C# Sharp Basic Exercises

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

*Expected Output* :  
Hello: Alexandra Abramov

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

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

**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

*Expected Output*:  
23  
5  
12  
3

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

*Test Data:*  
Input the First Number : 5  
Input the Second Number : 6  
Expected Output:  
After Swapping :  
First Number : 6  
Second Number : 5

**6.** Write a C# Sharp program to print the output of multiplication of three numbers which will be entered by the user.    
*Test Data:*  
Input the first number to multiply: 2  
Input the second number to multiply: 3  
Input the third number to multiply: 6  
*Expected Output:*  
2 x 3 x 6 = 36

**7.** 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.

*Test Data:*  
Input the first number: 25  
Input the second number: 4  
*Expected Output:*  
25 + 4 = 29  
25 - 4 = 21  
25 x 4 = 100  
25 / 4 = 6  
25 mod 4 = 1

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

*Test Data:*  
Enter the number: 5  
*Expected Output:*  
5 \* 0 = 0  
5 \* 1 = 5  
5 \* 2 = 10  
5 \* 3 = 15  
....  
5 \* 10 = 50

**9.** Write a C# Sharp program that takes four numbers as input to calculate and print the average.    
*Test Data:*  
Enter the First number: 10  
Enter the Second number: 15  
Enter the third number: 20  
Enter the four number: 30  
  
*Expected Output:*  
The average of 10 , 15 , 20 , 30 is: 18

**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.    
*Test Data:*  
Enter first number - 5  
Enter second number - 6  
Enter third number - 7  
  
*Expected Output:*  
Result of specified numbers 5, 6 and 7, (x+y).z is 77 and x.y + y.z is 72

**11**. Write a C# Sharp program that takes an age (for example 20) as input and prints something as "You look older than 20".    
*Test Data:*  
Enter your age - 25  
*Expected Output:*  
You look older than 25

**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}.    
*Test Data:*  
Enter a digit: 25  
*Expected Output:*  
25 25 25 25  
25252525  
25 25 25 25  
25252525

**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.    
*Test Data:*  
Enter a number: 5  
*Expected Output:*  
555  
5 5  
5 5  
5 5  
555

**14.** Write a C# program to convert from celsius degrees to Kelvin and Fahrenheit.    
*Test Data:*  
Enter the amount of celsius: 30  
*Expected Output:*  
Kelvin = 303  
Fahrenheit = 86

**15.** Write a C# program remove specified a character from a non-empty string using index of a character.    
*Test Data:*  
w3resource  
*Sample Output:*  
wresource  
w3resourc  
3resource

**16.** Write a C# program to create a new string from a given string where the first and last characters will change their positions.    
*Test Data:*  
w3resource  
Python  
*Sample Output:*  
e3resourcw  
nythoP  
x

**17.** 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.    
*Sample Output:*  
Input a string : The quick brown fox jumps over the lazy dog.  
TThe quick brown fox jumps over the lazy dog.T

**18.** Write a C# program to check two given integers and return true if one is negative and one is positive.    
*Sample Output:*  
Input first integer:  
-5  
Input second integer:  
25  
Check if one is negative and one is positive:  
True

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

**20.** 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. 

**21.** 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. 

**22.** Write a C# program to check if an given integer is within 20 of 100 or 200.    
*Sample Output:*  
Input an integer:  
25  
False

**23.** Write a C# program to convert a given string into lowercase.    
*Sample Output:*  
write a c# sharp program to display the following pattern using the alphabet.

**24.** Write a C# program to find the longest word in a string.    
Test Data: Write a C# Sharp Program to display the following pattern using the alphabet.  
*Sample Output:*  
following

**25.** Write a C# program to print the odd numbers from 1 to 99. Prints one number per line.    
*Sample Output:*  
Odd numbers from 1 to 99. Prints one number per line.  
1  
3  
5  
7  
9  
...  
95  
97  
99

**26.** Write a C# program to compute the sum of the first 500 prime numbers.    
*Sample Output:*  
Sum of the first 500 prime numbers:  
824693

**27.** Write a C# program and compute the sum of the digits of an integer.   
*Sample Output:*  
Input a number(integer): 12  
Sum of the digits of the said integer: 3

**28.** Write a C# program to reverse the words of a sentence.   
*Sample Output:*  
Original String: Display the pattern like pyramid using the alphabet.  
Reverse String: alphabet. the using pyramid like pattern the Display

**29.** Write a C# program to find the size of a specified file in bytes.   
*Sample Output:*  
Size of a file: 31

**30.** Write a C# program to convert a hexadecimal number to decimal number.   
*Sample Output:*  
Hexadecimal number: 4B0  
Convert to-  
Decimal number: 1200

**31.** Write a C# program to multiply corresponding elements of two arrays of integers.   
*Sample Output:*  
Array1: [1, 3, -5, 4]  
Array2: [1, 4, -5, -2]  
Multiply corresponding elements of two arrays:  
1 12 25 -8

**32.** 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.   
*Sample Output:*  
Input a string : The quick brown fox jumps over the lazy dog.  
dog.dog.dog.dog.

**33.** Write a C# program to check if a given positive number is a multiple of 3 or a multiple of 7.   
*Sample Output:*  
Input first integer:  
15  
True

**34.** Write a C# program to check if a string starts with a specified word.   
Note: Suppose the sentence starts with "Hello"  
Sample Data: string1 = "Hello how are you?"  
Result: Hello.  
*Sample Output:*  
Input a string : Hello how are you?  
True

**35.** Write a C# program to check two given numbers where one is less than 100 and other is greater than 200.   
*Sample Output:*  
Input a first number(<100): 75  
Input a second number(>100): 250  
True

**36.** Write a C# program to check if an integer (from the two given integers) is in the range -10 to 10.   
*Sample Output:*  
Input a first number: -5  
Input a second number: 8  
True

**37.** Write a C# program to check if "HP" appears at second position in a string and returns the string without "HP".   
Test Data: PHP Tutorial  
*Sample Output:*  
P Tutorial

**38.** Write a C# program to get a new string of two characters from a given string. The first and second character of the given string must be "P" and "H", so PHP will be "PH".   
Test Data: PHP  
*Sample Output:*  
PH

**39.** Write a C# program to find the largest and lowest values from three integer values.   
Test Data:  
Input first integer:  
15  
Input second integer:  
25  
Input third integer:  
30  
*Sample Output*  
Largest of three: 30  
Lowest of three: 15

**40.** Write a C# program to check the nearest value of 20 of two given integers and return 0 if two numbers are same.   
Test Data:  
Input first integer:  
15  
Input second integer:  
12  
*Sample Output*  
15

**41.** Write a C# program to check if a given string contains ‘w’ character between 1 and 3 times.   
Test Data:  
Input a string (contains at least one 'w' char) : w3resource  
Test the string contains 'w' character between 1 and 3 times:  
*Sample Output*  
True

**42.** Write a C# program to create a new string where the first 4 characters will be in lower case. If the string is less than 4 characters then make the whole string in upper case.   
Test Data:  
Input a string: w3r  
*Sample Output*  
W3R

**43.** Write a C# program to check if a given string starts with "w" and immediately followed by two "ww".   
Test Data:  
Input a string : www  
*Sample Output*  
False

**44.** Write a C# program to create a new string of every other character (odd position) from the first position of a given string.   
Test Data:  
Input a string : w3resource  
*Sample Output*  
wrsuc

**45.** Write a C# program to count a specified number in a given array of integers.   
Test Data:  
Input an integer: 5  
*Sample Output*  
Number of 5 present in the said array: 2

**46.** 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.   
Test Data:  
Input an integer: 25  
*Sample Output*  
False

**47.** Write a C# program to compute the sum of all the elements of an array of integers.   
Test Data:  
Array1: [1, 2, 2, 3, 3, 4, 5, 6, 5, 7, 7, 7, 8, 8, 1]  
*Sample Output*  
Sum: 69

**48.** Write a C# program to check if the first element and the last element are equal of an array of integers and the length is 1 or more.   
Test Data:  
Array1: [1, 2, 2, 3, 3, 4, 5, 6, 5, 7, 7, 7, 8, 8, 1]  
*Sample Output*  
True

**49.** Write a C# program to check if the first element or the last element of the two arrays ( length 1 or more) are equal.   
Test Data:  
Array1: [1, 2, 2, 3, 3, 4, 5, 6, 5, 7, 7, 7, 8, 8, 1]  
Array2: [1, 2, 2, 3, 3, 4, 5, 6, 5, 7, 7, 7, 8, 8, 5]  
Check if the first element or the last element of the two arrays ( leng th 1 or more) are equal.  
*Sample Output*  
True

**50.** Write a C# program to rotate an array (length 3) of integers in left direction.   
Test Data:  
Array1: [1, 2, 8]  
After rotating array becomes: [2, 8, 1]

**51.** Write a C# program to get the larger value between first and last element of an array (length 3) of integers.   
Test Data:  
Array1: [1, 2, 5, 7, 8]  
Highest value between first and last values of the said array: 8

**52.** Write a C# program to create a new array of length containing the middle elements of three arrays (each length 3) of integers.   
Test Data:  
Array1: [1, 2, 5]  
Array2: [0, 3, 8]  
Array3: [-1, 0, 2]  
New array: [2, 3, 0]

**53.** Write a C# program to check if an array contains an odd number.   
Test Data:  
Original array: [2, 4, 7, 8, 6]  
Check if an array contains an odd number? True

**54.** Write a C# program to get the century from a year. 

**55.** Write a C# program to find the pair of adjacent elements that has the largest product of an given array which is equal to a given value. 

**56.** Write a C# program to check if a given string is a palindrome or not.   
Sample Example:  
For 'aaa' the output should be true  
For 'abcd' the output should be false

**57.** Write a C# program to find the pair of adjacent elements that has the highest product of an given array of integers. 

**58.** Write a C# program which will accept a list of integers and checks how many integers are needed to complete the range.   
Sample Example [1, 3, 4, 7, 9], between 1-9 -> 2, 5, 6, 8 are not present in the list. So output will be 4.

**59.** Write a C# program to check whether it is possible to create a strictly increasing sequence from a given sequence of integers as an array. 

**60.** Write a C# program to calculate the sum of all the integers of a rectangular matrix except those integers which are located below an intger of value 0.   
Sample Example:  
matrix = [[0, 2, 3, 2],  
[0, 6, 0, 1],  
[4, 0, 3, 0]]  
Eligible integers which will be participated to calculate the sum -  
matrix = [[X, 2, 3, 2],  
[X, 6, X, 1],  
[X, X, X, X]]  
Therefore sum will be: 2 + 3 + 2 + 6 + 1 = 14

**61.** Write a C# program to sort the integers in ascending order without moving the number -5. 

**62.** Write a C# program to reverse the strings contained in each pair of matching parentheses in a given string and also remove the parentheses within the given string. 

**63.** Write a C# program to check if a given number present in an array of numbers. 

**64.** Write a C# Sharp program to get the file name (including extension) from a given path. 

**65.** Write a C# Sharp program to multiply all of elements of a given array of numbers by the array length. 

**66.** Write a C# Sharp program to find the minimum value from two given two numbers, represented as string. 

**67.** Write a C# Sharp program to create a coded string from a given string, using specified formula.   
Replace all 'P' with '9', 'T' with '0', 'S' with '1', 'H' with '6' and 'A' with '8'.  
Sample Output:  
969  
J8V81CRI90

**68.** Write a C# Sharp program to count a specified character (both cases) in a given string. 

**69.** Write a C# Sharp program to check if a given string contains only lowercase or uppercase characters. 

**70.** Write a C# Sharp program to remove the first and last elements from a given string.   
Sample Output:  
Original string: PHP  
After removing first and last elements: H  
Original string: Python  
After removing first and last elements: ytho  
Original string: JavaScript  
After removing first and last elements: avaScrip

**71.** Write a C# Sharp program to check if a given string contains two similar consecutive letters.   
Sample Output:  
Original string: PHP  
Test for consecutive similar letters! False  
Original string: PHHP  
Test for consecutive similar letters! True  
Original string: PHPP  
Test for consecutive similar letters! True  
Original string: PPHP  
Test for consecutive similar letters! True

**72.** Write a C# Sharp program to check whether the average value of the elements of a given array of numbers is a whole number or not.   
Sample Output:  
nums = { 1, 2, 3, 5, 4, 2, 3, 4 }  
Check the average value of the said array is a whole number or not: True  
nums1 = { 2, 4, 2, 6, 4, 8 }  
Check the average value of the said array is a whole number or not: False

**73.** Write a C# Sharp program to convert the letters of a given string (same case-upper/lower) into alphabetical order.   
Sample Output:  
Original string: PHP  
Convert the letters of the said string into alphabetical order: HPP  
Original string: javascript  
Convert the letters of the said string into alphabetical order: aacijprstv  
Original string: python  
Convert the letters of the said string into alphabetical order: hnopty

**74.** Write a C# Sharp program to check the length of a given string is odd or even. Return 'Odd length' if the string length is odd otherwise 'Even length'.   
Sample Output:  
Original string: PHP  
Convert the letters of the said string into alphabetical order: Odd length  
Original string: javascript  
Convert the letters of the said string into alphabetical order: Even length  
Original string: python  
Convert the letters of the said string into alphabetical order: Even length

**75.** Write a C# Sharp program which takes a positive number and return the nth odd number.   
Sample Output:  
1st odd number: 1  
2nd odd number: 3  
4th odd number: 7  
100th odd number: 199

**76.** Write a C# Sharp program to get the ASCII value of a given character.   
Sample Output:  
Ascii value of 1 is: 49  
Ascii value of A is: 65  
Ascii value of a is: 97  
Ascii value of # is: 35

**77.** Write a C# Sharp program to check whether a given word is plural or not.   
Sample Output:  
Is 'Exercise' is plural? False  
Is 'Exercises' is plural? True  
Is 'Books' is plural? True  
Is 'Book' is plural? False

**78.** Write a C# Sharp program to find sum of squares of elements of a given array of integers.   
Sample Output:  
Sum of squares of elements of the said array: 14  
Sum of squares of elements of the said array: 29

**79.** Write a C# Sharp program to convert an integer to string and a string to an integer.   
Sample Output:  
Original value and type: 50, System.String  
Convert string to integer:  
Return value and type: 50, System.Int32  
Original value and type: 122, System.Int32  
Convert integer to string:  
Return value and type: 122, System.String

**80.** Write a C# Sharp program to convert all the values of a given array of mixed values to string values.   
Sample Output:  
Printing original array elements and their types:  
Value-> 25 :: Type-> System.Int32  
Value-> Anna :: Type-> System.String  
Value-> False :: Type-> System.Boolean  
Value-> 4/15/2021 10:37:47 AM :: Type-> System.DateTime  
Value-> 112.22 :: Type-> System.Double  
Printing array elements and their types:  
Value-> 25 :: Type-> System.String  
Value-> Anna :: Type-> System.String  
Value-> False :: Type-> System.String  
Value-> 4/15/2021 10:37:47 AM :: Type-> System.String  
Value-> 112.22 :: Type-> System.String

**81.** Write a C# Sharp program to swap a two digit given number and check whether the given number is greater than its swap value.   
Sample Output:  
Input an integer value:  
Check whether the said value is greater than its swap value: True

**82.** Write a C# Sharp program to remove all characters which are non-letters from a given string.   
From Wikipedia,  
A letter is a segmental symbol of a phonemic writing system. The inventory of all letters forms the alphabet. Letters broadly correspond to phonemes in the spoken form of the language, although there is rarely a consistent, exact correspondence between letters and phonemes  
Sample Output:  
Orginal string: Py@th12on  
Remove all characters from the said string which are non-letters: Python  
Orginal string: Python 3.0  
Remove all characters from the said string which are non-letters: Python  
Orginal string: 2^sdfds\*^\*^jlljdslfnoswje34u230sdfds984  
Remove all characters from the said string which are non-letters: sdfdsjlljdslfnoswjeusdfds

**83.** Write a C# Sharp program to remove all vowels from a given string.   
Sample Output:  
Orginal string: Python  
After removing all the vowels from the said string: Pythn  
Orginal string: C Sharp  
After removing all the vowels from the said string: C Shrp  
Orginal string: JavaScript  
After removing all the vowels from the said string: JvScrpt

**84.** Write a C# Sharp program to get the index number of all lower case letters in a given string.   
Sample Output:  
Orginal string: Python  
Indices of all lower case letters of the said string:  
1 2 3 4 5  
Orginal string: JavaScript  
Indices of all lower case letters of the said string:  
1 2 3 5 6 7 8 9

**85.** Write a C# Sharp program to find the cumulative sum of an array of number.   
A cumulative sum is a sequence of partial sums of a given sequence. For example, the cumulative sums of the sequence {x, y, z,...}, are x , x+y , x+y+z  
Sample Output:  
Orginal Array elements:  
1 3 4 5 6 7  
Cumulative sum of the said array elements:  
1 4 8 13 19 26  
Orginal Array elements:  
1.2 -3 4.1 6 -5.47  
Cumulative sum of the said array elements:  
1.2 -1.8 2.3 8.3 2.83

**86.** Write a C# Sharp program to get the number of letters and digits in a given string.   
Sample Output:  
Original string:: Python 3.0  
Number of letters: 6 Number of digits: 2  
Original string:: dsfkaso230samdm2423sa  
Number of letters: 14 Number of digits: 7

**87.** Write a C# Sharp program to reverse a boolean value.   
Sample Output:  
Original value: False  
Reverse value: True  
Original value: True  
Reverse value: False

**88.** Write a C# Sharp program to find the sum of the interior angles (in degrees) of a given Polygon. Input number of straight line(s).   
From Wikipedia,  
In geometry, a polygon is a plane figure that is described by a finite number of straight line segments connected to form a closed polygonal chain or polygonal circuit. The solid plane region, the bounding circuit, or the two together, may be called a Polygon.  
Sample Output:  
Input number of straight lines of the polygon:  
Sum of the interior angles (in degrees) of the said polygon: -360

**89.** Write a C# Sharp program to count positive and negative numbers in a given array of integers.   
Sample Output:  
Original Array elements:  
10 -11 12 -13 14 -18 19 -20  
Number of positive numbers: 4  
Number of negative numbers: 4  
Original Array elements:  
-4 -3 -2 0 3 5 6 2 6  
Number of positive numbers: 5  
Number of negative numbers: 3  
Original Array elements:  
Number of positive numbers: 0  
Number of negative numbers: 0

**90.** Write a C# Sharp program to count number of ones and zeros in the binary representation of a given integer.   
Sample Output:  
Original number: 12  
Number of ones and zeros in the binary representation of the said number:  
Number of ones: 2  
Number of zeros: 2  
Original number: 1234  
Number of ones and zeros in the binary representation of the said number:  
Number of ones: 5  
Number of zeros: 6

**91.** Write a C# Sharp program to remove all the values except integer values from a given array of mixed values.   
Sample Output:  
Original array elements:  
25 Anna False 4/24/2021 11:43:11 AM -112 -34.67  
After removing all the values except integer values from the said array of mixed values: 25 -112

**92.** Write a C# Sharp program to find the next prime number of a given number. If the given number is a prime number, return the number.   
From Wikipedia,  
A prime number (or a prime) is a natural number greater than 1 that is not a product of two smaller natural numbers. A natural number greater than 1 that is not prime is called a composite number. For example, 5 is prime because the only ways of writing it as a product, 1 × 5 or 5 × 1, involve 5 itself. However, 4 is composite because it is a product (2 × 2) in which both numbers are smaller than 4. Primes are central in number theory because of the fundamental theorem of arithmetic: every natural number greater than 1 is either a prime itself or can be factorized as a product of primes that is unique up to their order.  
Sample Output:  
Original number: 120  
Next prime number/Current prime number: 127  
Original number: 321  
Next prime number/Current prime number: 331  
Original number: 43  
Next prime number/Current prime number: 43  
Original number: 4433  
Next prime number/Current prime number: 4441