**Resources 👍**

<https://www.w3resource.com/c-programming-exercises/>

**Problem and solution with flowchart and algorithm 🙂**

**1. Write a C program to print your name, date of birth, and mobile number.**

Expected Output:

Name : Alexandra Abramov

DOB : July 14, 1975

Mobile : 99-9999999999

**2. Write a C program to get the C version you are using.**

Expected Output:

We are using C18!

**3. Write a C program to print a block F using the hash (#), where the F has a height of six** characters and width of five and four characters. And also print a very large 'C'.

Expected Output:

######

#

#

#####

#

#

#

######

## ##

#

#

#

#

#

## ##

######

Code:

#include <stdio.h>

int main()

{

printf("######\n");

printf("#\n");

printf("#\n");

printf("#####\n");

printf("#\n");

printf("#\n");

printf("#\n");

return(0);

}

**4. Write a C program to print the following characters in reverse.**

Test Characters: 'X', 'M', 'L'

Expected Output:

The reverse of XML is LMX

Code:

#include <stdio.h>

int main()

{

char char1 = 'X';

char char2 = 'M';

char char3 = 'L';

printf("The reverse of %c%c%c is %c%c%c\n",

char1, char2, char3,

char3, char2, char1);

return(0);

}

**5. Write a C program to compute the perimeter and area of a rectangle with a height of 7 inches and width of 5 inches.**

Expected Output:

Perimeter of the rectangle = 24 inches

Area of the rectangle = 35 square inches

Code:

#include <stdio.h>

/\* height and width of a rectangle in inches \*/

int width;

int height;

int area;

int perimeter;

int main() {

height = 7;

width = 5;

perimeter = 2\*(height + width);

printf("Perimeter of the rectangle = %d inches\n", perimeter);

area = height \* width;

printf("Area of the rectangle = %d square inches\n", area);

return(0);

}

**6. Write a C program to compute the perimeter and area of a circle with a given radius.**

Expected Output:

Perimeter of the Circle = 37.680000 inches

Area of the Circle = 113.040001 square inches

Code:

#include <stdio.h>

int main() {

int radius;

float area, perimeter;

radius = 6;

perimeter = 2\*3.14\*radius;

printf("Perimeter of the Circle = %f inches\n", perimeter);

area = 3.14\*radius\*radius;

printf("Area of the Circle = %f square inches\n", area);

return(0);

}

**7. Write a C program to display multiple variables.**

Sample Variables :

a+ c, x + c,dx + x, ((int) dx) + ax, a + x, s + b, ax + b, s + c, ax + c, ax + ux

Declaration :

int a = 125, b = 12345;

long ax = 1234567890;

short s = 4043;

float x = 2.13459;

double dx = 1.1415927;

char c = 'W';

unsigned long ux = 2541567890;

Code:

#include <stdio.h>

int main()

{

int a = 125, b = 12345;

long ax = 1234567890;

short s = 4043;

float x = 2.13459;

double dx = 1.1415927;

char c = 'W';

unsigned long ux = 2541567890;

printf("a + c = %d\n", a + c);

printf("x + c = %f\n", x + c);

printf("dx + x = %f\n", dx + x);

printf("((int) dx) + ax = %ld\n", ((int) dx) + ax);

printf("a + x = %f\n", a + x);

printf("s + b = %d\n", s + b);

printf("ax + b = %ld\n", ax + b);

printf("s + c = %hd\n", s + c);

printf("ax + c = %ld\n", ax + c);

printf("ax + ux = %lu\n", ax + ux);

return 0;

}

**8. Write a C program to convert specified days into years, weeks, and days.**

Note: Ignore leap year.

Test Data :

Number of days: 1329

Expected Output :

Years: 3

Weeks: 33

Days: 3

Code:

#include <stdio.h>

int main()

{

int days, years, weeks;

days = 1329;

// Converts days to years, weeks and days

years = days/365;

weeks = (days % 365)/7;

days = days- ((years\*365) + (weeks\*7));

printf("Years: %d\n", years);

printf("Weeks: %d\n", weeks);

printf("Days: %d \n", days);

return 0;

}

**9. Write a C program that accepts two integers from the user and calculates the sum of the two integers.**

Test Data :

Input the first integer: 25

Input the second integer: 38

Expected Output:

Sum of the above two integers = 63

Code:

#include <stdio.h>

int main()

{

int x, y, sum;

printf("\nInput the first integer: ");

scanf("%d", &x);

printf("\nInput the second integer: ");

scanf("%d", &y);

sum = x + y;

printf("\nSum of the above two integers = %d\n", sum);

return 0;

}

**10. Write a C program that accepts two integers from the user and calculates the product of the two integers.**

Test Data :

Input the first integer: 25

Input the second integer: 15

Expected Output:

Product of the above two integers = 375

Code:

#include <stdio.h>

int main()

{

int x, y, result;

printf("\nInput the first integer: ");

scanf("%d", &x);

printf("\nInput the second integer: ");

scanf("%d", &y);

result = x \* y;

printf("Product of the above two integers = %d\n", result);

}

**11. Write a C program that accepts two items' weight and number of purchases (floating point values) and calculates their average value.**

Test Data :

Weight - Item1: 15

No. of item1: 5

Weight - Item2: 25

No. of item2: 4

Expected Output:

Average Value = 19.444444

12. Write a C program that accepts an employee's ID, total worked hours in a month and the amount he received per hour. Print the ID and salary (with two decimal places) of the employee for a particular month. Go to the editor

Test Data :

Input the Employees ID(Max. 10 chars): 0342

Input the working hrs: 8

Salary amount/hr: 15000

Expected Output:

Employees ID = 0342

Salary = U$ 120000.00

Click me to see the solution

13. Write a C program that accepts three integers and finds the maximum of three. Go to the editor

Test Data :

Input the first integer: 25

Input the second integer: 35

Input the third integer: 15

Expected Output:

Maximum value of three integers: 35

Click me to see the solution

14. Write a C program to calculate a bike’s average consumption from the given total distance (integer value) travelled (in km) and spent fuel (in litters, float number – 2 decimal points). Go to the editor

Test Data :

Input total distance in km: 350

Input total fuel spent in liters: 5

Expected Output:

Average consumption (km/lt) 70.000

Click me to see the solution

15. Write a C program to calculate the distance between two points. Go to the editor

Test Data :

Input x1: 25

Input y1: 15

Input x2: 35

Input y2: 10

Expected Output:

Distance between the said points: 11.1803

Click me to see the solution

16. Write a C program to read an amount (integer value) and break the amount into the smallest possible number of bank notes. Go to the editor

Test Data :

Input the amount: 375

Expected Output:

There are:

3 Note(s) of 100.00

1 Note(s) of 50.00

1 Note(s) of 20.00

0 Note(s) of 10.00

1 Note(s) of 5.00

0 Note(s) of 2.00

0 Note(s) of 1.00

Click me to see the solution

17. Write a C program to convert a given integer (in seconds) to hours, minutes and seconds. Go to the editor

Test Data :

Input seconds: 25300

Expected Output:

There are:

H:M:S - 7:1:40

Click me to see the solution

18. Write a C program to convert a given integer (in days) to years, months and days, assuming that all months have 30 days and all years have 365 days. Go to the editor

Test Data :

Input no. of days: 2535

Expected Output:

6 Year(s)

11 Month(s)

15 Day(s)

Click me to see the solution

19. Write a C program that accepts 4 integers p, q, r, s from the user where q, r and s are positive and p is even. If q is greater than r and s is greater than p and if the sum of r and s is greater than the sum of p and q print "Correct values", otherwise print "Wrong values". Go to the editor

Test Data :

Input the second integer: 35

Input the third integer: 15

Input the fourth integer: 46

Expected Output:

Wrong values

Click me to see the solution

20. Write a C program to print the roots of Bhaskara’s formula from the given three floating numbers. Display a message if it is not possible to find the roots. Go to the editor

Test Data :

Input the first number(a): 25

Input the second number(b): 35

Input the third number(c): 12

Expected Output:

Root1 = -0.60000

Root2 = -0.80000

Click me to see the solution

21. Write a C program that reads an integer and checks the specified range to which it belongs. Print an error message if the number is negative and greater than 80. Go to the editor

Test Data :

Input an integer: 15

Expected Output:

Range [0, 20]

Click me to see the solution

22. Write a C program that reads 5 numbers and sums all odd values between them. Go to the editor

Test Data :

Input the first number: 11

Input the second number: 17

Input the third number: 13

Input the fourth number: 12

Input the fifth number: 5

Expected Output:

Sum of all odd values: 46

Click me to see the solution

23. Write a C program that reads three floating-point values and checks if it is possible to make a triangle with them. Determine the perimeter of the triangle if the given values are valid. Go to the editor

Test Data :

Input the first number: 25

Input the second number: 15

Input the third number: 35

Expected Output:

Perimeter = 75.0

Click me to see the solution

24. Write a C program that reads two integers and checks whether they are multiplied or not. Go to the editor

Test Data :

Input the first number: 5

Input the second number: 15

Expected Output:

Multiplied!

Click me to see the solution

25. Write a C program that reads an integer between 1 and 12 and prints the month of the year in English. Go to the editor

Test Data :

Input a number between 1 to 12 to get the month name: 8

Expected Output:

August

Click me to see the solution

26. Write a C program that prints all even numbers between 1 and 50 (inclusive). Go to the editor

Test Data :

Even numbers between 1 to 50 (inclusive):

Expected Output:

2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50

Click me to see the solution

27. Write a C program that reads 5 numbers and counts the number of positive numbers and negative numbers. Go to the editor

Test Data :

Input the first number: 5

Input the second number: -4

Input the third number: 10

Input the fourth number: 15

Input the fifth number: -1

Expected Output:

Number of positive numbers: 3

Number of negative numbers: 2

Click me to see the solution

28. Write a C program that reads 5 numbers, counts the number of positive numbers, and prints out the average of all positive values. Go to the editor

Test Data :

Input the first number: 5

Input the second number: 8

Input the third number: 10

Input the fourth number: -5

Input the fifth number: 25

Expected Output:

Number of positive numbers: 4

Average value of the said positive numbers: 12.00

Click me to see the solution

29. Write a C program that read 5 numbers and sum of all odd values between them. Go to the editor

Test Data :

Input the first number: 5

Input the second number: 7

Input the third number: 9

Input the fourth number: 10

Input the fifth number: 13

Expected Output:

Sum of all odd values: 34

Click me to see the solution

30. Write a C program to find and print the square of all the even values from 1 to a specified value. Go to the editor

Test Data :

List of square of each one of the even values from 1 to a 4 :

Expected Output:

2^2 = 4

4^2 = 16

Click me to see the solution

31. Write a C program to check whether a given integer is positive even, negative even, positive odd or negative odd. Print even if the number is 0. Go to the editor

Test Data :

Input an integer: 13

Expected Output:

Positive Odd

Click me to see the solution

32. Write a C program to print all numbers between 1 and 100 which are divided by a specified number and the remainder will be 3. Go to the editor

Test Data :

Input an integer: 25

Expected Output:

3

28

53

78

Click me to see the solution

33. Write a C program that accepts some integers from the user and finds the highest value and the input position. Go to the editor

Test Data :

Input 5 integers:

5

7

15

23

45

Expected Output:

Highest value: 45

Position: 5

Click me to see the solution

34. Write a C program to compute the sum of consecutive odd numbers from a given pair of integers. Go to the editor

Test Data :

Input a pair of numbers (for example 10,2):

Input first number of the pair: 10

Input second number of the pair: 2

Expected Output:

List of odd numbers: 3

5

7

9

Sum=24

Click me to see the solution

35. Write a C program to check if two numbers in a pair are in ascending order or descending order. Go to the editor

Test Data :

Input a pair of numbers (for example 10,2 : 2,10):

Input first number of the pair: 10

Expected Output:

Input second number of the pair: 2

The pair is in descending order!

Click me to see the solution

36. Write a C program to read a password until it is valid. For wrong password print "Incorrect password" and for correct password print, "Correct password" and quit the program. The correct password is 1234. Go to the editor

Test Data :

Input the password: 1234

Expected Output:

Correct password

Click me to see the solution

37. Write a C program to read the coordinates (x, y) (in the Cartesian system) and find the quadrant to which it belongs (Quadrant -I, Quadrant -II, Quadrant -III, Quadrant -IV). Go to the editor

Note: A Cartesian coordinate system is a coordinate system that specifies each point uniquely in a plane by a pair of numerical coordinates.

These are often numbered from 1st to 4th and denoted by Roman numerals: I (where the signs of the (x,y) coordinates are I(+,+), II (−,+), III (−,−), and IV (+,−).

Test Data :

Input the Coordinate(x,y):

x: 25

y: 15

Expected Output:

Quadrant-I(+,+)

Click me to see the solution

38. Write a program that reads two numbers and divides the first number by the second number. If division is not possible print "Division is not possible". Go to the editor

Test Data :

Input two numbers:

x: 25

y: 5

Expected Output: 5.0

Click me to see the solution

39. Write a C program to calculate the sum of all numbers not divisible by 17 between two given integer numbers. Go to the editor

Test Data :

Input the first integer: 50 Input the second integer: 99

Expected Output:

Sum: 3521

Click me to see the solution

40. Write a C program that finds all integer numbers that divide by 7 and have a remainder of 2 or 3 between two given integers. Go to the editor

Test Data :

Input the first integer: 25

Input the second integer: 45

Expected Output:

30

31

37

38

44

Click me to see the solution

41. Write a C program to print 3 numbers on a line, starting with 1 and printing n lines. Accept the number of lines (n, integer) from the user. Go to the editor

Test Data :

Input number of lines: 5

Expected Output:

1 2 3

4 5 6

7 8 9

10 11 12

13 14 15

Click me to see the solution

42. Write a C program to print a number, its square and cube, starting with 1 and printing n lines. Accept the number of lines (n, integer) from the user. Go to the editor

Test Data :

Input number of lines: 5

Expected Output:

1 1 1

2 4 8

3 9 27

4 16 64

5 25 125

Click me to see the solution

43. Write a C program that reads two integers p and q, prints p number of lines in a sequence of 1 to b in a line. Go to the editor

Test Data :

Input number of lines: 5

Number of characters in a line: 6

Expected Output:

1 2 3 4 5 6

7 8 9 10 11 12

13 14 15 16 17 18

19 20 21 22 23 24

25 26 27 28 29 30

Click me to see the solution

44. Write a C program to calculate the average mathematics marks of some students. Input 0 (excluding to calculate the average) or a negative value to terminate the input process. Go to the editor

Test Data :

Input Mathematics marks (0 to terminate): 10

15

20

25

0

Expected Output:

Average marks in Mathematics: 17.50

Click me to see the solution

45. Write a C program to calculate the value of S where S = 1 + 1/2 + 1/3 + … + 1/50. Go to the editor

Expected Output:

Value of S: 4.50

Click me to see the solution

46. Write a C program to calculate the value of S where S = 1 + 3/2 + 5/4 + 7/8. Go to the editor

Expected Output:

Value of series: 4.62

Click me to see the solution

47. Write a C program that finds all the divisors of an integer. Go to the editor

Test Data:

Input an integer: 45

Expected Output:

All the divisor of 45 are:

1

3

5

9

15

45

Click me to see the solution

48. Write a C program that reads and prints the elements of an array of length 7. Before printing, replace every negative number, zero, with 100. Go to the editor

Test Data:

Input the 5 members of the array:

25

45

35

65

15

Expected Output:

Array values are:

n[0] = 25

n[1] = 45

n[2] = 35

n[3] = 65

n[4] = 15

Click me to see the solution

49. Write a C program to read and print the elements of an array with length 7. Before printing, insert the triple of the previous position, starting from the second position. Go to the editor

For example, if the first number is 2, the array numbers must be 2, 6, 18, 54 and 162

Test Data:

Input the first number of the array: 5

Expected Output:

n[0] = 5

n[1] = 15

n[2] = 45

n[3] = 135

n[4] = 405

Click me to see the solution

50. Write a C program to read an array of length 5 and print the position and value of the array elements of value less than 5. Go to the editor

Test Data:

Input the 5 members of the array:

15

25

4

35

40

Expected Output:

A[2] = 4.0

Click me to see the solution

51. Write a C program to read an array of length 6, change the first element by the last, the second element by the fifth and the third element by the fourth. Print the elements of the modified array. Go to the editor

Test Data:

Input the 5 members of the array:

15

20

25

30

35

Expected Output:

array\_n[0] = 35

array\_n[1] = 30

array\_n[2] = 25

array\_n[3] = 20

array\_n[4] = 15

Click me to see the solution

52. Write a C program to read an array of length 6 and find the smallest element and its position. Go to the editor

Test Data:

Input the length of the array: 5 Input the array elements:

25

35

20

14

45

Expected Output:

Smallest Value: 14

Position of the element: 3

Click me to see the solution

53. Write a C program that accepts the principle, rate of interest, and time and calculates simple interest. Go to the editor

Test Data:

Input Data: p = 10000, r = 10% , t = 12 year

Expected Output:

Input principle, Rate of interest & time to find simple interest:

Simple interest = 12000

Click me to see the solution

54. Write a C program that accepts a distance in centimeters and prints the corresponding value in inches. Go to the editor

Test Data:

Input Data: 500cms

Input the distance in cm:

Distance of 500.00 cms is = 196.85 inches

Click me to see the solution

55. Write a C program that swaps two numbers without using a third variable. Go to the editor

Input value for x & y:

Before swapping the value of x & y: 5 7

After swapping the value of x & y: 7 5

Click me to see the solution

56. Write a C program to shift given data by two bits to the left. Go to the editor

Input value : 2

Read the integer from keyboard-

Integer value = 2

The left shifted data is = 16

Click me to see the solution

57. Write a C program to reverse and print a given number. Go to the editor

Input a number:

The original number = 234

The reverse of the said number = 432

Click me to see the solution

58. Write a C program that accepts 4 real numbers from the keyboard and prints out the difference between the maximum and minimum values of these four numbers. Go to the editor

Input four numbers: 1.54 1.236 1.3625 1.002

Difference is 0.5380

Click me to see the solution

59. Write a C program to display the sum of series 1 + 1/2 + 1/3 + ………. + 1/n. Go to the editor

Input any number: 1 + 1/0

Sum = 1/0

Click me to see the solution

60. Write a C program to create enumerated data types for 7 days and display their values in integer constants. Go to the editor

Sun = 0

Mon = 1

Tue = 2

Wed = 3

Thu = 4

Fri = 5

Sat = 6

Click me to see the solution

61. Write a C program that accepts a real number x and prints out the corresponding value of sin(1/x) using 4-decimal places. Go to the editor

Input value of x: .6235

Value of sin(1/x) is 0.9995

Click me to see the solution

62. Write a C program that accepts a positive integer less than 500 and prints out the sum of the digits of this number. Go to the editor

Input a positive number less than 500:

Sum of the digits of 347 is 14

Click me to see the solution

63. Write a C program that accepts a positive integer n less than 100 from the user. It prints out the sum of 14 + 24 + 44 + 74 + 114 + • • • + m4. In this case, m is less than or equal to n. Print an appropriate message. Go to the editor

Input a positive number less than 100: 68

Sum of the series is 37361622

Click me to see the solution

64. Write a C program that accepts integers from the user until a zero or a negative number, displays the number of positive values, the minimum value, the maximum value, and the average value. Go to the editor

Input a positive integer:

Input next positive integer: 15

Input next positive integer: 25

Input next positive integer: 37

Input next positive integer: 43

Number of positive values entered is 4

Maximum value entered is 43

Minimum value entered is 15

Average value is 30.0000

Click me to see the solution

65. Write a C program that prints out the prime numbers between 1 and 200. The output should be such that each row contains a maximum of 20 prime numbers. Go to the editor

Expected output:

The prime numbers between 1 and 199 are:

2 3 5 7 11 13 17 19 23 29

31 37 41 43 47 53 59 61 67 71

73 79 83 89 97 101 103 107 109 113

127 131 137 139 149 151 157 163 167 173

179 181 191 193 197

Click me to see the solution

66. Write a C program that generates 50 random numbers between -0.5 and 0.5 and writes them to the file rand.dat. The first line of ran.dat contains the number of random numbers, while the next 50 lines contain 50 random numbers. Go to the editor

50

-0.4215

0.2620

0.3065

-0.0485

.... 0.3980

0.1750

0.4780

-0.2915

0.0715

0.3565

Click me to see the solution

67. Write a C program to evaluate the equation y=xn when n is a non-negative integer. Go to the editor

Input the values of x and n: 256

x=256.000000; n=0;

x to power n=1.000000

Click me to see the solution

68. Write a C program that prints the powers of 2 table for the powers 0 to 10, both positive and negative. Go to the editor

=======================================

n 2 to power n 2 to power -n

=======================================

0 1 1.000000000000

1 2 0.500000000000

2 4 0.250000000000

3 8 0.125000000000

4 16 0.062500000000

5 32 0.031250000000

6 64 0.015625000000

7 128 0.007812500000

8 256 0.003906250000

9 512 0.001953125000

10 1024 0.000976562500

======================================

Click me to see the solution

69. Write a C program to print a binomial coefficient table. Go to the editor

Mx 0 1 2 3 4 5 6 7 8 9 10

----------------------------------------------------------

0 1

1 1 1

2 1 2 1

3 1 3 3 1

4 1 4 6 4 1

5 1 5 10 10 5 1

6 1 6 15 20 15 6 1

7 1 7 21 35 35 21 7 1

8 1 8 28 56 70 56 28 8 1

9 1 9 36 84 126 126 84 36 9 1

10 1 10 45 120 210 252 210 120 45 10 1

----------------------------------------------------------

Click me to see the solution

70. Write a C program to print the alphabet set in decimal and character form. Go to the editor

[65-A] [66-B] [67-C] [68-D] [69-E] [70-F] [71-G] [72-H] [73-I] [74-J] [75-K] [76-L] [77-M] [78-N] [79-O] [80-P] [81-Q] [82-R] [83-S] [84-T] [85-U] [86-V] [87-W] [88-X] [89-Y]

[90-Z] [97-a] [98-b] [99-c] [100-d] [101-e] [102-f] [103-g] [104-h] [105-i] [106-j] [107-k] [108-l] [109-m] [110-n] [111-o] [112-p] [113-q] [114-r] [115-s] [116-t] [117-u] [118-v]

[119-w] [120-x] [121-y] [122-z]

Click me to see the solution

71. Write a C program to copy a given string into another and count the number of characters copied. Go to the editor

Input a string

Original string: w3resource

Number of characters = 10

Click me to see the solution

72. Write a C program to remove any negative sign in front of a number. Go to the editor

Input a value (negative):

Original value = -253

Absolute value = 253

Click me to see the solution

73. Write a C program that reads two integers and checks whether the first integer is a multiple of the second integer. Go to the editor

Sample Input: 9 3

Sample Output:

Input the first integer : Input the second integer:

9 is a multiple of 3.

Click me to see the solution

74. Write a C program to display the integer equivalents of letters (a-z, A-Z). Go to the editor

Sample Output:

List of integer equivalents of letters (a-z, A-Z).

==================================================

97 98 99 100 101 102

103 104 105 106 107 108

109 110 111 112 113 114

115 116 117 118 119 120

121 122 32 65 66 67

68 69 70 71 72 73

74 75 76 77 78 79

80 81 82 83 84 85

86 87 88 89 90

Click me to see the solution

75. Write a C program that accepts a seven-digit number, separates the number into its individual digits, and prints the digits separated from one another by two spaces each. Go to the editor

Sample Input: 2345678

Input a seven digit number:

Output: 2 3 4 5 6 7 8

Click me to see the solution

76. Write a C program to calculate and print the squares and cubes of the numbers from 0 to 20. It uses tabs to display them in a table of values. Go to the editor

Sample Output:

Number Square Cube

=========================

0 0 0

1 1 1

2 4 8

3 9 27

.....

18 324 5832

19 361 6859

20 400 8000

Click me to see the solution

77. Write a C program that accepts principal amount, rate of interest and days for a loan and calculates the simple interest for the loan, using the following formula. Go to the editor

interest = principal \* rate \* days / 365.

Sample Input:

10000

.1

365

0

Sample Output:

Input loan amount (0 to quit): Input interest rate: Input term of the loan in days: The interest amount is $1000.00

Input loan principal\_amt (0 to quit):

Click me to see the solution

78. Write a C program to demonstrate the difference between predecrementing and postdecrementing using the decrement operator --. Go to the editor

Sample Output:

Predecrementing:

x = 10

x-- = 10

x = 9

Click me to see the solution

79. Write a C program using looping to produce the following table of values. Go to the editor

Sample Output:

x x+2 x+4 x+6

--------------------------------

1 3 5 7

4 6 8 10

7 9 11 13

10 12 14 16

13 15 17 19

Click me to see the solution

80. Write a C program that reads the side (side sizes between 1 and 10 ) of a square and prints square using hash (#) character. Go to the editor

Sample Input: 10

Sample Output:

Input the size of the square:

# # # # # # # # # #

# # # # # # # # # #

# # # # # # # # # #

# # # # # # # # # #

# # # # # # # # # #

# # # # # # # # # #

# # # # # # # # # #

# # # # # # # # # #

# # # # # # # # # #

# # # # # # # # # #

Click me to see the solution

81. Write a C program that reads the side (side sizes between 1 and 10 ) of a square and prints a hollow square using the hash (#) character. Go to the editor

Sample Input: 10

Sample Output:

Input the size of the square:

##########

# #

# #

# #

# #

# #

# #

# #

# #

##########

Click me to see the solution

82. Write a C program that reads a five-digit integer and determines whether or not it's a palindrome. Go to the editor

Sample Input: 33333

Sample Output:

Input a five-digit number: 33333 is a palindrome.

Click me to see the solution

83. Write a C program that reads an integer (7 digits or fewer) and counts the number of 3s in the given number. Go to the editor

Sample Input: 538453

Sample Output:

Input a number: The number of threes in the said number is 2

Click me to see the solution

84. Write a C program to calculate and print the average of some integers. Accept all the values preceding 888. Go to the editor

Sample Input:12

15

24

888

Sample Output:

Input each number on a separate line (888 to exit):

The average value of the said numbers is 17.000000

Click me to see the solution

85. Write a C program to print a table of all the Roman numeral equivalents of decimal numbers in the range 1 to 50. Go to the editor

Sample Output:

Decimal Roman

number numeral

-------------------

1 I

2 II

3 III

4 IV

.....

98 LXXXXVIII

99 LXXXXIX

100 C

Click me to see the solution

86. Write a C program to display the sizes and ranges for each of C's data types. Go to the editor

Sample Output:

Size of C data types:

Type Bytes

--------------------------------

char 1

int8\_t 1

unsigned char 1

uint8\_t 1

short 2

int16\_t 2

uint16t 2

int 4

unsigned 4

long 8

unsigned long 8

int32\_t 4

uint32\_t 4

long long 8

int64\_t 8

unsigned long long 8

uint64\_t 8

float 4

double 8

long double 16

\_Bool 1

Click me to see the solution

87. Write a C program to display the minimum and maximum values for each of C's data types. Go to the editor

Sample Output:

Ranges for integer data types in C

------------------------------------------------------------

int8\_t -128 127

int16\_t -32768 32767

int32\_t -2147483648 2147483647

int64\_t -9223372036854775808 9223372036854775807

uint8\_t 0 255

uint16\_t 0 65535

uint32\_t 0 4294967295

uint64\_t 0 18446744073709551615

============================================================

Ranges for real number data types in C

------------------------------------------------------------

float 1.175494e-38 3.402823e+38

double 2.225074e-308 1.797693e+308

long double 3.362103e-4932 1.189731e+4932

Click me to see the solution

**88. Write a C program to create an extended ASCII table. Print the ASCII values 32 through 255.**

Sample Output:

|---------------------------------------------------------------------------------------------------------|

|extended ASCII table - excluding control characters |

| Ch Dec Hex | Ch Dec Hex | Ch Dec Hex | Ch Dec Hex | Ch Dec Hex | Ch Dec Hex | Ch Dec Hex |

|----------------|----------------|-------------|--------------|--------------|-------------|-------------|

| har 32 0x20 | @har 64 0x40 | ` 96 0x60 | � 128 0x80 | � 160 0xa0 | � 192 0xc0 | � 224 0xe0 |

| !har 33 0x21 | Ahar 65 0x41 | a 97 0x61 | � 129 0x81 | � 161 0xa1 | � 193 0xc1 | � 225 0xe1 |

| "har 34 0x22 | Bhar 66 0x42 | b 98 0x62 | � 130 0x82 | � 162 0xa2 | � 194 0xc2 | � 226 0xe2 |

| #har 35 0x23 | Char 67 0x43 | c 99 0x63 | � 131 0x83 | � 163 0xa3 | � 195 0xc3 | � 227 0xe3 |

| $har 36 0x24 | Dhar 68 0x44 | d 100 0x64 | � 132 0x84 | � 164 0xa4 | � 196 0xc4 | � 228 0xe4 |

| %har 37 0x25 | Ehar 69 0x45 | e 101 0x65 | � 133 0x85 | � 165 0xa5 | � 197 0xc5 | � 229 0xe5 |

| &har 38 0x26 | Fhar 70 0x46 | f 102 0x66 | � 134 0x86 | � 166 0xa6 | � 198 0xc6 | � 230 0xe6 |

| 'har 39 0x27 | Ghar 71 0x47 | g 103 0x67 | � 135 0x87 | � 167 0xa7 | � 199 0xc7 | � 231 0xe7 |

| (har 40 0x28 | Hhar 72 0x48 | h 104 0x68 | � 136 0x88 | � 168 0xa8 | � 200 0xc8 | � 232 0xe8 |

| )har 41 0x29 | Ihar 73 0x49 | i 105 0x69 | � 137 0x89 | � 169 0xa9 | � 201 0xc9 | � 233 0xe9 |

| \*har 42 0x2a | Jhar 74 0x4a | j 106 0x6a | � 138 0x8a | � 170 0xaa | � 202 0xca | � 234 0xea |

| +har 43 0x2b | Khar 75 0x4b | k 107 0x6b | � 139 0x8b | � 171 0xab | � 203 0xcb | � 235 0xeb |

| ,har 44 0x2c | Lhar 76 0x4c | l 108 0x6c | � 140 0x8c | � 172 0xac | � 204 0xcc | � 236 0xec |

| -har 45 0x2d | Mhar 77 0x4d | m 109 0x6d | � 141 0x8d | � 173 0xad | � 205 0xcd | � 237 0xed |

| .har 46 0x2e | Nhar 78 0x4e | n 110 0x6e | � 142 0x8e | � 174 0xae | � 206 0xce | � 238 0xee |

| /har 47 0x2f | Ohar 79 0x4f | o 111 0x6f | � 143 0x8f | � 175 0xaf | � 207 0xcf | � 239 0xef |

| 0har 48 0x30 | Phar 80 0x50 | p 112 0x70 | � 144 0x90 | � 176 0xb0 | � 208 0xd0 | � 240 0xf0 |

| 1har 49 0x31 | Qhar 81 0x51 | q 113 0x71 | � 145 0x91 | � 177 0xb1 | � 209 0xd1 | � 241 0xf1 |

| 2har 50 0x32 | Rhar 82 0x52 | r 114 0x72 | � 146 0x92 | � 178 0xb2 | � 210 0xd2 | � 242 0xf2 |

| 3har 51 0x33 | Shar 83 0x53 | s 115 0x73 | � 147 0x93 | � 179 0xb3 | � 211 0xd3 | � 243 0xf3 |

| 4har 52 0x34 | Thar 84 0x54 | t 116 0x74 | � 148 0x94 | � 180 0xb4 | � 212 0xd4 | � 244 0xf4 |

| 5har 53 0x35 | Uhar 85 0x55 | u 117 0x75 | � 149 0x95 | � 181 0xb5 | � 213 0xd5 | � 245 0xf5 |

| 6har 54 0x36 | Vhar 86 0x56 | v 118 0x76 | � 150 0x96 | � 182 0xb6 | � 214 0xd6 | � 246 0xf6 |

| 7har 55 0x37 | Whar 87 0x57 | w 119 0x77 | � 151 0x97 | � 183 0xb7 | � 215 0xd7 | � 247 0xf7 |

| 8har 56 0x38 | Xhar 88 0x58 | x 120 0x78 | � 152 0x98 | � 184 0xb8 | � 216 0xd8 | � 248 0xf8 |

| 9har 57 0x39 | Yhar 89 0x59 | y 121 0x79 | � 153 0x99 | � 185 0xb9 | � 217 0xd9 | � 249 0xf9 |

| :har 58 0x3a | Zhar 90 0x5a | z 122 0x7a | � 154 0x9a | � 186 0xba | � 218 0xda | � 250 0xfa |

| ;har 59 0x3b | [har 91 0x5b | { 123 0x7b | � 155 0x9b | � 187 0xbb | � 219 0xdb | � 251 0xfb |

| <har 60 0x3c | \har 92 0x5c | | 124 0x7c | � 156 0x9c | � 188 0xbc | � 220 0xdc | � 252 0xfc |

| =har 61 0x3d | ]har 93 0x5d | } 125 0x7d | � 157 0x9d | � 189 0xbd | � 221 0xdd | � 253 0xfd |

| >har 62 0x3e | ^har 94 0x5e | ~ 126 0x7e | � 158 0x9e | � 190 0xbe | � 222 0xde | � 254 0xfe |

| ?har 63 0x3f | \_har 95 0x5f |DEL 127 0x7f | � 159 0x9f | � 191 0xbf | � 223 0xdf | � 255 0xff |

**89. Write a C programming to calculate (x + y + z) for each pair of integers x, y and z where -2^31 <= x, y, z<= 2^31-1.**

Sample Output:

Result: 140733606875472

**90. Write a C program to find all prime palindromes in the range of two given numbers x and y (5 <= x<y<= 1000,000,000).**

A number is called a prime palindrome if the number is both a prime number and a palindrome.

Sample Output:

Input two numbers (separated by a space):

List of prime palindromes:

0

1

**91. Write a C program to find the angle between (12:00 to 11:59) the hour hand and the minute hand of a clock. The hour hand and the minute hand are always between 0 and 180 degrees.**

For example, when it's 12 o'clock, the angle of the two hands is 0 while 3:00 is 45 degrees and 6:00 is 180 degrees.

Sample Output:

Input hour(h) and minute(m) (separated by a space):

3 0

At 3:00 the angle is 90.0 degrees.

Input hour(h) and minute(m) (separated by a space):

6 15

The angle is 90.0 degrees at 6:15.

Input hour(h) and minute(m) (separated by a space):

12 0

At 12:00 the angle is 0.0 degrees.

**92. Write a C program to find the last non-zero digit of the factorial of a given positive integer.**

For example for 5!, the output will be "2" because 5! = 120, and 2 is the last nonzero digit of 120

Sample Output:

Input a positive number:

The last non-zero digit of the said factorial:

0

**93. Write a C program to check if a given number is nearly prime number or not.**

Nearly prime numbers are a positive integer which is equal to the product of two prime numbers.

Sample Output:

It is not a Nearly prime number.

**94. Write a C program to calculate body mass index and display the grade.**

Sample Output:

Input the weight: 65

Input the height: 5.6

BMI = 2.072704

Grade: Under

**95. Write a C program to print the corresponding Fahrenheit to Celsius and Celsius to Fahrenheit.**

Both cases initial tempratue = 00, maximum temperature = 1500 and step 100

Sample Output:

Celsius to Fahrenheit

---------------------

Celsius Fahrenheit

0.0 32.0

10.0 50.0

20.0 68.0

30.0 86.0

....

120.0 248.0

130.0 266.0

140.0 284.0

150.0 302.0

Fahrenheit to Celsius

---------------------

Fahrenheit Celsius

0.0 -17.8

10.0 -12.2

20.0 -6.7

30.0 -1.1

40.0 4.4

50.0 10.0

...

120.0 48.9

130.0 54.4

140.0 60.0

150.0 65.6

**96. Write a C program to count blanks, tabs, and newlines in input text.**

Sample Output:

Number of blanks, tabs, and newlines:

Input few words/tab/newlines

The quick

brown fox jumps

over the lazy dog

^Z

blank=7,tab=2,newline=3

**97. Write a C program that accepts a string and counts the number of characters, words and lines.**

Sample Output:

Input a string and get number of charcters, words and lines:

The quick brown fox jumps over the lazy dog

^Z

Number of Characters = 44

Number of words = 9

Number of lines = 1

**98. Write a C program that accepts some text from the user and prints each word of that text on a separate line.** Sample Output:

Input some text:

The quick brown fox jumps over the lazy dog

The

quick

brown

fox

jumps

over

the

lazy

dog

**99. Write a C program that takes some integer values from the user and prints a histogram.**

Sample Output:

Input number of histogram bar (Maximum 10):

4

Input the values between 0 and 10 (separated by space):

9

7

4

3

Histogram:

#########

#######

####

###

**100. Write a C program to convert a currency value (floating point with two decimal places) to the number of coins and notes.**

Sample Output:

Input the currency value (floating point with two decimal places):

10357.75

Currency Notes:

100 number of Note(s): 103

50 number of Note(s): 1

5 number of Note(s): 1

2 number of Note(s): 1

Currency Coins:

.50 number of Coin(s): 1

.25 number of Coin(s): 1

**101. There are three given ranges. Write a C program that reads a floating-point number and finds the range where it belongs from four given ranges.**

Sample Output:

Input a number: 87

Range (80,100]

**102. Write a C program that reads three integers and sorts the numbers in ascending order. Print the original numbers and the sorted numbers.**

Sample Output:

Input 3 integers: 17

-5

25

---------------------------

Original numbers: 17, -5, 25

Sorted numbers: -5, 17, 25

**103. Write a C program that takes two integers and tests whether they are multiplied or not.**

In science, a multiple is the product of any quantity and an integer. In other words, for the quantities a and b, we say that b is a multiple of a if b = na for some integer n, which is called the multiplier. If a is not zero, this is equivalent to saying that b/a is an integer.

Sample Output:

Input two integers:

3

9

Multiplies

**104. Write a C program that reads the item's price and creates a revised price for the item, based on the item price table.**

Sample Output:

Input the item price:525

New Item price: 582.75

Increased price: 57.75

Increase Percentage: 11%

**105. Write a C program that accepts seven floating point numbers and counts the number of positive and negative numbers. Print the average of all positive and negative values with two digits after the decimal number.**

Sample Output:

Input 7 numbers(int/float):

25

35.75

15

-3.5

40

35

16

6 Number of positive numbers: Average 27.79

1 Number of negative numbers: Average -3.50

**106. Write a C program that accepts 7 integer values and counts the even, odd, positive and negative values.**

Sample Output:

Input 7 integers:

10

12

15

-15

26

35

17

Number of even values: 3

Number of odd values: 4

Number of positive values: 6

Number of negative values: 1

**107. Write a C program that prints ten consecutive odd and even numbers after accepting an integer.**

Sample Output:

Input an integer number:

15

Next 10 consecutive odd numbers:

17, 19, 21, 23, 25, 27, 29, 31, 33, 35,

Next 10 consecutive even numbers:

26, 28, 30, 32, 34, 36, 38, 40, 42, 44,

**108. Write a C program that reads two integer values and calculates the sum of all odd numbers between them.**

Sample Output:

Input the first integer number:

25

Input the second integer number (greater than first integer):

45

Sum of all odd values between 25 and 45:

385

Sum of all even values between 25 and 45:

350

**109. Write a C program to find and print the square of each even and odd value between 1 and a given number (4 < n < 101).**

Sample Output:

Input a number(integer): 15

Square of each even between 1 and 15:

2^2 = 4

4^2 = 16

6^2 = 36

8^2 = 64

10^2 = 100

12^2 = 144

14^2 = 196

Square of each odd between 1 and 15:

1^2 = 1

3^2 = 9

5^2 = 25

7^2 = 49

9^2 = 81

11^2 = 121

13^2 = 169

15^2 = 225

**110. Write a C program to find the odd, even, positive and negative numbers from a given number (integer) and print a message 'Number is positive odd' or 'Number is negative odd' or 'Number is positive even' or 'Number is negative even'. If the number is 0 print "Zero".**

Sample Output:

Input a number (integer):

12

Number is positive-even

**111. Write a C program that accepts an integer from the user and divides all numbers between 1 and 100. Print those numbers where the remainder value is 3.**

Sample Output:

Input a number (integer):

65

Remainder value is 3 after divide all numbers between 1 and 100 by 65:

3

68

**112. Write a C program that reads seven integer values from the user and finds the highest value and its position.**

Sample Output:

Input 6 numbers (integer values):

15

20

25

17

-8

35

Maximum value: 35

Position: 6

**113. Write a C program to create and print the sequence of the following example.**

Sample Output:

a=1 b=100

a=6 b=90

a=11 b=80

a=16 b=70

a=21 b=60

a=26 b=50

a=31 b=40

a=36 b=30

a=41 b=20

a=46 b=10

a=51 b=0

**114. Write a C program that accepts two integer values and calculates the sum of all even values between them.**

Sample Output:

Input two numbers (integer values):

25

45

Sum of all even values between 25 and 45

350

Sample Output:

Input two numbers (integer values):

27

13

Sum of all even values between 27 and 13

140

**115. Write a C program that accepts a pair of numbers from the user and prints the sequence from the lowest to the highest number. Also, print the average value of the sequence.**

Sample Output:

Input two pairs values (integer values):

14

25

Sequence from the lowest to highest number:

14 15 16 17 18 19 20 21 22 23 24 25

Average value of the said sequence

19.50

Sample Output:

Input two pairs values (integer values):

35

13

Sequence from the lowest to highest number:

13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35

Average value of the said sequence

24.00

**116. Write a C program that accepts a pair of numbers from the user and prints "Ascending order" if the two numbers are in ascending order, otherwise prints, "Descending order".**

Sample Output:

Input two pairs values (integer values):

12

35

Ascending order

Sample Output:

Input two pairs values (integer values):

65

25

Descending order

**117. Write a C program that reads two integers and divides the first number by second, print the result of this division with two digits after the decimal point and prints “Division not possible..!” if the division is not possible.**

Sample Output:

Input two integer values:

75

5

Result: 15.00

**118. Write a C program that reads five subject marks (0-100) of a student and calculates the average of these marks.**

Sample Output:

Input five subject marks(0-100):

75

84

56

98

68

Average marks = 76.20

**119. Write a C program to calculate the sum of all numbers between two given numbers (inclusive) not divisible by 7.**

Sample Output:

Input two numbers(integer):

25

5

Sum of all numbers between said numbers (inclusive) not divisible by 7:

273

Sample Output:

Input two numbers(integer):

6

36

Sum of all numbers between said numbers (inclusive) not divisible by 7:

546

**120. Write a C program to print a sequence from 1 to a given (integer) number, inserting a comma between these numbers. There will be no comma after the last character.**

Sample Output:

Input a number(integer):

25

Sequence:

1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25

**121. Write a C program that reads an integer and finds all the divisors of the said integer.**

Sample Output:

Input a number (integer value):

35

All positive divisors of 35

1

5

7

35

**122. Write a C program that reads two integers m, n and computes the sum of n even numbers starting from m.**

Sample Output:

Input two integes (m, n):

20

60

Sum of 60 even numbers starting from 20:

4740

**123. Write a C program that reads two integers m, n and computes the sum of n odd numbers starting from m.**

Sample Output:

Input two integes (m, n):

65

5

Sum of 5 odd numbers starting from 65:

345

**124. Write a C program that reads an array of integers (length 7), replaces every negative or null element with 1 and prints the array elements.**

Sample Output:

Input 7 array elements:

15

12

-7

25

0

27

53

Array elements:

array\_nums[0] = 15

array\_nums[1] = 12

array\_nums[2] = 1

array\_nums[3] = 25

array\_nums[4] = 1

array\_nums[5] = 27

array\_nums[6] = 53

**125. Write a C program that reads an array of integers (length 7), and replaces the first element of the array by a given number and replaces each subsequent position of the array by the double value of the previous.**

Sample Output:

Input the first element of the array:

5

Array elements:

array\_nums[0] = 5

array\_nums[1] = 10

array\_nums[2] = 20

array\_nums[3] = 40

array\_nums[4] = 80

array\_nums[5] = 160

array\_nums[6] = 320

**126. Write a C program that reads an array (length 7) and prints all array positions that store a value less than or equal to 0.**

Sample Output:

Input 7 array elements:

15

23

37

65

20

-7

65

Array positions that store a value less or equal to 0:

array\_nums[5] = -7.0

**127. Write a C program that reads an array of integers (length 8), replaces the 1st element with the 8th, the 2nd with the 7th and so on. Print the final array.**

Sample Output:

Input 8 array elements:

25

35

17

-5

29

45

60

65

Modified array:

array\_nums[0] = 65

array\_nums[1] = 60

array\_nums[2] = 45

array\_nums[3] = 29

array\_nums[4] = -5

array\_nums[5] = 17

array\_nums[6] = 35

array\_nums[7] = 25

**128. Write a C program that reads an array of integers (length 10), fills it with numbers from o to a (given number) n – 1 repeatedly, where 2 ≤ n ≤ 10.**

Sample Output:

Input an integer (2-10)

8

array\_nums[0] = 0

array\_nums[1] = 1

array\_nums[2] = 2

array\_nums[3] = 3

array\_nums[4] = 4

array\_nums[5] = 5

array\_nums[6] = 6

array\_nums[7] = 7

array\_nums[8] = 0

array\_nums[9] = 1

**129. Write a C program that reads an array (length 10), and replaces the first element of the array by a given number and replaces each subsequent position of the array by one-third the value of the previous.**

Sample Output:

Input an integer (2-10)

8

array\_nums[0] = 0

array\_nums[1] = 1

array\_nums[2] = 2

array\_nums[3] = 3

array\_nums[4] = 4

array\_nums[5] = 5

array\_nums[6] = 6

array\_nums[7] = 7

array\_nums[8] = 0

array\_nums[9] = 1

**130. Write a C program to create an array of length n and fill the array elements with integer values. Find the smallest value and its position in the array.**

Sample Output:

Input a number:

35

Array elements:

array\_nums[0] = 35.0000

array\_nums[1] = 11.6667

array\_nums[2] = 3.8889

array\_nums[3] = 1.2963

array\_nums[4] = 0.4321

array\_nums[5] = 0.1440

array\_nums[6] = 0.0480

array\_nums[7] = 0.0160

array\_nums[8] = 0.0053

array\_nums[9] = 0.0018

**131.Write a C program that accepts two strings and checks whether the second string is present in the last part of the first string.**

Sample Output:

Input the first string:

abcdef

Input the second string:

ef

Is second string present in the last part of the first string?

Present!

**132. Write a C program to find the heights of the top three buildings in descending order from eight given buildings.**

Input:

0 <= height of building (integer) <= 10,000

Sample Output:

Input heights(integer values) of the top eight buildings:

25

15

45

22

35

18

95

65

Heights of the top three building:

95

65

45

**133. Write a C program to calculate the sum of two given integers and count the number of digits in the sum value.**

Sample Output:

Input two integer values:

68

75

Number of digits of the sum value of the said numbers:

3

**134. Write a C program to check whether the three given lengths (integers) of three sides of a triangle form a right triangle or not. Print "Yes" if the given sides form a right triangle otherwise print "No".**

Input:

Integers separated by a single space.

1 <= length of the side <= 1,000

Sample Output:

Input the three sides of a trainagel:

12

11

13

It is not a right angle triangle!

**135. Write a C program that reads an integer n and finds the number of combinations of a, b, c and d (0 ≤ a, b, c, d ≤ 9) where (a + b + c + d) will be equal to n.**

Input:

n (1 <= n <= 50)

Sample Output:

Input a number:

5

a + b + c + d = n

0, 0, 0, 5

0, 0, 1, 4

....

4, 0, 1, 0

4, 1, 0, 0

5, 0, 0, 0

Total number of combinations:

56

**136. Write a C program to find prime numbers that are less than or equal to a given integer.**

Input:

n (1 <= n <= 999,999)

Sample Output:

Input a number:

123

Number of prime numbers which are less than or equal to 123

30

**137. Write a C program to check if a point (x, y) is within a triangle or not. Three points make up a triangle.**

Input:

x1,y1,x2,y2,x3,y3,xp,yp separated by a single space

Sample Output:

Input three points to form a triangle:

x1 y1 z1

Input the point to check it is inside the triangle or not:

The point is outside the triangle!

**138.Write a C program to test whether two lines are parallel or not. The four points are P(x1, y1), Q(x2, y2), R(x3, y3) and S(x4, y4), check PQ and RS are parallel are not.**

Input:

−100 <= x1, y1, x2, y2, x3, y3, x4, y4 <= 100

Each value is a real number with at most 5 digits after the decimal point.

Sample Output:

Input P(x1,y1):

5

7

Input P(x2,y2):

3

6

Input P(x3,y3):

8

9

Input P(x4,y4):

5

6

PQ and RS are not parallel!

**139. Write a C program to find the maximum sum of a contiguous subsequence from a given sequence of numbers a1, a2, a3, ... an ( n = number of terms in the sequence).**

Input:

You can assume that 1 <= n <= 500 and -10000 <= ai <= 10000.

Sample Output:

Input number of terms in the sequence:

5

Input the terms of the said sequence:

3

2

6

-7

8

Maximum sum of a contiguous subsequence:

12

**140. Write a C program that reads a sequence of integers and finds the element that occurs most frequently.**

Sample Output:

Input the terms of the sequence:

5

2

4

6

8

10

^Z

Mode values of the said sequence in ascending order:

2

4

5

6

8

10

**141. Write a C program that reads n digits (given) chosen from 0 to 9 and prints the number of combinations where the sum of the digits equals another given number (s). Do not use the same digits in a combination.**

For example, the combinations where n = 3 and s = 6 are as follows:

1 + 2 + 3 = 6

0 + 1 + 5 = 6

0 + 2 + 4 = 6

Sample Output:

Input the number:

3

Sum of the digits:

6

Number of combinations: 3

**142. Write a C program that reads the two adjoining sides and the diagonal of a parallelogram and checks whether the parallelogram is a rectangle or a rhombus.**

Input:

Two adjoined sides and the diagonal.

1 <= ai, bi, ci <= 1000, ai + bi > ci

Sample Output:

Input two adjoined sides of the parallelogram:

3

4

Input the diagonal of the parallelogram:

5

This is a rectangle.

Sample Output:

Input two adjoined sides of the parallelogram:

5

5

Input the diagonal of the parallelogram:

7

This is a rhombus.

**143. Write a C program to find the difference between the largest integer and the smallest integer, which are created by 8 numbers from 0 to 9. The number that can be rearranged shall start with 0 as in 00135668.**

Input:

Data is a sequence of 8 numbers (digits from 0 to 9).

Output:

The difference between the largest integer and the smallest integer.

Sample Output:

Input an integer created by 8 numbers (0 to 9):

25346879

The difference between the largest integer and the smallest integer.

98765432 - 23456789 = 75308643

**144. Write a C program to create the maximum number of regions obtained by drawing n given straight lines.**

Input:

(1 ≤ n ≤ 10,000).

Sample Output:

Input number of straight lines:

2

Maximum number of regions obtained by drawing 2 given straight lines:

4

**145. Write a C program to sum all numerical values (positive integers) embedded in a sentence.**

Input:

Sentences with positive integers are given over multiple lines. Each line is a character string containing one-byte alphanumeric characters, symbols, spaces, or an empty line. However the input is 80 characters or less per line and the sum is 10,000 or less.

Sample Output:

Input Sentences with positive integers:

5littleJackand2mouse.

Sum of all numerical values embedded in a sentence:

7

Click me to see the solution

146. Write a C program to extract words of 3 to 6 characters length from a given sentence not more than 1024 characters. Go to the editor

Input:

English sentences consisting of delimiters and alphanumeric characters are given on one line.

Sample Output:

English sentences consisting of delimiters and alphanumeric characters on one line:

w3resource.com

Extract words of 3 to 6 characters length from the said sentence:

com

**147. Write a C program to find the number of combinations that satisfy p + q + r + s = n where n is a given number <= 4000 and p, q, r, s are between 0 and 1000.**

Sample Output:

Input a positive integer:

25

Number of combinations of p,q,r,s:

3276

**148. Write a C program, which adds up columns and rows of given table as shown in the following figure.**

Input:

n (the size of row and column of the given table)

1st row of the table

2nd row of the table

:

:

n th row of the table

The input ends with a line consisting of a single 0.

Sample Output:

Input number of rows/columns:

4

Input the cell value

Row 0 input cell values

25

69

51

26

Row 1 input cell values

68

35

29

54

Row 2 input cell values

54

57

45

63

Row 3 input cell values

61

68

47

59

Result:

25 69 51 26 171

68 35 29 54 186

54 57 45 63 219

61 68 47 59 235

208 229 172 202 811

**149. Write a C program that reads a list of pairs of a word and a page number, and prints the word and a list of the corresponding page numbers.**

Input:

word page\_number

Output:

word

a\_list\_of\_the\_page\_number

word

a\_list\_of\_the\_Page\_number.

Sample Output:

Input pairs of a word and a page\_no number:

Twinkle

65

Twinkle

55

Little

25

Star

35

^Z

Word and page\_no number in alphabetical order:

Little

25

Star

35

Twinkle

55 65

**150. Write a C program that reads an expression and evaluates it.**

Input:

4

10-2\*3=

8\*(8+2-5)=

Sample Output:

Input an expression using +, -, \*, / operators:

1+6\*8-4/2

47

Sample Output:

Input an expression using +, -, \*, / operators:

25/5-6\*7+2

-35

Sample Output:

Input an expression using +, -, \*, / operators:

9+6+(5\*2)-5

20

**Basic part 2**

**1. Write a C program that takes n number of positive integers. Find the integer that appears the least number of times among the said integers. If there are multiple such integers, select the smallest one.**

Sample Date:

(1,2,3) -> 1

(10, 20, 4, 5, 11) -> 4

**2. Write a C program that takes a string and two integers (n1, n2). Now reverse the sequence of characters in the string between n1 and n2.**

Sample Date:

("abcdxyabcd", 5, 6) -> "abcdyxabcd"

("Exercises", 1, 3) -> "exercises"

**3. Write a C program that accepts three integers from the user and finds the second largest number among them.**

Constraints:

1≤ x ≤100

1≤ y ≤100

1≤ z ≤100

Sample Date:

(1 , 2, 3) -> 2

(10, 12, 24) -> 12

(34, 21, 30) -> 30

4. Write a C program that accepts two sequences ((a1, a2, .. an), (b1, b2, .. bn)) of integers as input. Find all integers that appear in both sequences, one by one, in ascending order. Go to the editor

Constraints:

1≤N1≤100, N1 -> number of integers in first sequence.

1≤N2≤100, N2 -> number of integers in second sequence.

1 ≤ ai≤ 100 ( 1 ≤ i ≤ N1 )

1 ≤ bj≤ 100 ( 1 ≤ j ≤ N2 )

Sample Date:

( 1 2 3 1 2 3 4) -> 1 2 3

( 1 2 3 1 2 3) -> 1 2 3

(1 2 3 4 5 6) ->

Click me to see the solution

5. Write a C program that accepts a sequence of different values and calculates the sum of the values before and after the maximum value. Go to the editor

The sum of the values before the maximum value is 0, if there are no values before the maximum. Similarly, the sum of the values after the maximum value is 0, if there are no values after the maximum.

Sample Date:

1 2 3 -> 3 0

1 2 9 4 5 -> 3 9

2 2 2 2 -> 0 6

Click me to see the solution

6. Write a C program that accepts a sequence of positive integers from the user and finds the longest continuous subsequence. Go to the editor

Sample Date:

Length of the sequence: 5

Sequence: 5 2 3 4 1

Length of longest ascending contiguous subsequence: 5 [2 3 4]

Length of the sequence: 6

Sequence: 10 20 30 40 50 60

Length of longest ascending contiguous subsequence: 6 [10 20 30 40 50 60]

Length of the sequence: 3

Sequence: 5 1 3

Length of longest ascending contiguous subsequence: 2 [1 3]

Click me to see the solution

7. Write a C program that accepts three integers: A, B, and X. Find the smallest absolute value of the difference between X and the integers between A and B. Go to the editor

Sample Date:

Input A, B: 7, 11

C: 20

Smallest absolute value of difference between X and integers between A and B (inclusive): 11

Input A, B: 1, 5

C: 4

Smallest absolute value of difference between X and integers between A and B (inclusive): 4

BASIC ALGORITHM TYPES

1. Write a C program to compute the sum of the two input values. If the two values are the same, then return triple their sum. Go to the editor

Expected Output:

3

12

Click me to see the solution

2. Write a C program to get the absolute difference between n and 51. If n is greater than 51 return triple the absolute difference. Go to the editor

Expected Output:

6

21

0

Click me to see the solution

3. Write a C program to check two given integers, and return true if one of them is 30 or if their sum is 30. Go to the editor

Expected Output:

1

1

0

Click me to see the solution

4. Write a C program to check a given integer and return true if it is within 10 of 100 or 200. Go to the editor

Expected Output:

1

1

0

Click me to see the solution

5. Write a C program to check whether a given positive number is a multiple of 3 or a multiple of 7. Go to the editor

Expected Output:

1

1

1

0

Click me to see the solution

6. Write a C program to check if one given temperature is less than 0 and the other is greater than 100. Go to the editor

Expected Output:

1

1

0

Click me to see the solution

7. Write a C program to check two given integers whether either of them is in the range 100..200 inclusive. Go to the editor

Expected Output:

1

0

1

Click me to see the solution

8. Write a C program to check whether three given integer values are in the range 20..50 inclusive. Return true if 1 or more of them are in the range, otherwise return false. Go to the editor

Expected Output:

1

1

1

0

Click me to see the solution

9. Write a C program to check whether two given integer values are in the range 20..50 inclusive. Return true if 1 or other is in the said range otherwise false. Go to the editor

Expected Output:

1

1

1

0

Click me to see the solution

10. Write a C program to check which number is nearest to the value 100 among two given integers. Return 0 if the two numbers are equal. Go to the editor

Expected Output:

95

0

99

Click me to see the solution

11. Write a C program to check whether two given integers are in the range 40..50 inclusive, or they are both in the range 50..60 inclusive. Go to the editor

Expected Output:

0

0

1

1

Click me to see the solution

12. Write a C program to find the largest value between two positive integer values. This value should be in the range 20..30 inclusive, or return 0 if neither is in that range. Go to the editor

Expected Output:

0

30

25

28

Click me to see the solution

13. Write a C program to check if two given non-negative integers have the same last digit. Go to the editor

Expected Output:

0

1

1

0

Click me to see the solution

14. Write a C program to check whether the sequence of numbers 1, 2, 3 appears in a given array of integers somewhere. Go to the editor

Expected Output:

1

0

1

Click me to see the solution

15. Write a C program to count the number of 5's adjacent to each other in an array of integers. Consider the situation where the second 5 is actually a 6. Go to the editor

Expected Output:

1

2

1

Click me to see the solution

16. Write a C program to check if a triple is present in an array of integers or not. If a value appears three times in a row in an array it is called a triple. Go to the editor

Expected Output:

0

0

1

Click me to see the solution

17. Write a C program to compute the sum of the two given integers. If the sum is in the range 10..20 inclusive return 30.Go to the editor

Expected Output:

29

30

39

30

Click me to see the solution

18. Write a C program that accepts two integers and returns true if either of them is 5 or their sum or difference is 5. Go to the editor

Expected Output:

1

0

1

Click me to see the solution

19. Write a C program that tests whether a given non-negative number is a multiple of 13 or one more than a multiple of 13. Go to the editor

Expected Output:

1

1

1

0

Click me to see the solution

20. Write a C program that checks if a given non-negative number is a multiple of 3 or 7, but not both. Go to the editor

Expected Output:

1

1

0

Click me to see the solution

21. Write a C program to check whether a given number is within 2 of a multiple of 10. Go to the editor

Expected Output:

0

0

1

1

Click me to see the solution

22. Write a C program to compute the sum of the two given integers. Return 18 if one of the integer values given is in the range 10..20 inclusive. Go to the editor

Expected Output:

10

18

18

241

Click me to see the solution

23. Write a C program to check whether it is possible to add two integers to get the third integer from three given integers. Go to the editor

Expected Output:

1

0

1

Click me to see the solution

24. Write a C program to check whether y is greater than x, and z is greater than y from three given integers x,y,z. Go to the editor

Expected Output:

1

1

0

Click me to see the solution

25. Write a C program to check if two or more nonnegative integers have the same rightmost digit. Go to the editor

Expected Output:

1

1

0

Click me to see the solution

26. Write a C program to check three given integers and return true if one of them is 20 or more and less than one of the others. Go to the editor

Expected Output:

1

1

0

Click me to see the solution

27. Write a C program to find the larger of two given integers. However if the two integers have the same remainder when divided by 5, choose the smaller integer. If the two integers are the same, return 0. Go to the editor

Expected Output:

11

20

0

Click me to see the solution

28. Write a C program to check two given integers. Each integer is in the range 10..99. Return true if a digit appears in both numbers, such as the 3 in 13 and 33. Go to the editor

Expected Output:

1

0

1

Click me to see the solution

29. Write a C program to compute the sum of three given integers. Return the third value if the two values are the same. Go to the editor

Expected Output:

16

23

12

18

Click me to see the solution

30. Write a C program to compute the sum of the three integers. Do not count a value that is 13 and add it to the sum. Go to the editor

Expected Output:

16

23

10

0

Click me to see the solution

31. Write a C program to compute the sum of the three given integers. Any value in the range 10..20 inclusive counts as 0, except for 13 and 17. Go to the editor

Expected Output:

16

11

13

13

Click me to see the solution

32. Write a C program to check two given integers and return the one nearest to 13 without crossing over. Return 0 if both numbers go over. Go to the editor

Expected Output:

5

12

13

0

Click me to see the solution

33. Write a C program to check three given integers (small, medium and large) and return true if the difference between small and medium and the difference between medium and large is the same. Go to the editor

Expected Output:

1

0

1

Click me to see the solution

34. Write a C program to check a given array of integers of length 1 or more. Return true if the first element and the last element in the array are equal. Go to the editor

Expected Output:

1

0

0

Click me to see the solution

35. Write a C program to check two given arrays of integers of length 1 or more. Return true if they have the same first element or if they have the same last element. Go to the editor

Expected Output:

1

0

Click me to see the solution

36. Write a C program to compute the sum of the elements of an array of integers. Go to the editor

Expected Output:

150

10

Click me to see the solution

37. Write a C program to rotate the elements of a given array of integers (length 4 ) in the left direction and return the updated array. Go to the editor

Expected Output:

Elements in original array are: 10, 20, 30, 40

Elements in new array are: 20, 30, 40, 10

Click me to see the solution

38. Write a C program to reverse a given array of integers of length 5. Go to the editor

Expected Output:

Elements in original array are: 10, 20, 30, 40, 50

Elements in reverse array are: 50, 40, 30, 20, 10

Click me to see the solution

39. Write a C program to create a new array containing the middle elements from the two given arrays of integers, each of length 5. Go to the editor

Expected Output:

Elements in original array are:

10, 20, -30, -40, 30

10, 20, 30, 40, 30

Elements in new array are: -30, 30

Click me to see the solution

40. Write a C program to create a new array taking the first and last elements of a given array of integers and length one or more. Go to the editor

Expected Output:

Elements in original array are: 10, 20, 30, 40, 50

Elements in new array are: 10, 50

Click me to see the solution

41. Write a C program to check whether an array of integers with a length of 2 contains 15 or 20. Go to the editor

Expected Output:

1

1

0

Click me to see the solution

42. Write a C program to check if an array of integers with length 2 does not contain 15 or 20. Go to the editor

Expected Output:

0

0

1

Click me to see the solution

43. Write a C program to check a given array of integers and return true if the array contains 10 or 20 twice. The length of the array will be 0, 1, or 2. Go to the editor

Expected Output:

0

1

0

Click me to see the solution

44. Write a C program to check a given array of integers of length 3 and create a new array. If there is a 5 in the given array immediately followed by a 7 then set 7 to 1. Go to the editor

Expected Output:

Elements in original array are: 1, 5, 7

Elements in new array are: 1, 5, 1

Click me to see the solution

45. Write a C program to compute the sum of the two given arrays of integers, length 3 and find the array that has the largest sum. Go to the editor

Expected Output:

Elements in original array are: 10, 20, -30

Elements in original array are: 10, 20, 30

The array which has the largest sum.: 10, 20, 30

Click me to see the solution

46. Write a C program to create an array taking two middle elements from a given array of integers of length even. Go to the editor

Expected Output:

Elements in original array are: 1, 5, 7, 9, 11, 13

New array: 7, 9

Click me to see the solution

47. Write a C program to create a new array from two given arrays of integers, each of length 3. Go to the editor

Expected Output:

Elements in original array1 are: 10, 20, 30

Elements in original array2 are: 40, 50, 60

New array: 10, 20, 30, 40, 50, 60

Click me to see the solution

48. Write a C program to create a new array by swapping the first and last elements of a given array of integers whose length is at least 1. Go to the editor

Expected Output:

Elements in original array1 are: 1, 5, 7, 9, 11, 13

New array, after swapping first and last elements: 13, 5, 7, 9, 11, 1

Click me to see the solution

49. Write a C program to create an array of length 3 from a given array (length at least 3) containing the elements from the middle of the array. Go to the editor

Expected Output:

Elements in original array1 are: 1, 5, 7, 9, 11, 13

New array: 7, 9, 11

Click me to see the solution

50. Write a C program to find the largest value from the first, last, and middle elements of a given array of integers of odd length (at least 1). Go to the editor

Expected Output:

1

9

9

Click me to see the solution

51. Write a C program to count the even number of elements in a given array of integers. Go to the editor

Expected Output:

3

Click me to see the solution

52. Write a C program to compute the sum of values in a given array of integers except the number 17. Return 0 if the given array has no integers. Go to the editor

Expected Output:

Sum of values in the array of integers except the number 17: 46

Click me to see the solution

53. Write a C program to compute the sum of the numbers in a given array except those that begin with 5 followed by at least one 6. Return 0 if the given array has no integers. Go to the editor

Expected Output:

Sum of values in the array of integers except the number 17: 37

Click me to see the solution

54. Write a C program to check whether a given array of integers contains 5 next to a 5 somewhere. Go to the editor

Expected Output:

0

1

1

Click me to see the solution

55. Write a C program to check whether a given array of integers contains 5's and 7's. Go to the editor

Expected Output:

1

0

1

Click me to see the solution

56. Write a C program to check if the sum of all 5's in the array is exactly 15 in a given array of integers. Go to the editor

Expected Output:

0

1

0

Click me to see the solution

57. Write a C program to check whether the number of 3's is greater than the number of 5's. Go to the editor

Expected Output:

1

0

0

Click me to see the solution

58. Write a C program to check whether a given array of integers contains a 3 or a 5.Go to the editor

Expected Output:

1

0

1

Click me to see the solution

59. Write a C program to check if a given array of integers contains no 3 or 5. Go to the editor

Expected Output:

1

1

0

1

Click me to see the solution

60. Write a C program to check whether an array of integers contains a 3 next to a 3 or a 5 next to a 5 or both. Go to the editor

Expected Output:

1

0

1

Click me to see the solution

61. Write a C program to check a given array of integers. The program will return true if the given array contains two 5's next to each other, or two 5's separated by one element. Go to the editor

Expected Output:

1

0

1

Click me to see the solution

62. Write a C program to check a given array of integers and return true if there is a 3 with a 5 somewhere later in the given array. Go to the editor

Expected Output:

0

1

0

Click me to see the solution

63. Write a C program to check a given array of integers. The program will return true if the given array contains either 2 even or 2 odd values all next to each other. Go to the editor

Expected Output:

0

1

1

Click me to see the solution

64. Write a C program to check a given array of integers. The program will return true if the value 5 appears 5 times and there are no 5 next to each other. Go to the editor

Expected Output:

1

0

1

0

Click me to see the solution

65. Write a C program to check a given array of integers and return true if every 5 that appears in the given array is next to another 5. Go to the editor

Expected Output:

1

0

1

1

Click me to see the solution

66. Write a C program to check a given array of integers. The program will return true if the specified number of the same elements appears at the start and end of the given array. Go to the editor

Expected Output:

1

0

1

Click me to see the solution

67. Write a C program to check a given array of integers and return true if the array contains three increasing adjacent numbers. Go to the editor

Expected Output:

1

0

1

Click me to see the solution

68. Write a C program to shift an element in the left direction and return a newly created array. Go to the editor

Expected Output:

Elements in original array are: 10, 20, 30, 40

Elements in new array are: 20, 30, 40, 10

Click me to see the solution

69. Write a C program to create a new array taking the elements before the element value 5 from a given array of integers. Go to the editor

Expected Output:

Elements in original array are: 1, 2, 3, 5, 7

Elements in new array are: 1, 2, 3

Click me to see the solution

70. Write a C program to create a array taking the elements after the element value 5 from a given array of integers. Go to the editor

Expected Output:

Elements in original array are: 1, 2, 3, 5, 7, 9, 11

Elements in new array are: 7, 9, 11

Click me to see the solution

71. Write a C program to create a new array from a given array of integers shifting all zeros to left direction. Go to the editor

Expected Output:

Elements in original array are: 1, 2, 0, 3, 5, 7, 0, 9, 11

Elements in new array are: 0, 0, 1, 3, 5, 7, 2, 9, 11

Click me to see the solution

72. Write a C program to create an array after replacing all the values 5 with 0 and shifting all zeros to the right. Go to the editor

Expected Output:

Elements in original array are: 1, 2, 0, 3, 5, 7, 0, 9, 11, 5

Elements in new array are: 1, 2, 0, 3, 7, 0, 9, 11, 0, 0

Click me to see the solution

73. Write a C program to create an array from a given array of integers shifting all even numbers before all odd numbers. Go to the editor

Expected Output:

Elements in original array are: 1, 2, 5, 3, 5, 4, 6, 9, 11

Elements in new array are: 2, 4, 6, 3, 5, 1, 5, 9, 11

Click me to see the solution

74. Write a C program to check if the value of each element is equal or greater than the value of the previous element of a given array of integers. Go to the editor

Expected Output:

0

1

1

Click me to see the solution

75. Write a C program to check a given array (length will be at least 2) of integers and return true if there are two values 15, 15 next to each other. Go to the editor

Expected Output:

1

0

1

VARIABLE TYPE

w3resource

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C Programming Exercises, Practice, Solution : Variable Type

Last update on March 04 2023 12:31:59 (UTC/GMT +8 hours)

C Variable Type [18 exercises with solution]

[An editor is available at the bottom of the page to write and execute the scripts.]

1. Write a C program that invokes the command processor to execute a command. Go to the editor

Expected Output :

Is command processor available?

Command processor available!

Executing command DIR

00c40280-5e27-11e6-bd4f-71e8825f8ea3

01691610-41e1-11e6-901d-35b72ececc72

...........

ff827330-443a-11e6-9820-23e2f60d924e

file.txt

logging\_example.out

test.txt

Returned value is: 0.

Click me to see the solution

2. Write a C program to convert a string to an unsigned long integer. Go to the editor

Test Data and Expected Output :

Input an unsigned number: 25

Output: 25

Click me to see the solution

3. Write a C program to convert a string to a long integer. Go to the editor

Expected Output :

In decimals: 2016, 4235440, -3624422, 5947391.

Click me to see the solution

4. Write a C program to convert a string to a double. Go to the editor

Expected Output :

Output= 4.00

Click me to see the solution

5. Write a C program to generate a random number. Go to the editor

Test Data and Expected Output :

Guess the number (1 to 10): 6

The number is higher

Guess the number (1 to 10): 7

That is correct!

Click me to see the solution

6. Write a C program to sort the elements of an array. Go to the editor

Test Data and Expected Output :

Input the number of elements to be stored in the array :5

Input 6 elements in the array :

element - 0 : 15

element - 1 : 26

element - 2 : 42

element - 3 : 82

element - 4 : 35

After sorting the array are :

15

26

35

42

82

Click me to see the solution

7. Write a C program to calculate the integral quotient and remainder of a division. Go to the editor

Test Data and Expected Output :

Input numerator : 2500

Input denominator : 235

quotient = 10, remainder = 150

Click me to see the solution

8. Write a C program to return the absolute value of a long integer. Go to the editor

Test Data and Expected Output :

Input 1st number (positive or negative) : 25

Input 2nd number (positive or negative) : -125

The absolute value of 1st number is : 25

The absolute value of 2nd number is : 125

Click me to see the solution

9. Write a C program to get the environment string. Go to the editor

Expected Output :

The set path is: /usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin

:/bin:/usr/games:/usr/local/games

Click me to see the solution

10. Write a C program to return the quotient and remainder of a division. Go to the editor

Test Data and Expected Output :

Input numerator : 2000

Input denominator : 235

quotient = 8, remainder = 120.

Click me to see the solution

11. Write a C program to allocate a block of memory for an array. Go to the editor

Test Data and Expected Output :

Input the number of elements to be stored in the array :5

Input 5 elements in the array :

element 1 : 25

element 2 : 30

element 3 : 35

element 4 : 20

element 5 : 40

Values entered in the array are :

25 30 35 20 40

Click me to see the solution

12. Write a C program to perform a binary search in an array. Go to the editor

Test Data and Expected Output :

Input the number of elements to be stored in the array :5

Input 5 elements in the array :

element - 1 : 25

element - 2 : 20

element - 3 : 18

element - 4 : 13

element - 5 : 15

Input a value to search : 18

18 is found in the array.

Click me to see the solution

13. Write a C program to convert a string to an integer. Go to the editor

Test Data and Expected Output :

Input a number : 1972

The value Input is 1972.

Click me to see the solution

14. Write a C program to convert a string to a double. Go to the editor

Test Data and Expected Output :

Input a number : 25

The original number is : 25.000000

After division by 2 the number is : 12.500000

Click me to see the solution

15. Write a C program to set a function that will be executed on termination of a program. Go to the editor

Expected Output :

This is the message from main function.

Here is the message returning from newFunctionTwo.

Here is the message returning from newFunctionOne.

Click me to see the solution

16. Write a C program to return the absolute value of an integer. Go to the editor

Test Data and Expected Output :

Input a positive or negative number :-25

The absolute value of the given number is : 25

Click me to see the solution

17. Write a C program to abort the current process. Go to the editor

Expected Output :

File does not exist or error, in opening the file.

timeout: the monitored command dumped core

Aborted

Click me to see the solution

18. Write a C program to demonstrate the working of the keyword long. Go to the editor

Expected Output :

The size of int = 4 bytes

The size of long = 8 bytes

The size of long long = 8 bytes

The size of double = 8 bytes

The size of long double = 16 byte

Input output type

1. Write a program that converts Centigrade to Fahrenheit. Go to the editor

Expected Output :

Input a temperature (in Centigrade): 45

113.000000 degrees Fahrenheit.

Click me to see the solution

2. Write a C program that calculates the volume of a sphere. Go to the editor

Expected Output :

Input the radius of the sphere : 2.56

The volume of sphere is 70.276237.

Click me to see the solution

3. Write a C program that prints the perimeter of a rectangle using its height and width as inputs. Go to the editor

Expected Output :

Input the height of the Rectangle : 5

Input the width of the Rectangle : 7

Perimeter of the Rectangle is : 24.000000

Click me to see the solution

4. Write a C program that converts kilometers per hour to miles per hour. Go to the editor

Expected Output :

Input kilometers per hour: 15

9.320568 miles per hour

Click me to see the solution

5. Write a C program that takes hours and minutes as input, and calculates the total number of minutes. Go to the editor

Expected Output :

Input hours: 5

Input minutes: 37

Total: 337 minutes.

Click me to see the solution

6. Write a program in C that takes minutes as input, and display the total number of hours and minutes. Go to the editor

Expected Output :

Input minutes: 546

9 Hours, 6 Minutes

Click me to see the solution

7. Write a program in C that reads a forename, surname and year of birth and displays the names and the year one after another sequentially. Go to the editor

Expected Output :

Input your firstname: Tom

Input your lastname: Davis

Input your year of birth: 1982

Tom Davis 1982

Click me to see the solution

8. Write a program in C to calculate the sum of three numbers with input on one line separated by a comma. Go to the editor

Expected Output :

Input three numbers separated by comma : 5,10,15

The sum of three numbers : 30

Click me to see the solution

9. Write a C program to perform addition, subtraction, multiplication and division of two numbers. Go to the editor

Expected Output :

Input any two numbers separated by comma : 10,5

The sum of the given numbers : 15

The difference of the given numbers : 5

The product of the given numbers : 50

The quotient of the given numbers : 2.000000

Click me to see the solution

10. Write a C program to find the third angle of a triangle if two angles are given. Go to the editor

Expected Output :

Input two angles of triangle separated by comma : 50,70

Third angle of the triangle : 60

Click me to see the solution

**Decision-making in c**

1. Write a C program to receive three integers as input through the keyboard and find

the largest among the numbers.

2. Write a C program to receive an year as input through the keyboard and determine

whether the year is a leap year or not.

3. Write a C program to receive an integer as input through the keyboard and to find

out whether it is an odd number or even number.

4. Write a C Program to input a character from user and check whether it is vowel or

consonant.

1. Write a C program to accept two integers and check whether they are equal or not. Go to the editor

Test Data : 15 15

Expected Output :

Number1 and Number2 are equal

Click me to see the solution

2. Write a C program to check whether a given number is even or odd. Go to the editor

Test Data : 15

Expected Output :

15 is an odd integer

Click me to see the solution

3. Write a C program to check whether a given number is positive or negative. Go to the editor

Test Data : 15

Expected Output :

15 is a positive number

Click me to see the solution

4. Write a C program to find whether a given year is a leap year or not. Go to the editor

Test Data : 2016

Expected Output :

2016 is a leap year.

Click me to see the solution

5. Write a C program to read the age of a candidate and determine whether he is eligible to cast his/her own vote. Go to the editor

Test Data : 21

Expected Output :

Congratulation! You are eligible for casting your vote.

Click me to see the solution

6. Write a C program to read the value of an integer m and display the value of n is 1 when m is larger than 0, 0 when m is 0 and -1 when m is less than 0. Go to the editor

Test Data : -5

Expected Output :

The value of n = -1

Click me to see the solution

7. Write a C program to accept the height of a person in centimeters and categorize the person according to their height. Go to the editor

Test Data : 135

Expected Output :

The person is Dwarf.

Click me to see the solution

8. Write a C program to find the largest of three numbers. Go to the editor

Test Data : 12 25 52

Expected Output :

1st Number = 12, 2nd Number = 25, 3rd Number = 52

The 3rd Number is the greatest among three

Click me to see the solution

9. Write a C program to accept a coordinate point in an XY coordinate system and determine in which quadrant the coordinate point lies. Go to the editor

Test Data : 7 9

Expected Output :

The coordinate point (7,9) lies in the First quadrant.

Click me to see the solution

10. Write a C program to determine eligibility for admission to a professional course based on the following criteria: Go to the editor

Eligibility Criteria : Marks in Maths >=65 and Marks in Phy >=55 and Marks in Chem>=50 and Total in all three subject >=190 or Total in Maths and Physics >=140 ------------------------------------- Input the marks obtained in Physics :65 Input the marks obtained in Chemistry :51 Input the marks obtained in Mathematics :72 Total marks of Maths, Physics and Chemistry : 188 Total marks of Maths and Physics : 137 The candidate is not eligible.

Expected Output :

The candidate is not eligible for admission.

Click me to see the solution

11. Write a C program to calculate the root of a quadratic equation. Go to the editor

Test Data : 1 5 7

Expected Output :

Root are imaginary;

No solution.

Click me to see the solution

12. Write a C program to read the roll no, name and marks of three subjects and calculate the total, percentage and division. Go to the editor

Test Data :

Input the Roll Number of the student :784

Input the Name of the Student :James

Input the marks of Physics, Chemistry and Computer Application : 70 80 90

Expected Output :

Roll No : 784

Name of Student : James

Marks in Physics : 70

Marks in Chemistry : 80

Marks in Computer Application : 90

Total Marks = 240

Percentage = 80.00

Division = First

Click me to see the solution

13. Write a C program to read temperature in centigrade and display a suitable message according to the temperature state below: Go to the editor

Temp < 0 then Freezing weather

Temp 0-10 then Very Cold weather

Temp 10-20 then Cold weather

Temp 20-30 then Normal in Temp

Temp 30-40 then Its Hot

Temp >=40 then Its Very Hot

Test Data :

42

Expected Output :

Its very hot.

Click me to see the solution

14. Write a C program to check whether a triangle is Equilateral, Isosceles or Scalene. Go to the editor

Test Data :

50 50 60

Expected Output :

This is an isosceles triangle.

Click me to see the solution

15. Write a C program to check whether a triangle can be formed with the given values for the angles. Go to the editor

Test Data :

40 55 65

Expected Output :

The triangle is not valid.

Click me to see the solution

16. Write a C program to check whether a character is an alphabet, digit or special character. Go to the editor

Test Data :

@

Expected Output :

This is a special character.

Click me to see the solution

17. Write a C program to check whether an alphabet is a vowel or a consonant. Go to the editor

Test Data :

k

Expected Output :

The alphabet is a consonant.

Click me to see the solution

18. Write a C program to calculate profit and loss on a transaction. Go to the editor

Test Data :

500 700

Expected Output :

You can booked your profit amount : 200

Click me to see the solution

19. Write a program in C to calculate and print the electricity bill of a given customer. The customer ID, name, and unit consumed by the user should be captured from the keyboard to display the total amount to be paid to the customer. Go to the editor

The charge are as follow :

Unit Charge/unit

upto 199 @1.20

200 and above but less than 400 @1.50

400 and above but less than 600 @1.80

600 and above @2.00

If bill exceeds Rs. 400 then a surcharge of 15% will be charged and the minimum bill should be of Rs. 100/-

Test Data :

1001

James

800

Expected Output :

Customer IDNO :1001

Customer Name :James

unit Consumed :800

Amount Charges @Rs. 2.00 per unit : 1600.00

Surchage Amount : 240.00

Net Amount Paid By the Customer : 1840.00

Click me to see the solution

20. Write a program in C to accept a grade and declare the equivalent description : Go to the editor

Grade Description

E Excellent

V Very Good

G Good

A Average

F Fail

Test Data :

Input the grade :A

Expected Output :

You have chosen : Average

Click me to see the solution

21. Write a C program to read any day number in integer and display the day name in word format. Go to the editor

Test Data :

4

Expected Output :

Thursday

Click me to see the solution

22. Write a program in C to read any digit and display it in the word. Go to the editor

Test Data :

4

Expected Output :

Four

Click me to see the solution

23. Write a C program for reading any Month Number and displaying the Month name as a word. Go to the editor

Test Data :

4

Expected Output :

April

Click me to see the solution

24. Write a program in C to read any Month Number in integer and display the number of days for this month. Go to the editor

Test Data :

7

Expected Output :

Month have 31 days

Click me to see the solution

25. Write a C program which computes the area of various geometrical shapes using a menu-driven approach. Go to the editor

Test Data :

1

5

Expected Output :

The area is : 78.500000

Click me to see the solution

26. Write a program in C which is a Menu-Driven Program to perform a simple calculation. Go to the editor

Test Data :

10

2

3

Expected Output :

The Multiplication of 10 and 2 is: 20

Click me to see the solution

Loop type

w3resource

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C Programming Home

▼C Programming Exercises

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C Programming Exercises, Practice, Solution : For Loop

Last update on March 04 2023 12:37:46 (UTC/GMT +8 hours)

C For Loop [61 exercises with solution]

[An editor is available at the bottom of the page to write and execute the scripts.]

1. Write a program in C to display the first 10 natural numbers. Go to the editor

Expected Output :

1 2 3 4 5 6 7 8 9 10

Click me to see the solution

2. Write a C program to compute the sum of the first 10 natural numbers. Go to the editor

Expected Output :

The first 10 natural number is :

1 2 3 4 5 6 7 8 9 10

The Sum is : 55

Click me to see the solution

3. Write a program in C to display n terms of natural numbers and their sum. Go to the editor

Test Data : 7

Expected Output :

The first 7 natural number is :

1 2 3 4 5 6 7

The Sum of Natural Number upto 7 terms : 28

Click me to see the solution

4. Write a program in C to read 10 numbers from the keyboard and find their sum and average. Go to the editor

Test Data :

Input the 10 numbers :

Number-1 :2

...

Number-10 :2

Expected Output :

The sum of 10 no is : 55

The Average is : 5.500000

Click me to see the solution

5. Write a program in C to display the cube of the number up to an integer. Go to the editor

Test Data :

Input number of terms : 5

Expected Output :

Number is : 1 and cube of the 1 is :1

Number is : 2 and cube of the 2 is :8

Number is : 3 and cube of the 3 is :27

Number is : 4 and cube of the 4 is :64

Number is : 5 and cube of the 5 is :125

Click me to see the solution

6. Write a program in C to display the multiplication table for a given integer. Go to the editor

Test Data :

Input the number (Table to be calculated) : 15

Expected Output :

15 X 1 = 15

...

...

15 X 10 = 150

Click me to see the solution

7. Write a program in C to display the multiplier table vertically from 1 to n. Go to the editor

Test Data :

Input upto the table number starting from 1 : 8

Expected Output :

Multiplication table from 1 to 8

1x1 = 1, 2x1 = 2, 3x1 = 3, 4x1 = 4, 5x1 = 5, 6x1 = 6, 7x1 = 7, 8x1 = 8

...

1x10 = 10, 2x10 = 20, 3x10 = 30, 4x10 = 40, 5x10 = 50, 6x10 = 60, 7x10 = 70, 8x10 = 80

Click me to see the solution

8. Write a C program to display the n terms of odd natural numbers and their sum. Go to the editor

Test Data

Input number of terms : 10

Expected Output :

The odd numbers are :1 3 5 7 9 11 13 15 17 19

The Sum of odd Natural Number upto 10 terms : 100

Click me to see the solution

9. Write a program in C to display a pattern like a right angle triangle using an asterisk. Go to the editor

The pattern like :

\*

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Click me to see the solution

10. Write a C program to display a pattern like a right angle triangle with a number. Go to the editor

The pattern like :

1

12

123

1234

Click me to see the solution

11. Write a program in C to make such a pattern like a right angle triangle with a number which will repeat a number in a row. Go to the editor

The pattern like :

1

22

333

4444

Click me to see the solution

12. Write a program in C to make such a pattern like a right angle triangle with the number increased by 1. Go to the editor

The pattern like :

1

2 3

4 5 6

7 8 9 10

Click me to see the solution

13. Write a program in C to make a pyramid pattern with numbers increased by 1. Go to the editor

1

2 3

4 5 6

7 8 9 10

Click me to see the solution

14. Write a C program to make such a pattern as a pyramid with an asterisk. Go to the editor

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\* \*

\* \* \*

\* \* \* \*

Click me to see the solution

15. Write a C program to calculate the factorial of a given number. Go to the editor

Test Data :

Input the number : 5

Expected Output :

The Factorial of 5 is: 120

Click me to see the solution

16. Write a C program to display the sum of n terms of even natural numbers. Go to the editor

Test Data :

Input number of terms : 5

Expected Output :

The even numbers are :2 4 6 8 10

The Sum of even Natural Number upto 5 terms : 30

Click me to see the solution

17. Write a C program to make such a pattern like a pyramid with a number which will repeat the number in the same row. Go to the editor

1

2 2

3 3 3

4 4 4 4

Click me to see the solution

18. Write a program in C to find the sum of the series [ 1-X^2/2!+X^4/4!- .........]. Go to the editor

Test Data :

Input the Value of x :2

Input the number of terms : 5

Expected Output :

the sum = -0.415873

Number of terms = 5

value of x = 2.000000

Click me to see the solution

19. Write a program in C to display the n terms of a harmonic series and their sum. Go to the editor

1 + 1/2 + 1/3 + 1/4 + 1/5 ... 1/n terms

Test Data :

Input the number of terms : 5

Expected Output :

1/1 + 1/2 + 1/3 + 1/4 + 1/5 +

Sum of Series upto 5 terms : 2.283334

Click me to see the solution

20. Write a C program to display the pattern as a pyramid using asterisks, with each row containing an odd number of asterisks. Go to the editor

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Click me to see the solution

21. Write a program in C to display the sum of the series [ 9 + 99 + 999 + 9999 ...]. Go to the editor

Test Data :

Input the number or terms :5

Expected Output :

9 99 999 9999 99999

The sum of the saries = 111105

Click me to see the solution

22. Write a program in C to print Floyd's Triangle. Go to the editor

1

01

101

0101

10101

Click me to see the solution

23. Write a program in C to find the sum of the series [x - x^3 + x^5 + ......]. Go to the editor

Test Data :

Input the value of x :3

Input number of terms : 5

Expected Output :

The sum is : 16.375000

Click me to see the solution

24. Write a program in C to find the sum of the series [ x - x^3 + x^5 + ......]. Go to the editor

Test Data :

Input the value of x :2

Input number of terms : 5

Expected Output :

The values of the series:

2

-8

32

-128

512

The sum = 410

Click me to see the solution

25. Write a C program that displays the n terms of square natural numbers and their sum. Go to the editor

1 4 9 16 ... n Terms

Test Data :

Input the number of terms : 5

Expected Output :

The square natural upto 5 terms are :1 4 9 16 25

The Sum of Square Natural Number upto 5 terms = 55

Click me to see the solution

26. Write a program in C to find the sum of the series 1 +11 + 111 + 1111 + .. n terms. Go to the editor

Test Data :

Input the number of terms : 5

Expected Output :

1 + 11 + 111 + 1111 + 11111

The Sum is : 12345

Click me to see the solution

27. Write a C program to check whether a given number is a 'Perfect' number or not. Go to the editor

Test Data :

Input the number : 56

Expected Output :

The positive divisor : 1 2 4 7 8 14 28

The sum of the divisor is : 64

So, the number is not perfect.

Click me to see the solution

28. Write a C program to find the 'Perfect' numbers within a given number of ranges. Go to the editor

Test Data :

Input the starting range or number : 1

Input the ending range of number : 50

Expected Output :

The Perfect numbers within the given range : 6 28

Click me to see the solution

29. Write a C program to check whether a given number is an Armstrong number or not. Go to the editor

Test Data :

Input a number: 153

Expected Output :

153 is an Armstrong number.

Click me to see the solution

30. Write a C program to find the Armstrong number for a given range of number. Go to the editor

Test Data :

Input starting number of range: 1

Input ending number of range : 1000

Expected Output :

Armstrong numbers in given range are: 1 153 370 371 407

Click me to see the solution

31. Write a program in C to display a pattern like a diamond. Go to the editor

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Click me to see the solution

32. Write a C program to determine whether a given number is prime or not. Go to the editor

Test Data :

Input a number: 13

Expected Output :

13 is a prime number.

Click me to see the solution

33. Write a C program to display Pascal's triangle. Go to the editor

Test Data :

Input number of rows: 5

Expected Output :

1

1 1

1 2 1

1 3 3 1

1 4 6 4 1

Click me to see the solution

34. Write a program in C to find the prime numbers within a range of numbers. Go to the editor

Test Data :

Input starting number of range: 1

Input ending number of range : 50

Expected Output :

The prime number between 1 and 50 are :

2 3 5 7 11 13 17 19 23 29 31 37 41 43 47

Click me to see the solution

35. Write a program in C to display the first n terms of the Fibonacci series. Go to the editor

Fibonacci series 0 1 2 3 5 8 13 .....

Test Data :

Input number of terms to display : 10

Expected Output :

Here is the Fibonacci series upto to 10 terms :

0 1 1 2 3 5 8 13 21 34

Click me to see the solution

36. Write a C program to display a such a pattern for n rows using a number that starts with 1 and each row will have a 1 as the first and last number. Go to the editor

1

121

12321

Click me to see the solution

37. Write a program in C to display the number in reverse order. Go to the editor

Test Data :

Input a number: 12345

Expected Output :

The number in reverse order is : 54321

Click me to see the solution

38. Write a C program to check whether a number is a palindrome or not. Go to the editor

Test Data :

Input a number: 121

Expected Output :

121 is a palindrome number.

Click me to see the solution

39. Write a program in C to find the number and sum of all integers between 100 and 200 which are divisible by 9. Go to the editor

Expected Output :

Numbers between 100 and 200, divisible by 9 :

108 117 126 135 144 153 162 171 180 189 198

The sum : 1683

Click me to see the solution

40. Write a C program to display the pyramid pattern using the alphabet. Go to the editor

A

A B A

A B C B A

A B C D C B A

Click me to see the solution

41. Write a program in C to convert a decimal number into binary without using an array. Go to the editor

Test Data :

Input a decimal number: 25

Binary number equivalent to said decimal number is: 0000000000000000000000000001 1001

Click me to see the solution

42. Write a C program to convert a binary number into a decimal number without using array, function and while loop. Go to the editor

Test Data :

Input a binary number :1010101

Expected Output :

The Binary Number : 1010101

The equivalent Decimal Number : 85

Click me to see the solution

43. Write a C program to find the HCF (Highest Common Factor) of two numbers. Go to the editor

Test Data :

Input 1st number for HCF: 24

Input 2nd number for HCF: 28

Expected Output :

HCF of 24 and 28 is : 4

Click me to see the solution

44. Write a C program to find the LCM of any two numbers using HCF. Go to the editor

Test Data :

Input 1st number for LCM: 15

Input 2nd number for LCM: 20

Expected Output :

The LCM of 15 and 20 is : 60

Click me to see the solution

45. Write a program in C to find the LCM of any two numbers. Go to the editor

Test Data :

Input 1st number for LCM: 15

Input 2nd number for LCM: 20

Expected Output :

The LCM of 15 and 20 is : 60

Click me to see the solution

46. Write a C program to convert a binary number into a decimal number using the math function. Go to the editor

Test Data :

Input the binary number :1010100

Expected Output :

The Binary Number : 1010100

The equivalent Decimal Number is : 84

Click me to see the solution

47. Write a C program to check whether a number is a Strong Number or not. Go to the editor

Test Data :

Input a number to check whether it is Strong number: 15

Expected Output :

15 is not a Strong number.

Click me to see the solution

48. Write a C program to find Strong Numbers within a range of numbers. Go to the editor

Test Data :

Input starting range of number : 1

Input ending range of number: 200

Expected Output :

The Strong numbers are :

1 2 145

Click me to see the solution

49. Write a C program to find the sum of an A.P. series. Go to the editor

Test Data :

Input the starting number of the A.P. series: 1

Input the number of items for the A.P. series: 10

Input the common difference of A.P. series: 4

Expected Output :

The Sum of the A.P. series are :

1 + 5 + 9 + 13 + 17 + 21 + 25 + 29 + 33 + 37 = 190

Click me to see the solution

50. Write a program in C to convert a decimal number into octal without using an array. Go to the editor

Test Data :

Enter a number to convert : 79

Expected Output :

The Octal of 79 is 117.

Click me to see the solution

51. Write a C program to convert an octal number to a decimal without using an array. Go to the editor

Test Data :

Input an octal number (using digit 0 - 7) :745

Expected Output :

The Octal Number : 745

The equivalent Decimal Number : 485

Click me to see the solution

52. Write a C program to find the sum of the G.P. series. Go to the editor

Test Data :

Input the first number of the G.P. series: 3

Input the number or terms in the G.P. series: 5

Input the common ratio of G.P. series: 2

Expected Output :

The numbers for the G.P. series:

3.000000 6.000000 12.000000 24.000000 48.000000

The Sum of the G.P. series : 93.000000

Click me to see the solution

53. Write a C program to convert a binary number to octal. Go to the editor

Test Data :

Input a binary number :1001

Expected Output :

The Binary Number : 1001

The equivalent Octal Number : 11

Click me to see the solution

54. Write a program in C to convert an octal number into binary. Go to the editor

Test Data :

Input an octal number (using digit 0 - 7) :57

Expected Output :

The Octal Number : 57

The equivalent Binary Number : 101111

Click me to see the solution

55. Write a C program to convert a decimal number to hexadecimal. Go to the editor

Test Data :

Input any Decimal number: 79

Expected Output :

The equivalent Hexadecimal Number : 4F

Click me to see the solution

56. Write a program in C to check whether a number can be expressed as the sum of two prime. Go to the editor

Test Data :

Input a positive integer: 16

Expected Output :

16 = 3 + 13

16 = 5 + 11

Click me to see the solution

57. Write a C program to print a string in reverse order. Go to the editor

Test Data :

Input a string to reverse : Welcome

Expected Output :

Reversed string is: emocleW

Click me to see the solution

58. Write a C program to find the length of a string without using the library function. Go to the editor

Test Data :

Input a string : welcome

Expected Output :

The string contains 7 number of characters.

So, the length of the string welcome is : 7

Click me to see the solution

59. Write a C program to check the Armstrong number of n digits. Go to the editor

Test Data :

Input an integer : 1634

Expected Output :

1634 is an Armstrong number

Click me to see the solution

60. Write a C program that takes user input and counts the number of characters until the end of the file. Go to the editor

Test Data :

Input characters : w3resource

Expected Output :

Input characters: On Linux systems and OS X EOF is CTRL+D. For Windows EOF is CTRL+Z. Number of Characters: 10

Click me to see the solution

61. Write a C program that takes input from the user and counts the number of uppercase and lowercase letters, as well as the number of other characters. Go to the editor

Test Data :

Input characters : w3resource

Expected Output :

Input characters: On Linux systems and OS X EOF is CTRL+D. For Windows EOF is CTRL+Z. Uppercase letters: 0 Lowercase letters: 9 Other characters: 1

Click me to see the solution

Array types

w3resource

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C Programming Exercises, Practice, Solution : Array

Last update on March 04 2023 12:33:05 (UTC/GMT +8 hours)

C Array [107 exercises with solution]

[An editor is available at the bottom of the page to write and execute the scripts.]

1. Write a program in C to store elements in an array and print them. Go to the editor

Test Data :

Input 10 elements in the array :

element - 0 : 1

element - 1 : 1

element - 2 : 2

.......

Expected Output :

Elements in array are: 1 1 2 3 4 5 6 7 8 9

Click me to see the solution

2. Write a program in C to read n number of values in an array and display them in reverse order. Go to the editor

Test Data :

Input the number of elements to store in the array :3

Input 3 number of elements in the array :

element - 0 : 2

element - 1 : 5

element - 2 : 7

Expected Output :

The values store into the array are :

2 5 7

The values store into the array in reverse are :

7 5 2

Click me to see the solution

3. Write a program in C to find the sum of all elements of the array. Go to the editor

Test Data :

Input the number of elements to be stored in the array :3

Input 3 elements in the array :

element - 0 : 2

element - 1 : 5

element - 2 : 8

Expected Output :

Sum of all elements stored in the array is : 15

Click me to see the solution

4. Write a program in C to copy the elements of one array into another array. Go to the editor

Test Data :

Input the number of elements to be stored in the array :3

Input 3 elements in the array :

element - 0 : 15

element - 1 : 10

element - 2 : 12

Expected Output :

The elements stored in the first array are :

15 10 12

The elements copied into the second array are :

15 10 12

Click me to see the solution

5. Write a program in C to count the total number of duplicate elements in an array. Go to the editor

Test Data :

Input the number of elements to be stored in the array :3

Input 3 elements in the array :

element - 0 : 5

element - 1 : 1

element - 2 : 1

Expected Output :

Total number of duplicate elements found in the array is : 1

Click me to see the solution

6. Write a program in C to print all unique elements in an array. Go to the editor

Test Data :

Print all unique elements of an array:

------------------------------------------

Input the number of elements to be stored in the array: 4

Input 4 elements in the array :

element - 0 : 3

element - 1 : 2

element - 2 : 2

element - 3 : 5

Expected Output :

The unique elements found in the array are:

3 5

Click me to see the solution

7. Write a program in C to merge two arrays of the same size sorted in descending order. Go to the editor

Test Data :

Input the number of elements to be stored in the first array :3

Input 3 elements in the array :

element - 0 : 1

element - 1 : 2

element - 2 : 3

Input the number of elements to be stored in the second array :3

Input 3 elements in the array :

element - 0 : 1

element - 1 : 2

element - 2 : 3

Expected Output :

The merged array in decending order is :

3 3 2 2 1 1

Click me to see the solution

8. Write a program in C to count the frequency of each element of an array. Go to the editor

Test Data :

Input the number of elements to be stored in the array :3

Input 3 elements in the array :

element - 0 : 25

element - 1 : 12

element - 2 : 43

Expected Output :

The frequency of all elements of an array :

25 occurs 1 times

12 occurs 1 times

43 occurs 1 times

Click me to see the solution

9. Write a program in C to find the maximum and minimum elements in an array. Go to the editor

Test Data :

Input the number of elements to be stored in the array :3

Input 3 elements in the array :

element - 0 : 45

element - 1 : 25

element - 2 : 21

Expected Output :

Maximum element is : 45

Minimum element is : 21

Click me to see the solution

10. Write a program in C to separate odd and even integers into separate arrays. Go to the editor

Test Data :

Input the number of elements to be stored in the array :5

Input 5 elements in the array :

element - 0 : 25

element - 1 : 47

element - 2 : 42

element - 3 : 56

element - 4 : 32

Expected Output :

The Even elements are :

42 56 32

The Odd elements are :

25 47

Click me to see the solution

11. Write a program in C to sort elements of an array in ascending order. Go to the editor

Test Data :

Input the size of array : 5

Input 5 elements in the array :

element - 0 : 2

element - 1 : 7

element - 2 : 4

element - 3 : 5

element - 4 : 9

Expected Output :

Elements of array in sorted ascending order:

2 4 5 7 9

Click me to see the solution

12. Write a program in C to sort the elements of the array in descending order. Go to the editor

Test Data :

Input the size of array : 3

Input 3 elements in the array :

element - 0 : 5

element - 1 : 9

element - 2 : 1

Expected Output :

Elements of the array in sorted descending order:

9 5 1

Click me to see the solution

13. Write a program in C to insert the values in the array (sorted list). Go to the editor

Test Data :

Insert New value in the sorted array :

-----------------------------------------

Input the size of array : 5

Input 5 elements in the array in ascending order:

element - 0 : 2

element - 1 : 5

element - 2 : 7

element - 3 : 9

element - 4 : 11

Input the value to be inserted : 8

The exist array list is :

2 5 7 9 11

After Insert the list is :

2 5 7 8 9 11

--------------------------------

Process exited after 39.33 seconds with return value 10

Press any key to continue . . .

Click me to see the solution

14. Write a program in C to insert values in the array (unsorted list). Go to the editor

Test Data :

Input the size of array : 4

Input 4 elements in the array in ascending order:

element - 0 : 1

element - 1 : 8

element - 2 : 7

element - 3 : 10

Input the value to be inserted : 5

Input the Position, where the value to be inserted :2

Expected Output :

The current list of the array :

1 8 7 10

After Insert the element the new list is :

1 5 8 7 10

Click me to see the solution

15. Write a program in C to delete an element at a desired position from an array. Go to the editor

Test Data :

Input the size of array : 5

Input 5 elements in the array in ascending order:

element - 0 : 1

element - 1 : 2

element - 2 : 3

element - 3 : 4

element - 4 : 5

Input the position where to delete: 3

Expected Output :

The new list is : 1 2 4 5

Click me to see the solution

16. Write a program in C to find the second largest element in an array. Go to the editor

Test Data :

Input the size of array : 5

Input 5 elements in the array :

element - 0 : 2

element - 1 : 9

element - 2 : 1

element - 3 : 4

element - 4 : 6

Expected Output :

The Second largest element in the array is : 6

Click me to see the solution

17. Write a program in C to find the second smallest element in an array. Go to the editor

Test Data :

Input the size of array : 5

Input 5 elements in the array (value must be <9999) :

element - 0 : 0

element - 1 : 9

element - 2 : 4

element - 3 : 6

element - 4 : 5

Expected Output :

The Second smallest element in the array is : 4

Click me to see the solution

18. Write a program in C for a 2D array of size 3x3 and print the matrix. Go to the editor

Test Data :

Input elements in the matrix :

element - [0],[0] : 1

element - [0],[1] : 2

element - [0],[2] : 3

element - [1],[0] : 4

element - [1],[1] : 5

element - [1],[2] : 6

element - [2],[0] : 7

element - [2],[1] : 8

element - [2],[2] : 9

Expected Output :

The matrix is :

1 2 3

4 5 6

7 8 9

Click me to see the solution

19. Write a program in C for adding two matrices of the same size. Go to the editor

Test Data :

Input the size of the square matrix (less than 5): 2

Input elements in the first matrix :

element - [0],[0] : 1

element - [0],[1] : 2

element - [1],[0] : 3

element - [1],[1] : 4

Input elements in the second matrix :

element - [0],[0] : 5

element - [0],[1] : 6

element - [1],[0] : 7

element - [1],[1] : 8

Expected Output :

The First matrix is :

1 2

3 4

The Second matrix is :

5 6

7 8

The Addition of two matrix is :

6 8

10 12

Click me to see the solution

20. Write a program in C for the subtraction of two matrices. Go to the editor

Test Data :

Input the size of the square matrix (less than 5): 2

Input elements in the first matrix :

element - [0],[0] : 5

element - [0],[1] : 6

element - [1],[0] : 7

element - [1],[1] : 8

Input elements in the second matrix :

element - [0],[0] : 1

element - [0],[1] : 2

element - [1],[0] : 3

element - [1],[1] : 4

Expected Output :

The First matrix is :

5 6

7 8

The Second matrix is :

1 2

3 4

The Subtraction of two matrix is :

4 4

4 4

Click me to see the solution

21. Write a program in C for the multiplication of two square matrices. Go to the editor

Test Data :

Input the rows and columns of first matrix : 2 2

Input the rows and columns of second matrix : 2 2

Input elements in the first matrix :

element - [0],[0] : 1

element - [0],[1] : 2

element - [1],[0] : 3

element - [1],[1] : 4

Input elements in the second matrix :

element - [0],[0] : 5

element - [0],[1] : 6

element - [1],[0] : 7

element - [1],[1] : 8

Expected Output :

The First matrix is :

1 2

3 4

The Second matrix is :

5 6

7 8

The multiplication of two matrix is :

19 22

43 50

Click me to see the solution

22. Write a program in C to find the transpose of a given matrix. Go to the editor

Test Data :

Input the rows and columns of the matrix : 2 2

Input elements in the first matrix :

element - [0],[0] : 1

element - [0],[1] : 2

element - [1],[0] : 3

element - [1],[1] : 4

Expected Output :

The matrix is :

1 2

3 4

The transpose of a matrix is :

1 3

2 4

Click me to see the solution

23. Write a program in C to find the sum of the right diagonals of a matrix. Go to the editor

Test Data :

Input the size of the square matrix : 2

Input elements in the first matrix :

element - [0],[0] : 1

element - [0],[1] : 2

element - [1],[0] : 3

element - [1],[1] : 4

Expected Output :

The matrix is :

1 2

3 4

Addition of the right Diagonal elements is :5

Elements in array are:

Click me to see the solution

24. Write a program in C to find the sum of the left diagonals of a matrix. Go to the editor

Test Data :

Input the size of the square matrix : 2

Input elements in the first matrix :

element - [0],[0] : 1

element - [0],[1] : 2

element - [1],[0] : 3

element - [1],[1] : 4

Expected Output :

The matrix is :

1 2

3 4

Addition of the left Diagonal elements is :5

Click me to see the solution

25. Write a program in C to find the sum of rows and columns of a matrix. Go to the editor

Test Data :

Input the size of the square matrix : 2

Input elements in the first matrix :

element - [0],[0] : 5

element - [0],[1] : 6

element - [1],[0] : 7

element - [1],[1] : 8

Expected Output :

The First matrix is :

The matrix is :

5 6

7 8

The sum or rows and columns of the matrix is :

5 6 11

7 8 15

12 14

Click me to see the solution

26. Write a program in C to print or display the lower triangular of a given matrix. Go to the editor

Test Data :

Input the size of the square matrix : 3

Input elements in the first matrix :

element - [0],[0] : 1

element - [0],[1] : 2

element - [0],[2] : 3

element - [1],[0] : 4

element - [1],[1] : 5

element - [1],[2] : 6

element - [2],[0] : 7

element - [2],[1] : 8

element - [2],[2] : 9

Expected Output :

The matrix is :

1 2 3

4 5 6

7 8 9

Setting zero in lower triangular matrix

1 2 3

0 5 6

0 0 9

Click me to see the solution

27. Write a program in C to print or display an upper triangular matrix. Go to the editor

Test Data :

Input the size of the square matrix : 3

Input elements in the first matrix :

element - [0],[0] : 1

element - [0],[1] : 2

element - [0],[2] : 3

element - [1],[0] : 4

element - [1],[1] : 5

element - [1],[2] : 6

element - [2],[0] : 7

element - [2],[1] : 8

element - [2],[2] : 9

Expected Output :

The matrix is :

1 2 3

4 5 6

7 8 9

Setting zero in upper triangular matrix

1 0 0

4 5 0

7 8 9

Click me to see the solution

28. Write a program in C to calculate the determinant of a 3 x 3 matrix. Go to the editor

Test Data :

Input elements in the first matrix :

element - [0],[0] : 1

element - [0],[1] : 0

element - [0],[2] : -1

element - [1],[0] : 0

element - [1],[1] : 0

element - [1],[2] : 1

element - [2],[0] : -1

element - [2],[1] : -1

element - [2],[2] : 0

Expected Output :

The matrix is :

1 0 -1

0 0 1

-1 -1 0

The Determinant of the matrix is: 1

Click me to see the solution

29. Write a program in C to accept a matrix and determine whether it is a sparse matrix. Go to the editor

Test Data :

Input the number of rows of the matrix : 2

Input the number of columns of the matrix : 2

Input elements in the first matrix :

element - [0],[0] : 0

element - [0],[1] : 0

element - [1],[0] : 1

element - [1],[1] : 0

Expected Output :

The given matrix is sparse matrix.

There are 3 number of zeros in the matrix

Click me to see the solution

30. Write a program in C to accept two matrices and check whether they are equal. Go to the editor

Test Data :

Input Rows and Columns of the 1st matrix :2 2

Input Rows and Columns of the 2nd matrix :2 2

Input elements in the first matrix :

element - [0],[0] : 1

element - [0],[1] : 2

element - [1],[0] : 3

element - [1],[1] : 4

Input elements in the second matrix :

element - [0],[0] : 1

element - [0],[1] : 2

element - [1],[0] : 3

element - [1],[1] : 4

Expected Output :

The first matrix is :

1 2

3 4

The second matrix is :

1 2

3 4

The Matrices can be compared :

Two matrices are equal.

Click me to see the solution

31. Write a program in C to check whether a given matrix is an identity matrix. Go to the editor

Test Data :

Input number of Rows for the matrix :3

Input number of Columns for the matrix :3

Input elements in the first matrix :

element - [0],[0] : 1

element - [0],[1] : 0

element - [0],[2] : 0

element - [1],[0] : 0

element - [1],[1] : 1

element - [1],[2] : 0

element - [2],[0] : 0

element - [2],[1] : 0

element - [2],[2] : 1

Expected Output :

The matrix is :

1 0 0

0 1 0

0 0 1

The matrix is an identity matrix.

Click me to see the solution

32. Write a program in C to find a pair with given sum in the array. Go to the editor

Expected Output :

The given array : 6 8 4 -5 7 9

The given sum : 15

Pair of elements can make the given sum by the value of index 0 and 5

Click me to see the solution

33. Write a program in C to find the majority element of an array. Go to the editor

A majority element in an array A[] of size n is an element that appears more than n/2 times (and hence there is at most one such element).

Expected Output :

The given array is : 4 8 4 6 7 4 4 8

There are no Majority Elements in the given array.

Click me to see the solution

34. Write a program in C to find the number occurring odd number of times in an array. Go to the editor

All numbers occur even number of times except one number which occurs odd number of times.

Expected Output :

The given array is : 8 3 8 5 4 3 4 3 5

The element odd number of times is : 3

Click me to see the solution

35. Write a program in C to find the largest sum of contiguous subarrays in an array. Go to the editor

Expected Output :

The given array is : 8 3 8 -5 4 3 -4 3 5

The largest sum of contiguous subarray is : 21

Click me to see the solution

36. Write a program in C to find the missing number in a given array. There are no duplicates in the list. Go to the editor

Expected Output :

The given array is : 1 3 4 2 5 6 9 8

The missing number is : 7

Click me to see the solution

37. Write a program in C to find the pivot element of a sorted and rotated array using binary search. Go to the editor

Pivot element is the only element in input array which is smaller than it's previous element.

A pivot element divided a sorted rotated array into two monotonically increasing array.

Expected Output :

The given array is : 14 23 7 9 3 6 18 22 16 36

The Pivot Element in the array is : 3

Click me to see the solution

38. Write a program in C to merge one sorted array into another sorted array. Go to the editor

Pivot element is the only element in input array which is smaller than it's previous element.

A pivot element divided a sorted rotated array into two monotonically increasing array.

Expected Output :

The given Large Array is : 10 12 14 16 18 20 22

The given Small Array is : 11 13 15 17 19 21

After merged the new Array is :

10 11 12 13 14 15 16 17 18 19 20 21 22

Click me to see the solution

39. Write a program in C to rotate an array by N positions. Go to the editor

Expected Output :

The given array is : 0 3 6 9 12 14 18 20 22 25 27

From 4th position the values of the array are : 12 14 18 20 22 25 27

Before 4th position the values of the array are : 0 3 6 9

After rotating from 4th position the array is:

12 14 18 20 22 25 27 0 3 6 9

Click me to see the solution

40. Write a program in C to find the ceiling in a sorted array. Go to the editor

N.B.: Given a sorted array in ascending order and a value x, the ceiling of x is the smallest element in array greater than or equal to x, and the floor is the greatest element smaller than or equal to x.

Expected Output :

The given array is : 1 3 4 7 8 9 9 10

The ceiling of 5 is: 7

Click me to see the solution

41. Write a program in C to find the Floor and Ceiling of the number 0 to 10 from a sroted array. Go to the editor

Expected Output :

The given array is : 1 3 5 7 8 9

Number: 0 ceiling is: 1 floor is: -1

Number: 1 ceiling is: 1 floor is: 1

Number: 2 ceiling is: 3 floor is: 1

Number: 3 ceiling is: 3 floor is: 3

Number: 4 ceiling is: 5 floor is: 3

Number: 5 ceiling is: 5 floor is: 5

Number: 6 ceiling is: 7 floor is: 5

Number: 7 ceiling is: 7 floor is: 7

Number: 8 ceiling is: 8 floor is: 8

Number: 9 ceiling is: 9 floor is: 9

Number: 10 ceiling is: -1 floor is: 9

Click me to see the solution

42. Write a program in C to find the smallest missing element in a sorted array. Go to the editor

Expected Output :

The given array is : 0 1 3 4 5 6 7 9

The missing smallest element is: 2

Click me to see the solution

43. Write a program in C to print the next greatest elements in a given unsorted array. Elements for which no superior element exists, consider the next greatest element as -1. Go to the editor

Expected Output :

The given array is : 5 3 10 9 6 13

Next Bigger Elements are:

Next bigger element of 5 in the array is: 10

Next bigger element of 3 in the array is: 10

Next bigger element of 10 in the array is: 13

Next bigger element of 9 in the array is: 13

Next bigger element of 6 in the array is: 13

Next bigger element of 13 in the array is: -1

Next Bigger Elements Array:

10 10 13 13 13 -1

Click me to see the solution

44. Write a program in C to find the two repeating elements in a given array. Go to the editor

Expected Output :

The given array is : 2 7 4 7 8 3 4

The repeating elements are: 7 4

Click me to see the solution

45. Write a program in C to find two elements whose sum is closest to zero. Go to the editor

Expected Output :

The given array is : 38 44 63 -51 -35 19 84 -69 4 -46

The Pair of elements whose sum is minimum are:

[44, -46]

Click me to see the solution

46. Write a program in C to find the smallest positive number missing from an unsorted array. Go to the editor

Expected Output :

The given array is : 3 1 4 10 -5 15 2 -10 -20

The smallest positive number missed is: 5

Click me to see the solution

47. Write a program in C to find a subarray with a given sum from the given array. Go to the editor

Expected Output :

The given array is : 3 4 -7 1 3 3 1 -4

[0..1] -- { 3 4 }

[0..5] -- { 3 4 -7 1 3 3 }

[3..5] -- { 1 3 3 }

[4..6] -- { 3 3 1 }

Click me to see the solution

48. Write a program in C to find out if a given integer x appears more than n/2 times in a sorted array of n integers. Go to the editor

Expected Output :

The given array is : 1 3 3 5 4 3 2 3 3

The given value is : 3

3 appears more than 4 times in the given array[]

Click me to see the solution

49. Write a program in C to find the majority element of an array. Go to the editor

Expected Output :

The given array is : 1 3 3 7 4 3 2 3 3

The majority of the Element : 3

Click me to see the solution

50. Write a program in C to print a matrix in spiral form. Go to the editor

Expected Output :

The given array in matrix form is :

1 2 3 4 5

6 7 8 9 10

11 12 13 14 15

16 17 18 19 20

The spiral form of above matrix is:

1 2 3 4 5 10 15 20 19 18 17 16 11 6 7 8 9 14 13 12

Click me to see the solution

51. Write a program in C to find the maximum circular subarray sum of a given array. Go to the editor

Expected Output :

The given array is : 10 8 -20 5 -3 -5 10 -13 11

The maximum circular sum in the above array is: 29

Click me to see the solution

52. Write a program in C to count the number of triangles that can be formed from a given array. Go to the editor

Expected Output :

The given array is : 6 18 9 7 10

Number of possible triangles can be formed from the array is: 5

Click me to see the solution

53. Write a program in C to find the number of times a given number appears in an array. Go to the editor

Expected Output :

The given array is : 2 3 4 4 4 4 5 5 5 6 7 7

The number of times the number 4 occurs in the given array is: 4

Click me to see the solution

54. Write a program in C to sort an array of 0s, 1s and 2s. Go to the editor

Expected Output :

The given array is : 0 1 2 2 1 0 0 2 0 1 1 0

After sortig the elements in the array are:

0 0 0 0 0 1 1 1 1 2 2 2

Click me to see the solution

55. Write a program in C to check whether an array is a subset of another array. Go to the editor

Expected Output :

The given first array is : 4 8 7 11 6 9 5 0 2

The given second array is : 5 4 2 0 6

The second array is the subset of first array.

Click me to see the solution

56. Write a program in C to return the minimum number of jumps to reach the end of the array. Go to the editor

Expected Output :

The given array is : 1 3 5 8 9 2 6 7 6 8 9 1 1 1

The minimum of number of jumps is required to reach the end is: 3

Click me to see the solution

57. Write a program in C to find the minimum element in a sorted and rotated array. Go to the editor

Expected Output :

The given array is : 3 4 5 6 7 9 2

The minimum element in the above array is: 2

Click me to see the solution

58. Write a program in C to move all zeroes to the end of a given array. Go to the editor

Expected Output :

The given array is : 2 5 7 0 4 0 7 -5 8 0

The new array is:

2 5 7 8 4 -5 7 0 0 0

Click me to see the solution

59. Write a program in C to return the counting sort of an array. Go to the editor

Expected Output :

The given array is : 4 14 8 0 2 5 2 1 0 17 9 0 5

After sorting the elements in the array are: 0 0 0 1 2 2 4 5 5 8 9 14 17

Click me to see the solution

60. Write a program in C to find the row with the maximum number of 1s. Go to the editor

Expected Output :

The given 2D array is :

0 1 0 1 1

1 1 1 1 1

1 0 0 1 0

0 0 0 0 0

1 0 0 0 1

The index of row with maximum 1s is: 1

Click me to see the solution

61. Write a program in C to find the maximum product subarray in a given array. Go to the editor

Expected Output :

The given array is : -4 9 -7 0 -15 6 2 -3

The maximum product of a sub-array in the given array is: 540

Click me to see the solution

62. Write a program in C to find the largest subarray with an equal number of 0s and 1s. Go to the editor

Expected Output :

The given array is : 0 1 0 0 1 1 0 1 1 1

Subarray found from the index 0 to 7

Click me to see the solution

63. Write a program in C to replace every element with the greatest element on its right side. Go to the editor

Expected Output :

The given array is : 7 5 8 9 6 8 5 7 4 6

After replace the modified array is: 9 9 9 8 8 7 7 6 6 0

Click me to see the solution

64. Write a program in C to find the median of two sorted arrays of the same size. Go to the editor

Expected Output :

The given array - 1 is : 1 5 13 24 35

The given array - 2 is : 3 8 15 17 32

The Median of the 2 sorted arrays is: 14

Click me to see the solution

65. Write a program in C to find the product of an array such that product is equal to the product of all the elements of arr[] except arr[i]. Go to the editor

Expected Output :

The given array is : 1 2 3 4 5 6

The product array is: 720 360 240 180 144 120

Click me to see the solution

66. Write a program in C to count the number of inversions in a given array. Go to the editor

Expected Output :

The given array is : 1 9 6 4 5

The inversions are: (9, 6) (9, 4) (9, 5) (6, 4) (6, 5)

The number of inversion can be formed from the array is: 5

Click me to see the solution

67. Write a program in C to search for an element in a row wise and column wise sorted matrix. Go to the editor

Expected Output :

The given array in matrix form is :

15 23 31 39

18 26 36 43

25 28 37 48

30 34 39 50

The given value for searching is: 37

The element Found at the position in the matrix is: 2, 2

Click me to see the solution

68. Write a program in C to return the maximum sum such that no two elements are adjacent. Go to the editor

Expected Output :

The given array is : 1 3 5 9 7 10 1 10 100

The maximum sum from the array such that no two elements are adjacent is: 122

Click me to see the solution

69. Write a program in C to find the maximum difference between any two elements such that the larger element appears after the smaller number. Go to the editor

Expected Output :

The given array is : 7 9 5 6 13 2

The elements which provide maximum difference is: 5, 13

The Maximum difference between two elements in the array is: 8

Click me to see the solution

70. Write a program in C to find two numbers that occur an odd number of times in an array. Go to the editor

Expected Output:

The given array is: 6 7 3 6 8 7 6 8 3 3

The two numbers occuring odd number of times are: 3 & 6

Click me to see the solution

71. Write a program in C to find the median of two sorted arrays of different sizes. Go to the editor

Expected Output:

The given first array is : 90 240 300

The given second array is : 10 13 14 20 25

The median of two different size arrays are : 22.500000

Click me to see the solution

72. Write a program in C to return only the unique rows from a given binary matrix. Go to the editor

Expected Output:

The given array is :

0 1 0 0 1

1 0 1 1 0

0 1 0 0 1

1 0 1 0 0

The unique rows of the given array are :

0 1 0 0 1

1 0 1 1 0

1 0 1 0 0

Click me to see the solution

73. Write a program in C to print all unique elements of an unsorted array. Go to the editor

Expected Output:

The given array is : 1 5 8 5 7 3 2 4 1 6 2

Unique Elements in the given array are:

1 5 8 7 3 2 4 6

Click me to see the solution

74. Write a program in C to find the sum of the upper triangular elements of a matrix. Go to the editor

Expected Output:

The given array is :

1 2 3

4 5 6

7 8 9

The elements being summed of the upper triangular matrix are: 2 3 6

The Sum of the upper triangular Matrix Elements are: 11

Click me to see the solution

75. Write a program in C to find the sum of the lower triangular elements of a matrix. Go to the editor

Expected Output:

The given array is :

1 2 3

4 5 6

7 8 9

The elements being summed of the lower triangular matrix are: 4 7 8

The Sum of the lower triangular Matrix Elements are: 19

Click me to see the solution

76. Write a program in C to find the largest number possible from the set of given numbers. Go to the editor

Expected Output:

The given numbers are :

15 628 971 9 2143 12

The largest possible number by the given numbers are: 997162821431512

Click me to see the solution

77. Write a program in C to generate random permutations of array elements. Go to the editor

Expected Output:

The given array is:

1 2 3 4 5 6 7 8

The shuffled elements in the array are:

2 8 7 3 4 5 1 6

Click me to see the solution

78. Write a program in C to find four array elements whose sum is equal to a given number. Go to the editor

Expected Output:

The given array is:

3 7 1 9 15 14 6 2 5 7

The elements are:

3, 15, 14, 5

Click me to see the solution

79. Write a program in C to sort n numbers in the range from 0 to n^2. Go to the editor

Expected Output:

The given array is: 37 62 52 7 48 3 15 61

Sorted array is: 3 7 15 37 48 52 61 62

Click me to see the solution

80. Write a program in C to count all distinct pairs for a specific difference. Go to the editor

Expected Output:

The given array is:

5 2 3 7 6 4 9 8

The distinct pairs for difference 5 are: [7, 2] [8, 3] [9, 4]

Number of distinct pairs for difference 5 are: 3

Click me to see the solution

81. Write a program in C to find the maximum repeating number in a given array. Go to the editor

The array range is [0..n-1] and the elements are in the range [0..k-1] and k<=n..

Expected Output:

The given array is:

2 3 3 5 3 4 1 7 7 7 7

The maximum repeating number is: 7

Click me to see the solution

82. Write a program in C to print all possible combinations of r elements in a given array. Go to the editor

Expected Output:

The given array is:

1 5 4 6 8 The combination from by the number of elements are: 4

The combinations are:

1 5 4 6

1 5 4 8

1 5 6 8

1 4 6 8

5 4 6 8

Click me to see the solution

83. Write a program in C to find a pair with the given difference. Go to the editor

Expected Output:

The given array is:

1 15 39 75 92

The given difference is: 53

The pair are: (39, 92)

Click me to see the solution

84. Write a program in C to find the minimum distance between two numbers in a given array. Go to the editor

Expected Output:

The given array is:

7 9 5 11 7 4 12 6 2 11

The minimum distance between 7 and 11 is: 1

Click me to see the solution

85. Write a program in C to count all possible paths from top left to bottom right of a m X n matrix.Go to the editor

Expected Output:

The size of matrix is : 4 x 4

The all possible paths from top left to bottom right is: 20

Click me to see the solution

86. Write a program in C to find the equilibrium index of an array. Go to the editor

Expected Output:

The given array is:

0 -4 7 -4 -2 6 -3 0

The equilibrium index found at : 7 5 0

Click me to see the solution

87. Write a program in C to find the maximum element in an array that is first increasing and then decreasing. Go to the editor

Expected Output:

The given array is:

2 7 12 25 4 57 27 44

The maximum element which is increasing then decreasing is: 57

Click me to see the solution

88. Write a program in C to find the maximum n – m such that array[n] > array[m] from a given array[]. Go to the editor

Given an array arr[], find the maximum j – i such that arr[j] > arr[i]

Expected Output:

The given array is:

7 5 8 2 3 2 4 2 1 0

m = 0, n = 2, arr1[m] = 7 arr1[n] = 8 difference = 2

m = 3, n = 6, arr1[m] = 2 arr1[n] = 4 difference = 3

The maximum differcences between two position of array index is: 3

Click me to see the solution

89. Write a program in C to find the largest square sub-matrix with all 1s. Go to the editor

Expected Output:

The given array in matrix form is :

0 1 0 1 1

1 1 1 1 0

1 1 1 1 0

1 1 1 1 0

1 1 1 1 1

0 1 0 1 0

The maximum size sub-matrix is:

1 1 1 1

1 1 1 1

1 1 1 1

1 1 1 1

Click me to see the solution

90. Given an array of size n such that every element is in the range from 0 to n-1. Write a program in C to rearrange the given array so that arr[i] becomes arr[arr[i]]. Go to the editor

Expected Output:

The Original array is

2 1 4 3 0 The modified array is:

4 1 0 3 2

Click me to see the solution

91. An unsorted array of a specific size is given. Write a program in C to find the minimum length of a subarray such that sorting this subarray makes the whole array sorted.Go to the editor

Expected Output:

The given array is:

10 12 15 17 28 32 42 18 56 59 67

The minimum length of unsorted subarray which makes the given array sorted

lies between the indeces 4 and 7

Click me to see the solution

92. Write a program in C that checks whether the elements in an unsorted array appear consecutively or not. Go to the editor

Expected Output:

The given array is:

7 4 3 5 6 2

The appearence of elements in the array are consecutive.

The given array is:

7 4 4 5 6 2

The appearence of elements in the array are not consecutive.

The given array is:

7 4 9 5 6 3

The appearence of elements in the array are not consecutive.

Click me to see the solution

93. Write a program in C to rearrange positive and negative numbers alternatively in a given array.Go to the editor

N.B.: If positive numbers are more they appear at the end and for also negative numbers, they too appear in the end of the array.

Expected Output:

The given array is:

-4 8 -5 -6 5 -9 7 1 -21 -11 19

The rearranged array is:

-4 7 -5 1 -21 5 -11 8 -9 19 -6

Click me to see the solution

94. Write a program in C to find the largest element of each and every contiguous subarray of size k from a given array.Go to the editor

Expected Output:

The given array is:

1 3 6 21 4 9 12 3 16 10

The length of each subarray is: 4

The contigious subarray of length 4 and their maximum value are:

1 3 6 21 ----> 21

3 6 21 4 ----> 21

6 21 4 9 ----> 21

21 4 9 12 ----> 21

4 9 12 3 ----> 12

9 12 3 16 ----> 16

12 3 16 10 ----> 16

Click me to see the solution

95. Write a program in C to segregate 0s and 1s in an array. Go to the editor

Expected Output:

The given array is:

1 0 1 0 0 1 0 1 1

The array after segregation is: 0 0 0 0 1 1 1 1 1

Click me to see the solution

96. Write a program in C to segregate even and odd elements in an array. Go to the editor

Expected Output:

The given array is:

17 42 19 7 27 24 30 54 73

The array after segregation is: 54 42 30 24 27 7 19 17 73

Click me to see the solution

97. Write a program in C to find the index of the first peak element in a given array. Go to the editor

Expected Output:

The given array is:

5 12 13 20 16 19 11 7 25

The index of first peak element in the array is: 3

Click me to see the solution

98. Write a program in C to return the largest span found in the leftmost and rightmost appearances of the same value (values are inclusive) in a given array. Go to the editor

Expected Output:

The given array is:

17 42 19 7 27 24 17 54 73

The span between the same values in the array is: 7

Click me to see the solution

99. Write a program in C to return true if an array can be split in such a way that the left side of the splitting is equal to the sum of the right side. Go to the editor

Expected Output:

The given array is : 1 3 3 8 4 3 2 3 3

The array can be split in a position where the sum of both side are equal.

Click me to see the solution

100. Write a program in C to return the number of clumps (a series of 2 or more adjacent elements of the same value) in a given array. Go to the editor

Expected Output:

The given array is:

17 42 42 7 24 24 17 54 17

The number of clumps in the array is: 2

Click me to see the solution

101. Write a program in C to rearrange an array such that arr[i]=i. Go to the editor

N.B.: Given array contains N elements, from 0 to N – 1. All elements within the range may not be present in the array. There will be -1 if an element within the range is not present in the array.

Expected Output:

The given array is:

2 5 -1 6 -1 8 7 -1 9 1

The new array is: -1 1 2 -1 -1 5 6 7 8 9

Click me to see the solution

102. Write a program in C to rearrange an array in such an order that– small, large, second smallest, second largest, etc. Go to the editor

Expected Output:

The given array is:

5 8 1 4 2 9 3 7 6

The new array is:

1 9 2 8 3 7 4 6 5

Click me to see the solution

103. Write a program in C to update every array element with multiplication of previous and next numbers in array. Go to the editor

Expected Output:

The given array is:

1 2 3 4 5 6

The new array is:

2 3 8 15 24 30

Click me to see the solution

104. Write a program in C to rearrange an array such that even index elements are smaller and odd index elements are greater than their next. Go to the editor

Expected Output:

The array given is:

6 4 2 1 8 3

The new array after rearranging:

4 6 1 8 2 3

Click me to see the solution

105. Write a program in C to find the minimum number of swaps required to gather all elements less than or equal to k. Go to the editor

Expected Output:

The given array is:

2 7 9 5 8 7 4

The minimum swap required is: 2

Click me to see the solution

106. Write a C program to convert an array in such a way that it doubles its value. This will replace the next element with 0 if the current and next elements are the same. This program will rearrange the array so that all 0's are moved to the end. Go to the editor

Expected Output:

The given array is: 0 3 3 3 0 0 7 7 0 9

The new array is: 6 3 14 9 0 0 0 0 0 0

Click me to see the solution

107. Write a program in C to concatenate two given arrays of integers. Go to the editor

Sample Data:

({ 10, 20, 30, 40, 50, 60 }, { 70, 80, 90, 100, 110, 120 }) -> "10 20 30 40 50 60 70 80 90 100 110 120"

Pointer

1. Write a program in C to show the basic declaration of a pointer. Go to the editor

Expected Output :

Pointer : Show the basic declaration of pointer :

-------------------------------------------------------

Here is m=10, n and o are two integer variable and \*z is an integer

z stores the address of m = 0x7ffd40630d44

\*z stores the value of m = 10

&m is the address of m = 0x7ffd40630d44

&n stores the address of n = 0x7ffd40630d48

&o stores the address of o = 0x7ffd40630d4c

&z stores the address of z = 0x7ffd40630d50

Click me to see the solution

2. Write a program in C to demonstrate how to handle pointers in a program.. Go to the editor

Expected Output :

Address of m : 0x7ffcc3ad291c

Value of m : 29

Now ab is assigned with the address of m.

Address of pointer ab : 0x7ffcc3ad291c

Content of pointer ab : 29

The value of m assigned to 34 now.

Address of pointer ab : 0x7ffcc3ad291c

Content of pointer ab : 34

The pointer variable ab is assigned with the value 7 now.

Address of m : 0x7ffcc3ad291c

Value of m : 7

Click me to see the solution

3. Write a program in C to demonstrate the use of the &(address of) and \*(value at address) operators. Go to the editor

Expected Output :

Pointer : Demonstrate the use of & and \* operator :

--------------------------------------------------------

m = 300

fx = 300.600006

cht = z

Using & operator :

-----------------------

address of m = 0x7ffda2eeeec8

address of fx = 0x7ffda2eeeecc

address of cht = 0x7ffda2eeeec7

Using & and \* operator :

-----------------------------

value at address of m = 300

value at address of fx = 300.600006

value at address of cht = z

Using only pointer variable :

----------------------------------

address of m = 0x7ffda2eeeec8

address of fx = 0x7ffda2eeeecc

address of cht = 0x7ffda2eeeec7

Using only pointer operator :

----------------------------------

value at address of m = 300

value at address of fx= 300.600006

value at address of cht= z

Click me to see the solution

4. Write a program in C to add two numbers using pointers. Go to the editor

Test Data :

Input the first number : 5

Input the second number : 6

Expected Output :

The sum of the entered numbers is : 11

Click me to see the solution

5. Write a program in C to add numbers using call by reference. Go to the editor

Test Data :

Input the first number : 5

Input the second number : 6

Expected Output :

The sum of 5 and 6 is 11

Click me to see the solution

6. Write a program in C to find the maximum number between two numbers using a pointer. Go to the editor

Test Data :

Input the first number : 5

Input the second number : 6

Expected Output :

6 is the maximum number.

Click me to see the solution

7. Write a program in C to store n elements in an array and print the elements using a pointer. Go to the editor

Test Data :

Input the number of elements to store in the array :5

Input 5 number of elements in the array :

element - 0 : 5

element - 1 : 7

element - 2 : 2

element - 3 : 9

element - 4 : 8

Expected Output :

The elements you entered are :

element - 0 : 5

element - 1 : 7

element - 2 : 2

element - 3 : 9

element - 4 : 8

Click me to see the solution

8. Write a program in C to print all permutations of a given string using pointers. Go to the editor

Expected Output :

The permutations of the string are :

abcd abdc acbd acdb adcb adbc bacd badc bcad bcda bdca bdac cbad cbda cabd cadb cdab cdba db

ca dbac dcba dcab dacb dabc

Click me to see the solution

9. Write a program in C to find the largest element using Dynamic Memory Allocation. Go to the editor

Test Data :

Input total number of elements(1 to 100): 5

Number 1: 5

Number 2: 7

Number 3: 2

Number 4: 9

Number 5: 8

Expected Output :

The Largest element is : 9.00

Click me to see the solution

10. Write a program in C to calculate the length of a string using a pointer. Go to the editor

Test Data :

Input a string : w3resource

Expected Output :

The length of the given string w3resource

is : 10

Click me to see the solution

11. Write a program in C to swap elements using call by reference. Go to the editor

Test Data :

Input the value of 1st element : 5

Input the value of 2nd element : 6

Input the value of 3rd element : 7

Expected Output :

The value before swapping are :

element 1 = 5

element 2 = 6

element 3 = 7

The value after swapping are :

element 1 = 7

element 2 = 5

element 3 = 6

Click me to see the solution

12. Write a program in C to find the factorial of a given number using pointers. Go to the editor

Test Data :

Input a number : 5

Expected Output :

The Factorial of 5 is : 120

Click me to see the solution

13. Write a program in C to count the number of vowels and consonants in a string using a pointer. Go to the editor

Test Data :

Input a string: string

Expected Output :

Number of vowels : 1

Number of constant : 5

Click me to see the solution

14. Write a program in C to sort an array using a pointer. Go to the editor

Test Data :

testdata

Expected Output :

Test Data :

Input the number of elements to store in the array : 5

Input 5 number of elements in the array :

element - 1 : 25

element - 2 : 45

element - 3 : 89

element - 4 : 15

element - 5 : 82

Expected Output :

The elements in the array after sorting :

element - 1 : 15

element - 2 : 25

element - 3 : 45

element - 4 : 82

element - 5 : 89

Click me to see the solution

15. Write a C program to demonstrate how a function returns a pointer. Go to the editor

Test Data :

Input the first number : 5

Input the second number : 6

Expected Output :

The number 6 is larger.

Click me to see the solution

16. Write a program in C to compute the sum of all elements in an array using pointers. Go to the editor

Test Data :

Input the number of elements to store in the array (max 10) : 5

Input 5 number of elements in the array :

element - 1 : 2

element - 2 : 3

element - 3 : 4

element - 4 : 5

element - 5 : 6

Expected Output :

The sum of array is : 20

Click me to see the solution

17. Write a program in C to print the elements of an array in reverse order. Go to the editor

Test Data :

Input the number of elements to store in the array (max 15) : 5

Input 5 number of elements in the array :

element - 1 : 2

element - 2 : 3

element - 3 : 4

element - 4 : 5

element - 5 : 6

Expected Output :

The elements of array in reverse order are :

element - 5 : 6

element - 4 : 5

element - 3 : 4

element - 2 : 3

element - 1 : 2

Click me to see the solution

18. Write a program in C to demonstrate the use of pointers to structures. Go to the editor

Expected Output :

John Alter from Court Street

Click me to see the solution

19. Write a program in C to show a pointer to a union. Go to the editor

Expected Output :

Jhon Mc Jhon Mc

Click me to see the solution

20. Write a program in C to show a pointer to an array whose contents are pointers to structures. Go to the editor

Expected Output :

Exmployee Name : Alex

Employee ID : 1002

Click me to see the solution

21. Write a program in C to print all the alphabets using a pointer. Go to the editor

Expected Output :

The Alphabets are :

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Click me to see the solution

22. Write a program in C to print a string in reverse using a pointer. Go to the editor

Test Data :

Input a string : w3resource

Expected Output :

Pointer : Print a string in reverse order :

------------------------------------------------

Input a string : w3resource

Reverse of the string is : ecruoser3w

Linked list

1. Write a program in C to create and display a Singly Linked List. Go to the editor

Test Data :

Input the number of nodes : 3

Input data for node 1 : 5

Input data for node 2 : 6

Input data for node 3 : 7

Expected Output :

Data entered in the list :

Data = 5

Data = 6

Data = 7

Click me to see the solution

2. Write a program in C to create a singly linked list of n nodes and display it in reverse order. Go to the editor

Test Data :

Input the number of nodes : 3

Input data for node 1 : 5

Input data for node 2 : 6

Input data for node 3 : 7

Expected Output :

Data entered in the list are :

Data = 5

Data = 6

Data = 7

The list in reverse are :

Data = 7

Data = 6

Data = 5

Click me to see the solution

3. Write a program in C to create a singly linked list of n nodes and count the number of nodes. Go to the editor

Test Data :

Input the number of nodes : 3

Input data for node 1 : 5

Input data for node 2 : 6

Input data for node 3 : 7

Expected Output :

Data entered in the list are :

Data = 5

Data = 6

Data = 7

Total number of nodes = 3

Click me to see the solution

4. Write a program in C to insert a new node at the beginning of a Singly Linked List. Go to the editor

Test Data and Expected Output :

Input the number of nodes : 3

Input data for node 1 : 5

Input data for node 2 : 6

Input data for node 3 : 7

Data entered in the list are :

Data = 5

Data = 6

Data = 7

Input data to insert at the beginning of the list : 4

Data after inserted in the list are :

Data = 4

Data = 5

Data = 6

Data = 7

Click me to see the solution

5. Write a program in C to insert a new node at the end of a Singly Linked List. Go to the editor

Test Data and Expected Output :

Input the number of nodes : 3

Input data for node 1 : 5

Input data for node 2 : 6

Input data for node 3 : 7

Data entered in the list are :

Data = 5

Data = 6

Data = 7

Input data to insert at the end of the list : 8

Data, after inserted in the list are :

Data = 5

Data = 6

Data = 7

Data = 8

Click me to see the solution

6. Write a program in C to insert a node in the middle of a Singly Linked List. Go to the editor

Test Data and Expected Output :

Input the number of nodes (3 or more) : 4

Input data for node 1 : 1

Input data for node 2 : 2

Input data for node 3 : 3

Input data for node 4 : 4

Data entered in the list are :

Data = 1

Data = 2

Data = 3

Data = 4

Input data to insert in the middle of the list : 5

Input the position to insert new node : 3

Insertion completed successfully.

The new list are :

Data = 1

Data = 2

Data = 5

Data = 3

Data = 4

Click me to see the solution

7. Write a program in C to delete the first node of a Singly Linked List. Go to the editor

Test Data :

Input the number of nodes : 3

Input data for node 1 : 2

Input data for node 2 : 3

Input data for node 3 : 4

Expected Output :

Data entered in the list are :

Data = 2

Data = 3

Data = 4

Data of node 1 which is being deleted is : 2

Data, after deletion of first node :

Data = 3

Data = 4

Click me to see the solution

8. Write a program in C to delete a node from the middle of a Singly Linked List. Go to the editor

Test Data and Expected Output :

Input the number of nodes : 3

Input data for node 1 : 2

Input data for node 2 : 5

Input data for node 3 : 8

Data entered in the list are :

Data = 2

Data = 5

Data = 8

Input the position of node to delete : 2

Deletion completed successfully.

The new list are :

Data = 2

Data = 8

Click me to see the solution

9. Write a program in C to delete the last node of a Singly Linked List. Go to the editor

Test Data :

Input the number of nodes : 3

Input data for node 1 : 1

Input data for node 2 : 2

Input data for node 3 : 3

Expected Output :

Data entered in the list are :

Data = 1

Data = 2

Data = 3

The new list after deletion the last node are :

Data = 1

Data = 2

Click me to see the solution

10. Write a program in C to search for an existing element in a singly linked list. Go to the editor

Test Data and Expected Output :

Input the number of nodes : 3

Input data for node 1 : 2

Input data for node 2 : 5

Input data for node 3 : 8

Data entered in the list are :

Data = 2

Data = 5

Data = 8

Input the element to be searched : 5

Element found at node 2

Click me to see the solution

11. Write a C program that converts a singly linked list into a string and returns it. Go to the editor

Test Data and Expected Output :

Linked List: Convert a Singly Linked list into a string

-------------------------------------------------------------

Input the number of nodes: 3

Input data for node 1 : 10

Input data for node 2 : 20

Input data for node 3 : 30

Return data entered in the list as a string:

The linked list: 10 20 30

Click me to see the solution

12. Write a C program that converts a singly linked list into an array and returns it. Go to the editor

Test Data and Expected Output :

Linked List: Convert a Singly Linked list into a string

-------------------------------------------------------------

Input the number of nodes: 3

Input data for node 1 : 10

Input data for node 2 : 20

Input data for node 3 : 30

Return data entered in the list as a string:

The linked list: 10 20 30

Click me to see the solution

13. Write a C program to merge two sorted singly linked lists into a single sorted linked list. Go to the editor

Test Data and Expected Output :

Two sorted singly linked lists:

1 3 5 7

2 4 6

After merging the said two sorted lists:

1 2 3 4 5 6 7

Click me to see the solution

14. Write a C program to detect and remove a loop in a singly linked list. Go to the editor

Test Data and Expected Output :

Original singly linked list:

1 2 3 4 5

Create the loop:

Following statement display the loop:

displayList(head);

After removing the said loop:

1 2 3 4 5

Click me to see the solution

15. Write a C program to check if a singly linked list is a palindrome or not. Go to the editor

Test Data and Expected Output :

Original Singly List:

1 2 3 4 5

Linked list is not a palindrome.

Original Singly List:

1 2 2 1

Linked list is a palindrome.

Original Singly List:

MADAM

Linked list is a palindrome.

Click me to see the solution

16. Write a C program to remove duplicates from a single unsorted linked list. Go to the editor

Test Data and Expected Output :

Original Singly List:

1 2 3 3 4

After removing duplicate elements from the said singly list:

1 2 3 4

Original Singly List:

1 2 3 3 4 4

After removing duplicate elements from the said singly list:

1 2 3 4

Click me to see the solution

17. Write a C program to sort a singly linked list using merge sort. Go to the editor

Test Data and Expected Output :

Sort the said singly linked list using merge sort:

2 3 1 7 5

After sorting the said list:

1 2 3 5 7

Click me to see the solution

18. Write a C program to create a copy of a singly linked list with random pointers. Go to the editor

Test Data and Expected Output :

Original singly list:

1 2 3 5 7

After setting the random pointers:

Data: 1, Random: 3

Data: 2, Random: 5

Data: 3, Random: 7

Data: 5, Random: 1

Data: 7, Random: 3

Click me to see the solution

19. Write a C program to find the intersection of two singly linked lists. Go to the editor

Test Data and Expected Output :

Original lists:

1 2 3 4

5 3 4

Intersection found at 3.

Original lists:

1 2 3 4

5 3 4

Intersection not found.

Click me to see the solution

20. Write a C program to get the n number of nodes from the end of a singly linked list. Go to the editor

Test Data and Expected Output :

Original list:

1 3 5 11

Last 2 nodes from the end of the said singly list:

5 11

Last 3 nodes from the end of the said singly list:

3 5 11

Last 4 nodes from the end of the said singly list:

1 3 5 11

Last 1 node from the end of the said singly list:

11

Last 5 node from the end of the said singly list:

Click me to see the solution

21. Write a C program to partition a singly linked list based on a specific value. Go to the editor

Test Data and Expected Output:

Original list:

3 5 7 5 9 2 1

Linked List after partition around 5:

3 2 1 5 7 5 9

Click me to see the solution

22. Write a C program that takes two linked lists of numbers. Each node contains a single digit and returns the sum of those numbers of said linked lists as a linked list. Go to the editor

Test Data and Expected Output :

List-1

8 7 9 2

List-2

2 1 2 3

Adding said two lists:

0 9 1 6

Click me to see the solution

23. Write a C program that rotates a singly linked list to the right by k places. Go to the editor

Test Data and Expected Output :

Original List: 1 3 4 7 9

Rotate the said singly linked list to the right by 1 places:

9 1 3 4 7

Rotate the said singly linked list to the right by 2 places:

4 7 9 1 3

Rotate the said singly linked list to the right by 4 places:

7 9 1 3 4

Click me to see the solution

24. Write a C program to swap Kth node from the beginning with Kth node from the end in a singly linked list. Go to the editor

Test Data and Expected Output :

Original List: 1 3 4 7 9

Rotate the said singly linked list to the right by 1 places:

9 1 3 4 7

Rotate the said singly linked list to the right by 2 places:

4 7 9 1 3

Rotate the said singly linked list to the right by 4 places:

7 9 1 3 4

Click me to see the solution

25. Write a C program that removes elements with odd indices from a singly linked list. Go to the editor

Test Data and Expected Output :

Original linked list:

7 6 5 4 3 2 1

Linked list after removing odd indices:

6 4 2

Click me to see the solution

26. Write a C program that removes elements with even indices from a singly linked list. Go to the editor

Test Data and Expected Output :

Original linked list:

7 6 5 4 3 2 1

Linked list after removing even indices:

6 4 2

Click me to see the solution

27. Write a C program to implement a binary tree using linked list representation. Go to the editor

Test Data and Expected Output :

Traversal of a binary tree:

40 20 50 10 30

Click me to see the solution

28. Write a C program to remove the Nth node from the end of a singly linked list. Go to the editor

Test Data and Expected Output :

Original Singly List:

1 2 3 4 5

Remove 1st node from the end of a singly linked list:

1 2 3 4

Remove 3rd node from the end of a singly linked list:

1 3 4

Click me to see the solution

29. Write a C program to merge k sorted linked lists into a single sorted linked list. Go to the editor

Test Data and Expected Output :

List-1:

10 20 50

List-2:

30 40 60

List-3:

10 70 100

After merging the said three sorted lists into one sorted list:

10 10 20 30 40 50 60 70 100

Click me to see the solution

30. Write a C program to create and reorder a linked list placing all even-numbered nodes ahead of all odd-numbered nodes. Go to the editor

Test Data and Expected Output :

Original Singly List:

1 2 3 4 5 6

Reorder the said linked list placing all even-numbered

nodes ahead of all odd-numbered nodes:

1 3 5 2 4 6

Click me to see the solution

31. Write a C program to reverse a singly linked list in pairs. Go to the editor

Test Data and Expected Output :

Original List: 1 2 3 4 5 6

Reverse a singly linked list in pairs:

2 1 4 3 6 5

Original List: 1 2 3 4 5

Reverse a singly linked list in pairs:

2 1 4 3 5

Click me to see the solution

32. Write a C program to split a singly linked list into two halves. Go to the editor

Test Data and Expected Output :

Original List: 1 2 3 4 5

Split the said singly linked list into halves:

First half: 1 2 3

Second half: 4 5

Original List: 1 2 3 4 5 6

Split the said singly linked list into halves:

First half: 1 2 3

Second half: 4 5 6

Click me to see the solution

33. Write a C program to delete alternate nodes of a singly linked list. Go to the editor

Test Data and Expected Output :

Original List:

1 2 3 4 5 6 7

Delete alternate nodes of the said singly linked list:

1 3 5 7

Click me to see the solution

34. Write a C program to to merge alternate nodes of two singly linked lists. Go to the editor

Test Data and Expected Output :

First linked list: 9 7 5 3 1

Second linked list: 10 8 6 4 2

Merged linked list: 9 10 7 8 5 6 3 4 1 2

Click me to see the solution

35. Write a C program to remove duplicates from a sorted singly linked list. Go to the editor

Test Data and Expected Output :

Original sorted singly linked list:

1 2 3 3 5 6 6

After removing duplicates from the said sorted linked list:

1 2 3 5 6

Click me to see the solution

36. Write a C program to reverse a singly linked list starting at the first position in blocks of size k. Go to the editor

Test Data and Expected Output :

Given linked list:

1 2 3 4 5 6 7 8

Reverse the first 3 nodes of the said Linked list:

3 2 1 6 5 4 8 7

Reverse the first 5 nodes of the said Linked list:

5 6 1 2 3 7 8 4

Click me to see the solution

37. Write a C program to remove all elements from a singly linked list that are greater than a given value x. Go to the editor

Test Data and Expected Output :

Given linked list:

1 2 3 4 5 6 7 8

Reverse the first 3 nodes of the said Linked list:

3 2 1 6 5 4 8 7

Reverse the first 5 nodes of the said Linked list:

5 6 1 2 3 7 8 4

Click me to see the solution

38. Write a C program to find a pair in a singly linked list whose sum is equal to a given value. Go to the editor

Test Data and Expected Output :

Original singly linked list:

1 2 3 4 5 6 7

Find a pair whose sum is equal to 4:

(1,3)

Find a pair whose sum is equal to 11:

(4,7) (5,6)

Find a pair whose sum is equal to 5:

(1,4) (2,3)

Find a pair whose sum is equal to 14:

Pair not found.

Click me to see the solution

39. Write a C program to interleave elements of two singly linked lists alternatively. Go to the editor

Test Data and Expected Output :

Original Lists:

List1: 1 3 5 7

List2: 2 4 6 8

After interleaving the two linked lists alternatively:

List1: 1 2 3 4 5 6 7 8

List2: 2 3 4 5 6 7 8

Click me to see the solution

40. Write a C program to swap every two adjacent nodes of a given singly linked list. Go to the editor

Test Data and Expected Output :

Original List:

1 2 3 4 5

Updated List after swapping every two adjacent nodes:

2 1 4 3 5

Click me to see the solution

41. Write a C program to reverse alternate k nodes of a given singly linked list. Go to the editor

Test Data and Expected Output :

Original List: 1 2 3 4 5 6 7 8

Reverse alternate k (k=2) nodes of the said singly linked list:

2 1 3 4 6 5 7 8

Reverse alternate k (k=3) nodes of the said singly linked list:

3 1 2 4 6 5 8 7

Reverse alternate k (k=4) nodes of the said singly linked list:

4 2 1 3 6 5 8 7

Click me to see the solution

42. Write a C program to find the point at which two singly linked lists intersect. Go to the editor

Test Data and Expected Output :

List-1: 1 2 7

List-2: 3 4 5 7

Intersection found at node with data: 7

List-3: 1 2 5

List-4: 3 4 5 7

No intersection found.

Click me to see the solution

C Doubly Linked List [22 exercises with solution]

1. Write a program in C to create and display a doubly linked list. Go to the editor

Test Data :

Input the number of nodes : 3

Input data for node 1 : 2

Input data for node 2 : 5

Input data for node 3 : 8

Expected Output :

Data entered on the list are :

node 1 : 2

node 2 : 5

node 3 : 8

Click me to see the solution

2. Write a program in C to create a doubly linked list and display it in reverse order. Go to the editor

Test Data :

Input the number of nodes : 3

Input data for node 1 : 2

Input data for node 2 : 5

Input data for node 3 : 8

Expected Output :

Data in reverse order are :

Data in node 1 : 8

Data in node 2 : 5

Data in node 3 : 2

Click me to see the solution

3. Write a program in C to insert a node at the beginning of a doubly linked list. Go to the editor

Test Data and Expected Output :

Input the number of nodes : 3

Input data for node 1 : 2

Input data for node 2 : 5

Input data for node 3 : 8

Data entered in the list are :

node 1 : 2

node 2 : 5

node 3 : 8

Input data for the first node : 1

After insertion the new list are :

node 1 : 1

node 2 : 2

node 3 : 5

node 4 : 8

Click me to see the solution

4. Write a program in C to insert a new node at the end of a doubly linked list. Go to the editor

Test Data and Expected Output :

Input the number of nodes : 3

Input data for node 1 : 2

Input data for node 2 : 5

Input data for node 3 : 8

Data entered in the list are :

node 1 : 2

node 2 : 5

node 3 : 8

Input data for the last node : 9

After insertion the new list are :

node 1 : 2

node 2 : 5

node 3 : 8

node 4 : 9

Click me to see the solution

5. Write a program in C to insert a new node at any position in a doubly linked list. Go to the editor

Test Data and Expected Output :

Input the number of nodes (3 or more ): 3

Input data for node 1 : 2

Input data for node 2 : 4

Input data for node 3 : 5

Data entered in the list are :

node 1 : 2

node 2 : 4

node 3 : 5

Input the position ( 2 to 2 ) to insert a new node : 2

Input data for the position 2 : 3

After insertion the new list are :

node 1 : 2

node 2 : 3

node 3 : 4

node 4 : 5

Click me to see the solution

6. Write a program in C to insert a new node in the middle of a doubly linked list. Go to the editor

Test Data and Expected Output :

Doubly Linked List : Insert new node at the middle in a doubly linked list :

----------------------------------------------------------------------------------

Input the number of nodes (3 or more ): 3

Input data for node 1 : 2

Input data for node 2 : 4

Input data for node 3 : 5

Data entered in the list are :

node 1 : 2

node 2 : 4

node 3 : 5

Input the position ( 2 to 2 ) to insert a new node : 2

Input data for the position 2 : 3

After insertion the new list are :

node 1 : 2

node 2 : 3

node 3 : 4

node 4 : 5

Click me to see the solution

7. Write a program in C to delete a node from the beginning of a doubly linked list. Go to the editor

Test Data and Expected Output :

Input the number of nodes (3 or more ): 3

Input data for node 1 : 1

Input data for node 2 : 2

Input data for node 3 : 3

Data entered in the list are :

node 1 : 1

node 2 : 2

node 3 : 3

After deletion the new list are :

node 1 : 2

node 2 : 3

Click me to see the solution

8. Write a program in C to delete a node from the last node of a doubly linked list. Go to the editor

Test Data and Expected Output :

Input the number of nodes (3 or more ): 3

Input data for node 1 : 1

Input data for node 2 : 2

Input data for node 3 : 3

Data entered in the list are :

node 1 : 1

node 2 : 2

node 3 : 3

After deletion the new list are :

node 1 : 1

node 2 : 2

Click me to see the solution

9. Write a program in C to delete a node from any position in a doubly linked list. Go to the editor

Test Data and Expected Output :

Doubly Linked List : Delete node from any position of a doubly linked list :

----------------------------------------------------------------------------------

Input the number of nodes (3 or more ): 3

Input data for node 1 : 1

Input data for node 2 : 2

Input data for node 3 : 3

Data entered in the list are :

node 1 : 1

node 2 : 2

node 3 : 3

Input the position ( 1 to 3 ) to delete a node : 3

After deletion the new list are :

node 1 : 1

node 2 : 2

Click me to see the solution

10. Write a program in C to delete a node from the middle of a doubly linked list. Go to the editor

Test Data and Expected Output :

Input the number of nodes (3 or more ): 3

Input data for node 1 : 1

Input data for node 2 : 2

Input data for node 3 : 3

Data entered in the list are :

node 1 : 1

node 2 : 2

node 3 : 3

Input the position ( 1 to 3 ) to delete a node : 2

After deletion the new list are :

node 1 : 1

node 2 : 3

Click me to see the solution

11. Write a program in C to find the maximum value in a doubly linked list. Go to the editor

Test Data :

Input the number of nodes : 3

Input data for node 1 : 5

Input data for node 2 : 9

Input data for node 3 : 1

Expected Output :

Data entered in the list are :

node 1 : 5

node 2 : 9

node 3 : 1

The Maximum Value in the Linked List : 9

Click me to see the solution

12. Write a program in C to create and display a circular linked list. Go to the editor

Test Data :

Input the number of nodes : 3

Input data for node 1 : 2

Input data for node 2 : 5

Input data for node 3 : 8

Expected Output :

Data entered in the list are :

Data 1 = 2

Data 2 = 5

Data 3 = 8

Click me to see the solution

13. Write a program in C to insert a node at the beginning of a circular linked list. Go to the editor

Test Data and Expected Output :

Input the number of nodes : 3

Input data for node 1 : 2

Input data for node 2 : 5

Input data for node 3 : 8

Data entered in the list are :

Data 1 = 2

Data 2 = 5

Data 3 = 8

Input data to be inserted at the beginning : 1

After insertion the new list are :

Data 1 = 1

Data 2 = 2

Data 3 = 5

Data 4 = 8

Click me to see the solution

14. Write a program in C to insert a node at the end of a circular linked list. Go to the editor

Test Data and Expected Output :

Input the number of nodes : 3

Input data for node 1 : 2

Input data for node 2 : 5

Input data for node 3 : 8

Data entered in the list are :

Data 1 = 2

Data 2 = 5

Data 3 = 8

Input the data to be inserted : 9

After insertion the new list are :

Data 1 = 2

Data 2 = 5

Data 3 = 8

Data 4 = 9

Click me to see the solution

15. Write a program in C to insert a node at any position in a circular linked list. Go to the editor

Test Data and Expected Output :

Input the number of nodes : 3

Input data for node 1 : 2

Input data for node 2 : 5

Input data for node 3 : 8

Data entered in the list are :

Data 1 = 2

Data 2 = 5

Data 3 = 8

Input the position to insert a new node : 3

Input data for the position 3 : 7

After insertion the new list are :

Data 1 = 2

Data 2 = 5

Data 3 = 7

Data 4 = 8

Click me to see the solution

16. Write a program in C to delete a node from the beginning of a circular linked list. Go to the editor

Test Data :

Input the number of nodes : 3

Input data for node 1 : 2

Input data for node 2 : 5

Input data for node 3 : 8

Expected Output :

Data entered in the list are :

Data 1 = 2

Data 2 = 5

Data 3 = 8

The deleted node is -> 2

After deletion the new list are :

Data 1 = 5

Data 2 = 8

Click me to see the solution

17. Write a program in C to delete a node from the middle of a circular linked list. Go to the editor

Test Data and Expected Output :

Input the number of nodes : 3

Input data for node 1 : 2

Input data for node 2 : 5

Input data for node 3 : 8

Data entered in the list are :

Data 1 = 2

Data 2 = 5

Data 3 = 8

Input the position to delete the node : 3

The deleted node is : 8

After deletion the new list are :

Data 1 = 2

Data 2 = 5

Click me to see the solution

18. Write a program in C to delete the node at the end of a circular linked list. Go to the editor

Test Data and Expected Output :

Input the number of nodes : 3

Input data for node 1 : 2

Input data for node 2 : 5

Input data for node 3 : 8

Data entered in the list are :

Data 1 = 2

Data 2 = 5

Data 3 = 8

The deleted node is : 8

After deletion the new list are :

Data 1 = 2

Data 2 = 5

Click me to see the solution

19. Write a program in C to search an element in a circular linked list. Go to the editor

Test Data and Expected Output :

Circular Linked List : Search an element in a circular linked list :

-------------------------------------------------------------------------

Input the number of nodes : 3

Input data for node 1 : 2

Input data for node 2 : 5

Input data for node 3 : 9

Data entered in the list are :

Data 1 = 2

Data 2 = 5

Data 3 = 9

Input the element you want to find : 5

Element found at node 2

Click me to see the solution

20. Write a C program to sort a given linked list by bubble sort. Go to the editor

Test Data and Expected Output : 5

15

33

49

6

65

Input number of elements in the linked list? Input the elements in the linked list:

Sorted order is:

6 15 33 49 65

Click me to see the solution

21. Write a C program to convert a Doubly Linked list into a string. Go to the editor

Test Data and Expected Output :

Input the number of nodes: 4

Input data for node 1 : 10

Input data for node 2 : 11

Input data for node 3 : 12

Input data for node 4 : 13

The doubly linked list in string format: 10 11 12 13

Click me to see the solution

22. Write a C program to convert a doubly linked list into an array and return it. Go to the editor

Test Data and Expected Output :

Input the number of nodes: 4

Input data for node 1 : 10

Input data for node 2 : 11

Input data for node 3 : 12

Input data for node 4 : 13

Doubly linked list in array format:

10 11 12 13

Stack

1. Write a C program to implement a stack using an array with push and pop operations. Go to the editor

Expected Output:

Elements in the stack are: 3 5 4 3 2 1

Click me to see the solution

2. Write a C program to implement a stack using a singly linked list. Go to the editor

Expected Output:

Push data 1

Push data 2

Push data 3

Push data 4

Pop data: 4

Pop data: 3

Pop data: 2

Pop data: 1

Check a stack is empty or not?

Stack is empty!

Click me to see the solution

3. Write a C program to check a stack is full or not using an array with push and pop operations. Go to the editor

Expected Output:

Stack size: 3

Original Stack: 1 2 3

Push another value and check if the stack is full or not!

Stack is full!

Stack size: 3

Original Stack: 10 20

Check the said stack is full or not!

Stack is not full!

Click me to see the solution

4. Write a C program that accepts a string and reverse it using a stack. Go to the editor

Expected Output:

Input a string: w3resource

Reversed string using a stack is: ecruoser3w

Click me to see the solution

5. Write a C program to implement two stacks in a single array and performs push and pop operations for both stacks. Go to the editor

Expected Output:

Elements in Stack-1 are: 50 40 30 10

Elements in Stack-2 are: 70 60 50 40 20

Click me to see the solution

6. Write a C program to sort a given stack using another stack. Go to the editor

Expected Output:

Original stack: 1 5 5 2 3 8

Sorted stack: 1 2 3 5 5 8

Click me to see the solution

7. Write a C program that checks whether a string of parentheses is balanced or not using stack. Go to the editor

Expected Output:

Input an expression in parentheses: {[])

The expression is not balanced.

-----------------------------------------

Input an expression in parentheses: ((()))

The expression is balanced.

-----------------------------------------

Input an expression in parentheses: ())

The expression is not balanced.

-----------------------------------------

Input an text of parentheses: ([]){}[[(){}]{}]

The expression is balanced.

-----------------------------------------

Input an expression in parentheses: [(]))

The expression is not balanced.

Click me to see the solution

8. Write a C program to find the next greater element for each element in an array using a stack. Return -1 if there is no next-larger element. Go to the editor

Expected Output:

Elements in the array are: 1 2 3 4 5 6

The next larger elements are:

1 --> 2

2 --> 3

3 --> 4

4 --> 5

5 --> 6

6 --> -1

Elements in the array are: 6 5 4 3 2 1 0

The next larger elements are:

0 --> -1

1 --> -1

2 --> -1

3 --> -1

4 --> -1

5 --> -1

6 --> -1

Elements in the array are: 3 7 5 9 3 2 4 1 4

The next larger elements are:

3 --> 7

5 --> 9

7 --> 9

2 --> 4

3 --> 4

1 --> 4

4 --> -1

9 --> -1

--------------------------------

Click me to see the solution

9. Write a C program to implement two stacks using a single array. Go to the editor

Expected Output:

3 popped from stack 1

2 popped from stack 1

1 popped from stack 1

30 popped from stack 2

20 popped from stack 2

10 popped from stack 2

Click me to see the solution

10. Write a C program that reverses a stack using only stack operations push and pop. Go to the editor

Expected Output:

Original Stack: 10 20 30 40 50

Reversed Stack: 50 40 30 20 10

Click me to see the solution

11. Write a C program to find the minimum element in a stack. Go to the editor

Expected Output:

Current stack elements:

9 2 4 2 4

Minimum element: 2

After removing two elements:

Current stack elements:

9 2 4

Minimum element: 2

After adding one element:

Current stack elements:

9 2 4 1

Minimum element: 1

Click me to see the solution

12. Write a C program to find the maximum element in a stack. Go to the editor

Expected Output:

Current stack elements:

5 2 1 6 8

Maximum element: 8

After removing two elements:

Current stack elements:

5 2 1

Maximum element: 5

After adding one element:

Current stack elements:

5 2 1 10

Maximum element: 10

Click me to see the solution

13. Write a C program to implement a stack that supports push, pop, get middle, and delete middle elements. Go to the editor

Expected Output:

Stack elements: 88 15 26 32 23

Middle element: 26

Delete the middle element of the said stack:

Stack elements: 88 15 32 23

Middle element: 15

Delete the middle element of the said stack:

Stack elements: 88 32 23

Middle element: 32

Click me to see the solution

14. Write a C program to calculate the average value of the stack elements. Go to the editor

Expected Output:

Elements of the stack:

6 4 2 5 3 1

Average of the said stack values: 3.50

Popped value: 6

Elements of the stack:

4 2 5 3 1

Average of the said stack values: 3.00

Click me to see the solution

15. Write a C program to implement a stack and accept some numeric values. Remove the number whose value is the minimum on the stack. Go to the editor

Expected Output:

Elements of the stack:

Stack: 7 4 5 2 3 1

Minimum value of the said stack: 1

Elements of the stack after removing the said minimum value:

Stack: 7 4 5 2 3

Minimum value of the said stack: 2

Elements of the stack after removing the said minimum value:

Stack: 7 4 5 3

Minimum value of the said stack: 3

Elements of the stack after removing the said minimum value:

Stack: 7 4 5

Click me to see the solution

16. Write a C program to implement a stack and accept some numeric values. Find the top and kth element of the stack. Go to the editor

Expected Output:

Elements of the stack:

1 2 3 4 5 6

Top element: 6

3rd element from top: 4

Remove the topmost element from the stack:

Elements of the stack:

1 2 3 4 5

Top element: 5

4th element from top: 2

Click me to see the solution

17. Write a C program to convert a decimal number to its binary equivalent using stack. Go to the editor

Expected Output:

Input a decimal number: 10

The binary equivalent is: 1010

Input a decimal number: 109

Binary equivalent of the said number is: 1101101

Input a decimal number: 2015

Binary equivalent of the said number is: 11111011111

Queue

1. Write a C program to implement a queue using an array. Programs should contain functions for inserting elements into the queue, displaying queue elements, and checking whether the queue is empty or not. Go to the editor

Expected Output:

Initialize a queue!

Check the queue is empty or not? Yes

Insert some elements into the queue:

Queue elements are: 1 2 3

Insert another element into the queue:

Queue elements are: 1 2 3 4

Check the queue is empty or not? No

Click me to see the solution

2. Write a C program to implement a queue using an array. Create a function that removes an element from the queue. Go to the editor

Expected Output:

Initialize a queue!

Insert some elements into the queue:

Queue elements are: 1 2 3

Delete an element from the said queue:

Queue elements are: 2 3

Insert another element into the queue:

Queue elements are: 2 3 4

Click me to see the solution

3. Write a C program to implement a queue using a linked list. Programs should contain functions for inserting elements into the queue, displaying queue elements, and checking whether the queue is empty or not. Go to the editor

Expected Output:

Initialize a queue!

Check the queue is empty or not? Yes

Insert some elements into the queue:

1 2 3

Insert another element into the queue:

1 2 3 4

Check the queue is empty or not? No

Click me to see the solution

4. Write a C program to implement a queue using an array. Create a function that removes an element from the queue. Go to the editor

Expected Output:

Initialize a queue!

Check the queue is empty or not? Yes

Insert some elements into the queue:

1 2 3

Insert another element into the queue:

1 2 3 4

Check the queue is empty or not? No

Click me to see the solution

5. Write a C program to count the number of elements in a queue. Go to the editor

Expected Output:

Initialize a queue!

Check the queue is empty or not? Yes

Number of elements in queue: 0

Insert some elements into the queue:

Queue elements are: 1 2 3

Number of elements in queue: 3

Delete two elements from the said queue:

Queue elements are: 3

Number of elements in queue: 1

Insert another element into the queue:

Queue elements are: 3 4

Number of elements in the queue: 2

Click me to see the solution

6. Write a C program to reverse the elements of a queue. Go to the editor

Expected Output:

Queue elements are:

1 2 3 4 5

Reverse Queue, elements are:

5 4 3 2 1

Add two elements to the said queue:

Queue elements are:

5 4 3 2 1 100 200

Reverse Queue, elements are:

200 100 1 2 3 4 5

Click me to see the solution

7. Write a C program to calculate the sum of the elements in a queue. Go to the editor

Expected Output:

Queue elements are: 1 2 3 4 5

Sum of the elements in the queue is: 15

Remove 2 elements from the said queue:

Queue elements are: 3 4 5

Sum of the elements in the queue is: 12

Insert 3 more elements:

Queue elements are: 3 4 5 300 400 500

Sum of the elements in the queue is: 1212

Click me to see the solution

8. Write a C program to compute the average value of the elements in a queue. Go to the editor

Expected Output:

Queue elements are: 1 2 3 4 5

Average of the elements in the queue is: 3.000000

Remove 2 elements from the said queue:

Queue elements are: 3 4 5

Average of the elements in the queue is: 4.000000

Insert 3 more elements:

Queue elements are: 3 4 5 300 427 519

Average of the elements in the queue is: 209.666672

Click me to see the solution

9. Write a C program to find the maximum element in a queue. Go to the editor

Expected Output:

Queue elements are: 1 2 3 4 5

Maximum value in the queue is: 5

Remove 2 elements from the said queue:

Queue elements are: 3 4 5

Maximum value in the queue is: 5

Insert 3 more elements:

Queue elements are: 3 4 5 600 427 519

Maximum value in the queue is: 600

Click me to see the solution

10. Write a C program to find the minimum element in a queue. Go to the editor

Expected Output:

Queue elements are: 1 2 3 4 5

Minimum value in the queue is: 1

Remove 2 elements from the said queue:

Queue elements are: 3 4 5

Minimum value in the queue is: 3

Insert 3 more elements:

Queue elements are: 3 4 5 600 -427 519

Minimum value in the queue is: -427

Click me to see the solution

11. Write a C program to delete the nth element of a queue. Go to the editor

Firstly, this code checks if the queue is empty or if the position to delete is invalid. If the position is valid, it deletes the first n-1 elements, then deletes the nth element by calling the dequeue() function

Expected Output:

Insert some elements into the queue:

Queue elements are: 1 2 3 4 5

Delete the 7th element of the said queue:

Error: Invalid position

Delete the 3rd element of the said queue:

Queue elements are: 4 5

Click me to see the solution

12. Write a C program to sort the elements of a queue in ascending order. Go to the editor

Expected Output:

Input some elements into the queue:

Elements of the queue:

4 2 7 5 1

Sort the said queue:

Elements of the sorted queue in ascending order:

1 2 4 5 7

Input two more elements into the queue:

Elements of the queue:

1 2 4 5 7 -1 3

Sort the said queue:

Elements of the sorted queue in ascending order:

-1 1 2 3 4 5 7

Click me to see the solution

13. Write a C program to find the median of the elements in a queue. Go to the editor

From Wikipedia,

In statistics and probability theory, the median is the value separating the higher half from the lower half of a data sample, a population, or a probability distribution.

The median of a finite list of numbers is the "middle" number, when those numbers are listed in order from smallest to greatest.

If the data set has an odd number of observations, the middle one is selected. For example, the following list of seven numbers,

1, 3, 3, 6, 7, 8, 9

has the median of 6, which is the fourth value.

If the data set has an even number of observations, there is no distinct middle value and the median is usually defined to be the arithmetic mean of the two middle values. For example, this data set of 8 numbers1, 2, 3, 4, 5, 6, 8, 9 has a median value of 4.5, that is (4+5)/2 . (In more technical terms, this interprets the median as the fully trimmed mid-range).

Expected Output:

Input some elements into a queue:

Queue elements are:

1 2 3 4 5

The median of the elements in the queue is 3.000000

Input one more element:

Queue elements are:

1 2 3 4 5 6

The median of the elements in the queue is 3.500000

Number

1. Write a program in C to check whether a given number is an ugly number or not. Go to the editor

Expected Output :

Input an integer number: 25

It is an ugly number.

Click me to see the solution

2. Write a program in C to check whether a given number is Abundant or not. Go to the editor

Expected Output :

Input an integer number: 18

The number is Abundant.

Click me to see the solution

3. Write a program in C to find the Abundant numbers (integers) between 1 and 1000. Go to the editor

Expected Output :

The Abundant number between 1 to 1000 are:

-----------------------------------------------

12 18 20 24 30 36 40 42 48 54 56 60 66 70 72 78 80...

Click me to see the solution

4. Write a program in C to check whether a given number is Deficient or not. Go to the editor

Expected Output :

Input an integer number: 15

The number is Deficient.

Click me to see the solution

5. Write a program in C to find the Deficient numbers (integers) between 1 to 100. Go to the editor

Expected Output :

The Deficient numbers between 1 to 100 are:

------------------------------------------------

1 2 3 4 5 7 8 9 10 11 13 14 15 16 17 19 21 22 23 25 26 27...

Click me to see the solution

6. Write a program in C to check whether a given number is a Kaprekar number or not. Go to the editor

Expected Output :

Input a number: 45

45 is a Kaprekar number.

Click me to see the solution

7. Write a program in C to generate and show all Kaprekar numbers less than 1000. Go to the editor

Expected Output :

The Kaprekar numbers less than 1000 are:

1 9 45 55 99 297 703 999

Click me to see the solution

8. Write a program in C to check whether a number is a Lychrel number or not. Go to the editor

Expected Output :

Input a number: 196

The given number is Lychrel.

Click me to see the solution

9. Write a program in C to display and count the number of Lychrel numbers within a specific range (from 1 to a specific upper limit). Go to the editor

Expected Output :

Input the upper limit: 1000

The Lychrel numbers are:

196 295 394 493 592 689 691 788 790 879 887 978 986

The number of Lychrel numbers are: 13

Click me to see the solution

10. Write a program in C to generate and show the first 15 narcissistic decimal numbers. Go to the editor

Expected Output :

The first 15 narcissistic decimal numbers are:

1 2 3 4 5 6 7 8 9 153 370 371 407 1634 8208

Click me to see the solution

11. Write a program in C to display the first 10 lucus numbers. Go to the editor

Expected Output :

The first 10 Lucus numbers are:

2 1 3 4 7 11 18 29 47 76

Click me to see the solution

12. Write a program in C to display the first 10 Catalan numbers. Go to the editor

Expected Output :

The first 10 catalan numbers are:

1 1 2 5 14 42 132 429 1430 4862

Click me to see the solution

13. Write a program in C to determine whether a number is Happy or not. Go to the editor

Expected Output :

Input a number: 13

13 is a Happy number.

Click me to see the solution

14. Write a program in C to find the happy numbers between 1 and 1000. Go to the editor

Expected Output :

The happy numbers between 1 to 1000 are: 1 7 10 13 19 23 28 31 32 44 49.....

Click me to see the solution

15. Write a program in C to check whether a number is Disarium or not. Go to the editor

Expected Output :

Input a number: 135

The given number is a Disarium Number.

Click me to see the solution

16. Write a program in C to find Disarium numbers between 1 and 1000. Go to the editor

Expected Output :

The Disarium numbers are:

1 2 3 4 5 6 7 8 9 89 135 175 518 598

Click me to see the solution

17. Write a program in C to check if a number is a Harshad Number or not. Go to the editor

Expected Output :

Input a number: 9

The given number is a Harshad Number.

Click me to see the solution

18. Write a program in C to find the Harshad Number between 1 and 100. Go to the editor

Expected Output :

The Harshad Numbers are: 1 2 3 4 5 6 7 8 9 10 12 18 20 21 24 27 30 36 40 42 45 48 50 54 60 63 70 72 80 81 84 90 100

Click me to see the solution

19. Write a program in C to check whether a number is a Pronic Number or Heteromecic Number or not. Go to the editor

Expected Output :

Input a number: 132

The given number is a Pronic Number.

Click me to see the solution

20. Write a program in C to find a Pronic Number between 1 and 1000. Go to the editor

Expected Output :

The Pronic numbers are: 2 6 12 20 30 42 56 72 90 110 132 156 182 210 240 272 306 342 380 420 462 506 552 600 650 702 756 812 870 930 992

Click me to see the solution

21. Write a program in C to check if a number is Authomorphic or not. Go to the editor

Expected Output :

Input a number: 76

The given number is an Automorphic Number.

Click me to see the solution

22. Write a program in C to find the Authomorphic numbers between 1 and 1000. Go to the editor

Expected Output :

The Authomorphic numbers are: 1 5 6 25 76 376 625

Click me to see the solution

23. Write a program in C to check whether a number is a Duck Number or not. Go to the editor

Expected Output :

Input a number: 3210

The given number is a Duck Number.

Click me to see the solution

24. Write a program in C to find Duck Numbers between 1 and 500. Go to the editor

Expected Output :

The Duck numbers are: 10 20 30 40 50 60 70 80 90 100 101 102......

Click me to see the solution

25. Write a program in C to check whether two numbers are Amicable numbers or not. Go to the editor

Expected Output :

Input the 1st number : 1184

Input the 2nd number : 1210

The given numbers are an Amicable pair.

Click me to see the solution

26. Write a program in C to count the amicable pairs in an array. Go to the editor

Expected Output :

Input the number of elements to be stored in the array: 4

element - 0: 220

element - 1: 274

element - 2: 1184

element - 3: 1210

Number of Amicable pairs presents in the array: 1

Click me to see the solution

27. Write a program in C to check if a given number is circular prime or not. Go to the editor

Expected Output :

Input a Number: 1193

The given number is a circular prime Number.

Click me to see the solution

28. Write a program in C to find circular prime numbers up to a specific limit. Go to the editor

Expected Output :

Enter the upper Limit: 1000

The Circular Prime Numbers less than 1000 are:

2 3 5 7 11 13 17 31 37 71 73 79 97 113 131 197 199 311 337 373 719 733 919 971 991

Click me to see the solution

29. Write a program in C to check whether a given number is an ideal cube or not. Go to the editor

Expected Output :

Input a number: 125

The number is a perfect Cube of 5

Click me to see the solution

30. Write a program in C to display the first 10 Fermat numbers. Go to the editor

Expected Output:

The first 10 Fermat numbers are:

3.000000

5.000000

17.000000

257.000000

65537.000000

4294967297.000000

18446744073709551616.000000

340282366920938463463374607431768211456.000000

115792089237316195423570985008687907853269984665640564039457584007913129639936.000000

13407807929942597099574024998205846127479365820592393377723561443721764030073546976801874298166903427690031858 186486050853753882811946569946433649006084096.000000

inf

Click me to see the solution

31. Write a program in C to find any number between 1 and n that can be expressed as the sum of two cubes in two (or more) different ways. Go to the editor

Expected Output :

The numbers in the above range are:

1729 = 1^3 + 12^3 = 9^3 + 10^3

4104 = 2^3 + 16^3 = 9^3 + 15^3

13832 = 2^3 + 24^3 = 18^3 + 20^3

39312 = 2^3 + 34^3 = 15^3 + 33^3

46683 = 3^3 + 36^3 = 27^3 + 30^3

32832 = 4^3 + 32^3 = 18^3 + 30^3

40033 = 9^3 + 34^3 = 16^3 + 33^3

20683 = 10^3 + 27^3 = 19^3 + 24^3

65728 = 12^3 + 40^3 = 31^3 + 33^3

64232 = 17^3 + 39^3 = 26^3 + 36^3

Click me to see the solution

32. Write a program in C to check if a number is a Mersenne number or not. Go to the editor

Expected Output :

Input a number: 127

127 is a Mersenne number.

Click me to see the solution

33. Write a program in C to generate Mersenne primes within a range of numbers. Go to the editor

Expected Output:

Input a upper limit [range from 1 to upper limit]: 1000

Mersenne prime numbers are:

3 7 31 127

Click me to see the solution

34. Write a program in C to find narcissistic decimal numbers within a specific range. Go to the editor

Expected Output :

Input the lower limit: 100

Input a upper limit: 1000

The narcissistic decimal numbers between 100 and 1000 are:

153 370 371 407

Click me to see the solution

35. Write a program in C to print the first 20 numbers of the Pell series. Go to the editor

Expected Output :

The first 20 numbers of Pell series are:

0 1 2 5 12 29 70 169 408 985 2378 5741 13860 33461 80782 195025 470832 1136689 2744210 6625109

Click me to see the solution

36. Write a program in C to check if a number is Keith or not. Go to the editor

Expected Output :

Input a number : 1104

The given number is a Keith Number.

Click me to see the solution

37. Write a program in C to check if a number is Keith or not (with explanation). Go to the editor

Expected Output :

Input a number : 1537

1 + 5 + 3 + 7 = 16

5 + 3 + 7 + 16 = 31

3 + 7 + 16 + 31 = 57

7 + 16 + 31 + 57 = 111

16 + 31 + 57 + 111 = 215

31 + 57 + 111 + 215 = 414

57 + 111 + 215 + 414 = 797

111 + 215 + 414 + 797 = 1537

The given number is a Keith Number.

Click me to see the solution

38. Write a C program to check whether a given number with base b (2 <= b<= 10) is a Niven number or not. Go to the editor

From Wikipedia,

In recreational mathematics, a harshad number (or Niven number) in a given number base, is an integer that is divisible by the sum of its digits when written in that base. Harshad numbers in base n are also known as n-harshad (or n-Niven) numbers. Harshad numbers were defined by D. R. Kaprekar, a mathematician from India. The word "harshad" comes from the Sanskrit harṣa (joy) + da (give), meaning joy-giver. The term “Niven number” arose from a paper delivered by Ivan M. Niven at a conference on number theory in 1977. All integers between zero and n are n-harshad numbers.

The number 18 is a harshad number in base 10, because the sum of the digits 1 and 8 is 9 (1 + 8 = 9), and 18 is divisible by 9 (since 18/9 = 2, and 2 is a whole number).

Test Data

Input: base 10: Number 3

Output: 3 is a Niven Number

Input: base 10: Number 18

Output: 18 is a Niven Number

Input: base 10: Number 15

Output: 15 is not a Niven Number

String

1. Write a program in C to input a string and print it. Go to the editor

Test Data :

Input the string : Welcome, w3resource

Expected Output :

The string you entered is : Welcome, w3resource

Click me to see the solution

2. Write a program in C to find the length of a string without using library functions. Go to the editor

Test Data :

Input the string : w3resource.com

Expected Output :

Length of the string is : 15

Click me to see the solution

3. Write a program in C to separate individual characters from a string. Go to the editor

Test Data :

Input the string : w3resource.com

Expected Output :

The characters of the string are :

w 3 r e s o u r c e . c o m

Click me to see the solution

4. Write a program in C to print individual characters of a string in reverse order. Go to the editor

Test Data :

Input the string : w3resource.com

Expected Output :

The characters of the string in reverse are :

m o c . e c r u o s e r 3 w

Click me to see the solution

5. Write a program in C to count the total number of words in a string. Go to the editor

Test Data :

Input the string : This is w3resource.com

Expected Output :

Total number of words in the string is : 3

Click me to see the solution

6. Write a program in C to compare two strings without using string library functions. Go to the editor

Test Data :

Check the length of two strings:

--------------------------------

Input the 1st string : aabbcc

Input the 2nd string : abcdef

String1: aabbcc

String2: abcdef

Expected Output : Strings are not equal.

Check the length of two strings:

--------------------------------

Input the 1st string : aabbcc

Input the 2nd string : aabbcc

String1: aabbcc

String2: aabbcc

Expected Output : Strings are equal.

Click me to see the solution

7. Write a program in C to count the total number of alphabets, digits and special characters in a string. Go to the editor

Test Data :

Input the string : Welcome to w3resource.com

Expected Output :

Number of Alphabets in the string is : 21

Number of Digits in the string is : 1

Number of Special characters in the string is : 4

Click me to see the solution

8. Write a program in C to copy one string to another string. Go to the editor

Test Data :

Input the string : This is a string to be copied.

Expected Output :

The First string is : This is a string to be copied.

The Second string is : This is a string to be copied.

Number of characters copied : 31

Click me to see the solution

9. Write a program in C to count the total number of vowels or consonants in a string. Go to the editor

Test Data :

Input the string : Welcome to w3resource.com

Expected Output :

The total number of vowel in the string is : 9

The total number of consonant in the string is : 12

Click me to see the solution

10. Write a program in C to find the maximum number of characters in a string. Go to the editor

Test Data :

Input the string : Welcome to w3resource.com.

Expected Output :

The Highest frequency of character 'e'

appears number of times : 4

Click me to see the solution

11. Write a C program to sort a string array in ascending order. Go to the editor

Test Data :

Input the string : w3resource

Expected Output :

After sorting the string appears like :

3ceeorrsuw

Click me to see the solution

12. Write a program in C to read a string from the keyboard and sort it using bubble sort. Go to the editor

Test Data :

Input number of strings :3

Input string 3 :

zero

one

two

Expected Output :

The strings appears after sorting :

one

two

zero

Click me to see the solution

13. Write a program in C to extract a substring from a given string. Go to the editor

Test Data :

Input the string : this is test string

Input the position to start extraction :9

Input the length of substring :4

Expected Output :

The substring retrieve from the string is : " test "

Click me to see the solution

14. Write a C program to check whether a substring is present in a string. Go to the editor

Test Data :

Input the string : This is a test string.

Input the substring to be search : search

Expected Output :

The substring is not exists in the string.

Click me to see the solution

15. Write a program in C to read a sentence and replace lowercase characters with uppercase and vice versa. Go to the editor

Test Data :

Input the string : This Is A Test String.

Expected Output :

The given sentence is : This Is A Test String.

After Case changed the string is: tHIS iS a tEST sTRING.

Click me to see the solution

16. Write a program in C to find the number of times a given word 'the' appears in the given string. Go to the editor

Test Data :

Input the string : The string where the word the present more than once.

Expected Output :

The frequency of the word 'the' is : 3

Click me to see the solution

17. Write a program in C to remove characters from a string except alphabets. Go to the editor

Test Data :

Input the string : w3resource.com

Expected Output :

After removing the Output String : wresourcecom

Click me to see the solution

18. Write a program in C to find the frequency of characters. Go to the editor

Test Data :

Input the string : This is a test string

Input the character to find frequency: i

Expected Output :

The frequency of 'i' is : 3

Click me to see the solution

19. Write a program in C to combine two strings manually. Go to the editor

Test Data :

Input the first string : this is string one

Input the second string : this is string two

Expected Output :

After concatenation the string is :

this is string one this is string two

Click me to see the solution

20. Write a program in C to find the largest and smallest words in a string. Go to the editor

Test Data :

Input the string : It is a string with smallest and largest word.

Expected Output :

The largest word is 'smallest'

and the smallest word is 'a'

in the string : 'It is a string with smallest and largest word.'.

Click me to see the solution

21. Write a program in C to convert a string to uppercase. Go to the editor

Test Data :

Input a string in lowercase : the quick brown fox jumps over the lazy dog

Expected Output :

Here is the above string in UPPERCASE :

THE QUICK BROWN FOX JUMPS OVER THE LAZY DOG.

Click me to see the solution

22. Write a program in C to convert a string to lowercase. Go to the editor

Test Data :

Input a string in UPPERCASE : THE QUICK BROWN FOX JUMPS OVER THE LAZY DOG.

Expected Output :

Here is the above string in lowercase :

the quick brown fox jumps over the lazy dog.

Click me to see the solution

23. Write a program in C to check whether a character is a Hexadecimal Digit or not. Go to the editor

Test Data :

Input a character : 7

Expected Output :

The entered character is a hexadecimal digit.

Click me to see the solution

24. Write a program in C to check whether a letter is uppercase or not. Go to the editor

Test Data :

Input a character : p

Expected Output :

The entered letter is not an UPPERCASE letter.

Click me to see the solution

25. Write a program in C to replace the spaces in a string with a specific character. Go to the editor

Test Data :

Input a string : Be glad to see the back of Input replace character : \*

Expected Output :

After replacing the space with \* the new string is :

Be\*glad\*to\*see\*the\*back\*of\*

Click me to see the solution

26. Write a program in C to count the number of punctuation characters present in a string. Go to the editor

Test Data :

Input a string : The quick brown fox, jumps over the, lazy dog.

Expected Output :

The punctuation characters exists in the string is : 3

Click me to see the solution

27. Write a program in C to print only the string before the new line character. Go to the editor

Note: isprint() will only print line one, because the newline character is not printable.

Expected Output :

The quick brown fox

Click me to see the solution

28. Write a program in C to check whether a letter is lowercase or not. Go to the editor

Test Data :

Input a character : w

Expected Output :

The entered letter is a lowercase letter.

Click me to see the solution

29. Write a program in C to read a file and remove the spaces between two words of its content. Go to the editor

Expected Output :

The content of the file is :

The quick brown fox jumps over the lazy dog

After removing the spaces the content is :

Thequickbrownfoxjumpsoverthelazydog

Click me to see the solution

30. Write a program in C to check whether a character is a digit or not. Go to the editor

Test Data :

Input a character : 8

Expected Output :

The entered character is a digit.

Click me to see the solution

31. Write a program in C to split strings by space into words. Go to the editor

Test Data :

Input a string : this is a test string

Expected Output :

Strings or words after split by space are :

this

is

a

test

string .

Click me to see the solution

32. Write a C program to find the repeated character in a string. Go to the editor

Test Data :

Input a string: w3resource

Expected Output:

Input a string: The first repetitive character in w3resource is: r

Click me to see the solution

33. Write a C program to count each character in a given string. Go to the editor

Test Data :

Input a string: w3resource

Expected Output:

Enter a str1ing: The count of each character in the string w3resource is

w 1

3 1

r 2

e 2

s 1

o 1

u 1

c 1

Click me to see the solution

34. Write a C program to convert vowels into uppercase characters in a string. Go to the editor

Test Data :

Input a string : w3resource

Expected Output:

Input a sentence: The original string:

w3resource

After converting vowels into upper case the sentence becomes:

w3rEsOUrcE

Click me to see the solution

35. Write a C program to find the length of the longest substring of a given string without repeating characters. Go to the editor

Test Data :

Input a string: “abcddefffd”

Expected Output:

Input a string: Length of the longest substring without repeating characters: 4

Click me to see the solution

36. A given string contains the bracket characters '(', ')', '{', '}', '<', ‘>', '[' and ']', Write a C program to check if the string is valid or not. The input string will be valid when open brackets and closed brackets are same type of brackets. Go to the editor

Test Data :

Input a string: <>()[]{}

Expected Output:

Check bracket in the said string is valid or not? 1

Click me to see the solution

37. Write a C program to multiply two positive numbers as strings. Return a string representation of the product. Go to the editor

Expected Output:

Original numbers: 100 and 15

Multiple two said numbers represent as string? 1500

Click me to see the solution

38. Write a C program to reverse all the vowels present in a given string. Return the newly created string. Go to the editor

Test Data :

Input a string: “AEIou”

Expected Output:

Input a string: Check bracket in the said string is valid or not? “uoIEA”

Click me to see the solution

39. Write a C program to find the longest palindromic substring from a given string. Return the substring. Go to the editor

Expected Output:

Original string: abcdcsdfabbccb

Longest Palindromic Substring from the said string? bccb

Click me to see the solution

40. Write a C program to replace each lowercase letter with the same uppercase letter of a given string. Return the newly created string. Go to the editor

Sample Data:

("Python") -> "PYTHON"

("abcdcsd") -> "ABCDCSD"

Click me to see the solution

41. Write a C program to calculate the length of the longest common subsequence of two given strings. The strings consist of alphabetical characters. Go to the editor

Sample Data:

("abcdkiou", "cabsdf") -> 3

("pqrjad", "qr") -> 2

Date and time

1. Write a program in C to print the current date and time. Go to the editor

Expected Output :

The Current date and time is : Thu Aug 03 13:38:58 2017

Click me to see the solution

2. Write a program in C to compute the number of seconds passed since the beginning of the month. Go to the editor

Expected Output :

222084 seconds passed since the beginning of the month.

Click me to see the solution

3. Write a program in C to convert a time\_t object to a textual representation. Go to the editor

Expected Output :

Thu Aug 03 13:44:49 2017

Click me to see the solution

4. Write a program in C to convert a tm object to a custom textual representation. Go to the editor

Expected Output :

The textual representation of specified date and time :

September Sun Sep 2 16:30:32 2016 pm

September Sun Sep 2 16:30:32 2016 pm

Click me to see the solution

5. Write a program in C to convert a tm object to a custom wide string textual representation. Go to the editor

Expected Output :

The textual representation of specified date and time :

Sunday 09/02/16 17:51:10

Sunday 09/02/16 17:51:10

Click me to see the solution

6. Write a program in C to convert a time\_t object to calendar time expressed as Coordinated Universal Time. Go to the editor

Expected Output :

The calendar time expressed as Coordinated Universal Time is :

UTC: Thu Aug 03 10:53:03 2017

local: Thu Aug 03 16:23:03 2017

Click me to see the solution

7. Write a program in C to convert a time\_t object to calendar time expressed as local time. Go to the editor

Expected Output :

The calendar time expressed as a local Time is :

UTC: Thu Aug 03 11:15:59 2017

local: Thu Aug 03 16:45:59 2017

Click me to see the solution

8. Write a program in C to print the date and time before 24 months. Go to the editor

Expected Output :

Today is : Thu Aug 3 17:27:16 2017

(DST is not in effect)

24 months ago the date was : Mon Aug 3 17:27:16 2015

(DST was not in effect)

Click me to see the solution

9. Write a program in C to show the first of calendar time. Go to the editor

Expected Output :

Sun Jan 01 00:00:00 1900

Click me to see the solution

10. Write a program in C to show the start of the epoch. Go to the editor

Note : epoch means the beginning of a period in the history of someone.

Expected Output :

0 seconds since the epoch began

Thu Jan 01 00:00:00 1970

Math

1. Write a C program to reverse the digits of a given integer. Go to the editor

Example:

Input:

i = 123

i = 208478933

i = -73634

Output:

Reverse integer: 321

Reverse integer: 339874802

Reverse integer: -43637

Click me to see the solution

2. Write a C program to check whether an integer is a palindrome or not. An integer is a palindrome when it reads the same forward as backward. Go to the editor

Example:

Input:

i = 1221

i = -121

i = 100

Output:

Is Palindrome: 1

Is Palindrome: 0

Is Palindrome: 0

Click me to see the solution

3. Write a C program to divide two integers (dividend and divisor) without using the multiplication, division and mod operator. Go to the editor

Example:

Input:

dividend\_num = 7

divisor\_num = 2

dividend\_num = -17

divisor\_num = 5

dividend\_num = 35

divisor\_num = 7

Output:

Result: 3

Result: -3

Result: 5

Click me to see the solution

4. Write a C program to calculate x raised to the power n (xn). Go to the editor

Example:

Input:

x = 7.0

n = 2

x = 6.2

n = 3

Output:

Result:(x^n) : 49.000000

Result:(x^n) : 238.328000

Click me to see the solution

5. The following set contains a total of n! unique permutations

Set: [1, 2, 3, ..., n]

If n =3 we will get the following sequence:

1. "123"

2. "132"

3. "213"

4. "231"

5. "312"

6. "321"

Input: n = 3, k = 4

Output: "231"

Write a C program to get the kth permutation sequence from two given integers n and k. In these integers, n is between 1 and 9 inclusive. In addition, k is between 1 and n! Inclusive. Go to the editor

Example:

Input:

n = 3

int k = 2

n = 4

k = 7

Output:

Kth sequence: 132

Kth sequence: 2134

Click me to see the solution

6. Write a C program to check if a given string can be interpreted as a decimal number. Go to the editor

Example:

Input:

str\_num1[ ] ="1234"

str\_num2[ ]=" 0.1 "

str\_num3[ ]=" -90e3 "

str\_num4[ ]=" 99e2.5 "

Output:

Is the above string is a number? 1

Is the above string is a number? 1

Is the above string is a number? 1

Is the above string is a number? 0

Click me to see the solution

7. Write a C program to get the fraction part from two given integers representing the numerator and denominator in string format. Go to the editor

Example:

Input:

n = 3

d = 2

n = 4

d = 7

Output:

Fractional part: 1.5

Fractional part: 0.(571428)

Click me to see the solution

8. Write a C program to get the Excel column title that corresponds to a given column number (integer value). Go to the editor

For example:

1 -> A

2 -> B

3 -> C

...

26 -> Z

27 -> AA

28 -> AB

...

Example:

Input:

n = 3

n = 27

n = 151

Output:

Excel column title: C

Excel column title: AA

Excel column title: EU

Click me to see the solution

9. Write a C program to get the column number (integer value) that corresponds to a column title as it appears in an Excel sheet. Go to the editor

For example:

A -> 1

B -> 2

C -> 3

...

Z -> 26

AA -> 27

AB -> 28

...

Example:

Input:

col\_title1[ ] ="C"

col\_title2[ ] ="AC"

col\_title3[ ] ="ZY"

Output:

Corresponding number: 3

Corresponding number: 29

Corresponding number: 701

Click me to see the solution

10. Write a C program to find the number of trailing zeroes in a given factorial. Go to the editor

Example 1:

Input: 4

Output: 0

Explanation: 4! = 24, no trailing zero.

Example 2:

Input: 6

Output: 1

Explanation: 6! = 720, one trailing zero.

Example:

Input:

n = 4

n = 5

Output:

Number of trailing zeroes of factorial 4 is 0

Number of trailing zeroes of factorial 5 is 1

Click me to see the solution

11. Write a C program to count the total number of digits 1 appearing in all positive integers less than or equal to a given integer n. Go to the editor

Example:

Input n = 12,

Return 5, because digit 1 occurred 5 times in the following numbers: 1, 10, 11, 12.

Example:

Input:

n = 12

n = 30

Output:

Total number of digit 1 appearing in 12 (less than or equal) is 5.

Total number of digit 1 appearing in 30 (less than or equal) is 13.

Click me to see the solution

12. Write a C program to add repeatedly all digits of a given non-negative number until the result has only one digit. Go to the editor

Example:

Input: 48

Output: 2

Explanation: The formula is like: 4 + 8 = 12, 1 + 2 = 3.

Click me to see the solution

13. Write a C program to check if a given integer is a power of three. Go to the editor

Example:

Input: 9

Output: true

Input: 81

Output: true

Input: 45

Output: false

Click me to see the solution

14. For a non negative integer in the range 0 ≤ i ≤ n write a C program to calculate the number of 1's in their binary representation and return them as an array. Go to the editor

Example:

Input:

Number: 7

Number of 1's in the binary representation:

0: 0

1: 1

2: 1

3: 2

4: 1

5: 2

Click me to see the solution

15. Write a C program to get the maximum product of a given integer after breaking the integer into the sum of at least two positive integers. Go to the editor

Example:

Input: 12

Output: 81

Explanation: 12 = 3 + 3 + 3 + 3, 3 x 3 × 3 × 3 = 81.

Input: 7

Output: 12

Explanation: 7 = 3 + 2 + 2, 3 x 2 x 2 = 12.

Click me to see the solution

16. Lexicographical order:

From Wikipedia,

In mathematics, the lexicographic or lexicographical order (also known as lexical order, dictionary order, alphabetical order or lexicographic(al) product) is a generalization of the way words are alphabetically ordered based on the alphabetical order of their component letters. This generalization consists primarily in defining a total order on the sequences (often called strings in computer science) of elements of a finite totally ordered set, often called an alphabet.

Write a C program to print numbers from 1 to an integer(N) in lexicographic order. Go to the editor

Example:

Input: 10

Output:

Print numbers from 1 to 10 in lexicographic order-

1 10 2 3 4 5 6 7 8 9

Input: 25

Output:

Print numbers from 1 to 25 in lexicographic order-

1 10 11 12 13 14 15 16 17 18 19 2 20 21 22 23 24 25 3 4 5 6 7 8 9

Click me to see the solution

17. Write a C program to find the nth digit of the number 1 to n? Go to the editor

Infinite integer sequence: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 .. where n is a positive integer.

Example:

Input:

7

Output:

7

Input:

12

Output:

1

The 12th digit of the sequence 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, ... is 1, which is part of the number 11.

Click me to see the solution

18. Write a C program to find the total number of full staircase rows that can be formed from a given number of dice. Go to the editor

Example 1:

n = 5

The dices can form the following rows:

C Exercises: staircase format when n = 5.

As the 3rd row is incomplete the program will return 2 (full staircase rows).

Example 1:

n = 8 The dices can form the following rows:

C Exercises: staircase format when n = 8.

As the 4th row is incomplete the program will return 3 (full staircase rows).

Click me to see the solution

19. Write a C program to find the square root of a number using the Babylonian method. Go to the editor

Example 1:

Input: n = 50

Output: 7.071068

Example 2:

Input: n = 17

Output: 4.123106

Click me to see the solution

20. Write a C program to multiply two integers without using multiplication, division, bitwise operators, and loops. Go to the editor

Example 1:

Input: n1 = 50

Input: n2 = 12

Output: 600

Example 2:

Input: n1 = 0

Input: n2 = 12

Output: 0

Click me to see the solution

21. Write a C program to calculate and print the average (or mean) of a stream of given numbers. Go to the editor

Example 1:

Input:

arr[] = {10, 20, 30, 40, 50, 60, 70, 80, 90, 100}

Output:

Average of 1 numbers is 10.000000

Average of 2 numbers is 15.000000

Average of 3 numbers is 20.000000

Average of 4 numbers is 25.000000

Average of 5 numbers is 30.000000

Average of 6 numbers is 35.000000

Average of 7 numbers is 40.000000

Average of 8 numbers is 45.000000

Average of 9 numbers is 50.000000

Average of 10 numbers is 55.000000

Click me to see the solution

22. Write a C program to count the numbers without the digit 7, from 1 to a given number. Go to the editor

Example 1:

Input: n = 10

Output: 9

Example 2:

Input: n = 687

Output: 555

Click me to see the solution

23. Write a C program to find next smallest palindrome of a given number. Go to the editor

From Wikipedia,

A palindrome is a word, number, phrase, or other sequence of characters which reads the same backward as forward, such as madam, racecar. There are also numeric palindromes, including date/time stamps using short digits 11/11/11 11:11 and long digits 02/02/2020. Sentence-length palindromes may be written when allowances are made for adjustments to capital letters, punctuation, and word dividers, such as "A man, a plan, a canal, Panama!".

Example 1:

Input: n = 121

Output: Next smallest palindrome of 121 is 131

Click me to see the solution

24. Write a C program to calculate e raised to the power of x using the sum of the first n terms of the Taylor Series. Go to the editor

From Wikipedia,

In mathematics, a Taylor series is a representation of a function as an infinite sum of terms that are calculated from the values of the function's derivatives at a single point.

Example:

The Taylor series for any polynomial is the polynomial itself.

C programming Exercises: Math - Taylor Series

The above expansion holds because the derivative of ex with respect to x is also ex, and e0 equals 1.

This leaves the terms (x − 0)n in the numerator and n! in the denominator for each term in the infinite sum.

Example 1:

Input: n = 25

float x= 5.0

Output: e^x = 148.413162

Click me to see the solution

25. Write a C program to print all prime factors of a given number. Go to the editor

Example 1:

Input: n = 75

Output: All prime factors of 75 are: 3 5 5

Click me to see the solution

26. Write a C program to check if a given number is a Fibonacci number or not. Go to the editor

In mathematics, the Fibonacci numbers, commonly denoted Fn form a sequence, called the Fibonacci sequence, such that each number is the sum of the two preceding ones, starting from 0 and 1. That is, and for n > 1. By starting with 1 and 2, the first 10 terms will be: 1, 2, 3, 5, 8, 13, 21, 34, 55, 89.

Example 1:

Input: n = 8

Output: 1

Click me to see the solution

27. Write a C program to multiply two numbers using bitwise operators. Go to the editor

Example 1:

Input: int x = 8

int y = 9

Output: Product of 8 and 9 using bitwise operators is: 72

Click me to see the solution

28. Write a C program to find the angle between the hour and minute hands. Go to the editor

Example 1:

Input: int ha = 11

int ma = 30 Output: Angle between hour and minute hands 165

Click me to see the solution

29. Write a C programming to get the smallest number of square numbers that add up to an integer n. Go to the editor

In mathematics, a perfect square is a number that can be expressed as either the product of an integer by itself or as the second exponent of an integer..

Sample Data:

14 = 32 + 22 + 12

Output – 3

15 = 32 + 22 + 12 + 12

Output - 4

16 = 42

Output – 1

17 = 42 + 12

Output – 2

Click me to see the solution

30. Write a C program that accepts a number (n) and counts all numbers with unique digits of length x within a specified range. Go to the editor

Range: 0 <= x < 10n

Test Data:

(1) -> 10

(2) -> 91

Click me to see the solution

31. Write a C programming to calculate the largest number that can be generated by swapping just two digits at most once. Go to the editor

Test Data:

(89) -> 98 [Swapping 8 and 9]

(568) -> 865 [Swapping 8 and 5]

(4499) -> 9494 [Swapping 9 and 4]

(12345) -> 52341 [Swapping 1 and 5]

(7743) -> 52341 [No Swap]

Click me to see the solution

32. Write a C programming to check whether a given integer can be expressed as the sum of any non-negative integer and its reverse. Return true otherwise false. Go to the editor

Test Data:

(554) -> 1

(51) -> 0

(55) -> 1

(181) -> 1

Click me to see the solution

33. Write a C program to count the digits in a given number that divide it. Go to the editor

Test Data:

(9) -> 1

(27) -> 0

(145) -> 2

(2245) -> 1

(2222) -> 4

Click me to see the solution

34. Write a C program that creates a multiplication table of size m x n using integers where 1 <= k <= m \* n. Return the kth smallest element in the said multiplication table. Go to the editor

In mathematics, a multiplication table is a mathematical table used to define a multiplication operation for an algebraic system. The decimal multiplication table was traditionally taught as an essential part of elementary arithmetic around the world, as it lays the foundation for arithmetic operations with base-ten numbers

Test Data:

(3,3,8) -> 6

(2,3,4) -> 3

Click me to see the solution

35. Write a C program that accepts an integer and find all prime factors of the integer. Go to the editor

Prime factors of a number are those factors that are prime numbers. 2 and 4 are factors of 4, where 2 is considered the prime factor.

Test Data:

(77) -> 7, 11

(12) -> 2, 2, 3

(45) -> 3, 3, 5

Click me to see the solution

36. Write a C program to count common factors of the two given integers. Go to the editor

Factor - A number or algebraic expression that divides another evenly, that is, without leaving a remainder.

Test Data:

(18, 6) -> 4

(45, 105) -> 4

Click me to see the solution

37. Write a C program that counts the number of integers whose digits are unique from 1 and a given integer value. Go to the editor

Test Data:

(30) -> 28

(135) -> 110

Click me to see the solution

38. Accept a positive integer (n) from the user. Write a C program that counts the number of positive integers from 1 to n whose digit sums are odd. Go to the editor

Test Data:

(5) -> 3

(10) -> 6

(11) -> 6

Function

1. Write a program in C to show the simple structure of a function.Go to the editor

Expected Output :

The total is : 11

Click me to see the solution

2. Write a program in C to find the square of any number using the function. Go to the editor

Test Data :

Input any number for square : 20

Expected Output :

The square of 20 is : 400.00

Click me to see the solution

3. Write a program in C to swap two numbers using a function. Go to the editor

Test Data :

Input 1st number : 2

Input 2nd number : 4

Expected Output :

Before swapping: n1 = 2, n2 = 4

After swapping: n1 = 4, n2 = 2

Click me to see the solution

4. Write a program in C to check if a given number is even or odd using the function. Go to the editor

Test Data :

Input any number : 5

Expected Output :

The entered number is odd.

Click me to see the solution

5. Write a program in C to find the sum of the series 1!/1+2!/2+3!/3+4!/4+5!/5 using the function. Go to the editor

Expected Output :

The sum of the series is : 34

Click me to see the solution

6. Write a program in C to convert a decimal number to a binary number using the function. Go to the editor

Test Data :

Input any decimal number : 65

Expected Output :

The Binary value is : 1000001

Click me to see the solution

7. Write a program in C to check whether a number is a prime number or not using the function. Go to the editor

Test Data :

Input a positive number : 5

Expected Output :

The number 5 is a prime number.

Click me to see the solution

8. Write a program in C to get the largest element of an array using the function. Go to the editor

Test Data :

Input the number of elements to be stored in the array :5

Input 5 elements in the array :

element - 0 : 1

element - 1 : 2

element - 2 : 3

element - 3 : 4

element - 4 : 5

Expected Output :

The largest element in the array is : 5

Click me to see the solution

9. Write a program in C to check Armstrong and Perfect numbers using the function. Go to the editor

Test Data :

Input any number: 371

Expected Output :

The 371 is an Armstrong number.

The 371 is not a Perfect number.

Click me to see the solution

10. Write a program in C to print all perfect numbers in a given range using the function. Go to the editor

Test Data :

Input lowest search limit of perfect numbers : 1

Input lowest search limit of perfect numbers : 100

Expected Output :

The perfect numbers between 1 to 100 are :

6 28

Click me to see the solution

11. Write a program in C to check whether two given strings are an anagram. Go to the editor

Test Data :

Input the first String : spare

Input the second String : pears

Expected Output :

spare and pears are Anagram.

Click me to see the solution

12. Write a C program to find the maximum and minimum of some values using a function that returns an array. Go to the editor

Test Data :

Input 5 values

25

11

35

65

20

Expected Output :

Number of values you want to input: Input 5 values

Minimum value is: 11

Maximum value is: 65

Callback function

1. Write a C program to print the square of array elements using callback function. Go to the editor

Expected Output:

Array elements before processing: 1 2 3 4 5 6

Square of the array elements after processing: 1 4 9 16 25 36

Click me to see the solution

2. Write C program to sort an array of integers in ascending or descending order using a callback function to compare the elements. Go to the editor

Expected Output:

Original array: 7 2 0 5 8 9

Ascending order: 0 2 5 7 8 9

Descending order: 9 8 7 5 2 0

Click me to see the solution

3. Write a C program to calculate the sum or product of an array of integers using a callback function. Go to the editor

Expected Output:

Original array elements: 10 20 30 40 50 60

Sum: 210

Product: 720000000

Click me to see the solution

4. Write a C program to check if a string (case-sensitive) is a palindrome or not using a callback function. Go to the editor

Expected Output:

String: Madam

Madam is not a palindrome (case-sensitive).

Madam is a palindrome (case-insensitive).

String: aba

aba is a palindrome (case-sensitive).

aba is a palindrome (case-insensitive).

Click me to see the solution

5. Write a program in C program to convert a string to uppercase or lowercase using a callback function to modify each character. Go to the editor

Expected Output:

Input a string: w3resource

Select an option:

1. Convert to uppercase

2. Convert to lowercase

1

Uppercase string: W3RESOURCE

Recursion

1. Write a program in C to print the first 50 natural numbers using recursion. Go to the editor

Expected Output:

The natural numbers are : 1 2 3

4 5 6 7 8 9 10 11 12 13

14 15 16 17 18 19 20 21

22 23 24 25 26 27 28 29 30

31 32 33 34 35 36 37 38

39 40 41 42 43 44 45 46 47

48 49 50

Click me to see the solution

2. Write a program in C to calculate the sum of numbers from 1 to n using recursion. Go to the editor

Test Data :

Input the last number of the range starting from 1 : 5

Expected Output:

The sum of numbers from 1 to 5 :

15

Click me to see the solution

3. Write a program in C to print the Fibonacci Series using recursion. Go to the editor

Test Data :

Input number of terms for the Series (< 20) : 10

Expected Output:

Input number of terms for the Series (< 20) : 10

The Series are :

1 1 2 3 5 8 13 21 34 55

Click me to see the solution

4. Write a program in C to print the array elements using recursion. Go to the editor

Test Data :

Input the number of elements to be stored in the array :6

Input 6 elements in the array :

element - 0 : 2

element - 1 : 4

element - 2 : 6

element - 3 : 8

element - 4 : 10

element - 5 : 12

Expected Output :

The elements in the array are : 2 4 6 8 10 12

Click me to see the solution

5. Write a program in C to count the digits of a given number using recursion. Go to the editor

Test Data :

Input a number : 50

Expected Output :

The number of digits in the number is : 2

Click me to see the solution

6. Write a program in C to find the sum of digits of a number using recursion. Go to the editor

Test Data :

Input any number to find sum of digits: 25

Expected Output:

The Sum of digits of 25 = 7

Click me to see the solution

7. Write a program in C to find the GCD of two numbers using recursion. Go to the editor

Test Data :

Input 1st number: 10

Input 2nd number: 50

Expected Output :

The GCD of 10 and 50 is: 10

Click me to see the solution

8. Write a program in C to get the largest element of an array using recursion. Go to the editor

Test Data :

Input the number of elements to be stored in the array :5

Input 5 elements in the array :

element - 0 : 5

element - 1 : 10

element - 2 : 15

element - 3 : 20

element - 4 : 25

Expected Output :

Largest element of an array is: 25

Click me to see the solution

9. Write a program in C to reverse a string using recursion. Go to the editor

Test Data :

Input any string: w3resource

Expected Output:

The reversed string is: ecruoser3w

Click me to see the solution

10. Write a program in C to find the Factorial of a number using recursion. Go to the editor

Test Data :

Input a number : 5

Expected Output:

The Factorial of 5 is : 120

Click me to see the solution

11. Write a program in C to convert a decimal number to binary using recursion. Go to the editor

Test Data :

Input any decimal number : 66

Expected Output :

The Binary value of decimal no. 66 is : 1000010

Click me to see the solution

12. Write a program in C to check if a number is a prime number or not using recursion. Go to the editor

Test Data :

Input any positive number : 7

Expected Output :

The number 7 is a prime number.

Click me to see the solution

13. Write a program in C to find the LCM of two numbers using recursion. Go to the editor

Test Data :

Input 1st number for LCM : 4

Input 2nd number for LCM : 6

Expected Output :

The LCM of 4 and 6 : 12

Click me to see the solution

14. Write a program in C to print even or odd numbers in a given range using recursion. Go to the editor

Test Data :

Input the range to print starting from 1 : 10

Expected Output :

All even numbers from 1 to 10 are : 2 4 6 8 10

All odd numbers from 1 to 10 are : 1 3 5 7 9

Click me to see the solution

15. Write a C program to multiply two matrices using recursion. Go to the editor

Test Data :

Input number of rows for the first matrix : 2

Input number of columns for the first matrix : 1

Input number of rows for the second matrix : 1

Input number of columns for the second matrix : 2

Input elements in the first matrix :

element - [0],[0] : 1

element - [1],[0] : 2

Input elements in the second matrix :

element - [0],[0] : 3

element - [0],[1] : 4

Expected Output :

Here is the elements of First matrix :

1

2

Here is the elements of Second matrix :

3 4

The multiplication of two matrix is :

3 4

6 8

Click me to see the solution

16. Write a C program to check whether a given string is a palindrome or not using recursion. Go to the editor

Test Data :

Input a word to check for palindrome : mom

Expected Output :

The entered word is a palindrome.

Click me to see the solution

17. Write a program in C to calculate the power of any number using recursion. Go to the editor

Test Data :

Input the base value : 2

Input the value of power : 6

Expected Output :

The value of 2 to the power of 6 is : 64

Click me to see the solution

18. Write a C program to find the Hailstone Sequence of a given number up to 1. Go to the editor

Test Data :

Input any number (positive) to start for Hailstone Sequence : 13

Expected Output :

The hailstone sequence starting at 13 is :

13 40 20 10 5 16 8 4 2 1

The length of the sequence is 10.

Click me to see the solution

19. Write a program in C to copy one string to another using recursion. Go to the editor

Test Data :

Input the string to copy : w3resource

Expected Output :

The string successfully copied.

The first string is : w3resource

The copied string is : w3resource

Click me to see the solution

20. Write a program in C to find the first capital letter in a string using recursion. Go to the editor

Test Data :

Input a string to including one or more capital letters : testString

Expected Output :

The first capital letter appears in the string testString is S.

Click me to see the solution

21. Write a program in C for binary search using recursion. Go to the editor

Test Data :

Input the number of elements to store in the array :3

Input 3 numbers of elements in the array in ascending order :

element - 0 : 15

element - 1 : 25

element - 2 : 35

Input the number to search : 35

Expected Output :

The search number found in the array.