TUGAS JURNAL
KONSTRUKSI PERANGKAT LUNAK
MODUL 12

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S1 REKAYASA PERANGKAT LUNAK

FAKULTAS INFORMATIKA

TELKOM UNIVERSITY PURWOKERTO

Cari tanda bilangan

```
1   public int CariNilaiPangkat(int a, int b)
2   {
3       if (b == 0) return 1;
4       if (b < 0) return -1;
5       if (b > 10 || a > 100) return -2;
6
7       try
8       {
9           checked
10          {
11              int hasil = 1;
12              for (int i = 0; i < b; i++)
13              {
14                  hasil *= a;
15              }
16              return hasil;
17          }
18      }
19      catch (OverflowException)
20      {
21          return -3;
22      }
23  }
```

Button hitung

```
1   private void button1_Click(object sender, EventArgs e)
2   {
3       int a, b;
4       if (int.TryParse(textBox1.Text, out a) && int.TryParse(textBox2.Text, out b))
5       {
6           int hasil = CariNilaiPangkat(a, b);
7           label1.Text = $"Hasil: {hasil}";
8       }
9       else
10      {
11          label1.Text = "Input tidak valid!";
12      }
13  }
```

Unit testing

```csharp
using Microsoft.VisualStudio.TestTools.UnitTesting;
using System;

namespace modul12_2211104011.Tests
{
    [TestClass]
    public class Form1Tests
    {
        Form1 form = new Form1();

        [TestMethod]
        public void TestPangkat_Normal()
        {
            Assert.AreEqual(8, form.CariNilaiPangkat(2, 3));
        }

        [TestMethod]
        public void TestPangkat_BZero()
        {
            Assert.AreEqual(1, form.CariNilaiPangkat(5, 0));
        }

        [TestMethod]
        public void TestPangkat_Negatif()
        {
            Assert.AreEqual(-1, form.CariNilaiPangkat(2, -2));
        }

        [TestMethod]
        public void TestPangkat_Limit()
        {
            Assert.AreEqual(-2, form.CariNilaiPangkat(101, 2));
        }

        [TestMethod]
        public void TestPangkat_Overflow()
        {
            Assert.AreEqual(-3, form.CariNilaiPangkat(50, 10));
        }
    }
}
```