**C# Jagged Arrays**

In C#, jagged array is also known as "array of arrays" because its elements are arrays. The element size of jagged array can be different.

**Declaration of Jagged array**

Let's see an example to declare jagged array that has two elements.

1. int[][] arr = new int[2][];

**Initialization of Jagged array**

Let's see an example to initialize jagged array. The size of elements can be different.

1. arr[0] = new int[4];
2. arr[1] = new int[6];

**Initialization and filling elements in Jagged array**

Let's see an example to initialize and fill elements in jagged array.

1. arr[0] = new int[4] { 11, 21, 56, 78 };
2. arr[1] = new int[6] { 42, 61, 37, 41, 59, 63 };

Here, size of elements in jagged array is optional. So, you can write above code as given below:

1. arr[0] = new int[] { 11, 21, 56, 78 };
2. arr[1] = new int[] { 42, 61, 37, 41, 59, 63 };

**C# Jagged Array Example**

Let's see a simple example of jagged array in C# which declares, initializes and traverse jagged arrays.

1. public class JaggedArrayTest
2. {
3. public static void Main()
4. {
5. int[][] arr = new int[2][];// Declare the array
7. arr[0] = new int[] { 11, 21, 56, 78 };// Initialize the array
8. arr[1] = new int[] { 42, 61, 37, 41, 59, 63 };
10. // Traverse array elements
11. for (int i = 0; i < arr.Length; i++)
12. {
13. for (int j = 0; j < arr[i].Length; j++)
14. {
15. System.Console.Write(arr[i][j]+" ");
16. }
17. System.Console.WriteLine();
18. }
19. }
20. }

Output:

11 21 56 78

42 61 37 41 59 63

**Initialization of Jagged array upon Declaration**

Let's see an example to initialize the jagged array while declaration.

1. int[][] arr = new int[3][]{
2. new int[] { 11, 21, 56, 78 },
3. new int[] { 2, 5, 6, 7, 98, 5 },
4. new int[] { 2, 5 }
5. };

**C# Jagged Array Example 2**

Let's see a simple example of jagged array which initializes the jagged arrays upon declaration.

1. public class JaggedArrayTest
2. {
3. public static void Main()
4. {
5. int[][] arr = new int[3][]{
6. new int[] { 11, 21, 56, 78 },
7. new int[] { 2, 5, 6, 7, 98, 5 },
8. new int[] { 2, 5 }
9. };
11. // Traverse array elements
12. for (int i = 0; i < arr.Length; i++)
13. {
14. for (int j = 0; j < arr[i].Length; j++)
15. {
16. System.Console.Write(arr[i][j]+" ");
17. }
18. System.Console.WriteLine();
19. }
20. }
21. }

Output:

11 21 56 78

2 5 6 7 98 5

2 5