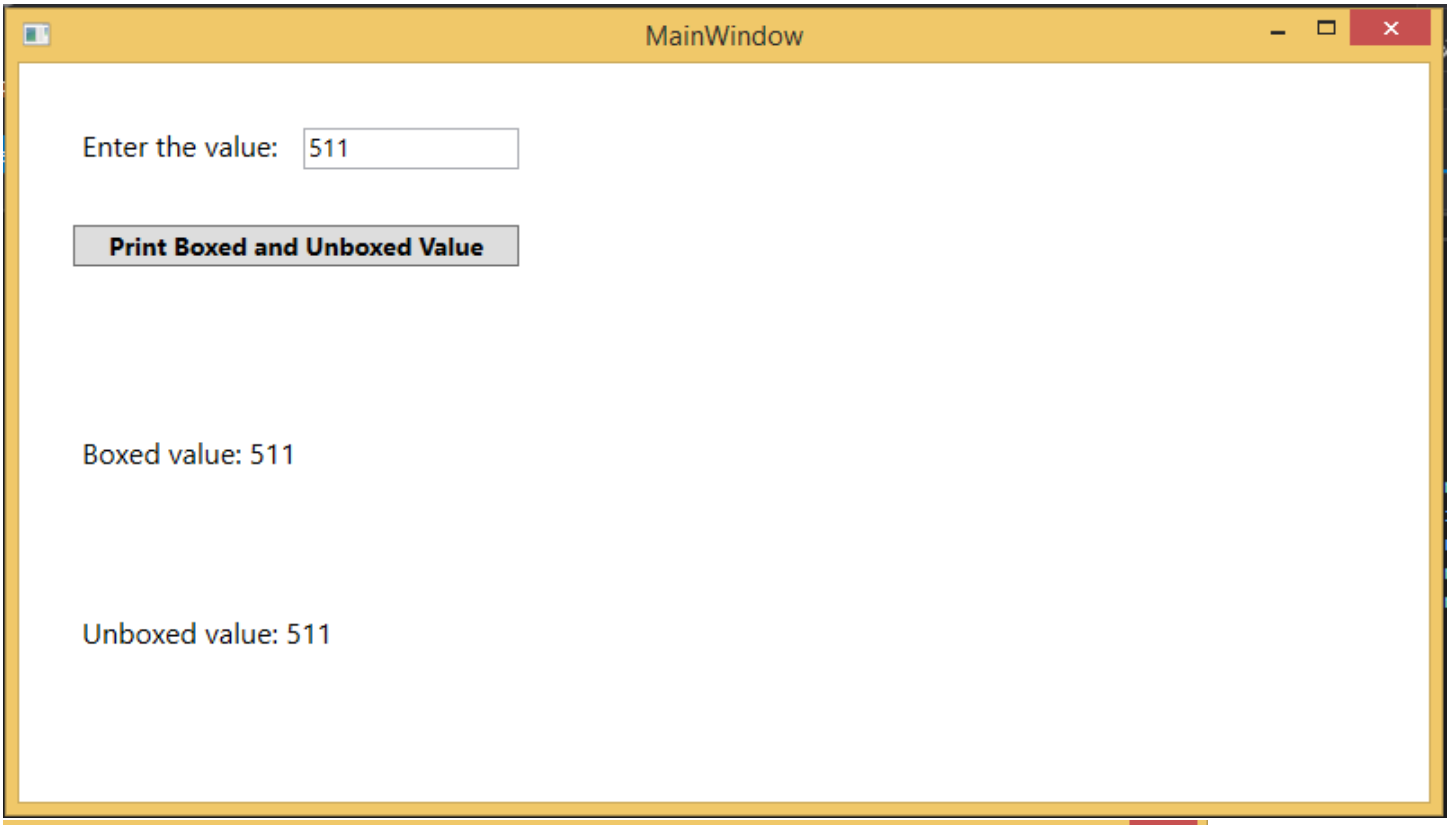
Code :

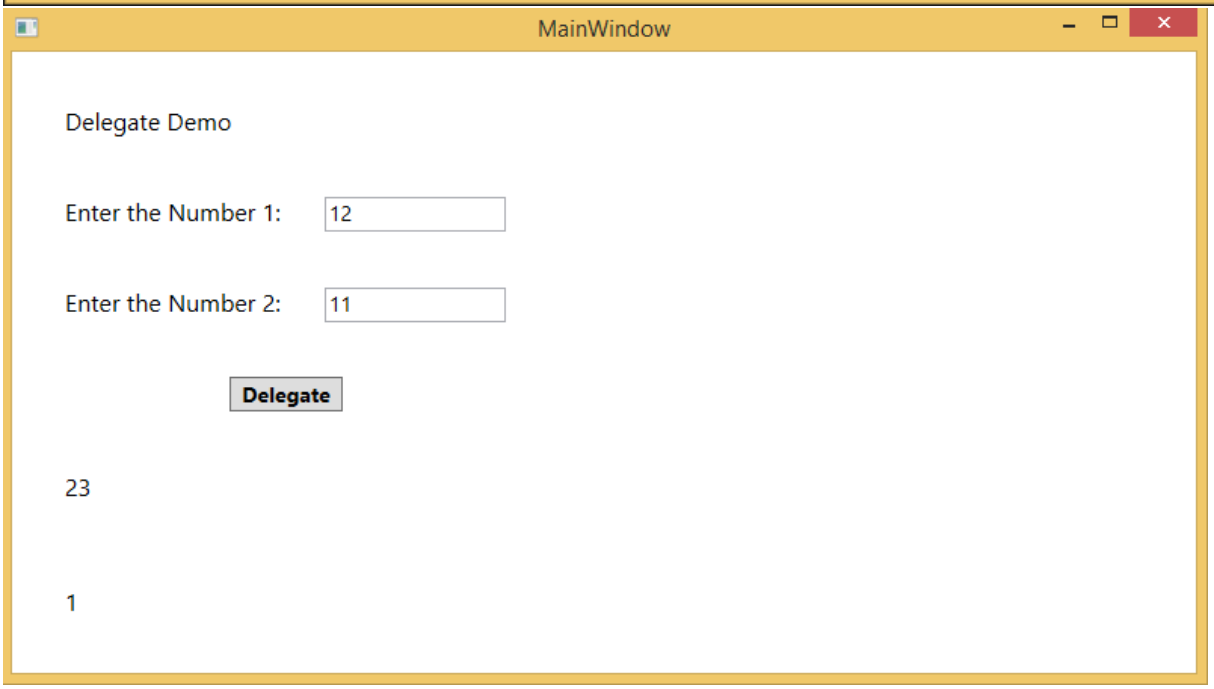
```
private void Button_Click(object sender, RoutedEventArgs e)   {
            int x = Convert.ToInt32(NumberTxt1.Text);
            int y = Convert.ToInt32(NumberTxt2.Text);
            MathOperation add = new MathOperation(Add);
            MathOperation sub = new MathOperation(Sub);
            Label1.Content = add(x, y).ToString();
            Label2.Content = sub(x, y).ToString();
        }
```


Enter Number1
5
Enter Number2
11
Calculate
Add
Subtract
Multiply
Divide
16
-6
55
0.454545454545455


MainWindow
Floyd's Triangles
Enter Number of Rows :
10
Result
1
2 3
4 5 6
7 8 9 10
11 12 13 14 15
16 17 18 19 20 21
22 23 24 25 26 27 28
29 30 31 32 33 34 35 36
37 38 39 40 41 42 43 44 45
46 47 48 49 50 51 52 53 54 55


MainWindow
Enter the Number :
5
Fibonacci Series
11235
Prime Numbers
The given number is Prime.


MainWindow
Enter the value:
511
Print Boxed and Unboxed Value
Boxed value: 511
Unboxed value: 511


MainWindow
Delegate Demo
Enter the Number 1:
12
Enter the Number 2:
11
Delegate
23
1