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44)program to read a string and display it on the screen*/

45)program to read 10 strings and display them on the screen*/

46a)program to accept 2x2 matrices and display in matrix*/

46b)program to add 2 matrices*/

47)program to find the largest and smallest element in the
array*/

48) matrix multiplication 2 by 2 */

49)transpose of a matrix i.e swaping elements between row and column*/

50) program to find whether the given matrix is diagonal
matrix or not */

51) program to find whether the given matrix is diagonal
matrix or not */

52) program to reverse the contents of a string using string function */

53) program to reverse the contents of a string without using

string function */

54)program to convert from lowerletter to upperletter and vise versa

lowerletter-32=UPPERLETTER;

UPPERLETTER+32=lowerletter;

*/

55)/* program to convert a string to uppercase and lowercase without

using string functions

HINT:

lowerletter-32=UPPERLETTER;

UPPERLETTER+32=lowerletter;

*/

56)program to compare 2 strings using standard library functions*/

57)program to compare 2 strings without using standard library functions*/

58)program to concatenate 2 strings using standard library functions*/

59)program to concatenate 2 strings without using standard

library functions*/

60)program to search a string in main string */

```
using System;
public class StringClass
{
  public static void Main()
  {
    //Question 44
    string s = Console.ReadLine();
    Console.WriteLine(s);
    //Question 45
    // string[] stringArray = new string[10]{};
    // for (int i = 0; i < stringArray.Length; i++)
    // {
    //   stringArray[i] = Console.ReadLine();
    // }
    //Question 46
    // a
    // int[,] matrix = new int[5, 5];
    // for (int i = 0; i < matrix.GetLength(0); i++)
    // {
    //   for (int j = 0; j < matrix.GetLength(1); j++)
    //   {
    //     if (!int.TryParse(Console.ReadLine(), out int value)) value = 0;
    //     matrix[i, j] = value;
    //   }
```

```
// }
//b
int[,] mat1 =
{
  { 1, 2, 3 },
  { 4, 5, 6 },
  { 7, 8, 9 }
};

int[,] mat2 =
{
  { 10, 20, 30 },
  { 40, 50, 60 },
  { 70, 80, 90 }
};

int[,] result = new int[3, 3];

for (int i = 0; i < result.GetLength(0); i++)
{
  for (int j = 0; j < result.GetLength(1); j++)
  {
    result[i, j] = mat1[i, j] + mat2[i, j];
  }
}

for (int i = 0; i < result.GetLength(0); i++)
{
```

```
  for (int j = 0; j < result.GetLength(1); j++)
  {
    Console.Write(result[i, j] + " ");
  }
  Console.WriteLine();
}
//Queston 47
int []arr={1,2,3,4,5,6,7};
int largest=arr[0];
int smallest=arr[0];
for(int i=0;i<arr.Length;i++){
  if(arr[i]>largest){
    largest=arr[i];
  }
  else if(arr[i]<smallest){
    smallest=arr[i];
  }
}
Console.WriteLine($"Largest is : {largest} , Smallest is : {smallest}");

//Question 48
int[,] mat3=
{
  { 1, 2, 3 },
  { 4, 5, 6 },
  { 7, 8, 9 }
};
```

```
for (int i = 0; i < mat3.GetLength(0); i++)
{
  for (int j = 0; j < mat3.GetLength(1); j++)
  {
    mat3[i, j] *=2 ;
  }
}

for (int i = 0; i < mat3.GetLength(0); i++)
{
  for (int j = 0; j < mat3.GetLength(1); j++)
  {
    Console.Write(mat3[i, j] + " ");
  }
  Console.WriteLine();
}

//question 49

int[,] mat4 =
{
  { 1, 2, 3 },
  { 4, 5, 6 },
  { 7, 8, 9 }
};
for (int i = 0; i < mat4.GetLength(0); i++)
{
  for (int j = 0; j < i; j++)
```

```
  {
    int temp = mat4[i, j];
    mat4[i, j] = mat4[j, i];
    mat4[j, i] = temp;
  }
}

for (int i = 0; i < mat4.GetLength(0); i++)
{
  for (int j = 0; j < mat4.GetLength(1); j++)
  {
    Console.Write(mat4[i, j] + " ");
  }
  Console.WriteLine();
}
// //question 50

int[,] mat5 =
    {
  { 1, 0, 0 },
  { 0, 5, 0 },
  { 0, 0, 9 }
};
bool flag=true;
for (int i = 0; i < mat5.GetLength(0); i++)
{
  for (int j = 0; j < mat5.GetLength(1); j++)
  {
```

```
    if(i!=j&&mat5[i,j]!=0){
      flag=false;
      break;
    }
  }
}
Console.WriteLine($"The matrix is Diagonal Matrix : {flag}");

//question 52
string myName="Kundan Kumar";
char [] myNameChar=myName.ToCharArray();
Array.Reverse(myNameChar);
string reverseMyName=new string(myNameChar);
Console.WriteLine(reverseMyName);

//question 53
string MyNameSecond="Kundan Kumar";
char[]MyNameArray= MyNameSecond.ToCharArray();

int left=0,right= MyNameArray.Length-1;
while(left<right){
  char temp= MyNameArray[left];
  MyNameArray[left]= MyNameArray[right];
  MyNameArray[right]=temp;
  left++;
  right--;
}
Console.WriteLine(new string(MyNameArray));
```

```
//question 54
string UpperName = "kundan kumar";
char[] upperNameArray = UpperName.ToCharArray();

for (int i = 0; i < upperNameArray.Length; i++)
{
  if (upperNameArray[i] >= 'a' && upperNameArray[i] <= 'z')
  {
    upperNameArray[i] = (char)((int)(upperNameArray[i]) - 32);
  }
}
Console.WriteLine(new string(upperNameArray));

//question 55
string LoweName = "KUNDAN KUMAR";
char[] LoweNameArray = LoweName.ToCharArray();

for (int i = 0; i < LoweNameArray.Length; i++)
{
  if (LoweNameArray[i] >= 'A' && LoweNameArray[i] <= 'Z')
  {
    LoweNameArray[i] = (char)((int)(LoweNameArray[i]) + 32);
  }
}
Console.WriteLine(new string(LoweNameArray));

//question 56
```

```
string str4 = "This is test";
string str5 = "This is string";
if (str4.CompareTo(str5) == 0)
{
  Console.WriteLine("String is equal");
}
else
{
  Console.WriteLine("String is not equal");
}

//question 57
string str6 = "This is string";
string str7 = "This is myString";
int cmp = CompareManual(str6 ?? "", str7 ?? "");
if (cmp == 0)
{
  Console.WriteLine("String are equal");
}
else if (cmp < 0)
{
  Console.WriteLine("first string is smaller");
}
else
{
  Console.WriteLine("First string is greater");
}
```

```
  //question 58
  string fName = "kundan ";
  string lName = "kumar";
  Console.WriteLine(string.Concat(fName, lName));

  //question 59
  string fName1 = "kundan ";
  string lName2 = "kumar";

  Console.WriteLine(ConcatManual(fName1,lName));

  //questoin 60
  string  firstString="Kundan Kumar";
  string searchString="Kumar";
  Console.WriteLine($"search string {searchString} found in {firstString}:
"+firstString.Contains(searchString));

 }
 public static int CompareManual(string a, string b)
 {
  int i = 0, j = 0;
  while (i < a.Length && j < b.Length)
  {
   if (a[i] != b[j])
   {
    return a[i] < b[j] ? -1 : 1;
   }
   i++; j++;
```

```
    }
    if (a.Length == b.Length) return 0;
    return a.Length < b.Length ? -1 : 1;

  }
  public static string ConcatManual(string a, string b)
  {
    a = a ?? "";
    b = b ?? "";
    char[] buffer = new char[a.Length + b.Length];
    int k = 0;
    for (int i = 0; i < a.Length; i++) buffer[k++] = a[i];
    for (int i = 0; i < b.Length; i++) buffer[k++] = b[i];
    return new string(buffer);
  }
}
```