

Laboratory Exercise

Parameter

Objectives:

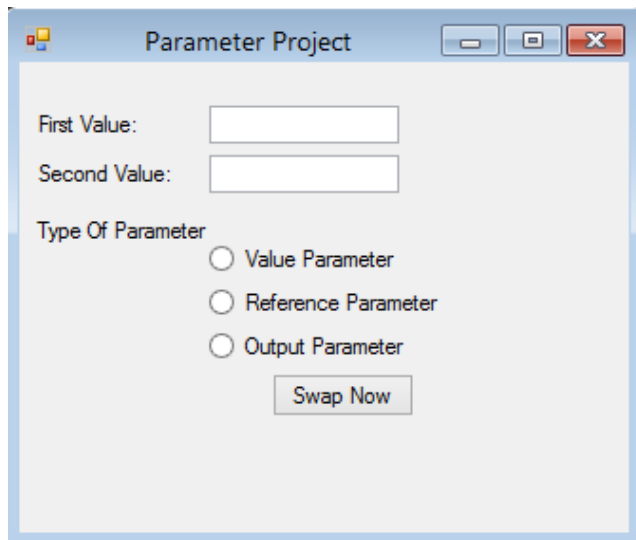
At the end of the exercise, the students should be able to:

- use and differentiate value and out parameter.

Materials:

- Flash drive
- PC with installed Microsoft Visual C# 2010 Express

Procedures:



Activity 1 Create a new project

1. Name your project as **ParameterProject**
2. Select **Windows Forms Application**
3. Change the **Property** of **form1.cs**:
 - a. **Name**
 - i. **Form1 = frmParameter**
 - b. **Text**
 - i. **frmParameter = Parameter Project**
4. Add 2 **Textbox** and change the **Name Property**:
 - a. **textbox1 = txtFirstValue**
 - b. **textbox2 = txtSecondValue**
5. Add 2 **Labels** and change the **Text Property**:
 - a. **label1 = First Value:**
 - b. **label2 = Last Value:**
6. Add 3 **Radio Buttons** and change the **Name Property** and **Text Property**:
 - a. **Name Property**
 - i. **radiobutton1 = rbnValueParameter**

- ii. radiobutton2 = rbnRefParameter
 - iii. radiobutton3 = rbnOutParameter
 - b. Text Property
 - i. rbnValueParameter = Value Parameter
 - ii. rbnRefParameter = Reference Parameter
 - iii. rbnOutParameter= Output Parameter
- 7. Add 1 Button and change the Name Property and Text Property:
 - a. Name Property
 - i. button1 = btnSwap
 - b. Text Property
 - i. btnShowResult = Swap Now
- 8. Add the following code and observe:

```
private void btnSwap_Click(object sender, EventArgs e)
{
    object a = txtFirstValue.Text;
    object b = txtSecondValue.Text;

    if (rbnValueParameter.Checked == true)
    {
        ValueParameter(a, b);
    }
    else if (rbnRefParameter.Checked == true)
    {
        RefParameter(ref a, ref b);
    }
    else if (rbnOutParameter.Checked == true)
    {
        OutParameter(a, out b);
    }
    else
    {
        MessageBox.Show("Please select first a type of parameter.");
        return;
    }
    MessageBox.Show("First Value is now: " + a + Environment.NewLine + "Second Value is now: " + b);
}

private void ValueParameter(object a, object b)
{
    object tempStorage;
    tempStorage = a;
    a = b;
    b = tempStorage;
}

private void RefParameter(ref object a, ref object b)
{
    object tempStorage;
    tempStorage = a;
    a = b;
    b = tempStorage;
}

private void OutParameter(object a, out object b)
{
    object tempStorage;
    tempStorage = a;
    b = a;
    a = tempStorage;
}
```