C# Scenario's (Interview)

<<C__CONCEPTS.cs>>

Find the second maximum number in an array with the smallest complexity

Using Sort and Reverse -

```
using System;
class Program
{
    static void Main()
    {
        int[] numbers = { 5, 2, 8, 10, 3, 1 };

        // Sorting the array in descending order
        Array.Sort(numbers);
        Array.Reverse(numbers);

        // The second highest number is now at index 1
        int secondHighest = numbers[1];

        Console.WriteLine("The second highest number is: " + secondHighest);
    }
}
```

Without Sort and Reverse -

```
int[] myArray = new int[] { 0, 1, 2, 3, 13, 8, 5};
int largest = int.MinValue;
int second = int.MinValue;
foreach(int i in myArray)
{
 if(i > largest)
 {
  second = largest;
  largest = i;
 }
elseif(i > second)
    second = i;
}
Console.WriteLine(second);
```

3. How To Find Sum Of An Array Of Numbers In C#

```
using System;
using System.Linq;

public class ArraySum
{ public static void Main()
{
int[] arr = { 10, 20, 30, 10 };
int sum = arr.Sum();
Console.WriteLine(sum); Console.ReadLine();
}
```

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```
}
```

4. Return Duplicate value from array

```
using System;
class Program
{
    static void Main()
    {
        int[] myArray = { 1, 2, 3, 3 };
        Console.WriteLine("Duplicate elements in the array:");
        for (int i = 0; i < myArray.Length; i++)
        {
            for (int j = i + 1; j < myArray.Length; j++)
            {
                if (myArray[i] == myArray[j])
                {
                    Console.WriteLine(myArray[i]);
                    break; // To avoid printing duplicates multiple times
                }
            }
        }
    }
}
```

```
int [] numbers= {1, 2, 3,4}
numbers.Sort()
numbers.Reverse()
numbers.Max()
numbers.Min()
For loop
Foreach loop –

int[] numbers = { 1, 2, 3, 4, 5 };
foreach (int number in numbers)
{ Console.WriteLine(number); }
```

```
reverse the order of words in a given string?

input:
Welcome to Csharp corner,
output: corner Csharp to Welcome


string quotesInp = "Welcome to Csharp corner,"
string [] quotesArr = quotesInp.Split(new [] {" "};
 // "Welcome" "to" "Csharp" "corner"

Array.Reverse(quotesArr);
string quotesInp = Array.Join(" ",quotesArr)
```

Linq Query –

```
var getStudentFromGrade = from student in students
```

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```
                        where student.Grade == "A"
                        Select student;
```

is below C# code will compiled

```
public class A
{
    public string Func(int a)
    {
        console.writeline(a.ToString());
        return "";
    }

    public int Func(int a)// This will not work with same Data type
    {
        console.writeline(a.ToString());
        return 5;
    }

    public int Func(string a)
    {
        console.writeline(a.ToString());
        return 100;

    }
}
```

Value type and Reference Type Example

```
int num = 23;
Object obj = 23;
```

List to Array-

```
List<int> intList = new List<int> { 1, 2, 3, 4, 5 };
int[] intArray = new int[intList.Count];

intList.CopyTo(intArray);

Console.WriteLine("Array elements:");
foreach (int i in intArray)
 {
Console.WriteLine(i);
}
```

Array to List -

```
int[] intArray = { 1, 2, 3, 4, 5 };
List<int> intList = new List<int> { };

intList.AddRange(intArray);
```

```
Input: "grass is green"
Output: "ssarg si neerg"
```

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```
string Input: "grass is green";
public getManupulate(string Input){
    # string []  = Array.Split(" ", Input);
    string []  = Input.Split(" ");//"grass" "is" "green"; mistake 1
    for(int i=0; i <wordsArray.Length ; i++ ){
        const[] Arr1 =  Array.Reverse(Input.ToCharArray()); // "g", "r", "a",
"s","s"
        wordsArray[i] = Array.Join("",Arr1)
    }

    returns Array.Join(" ", wordsArray)
}
```

Linq Query for Join

```
var query = from c in db.Customers
            join o in db.Orders
            on c.CustomerID equals o.CustomerID into customerOrders
            from o in customerOrders.DefaultIfEmpty()
            select new
            {
                CustomerID = c.CustomerID,
                CustomerName = c.CustomerName,
                OrderID = o != null ? o.OrderID : (int?)null,
                OrderDate = o != null ? o.OrderDate : (DateTime?)null
            };
```