C# Foreach Loop

foreach loop is a different kind of looping constructs in C# programming that doesn't includes initialization, termination and increment/decrement characteristics.

It uses collection to take value one by one and then processes them.

Syntax:

```
foreach (string name in arr)
{

}
```

- Where, **name** is a **string variable** that takes value from collection
- as **arr** and then processes them in the body area.

Sample Program

```
.   using System;
.   using System.Collections.Generic;
.   using System.Linq;
.   using System.Text;
.
.   namespace foreach_loop
.   {
.       class Program
.       {
.           static void Main(string[] args)
.           {
.               string[] arr = new string[5]; // declaring array
.
.               //Storing value in array element
.               arr[0] = "Steven";
.               arr[1] = "Clark";
.               arr[2] = "Mark";
.               arr[3] = "Thompson";
.               arr[4] = "John";
```

```
.
.              //retrieving value using foreach loop
.              foreach (string name in arr)
.              {
.                  Console.WriteLine("Hello " + name);
.              }
.              Console.ReadLine();
.          }
.      }
.  }
```

Note: You will learn more about array in lateral chapter.

Output

Hello Steven
Hello Clark
Hello Mark
Hello Thompson
Hello John
▂

Engaging Activities

Q1: Write a program to display a multiplication table of given number.

Example:

8 x 1 = 8

8 x 2 = 16

8 x 3 = 24

8 x 4 = 32

8 x 5 = 40

8 x 6 = 48

8 x 7 = 56

8 x 8 = 64

8 x 9 = 72

8 x 10 = 80

Answer:

```csharp
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

namespace Loop_Examples1
{
    class Program
    {
        static void Main(string[] args)
        {
            int num, i, result;
            Console.Write("Enter a number\t");
            num = Convert.ToInt32(Console.ReadLine());

            for (i = 1; i <= 10; i++)
            {
                result = num * i;
                Console.WriteLine("{0} x {1} = {2}", num, i, result);
            }
            Console.ReadLine();
        }
    }
}
```

Output

```
Enter a number      8
8 x 1 = 8
8 x 2 = 16
8 x 3 = 24
8 x 4 = 32
8 x 5 = 40
```

```
8 x 6 = 48
8 x 7 = 56
8 x 8 = 64
8 x 9 = 72
8 x 10 = 80
_
```

Q2: Write a program to print following output using for loop.
```
1
22
333
4444
55555
```

Answer:

```csharp
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

namespace Loop_Example2
{
    class Program
    {
        static void Main(string[] args)
        {
            int i, j;
            i = 0;
            j = 0;

            for (i = 1; i <= 5; i++)
            {
                for (j = 1; j <= i; j++)
```

```
            {
                Console.Write(i);
            }
            Console.Write("\n");
        }
        Console.ReadLine();
    }
}
}
```

Output

```
1
22
333
4444
55555
▬
```

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