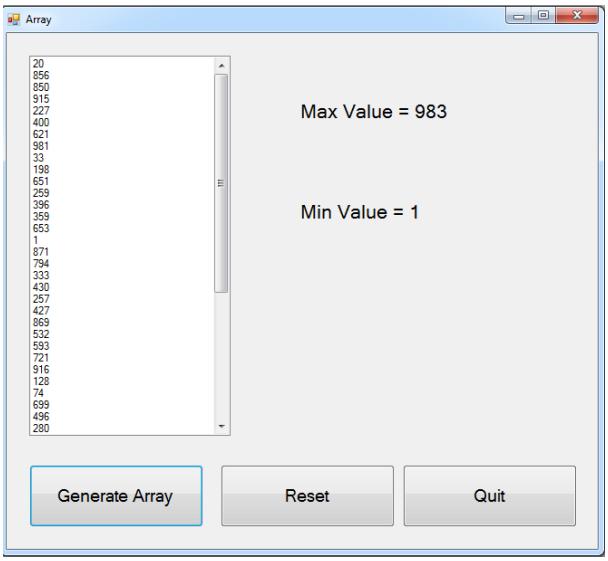
Name: **Session:**

Programming II

Lab Exercise 4.13.2021

You may create this application using either a console application of a Windows form. You may copy my design, or create your own.

1. Create an application that generates 50 values and stored an array. The application should then display the largest and smallest values stored in the array. Your values should be in the range of 1 and 1000.



a. Add the following code to btnReset_Click event handler.

```
lstValues.Items.Clear();
lblMax.Text = "";
lblMin.Text = "";
```

b. Add the following code to the btnGenerate_Click event handler.

```
int [] numbers = new int[50];
int number, index;
int max, min;

Random r = new Random();

for (index = 0; index < numbers.Length; index++)
{
        number = r.Next(1000);
        numbers[index] = number;
        lstValues.Items.Add(number);
}
```

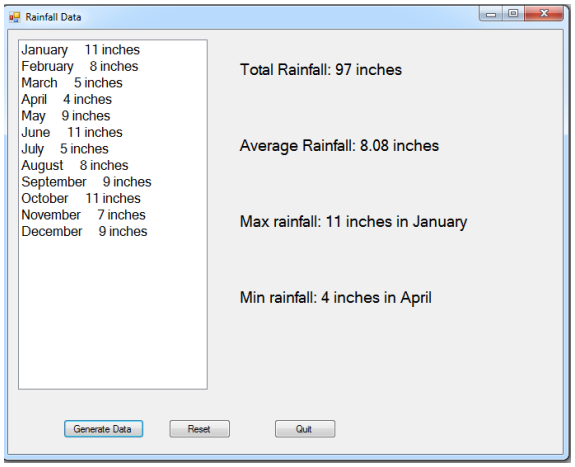
```
max = numbers[0];
for (index = 0; index < numbers.Length; index++)
{
        if (numbers[index] > max)
        max = numbers[index];
}

min = numbers[0];
for (index = 0; index < numbers.Length; index++)
{
        if (numbers[index] < min)
        min = numbers[index];
}

lblMax.Text = "Max Value = " + max;
lblMin.Text = "Min Value = " + min;
```

c. Now test your application

2. Create an application that generates rainfall data for each of 12 months into an array. The application should calculate and display the following statistics: total rainfall for the year, average monthly rainfall, and the months with the highest and lowest rainfall. Monthly rainfall should be in the range of 3 to 13 inches.



a. Add the following code to the btnReset_Click event handler.

```
lstData.Items.Clear();
lblAverage.Text = "";
lblMax.Text = "";
lblMin.Text = "";
lblTotal.Text = "";
```

b. Add the following code to the btnGenerate_Click event handler.

```
string [] months = new string[] {"January", "February", "March", "April", "May"
        "June", "July", "August", "September", "October", "November", "December"};
int[] data = new int[12];
string month, maxMonth, minMonth, message;
int inches, total=0, max, min, index;
double average;

Random r = new Random();

for (index = 0; index < data.Length; index++)
{
        month = months[index];
        inches = r.Next(1, 10) + 3;
        data[index] = inches;
        message = month + "     " + inches + " inches";
        lstData.Items.Add(message);
}

for (index = 0; index < data.Length; index++)
        total += data[index];

average = total / 12.0;

max = data[0];
maxMonth = months[0];
for (index = 1; index < data.Length; index++)
{
        if (data[index] > max)
        {
        max = data[index];
        maxMonth = months[index];
        }
}

min = data[0];
minMonth = months[0];
for (index = 1; index < data.Length; index++)
{
        if (data[index] < min)
        {
                min = data[index];
                minMonth = months[index];
        }
}
```

```
lblTotal.Text = "Total Rainfall: " + total + " inches";
lblAverage.Text = "Average Rainfall: " + average.ToString("n2") + " inches";
lblMax.Text = "Max rainfall: " + max + " inches in " + maxMonth;
lblMin.Text = "Min rainfall: " + min + " inches in " + minMonth;
```

When you complete your application, submit a screenshot of your running program.