**C# Basic Laboratory Exercise**

1. **Write a C# Sharp program to print Hello and your name in a separate line**

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using System;

class pro1

{

static void Main()

{

Console.WriteLine("Hello\_World..... ");

}

}

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1. **Write a C# Sharp program to print the sum of two numbers.**

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using System;

class Example

{

static void Main()

{

int a = 10, b = 20, c;

c = a + b;

Console.WriteLine("Sum Of " + c);

}

}

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1. **Write a C# Sharp program to print the result of dividing two numbers.**

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using System;

class Example

{

static void Main()

{

int b = 20;

float a = 10, c;

c = a / b;

Console.WriteLine("Result " + c);

}

}

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**4. Write a C# Sharp program to print the result of the specified operations.**

**Test data:**

* **-1 + 4 \* 6**
* **( 35+ 5 ) % 7**
* **14 + -4 \* 6 / 11**
* **2 + 15 / 6 \* 1 - 7 % 2**

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using System;

class Exercise4

{

static void Main()

{

Console.WriteLine(-1 + 4 \* 6);

//-1 + 24 = 23

Console.WriteLine((35 + 5) % 7);

//40 % 7 = 5 (remainder of 40/7)

Console.WriteLine(14 + -4 \* 6 / 11);

//14 - (24/11)= 14 - 2 = 12

Console.WriteLine(2 + 15 / 6 \* 1 - 7 % 2);

//2 + (15/6) - remainder of (7/2) = 2 + 2 - 1 = 4 - 1 = 3

}

}

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1. **Write a C# Sharp program to swap two numbers…..**

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using System;

class SwapExample

{

static void Main()

{

int a = 5, b = 6;

Console.WriteLine("Before swap a= " + a + " b= "+b);

a = a \* b; //a=30 (5\*6)

b = a / b; //b=6 (30/6)

a = a / b; //a=6 (30/5)

Console.Write("After swap a= " + a + " b= " + b);

}

}

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1. **Write a C# Sharp program to print the output of multiplication of three numbers which will be entered by the user.**

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using System;

class Exercise6

{

static void Main()

{

int num1, num2, num3;

Console.Write("Input the first number to multiply: ");

num1 = Convert.ToInt32(Console.ReadLine());

Console.Write("Input the second number to multiply: ");

num2 = Convert.ToInt32(Console.ReadLine());

Console.Write("Input the third number to multiply: ");

num3 = Convert.ToInt32(Console.ReadLine());

int result = num1 \* num2 \* num3;

Console.WriteLine("Output: {0} x {1} x {2} = {3}",

num1, num2, num3, result);

}

}

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1. **Write a C# Sharp program to print on screen the output of adding, subtracting, multiplying and dividing of two numbers which will be entered by the user.**

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using System;

class Exercise7

{

static void Main()

{

Console.Write("Enter a number: ");

int num1 = Convert.ToInt32(Console.ReadLine());

Console.Write("Enter another number: ");

int num2 = Convert.ToInt32(Console.ReadLine());

Console.WriteLine("{0} + {1} = {2}", num1, num2, num1 + num2);

Console.WriteLine("{0} - {1} = {2}", num1, num2, num1 - num2);

Console.WriteLine("{0} x {1} = {2}", num1, num2, num1 \* num2);

Console.WriteLine("{0} / {1} = {2}", num1, num2, num1 / num2);

Console.WriteLine("{0} mod {1} = {2}", num1, num2,num1%num2);

}

}

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1. **Write a C# Sharp program that takes a number as input and print its multiplication table…**

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using System;

public class Exercise8

{

public static void Main()

{

int x;

int result;

Console.WriteLine("Enter a number:");

x = Convert.ToInt32(Console.ReadLine() );

result = x \* 1;

Console.WriteLine("The table is : {0} x {1} = {2}", x, 1, result);

result = x \* 2;

Console.WriteLine(" : {0} x {1} = {2}", x, 2, result);

result = x \* 3;

Console.WriteLine(" : {0} x {1} = {2}", x, 3, result);

result = x \* 4;

Console.WriteLine(" : {0} x {1} = {2}", x, 4, result);

result = x \* 5;

Console.WriteLine(" : {0} x {1} = {2}", x, 5, result);

result = x \* 6;

Console.WriteLine(" : {0} x {1} = {2}", x, 6, result);

result = x \* 7;

Console.WriteLine(" : {0} x {1} = {2}", x, 7, result);

result = x \* 8;

Console.WriteLine(" : {0} x {1} = {2}", x, 8, result);

result = x \* 9;

Console.WriteLine(" : {0} x {1} = {2}", x, 9, result);

result = x \* 10;

Console.WriteLine(" : {0} x {1} = {2}", x, 10, result);

}

}

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1. **Write a C# Sharp program that takes four numbers as input to calculate and print the average….**

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using System;

using System.IO;

class Exercise9

{

static void Main()

{

double number1, number2, number3, number4;

Console.Write("Enter the First number: ");

number1 = Convert.ToDouble(Console.ReadLine());

Console.Write("Enter the Second number: ");

number2 = Convert.ToDouble(Console.ReadLine());

Console.Write("Enter the third number: ");

number3 = Convert.ToDouble(Console.ReadLine());

Console.Write("Enter the fourth number: ");

number4 = Convert.ToDouble(Console.ReadLine());

double result = (number1 + number2 + number3 + number4) / 4;

Console.WriteLine("The average of {0}, {1}, {2}, {3} is: {4}",

number1, number2, number3, number4, result);

}

}

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**10. Write a C# Sharp program to that takes three numbers(x,y,z) as input and print the output of (x+y).z and x.y + y.z…….**

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using System;

public class Exercise10

{

public static void Main()

{

int number1, number2, number3;

Console.Write("Enter first number - ");

number1 = Convert.ToInt32(Console.ReadLine());

Console.Write("Enter second number - ");

number2 = Convert.ToInt32(Console.ReadLine());

Console.Write("Enter third number - ");

number3 = Convert.ToInt32(Console.ReadLine());

Console.Write("Result of specified numbers {0}, {1} and {2}, (x+y)·z is {3} and x·y + y·z is {4}\n\n",

number1, number2, number3, ((number1 + number2) \* number3), (number1 \* number2 + number2 \* number3));

}

}

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**11. Write a C# Sharp program that takes an age (for example 20) as input and prints something as "You look older than 20"**

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using System;

class Dp

{

static void Main()

{

int age;

Console.Write("Enter your age ");

age = Convert.ToInt32(Console.ReadLine());

Console.Write("You look older than {0} ", age);

}

}

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**12. Write a C# program to that takes a number as input and display it four times in a row (separated by blank spaces), and then four times in the next row, with no separation. You should do it two times: Use Console. Write and then use {0}.**

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using System;

class pro12

{

static void Main()

{

int num;

Console.WriteLine("Enter a Number: ");

num = Convert.ToInt32(Console.ReadLine());

// Part A: "num num num num" using Write

Console.Write(num);

Console.Write(" ");

Console.Write(num);

Console.Write(" ");

Console.Write(num);

Console.Write(" ");

Console.Write(num);

Console.WriteLine();

// Part B: "numnumnumnum" using Write

Console.Write(num);

Console.Write(num);

Console.Write(num);

Console.WriteLine(num);

Console.WriteLine();

// Part C: "num num num num" using {0}

Console.WriteLine("{0} {0} {0} {0}", num);

// Part D: "numnumnumnum" using {0}

Console.WriteLine("{0}{0}{0}{0}", num);

}

}

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**13. Write a C# program that takes a number as input and then displays a rectangle of 3 columns wide and 5 rows tall using that digit.**

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using System;

class pro13

{

static void Main()

{

int x;

Console.Write("Enter a number: ");

x = Convert.ToInt32(Console.ReadLine());

Console.WriteLine("{0}{0}{0}", x);

Console.WriteLine("{0} {0}", x);

Console.WriteLine("{0} {0}", x);

Console.WriteLine("{0} {0}", x);

Console.WriteLine("{0}{0}{0}", x);

}

}

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**14. Write a C# program to convert from celsius degrees to Kelvin and Fahrenheit.**

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using System;

public class pro14

{

public static void Main()

{

Console.Write("Enter the amount of Celsius: ");

int celsius = Convert.ToInt32(Console.ReadLine());

Console.WriteLine("Kelvin = {0}", celsius + 273);

Console.WriteLine("Fahrenheit = {0}", celsius \* 18 / 10 + 32);

}

}

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**15. Write a C# program remove specified a character from a non-empty string using index of a character**

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using System;

class pro15

{

static void Main()

{

Console.WriteLine(remove\_char("Atmiya University", 1));

Console.WriteLine(remove\_char("Atmiya University", 9));

Console.WriteLine(remove\_char("Atmiya University", 0));

}

public static string remove\_char(string str, int n)

{

return str.Remove(n, 1);

}

}

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**16. Write a C# program to create a new string from a given string (length 1 or more) with the first character added at the front and back**

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using System;

class pro16

{

static void Main()

{

string str;

Console.Write("Input a string : ");

str = Console.ReadLine();

if (str.Length >= 1)

{

var s = str.Substring(0, 1);

Console.WriteLine(s + str + s);

}

}

}

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**17.Write a C# program to check two given integers and return true if one is negative and one is positive.**

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using System;

class pro17

{

static void Main()

{

Console.WriteLine("\nInput first integer:");

int x = Convert.ToInt32(Console.ReadLine());

Console.WriteLine("Input second integer:");

int y = Convert.ToInt32(Console.ReadLine());

Console.WriteLine("Check if one is negative and one is positive:");

Console.WriteLine((x < 0 && y > 0) || (x > 0 && y < 0));

}

}

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**18. Write a C# program to compute the sum of two given integers, if two values are equal then return the triple of their sum.**

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using System;

public class pro18

{

static void Main()

{

Console.WriteLine(SumTriple(2, 2));

Console.WriteLine(SumTriple(12, 10));

Console.WriteLine(SumTriple(-5, 2));

}

public static int SumTriple(int a, int b)

{

return a == b ? (a + b) \* 3 : a + b;

}

}

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**19. Write a C# program to get the absolute value of the difference between two given numbers. Return double the absolute value of the difference if the first number is greater than second number…**

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using System;

class pro19

{

static void Main()

{

Console.WriteLine(result(13, 40));

Console.WriteLine(result(50, 21));

Console.WriteLine(result(0, 23));

}

public static int result(int a, int b)

{

if (a > b)

{

return (a - b) \* 2;

}

return b - a;

}

}

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**20.Write a C# program to check the sum of the two given integers and return true if one of the integer is 20 or if their sum is 20**

using System;

class pro20

{

static void Main()

{

int x, y;

int result;

Console.WriteLine("\nInput an integer:");

x = Convert.ToInt32(Console.ReadLine());

Console.WriteLine("Input another integer:");

y = Convert.ToInt32(Console.ReadLine());

Console.WriteLine(x == 20 || y == 20 || (x + y == 20));

}

}

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**21. Write a C# program to check if an given integer is within 20 of 100 or 200….**

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using System;

class pro21

{

static void Main()

{

Console.WriteLine("\nInput an integer:");

int x = Convert.ToInt32(Console.ReadLine());

Console.WriteLine(result(x));

}

public static bool result(int n)

{

if (Math.Abs(n - 100) <= 20 || Math.Abs(n - 200) <= 20)

return true;

return false;

}

}

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**22. write a c# sharp program to display the following pattern using the alphabet.**

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using System;

class pro22

{

static void Main()

{

string line = "Write a C# Sharp Program to display the following pattern using the Alphabet.";

Console.WriteLine(line.ToLower());

}

}

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**23. Write a C# program to print the odd numbers from 1 to 99. Prints one number per line.**

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using System;

class Pro23

{

static void Main()

{

Console.WriteLine("Odd numbers from 1 to 99. Prints one number per line.");

for (int n = 1; n < (99 + 1); n++)

{

if (n % 2 != 0)

{

Console.WriteLine(n.ToString());

}

}

}

}

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**24.. Write a C# program to compute the sum of the first 500 prime numbers.**

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using System;

class pro244

{

static void Main()

{

Console.WriteLine("\nSum of the first 500 prime numbers: ");

long sum = 0;

int ctr = 0;

int n = 2;

while (ctr < 500)

{

if (isPrime(n))

{

sum += n;

ctr++;

}

n++;

}

Console.WriteLine(sum.ToString());

}

public static bool isPrime(int n)

{

int x = (int)Math.Floor(Math.Sqrt(n));

if (n == 1) return false;

if (n == 2) return true;

for (int i = 2; i <= x; ++i)

{

if (n % i == 0) return false;

}

return true;

}

}

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**25. Write a C# program and compute the sum of the digits of an integer.**

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using System;

class pro25

{

static void Main()

{

Console.Write("Input a number(integer): ");

int n = Convert.ToInt32(Console.ReadLine());

int sum = 0;

while (n != 0)

{

sum += n % 10;

n /= 10;

}

Console.WriteLine("Sum of the digits of the said integer: " + sum);

}

}

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**26. Write a C# program to reverse the words of a sentence.**

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using System;

using System.Linq;

class Pro26

{

static void Main()

{

string text = "My GirlFriend name is Natasha Patel";

Console.WriteLine(string.Join(" ", text.Split(' ').Reverse()));

}

}

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**28. Write a C# program to convert a hexadecimal number to decimal number….**

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using System;

class pro28

{

static void Main()

{

string hexval = "4B0";

Console.WriteLine("Hexadecimal number: " + hexval);

int decValue = int.Parse(hexval, System.Globalization.NumberStyles.HexNumber);

Console.WriteLine("Convert to-");

Console.WriteLine("Decimal number: " + decValue);

}

}

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**29.Write a C# program to multiply corresponding elements of two arrays of integers.**

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using System;

class Pro29

{

static void Main()

{

int[] first\_array = { 1, 3, -5, 4 };

int[] second\_array = { 1, 4, -5, -2 };

Console.WriteLine("\nArray1: [{0}]", string.Join(", ", first\_array));

Console.WriteLine("Array2: [{0}]", string.Join(", ", second\_array));

Console.WriteLine("\nMultiply corresponding elements of two arrays: ");

for (int i = 0; i < first\_array.Length; i++)

{

Console.Write(first\_array[i] \* second\_array[i] + " ");

}

Console.WriteLine("\n");

}

}

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**30. Write a C# program to create a new string of four copies, taking last four characters from a given string. If the length of the given string is less than 4 return the original one…**

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using System;

using System.Linq;

class Pro30

{

static void Main()

{

string str;

int l= 0;

Console.Write("Input a string : ");

str = Console.ReadLine();

if (str.Length>4)

{

Console.WriteLine(str.Length < 4 ? str + str + str : str.Substring(str.Length - 4)+ str.Substring(str.Length - 4) + str.Substring(str.Length - 4) + str.Substring(str.Length - 4));

}

}

}

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**31. Write a C# program to check if a given positive number is a multiple of 3 or a multiple of 7.**

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using System;

using System.Linq;

class Pro31

{

static void Main()

{

Console.WriteLine("\nInput first integer:");

int x = Convert.ToInt32(Console.ReadLine());

if (x > 0)

{

Console.WriteLine(x % 3 == 0 || x % 7 == 0);

}

}

}

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**32. Write a C# program to check if a string starts with a specified word**

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using System;

using System.Linq;

class pro32

static void Main()

{

string str;

Console.Write("Input a string : ");

str = Console.ReadLine();

Console.WriteLine((str.Length < 6 && str.Equals("Hello")) || (str.StartsWith("Hello") && str[5] == ' '));

}

}

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**33. Write a C# program to check two given numbers where one is less than 100 and other is greater than 200.**

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using System;

using System.Linq;

public class Pro33

{

static void Main()

{

Console.Write("Input a first number(<100): ");

int m = Convert.ToInt32(Console.ReadLine());

Console.Write("Input a second number(>200): ");

int n = Convert.ToInt32(Console.ReadLine());

Console.WriteLine((m < 100 && n > 200));

}

}

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**34. Write a C# program to check if an integer (from the two given integers) is in the range -10 to 10.**

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using System;

using System.Linq;

class Pro34

{

static void Main()

{

Console.Write("Input a first number: ");

int m = Convert.ToInt32(Console.ReadLine());

Console.Write("Input a second number: ");

int n = Convert.ToInt32(Console.ReadLine());

Console.WriteLine(((m >= -10 && m <= 10)) || ((n >= -10 && n <= 10)));

}

}

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**35. Write a C# program to check if "HP" appears at second position in a string and returns the string without "HP".**

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using System;

using System.Linq;

class Pro35

{

static void Main()

{

string str = "PHP Tutorial";

Console.WriteLine((str.Substring(1, 2).Equals("HP") ? str.Remove(1, 2) : str));

}

}

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**36. Write a C# program to find the largest and lowest values from three integer values.**

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using System;

using System.Linq;

class pro36

{

static void Main()

{

Console.WriteLine("\nInput first integer:");

int x = Convert.ToInt32(Console.ReadLine());

Console.WriteLine("Input second integer:");

int y = Convert.ToInt32(Console.ReadLine());

Console.WriteLine("Input third integer:");

int z = Convert.ToInt32(Console.ReadLine());

Console.WriteLine("Largest of three: " + Math.Max(x, Math.Max(y, z)));

Console.WriteLine("Lowest of three: " + Math.Min(x, Math.Min(y, z)));

}

}

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**37. Write a C# program to check the nearest value of 20 of two given integers and return 0 if two numbers are same.**

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using System;

using System.Linq;

class pro37

{

static void Main()

{

Console.WriteLine("\nInput first integer:");

int x = Convert.ToInt32(Console.ReadLine());

Console.WriteLine("Input second integer:");

int y = Convert.ToInt32(Console.ReadLine());

int n = 20;

var val1 = Math.Abs(x - n);

var val2 = Math.Abs(y - n);

Console.WriteLine(val1 == val2 ? 0 : (val1 < val2 ? x : y));

}

}

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**38. Write a C# program to count a specified number in a given array of integers.**

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using System;

using System.Linq;

class pro38

{

static void Main()

{

Console.WriteLine("\nInput an integer:");

int x = Convert.ToInt32(Console.ReadLine());

int[] nums = { 1, 2, 2, 3, 3, 4, 5, 6, 5, 7, 7, 7, 8, 8, 9 };

Console.WriteLine("Number of " + x + " present in the said array:");

Console.WriteLine(nums.Count(n => n == x));

}

}

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**39. Write a C# program to check if a number appears as either the first or last element of an array of integers and the length is 1 or more.**

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

using System;

using System.Linq;

class pro39

{

static void Main()

{

Console.WriteLine("\nInput an integer:");

int x = Convert.ToInt32(Console.ReadLine());

int[] nums = { 1, 2, 2, 3, 3, 4, 5, 6, 5, 7, 7, 7, 8, 8, 9 };

Console.WriteLine((nums[0] == x) || (nums[nums.Length - 1] == x));

}

}

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

**40. Write a C# program to compute the sum of all the elements of an array of integers.**

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

using System;

using System.Linq;

class pro40

{

static void Main()

{

int[] nums = { 1, 2, 2, 3, 3, 4, 5, 6, 5, 7, 7, 7, 8, 8, 1 };

Console.WriteLine("\nArray1: [{0}]", string.Join(", ", nums));

var sum = 0;

for (var i = 0; i < nums.Length; i++)

{

sum += nums[i];

}

Console.WriteLine("Sum: " + sum);

}

}

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

**41. Write a C# program to check if the first element or the last element of the two arrays ( length 1 or more) are equal.**

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

using System;

using System.Linq;

class pro41

{

static void Main()

{

int[] nums1 = { 1, 2, 2, 3, 3, 4, 5, 6, 5, 7, 7, 7, 8, 8, 1 };

Console.WriteLine("\nArray1: [{0}]", string.Join(", ", nums1));

int[] nums2 = { 1, 2, 2, 3, 3, 4, 5, 6, 5, 7, 7, 7, 8, 8, 5 };

Console.WriteLine("\nArray2: [{0}]", string.Join(", ", nums2));

Console.WriteLine("\nCheck if the first element or the last element of the two arrays ( length 1 or more) are equal.");

Console.WriteLine((nums1[0].Equals(nums2[0])) || (nums1[nums1.Length - 1].Equals(nums2[nums2.Length - 1])));

}

}

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

**42. Write a C# program to rotate an array (length 3) of integers in left direction.**

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

using System;

using System.Linq;

class pro42

{

static void Main()

{

int[] nums = { 1, 2, 8 };

Console.WriteLine("\nArray1: [{0}]", string.Join(", ", nums));

var temp = nums[0];

for (var i = 0; i < nums.Length - 1; i++)

{

nums[i] = nums[i + 1];

}

nums[nums.Length - 1] = temp;

Console.WriteLine("\nAfter rotating array becomes: [{0}]", string.Join(", ", nums));

}

}

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**43. Write a C# program to get the larger value between first and last element of an array (length 3) of integers.**

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

using System;

using System.Linq;

class pro43

{

static void Main()

{

int[] nums = { 1, 2, 5, 7, 8 };

Console.WriteLine("\nArray1: [{0}]", string.Join(", ", nums));

var h\_val = nums[0];

for (var i = 0; i < nums.Length; i++)

{

if (nums[i] > nums[0])

h\_val = nums[i];

}

Console.WriteLine("\nHighest value between first and last values of the said array: {0}", h\_val);

}

}

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

**44. Write a C# program to create a new array of length containing the middle elements of three arrays (each length 3) of integers.**

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using System;

using System.Linq;

class pro44

{

static void Main()

{

int[] array1 = { 1, 2, 5 };

Console.WriteLine("\nArray1: [{0}]", string.Join(", ", array1));

int[] array2 = { 0, 3, 8 };

Console.WriteLine("\nArray2: [{0}]", string.Join(", ", array2));

int[] array3 = { -1, 0, 2 };

Console.WriteLine("\nArray3: [{0}]", string.Join(", ", array3));

int[] new\_array = { array1[1], array2[1], array3[1] };

Console.WriteLine("\nNew array: [{0}]", string.Join(", ", new\_array));

}

}

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

**45. Write a C# program to check if an array contains an odd number.**

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using System;

using System.Linq;

class pro45

{

static void Main()

{

int[] nums = { 2, 4, 7, 8, 6 };

Console.WriteLine("\nOriginal array: [{0}]", string.Join(", ", nums));

Console.WriteLine("Check if an array contains an odd number? " + even\_odd(nums));

}

public static bool even\_odd(int[] nums)

{

foreach (var n in nums)

{

if (n % 2 != 0)

return true;

}

return false;

}

}