**List of if...else programming exercises**

A.

1. Write a C program to find maximum between two numbers.
2. Write a C program to find maximum between three numbers.
3. Write a C program to check whether a number is negative, positive or zero.
4. Write a C program to check whether a number is divisible by 5 and 11 or not.
5. Write a C program to check whether a number is even or odd.
6. Write a C program to check whether a year is leap year or not.
7. Write a C program to check whether a character is alphabet or not.
8. Write a C program to input any alphabet and check whether it is vowel or consonant.
9. Write a C program to input any character and check whether it is alphabet, digit or special characters
10. Write a C program to check whether a character is uppercase or lowercase alphabet.
11. Write a C program to input week number and print week day.
12. Write a C program to input month number and print number of days in that month.
13. Write a C program to count total number of notes in given amount.
14. Write a C program to input angles of a triangle and check whether triangle is valid or not.
15. Write a C program to input all sides of a triangle and check whether triangle is valid or not.
16. Write a C program to check whether the triangle is equilateral, isosceles or scalene triangle.
17. Write a C program to find all roots of a quadratic equation.
18. Write a C program to calculate profit or loss.
19. Write a C program to input marks of five subjects Physics, Chemistry, Biology, Mathematics and Computer. Calculate percentage and grade according to following:  
    Percentage >= 90% : Grade A  
    Percentage >= 80% : Grade B  
    Percentage >= 70% : Grade C  
    Percentage >= 60% : Grade D  
    Percentage >= 40% : Grade E  
    Percentage < 40% : Grade F
20. Write a C program to input basic salary of an employee and calculate its Gross salary according to following:  
    Basic Salary <= 10000 : HRA = 20%, DA = 80%  
    Basic Salary <= 20000 : HRA = 25%, DA = 90%  
    Basic Salary > 20000 : HRA = 30%, DA = 95%
21. Write a C program to input electricity unit charges and calculate total electricity bill according to the given condition:  
    For first 50 units Rs. 0.50/unit  
    For next 100 units Rs. 0.75/unit  
    For next 100 units Rs. 1.20/unit  
    For unit above 250 Rs. 1.50/unit  
    An additional surcharge of 20% is added to the bill

**List of loop programming exercises**

1. Write a C program to print all natural numbers from 1 to n. - using while loop
2. Write a C program to print all natural numbers in reverse (from n to 1). - Using while loop
3. Write a C program to print all alphabets from a to z. - using while loop
4. Write a C program to print all even numbers from 1 to 100. - Using while loop
5. Write a C program to print all odd number from 1 to 100.
6. Write a C program to find sum of all natural numbers between 1 to n.
7. Write a C program to find sum of all even numbers between 1 to n.
8. Write a C program to find sum of all odd numbers between 1 to n.
9. Write a C program to print multiplication table of any number.
10. Write a C program to count number of digits in a number.
11. Write a C program to find first and last digit of a number.
12. Write a C program to find sum of first and last digit of a number.
13. Write a C program to swap first and last digits of a number
14. Write a C program to calculate sum of digits of a number
15. Write a C program to calculate product of digits of a number
16. Write a C program to enter a number and print its reverse
17. Write a C program to check whether a number is palindrome or not
18. Write a C program to find frequency of each digit in a given integer
19. Write a C program to enter a number and print it in words.
20. Write a C program to print all ASCII character with their values.
21. Write a C program to find power of a number using for loop.
22. Write a C program to find all factors of a number
23. Write a C program to calculate factorial of a number.
24. Write a C program to find HCF (GCD) of two numbers.
25. Write a C program to find LCM of two numbers.
26. Write a C program to check whether a number is Prime number or not.
27. Write a C program to print all Prime numbers between 1 to n.
28. Write a C program to find sum of all prime numbers between 1 to n.
29. Write a C program to find all prime factors of a number.
30. Write a C program to check whether a number is Armstrong number or not.
31. Write a C program to print all Armstrong numbers between 1 to n
32. Write a C program to check whether a number is Perfect number or not
33. Write a C program to print all Perfect numbers between 1 to n
34. Write a C program to check whether a number is Strong number or not
35. Write a C program to print all Strong numbers between 1 to n
36. Write a C program to print Fibonacci series up to n terms
37. Write a C program to find one's complement of a binary number
38. Write a C program to find two's complement of a binary number
39. Write a C program to convert Binary to Octal number system
40. Write a C program to convert Binary to Decimal number system

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

1. Write a C program to convert Binary to Hexadecimal number system.
2. Write a C program to convert Octal to Binary number system.
3. Write a C program to convert Octal to Decimal number system.
4. Write a C program to convert Octal to Hexadecimal number system.
5. Write a C program to convert Decimal to Binary number system.
6. Write a C program to convert Decimal to Octal number system.
7. Write a C program to convert Decimal to Hexadecimal number system.
8. Write a C program to convert Hexadecimal to Binary number system.
9. Write a C program to convert Hexadecimal to Octal number system.
10. Write a C program to convert Hexadecimal to Decimal number system.
11. Write a C program to print Pascal triangle up to n rows.
12. Star pattern programs - Write a C program to print the given star patterns.
13. Number pattern programs - Write a C program to print the given number patterns.

**Pattern Problem (Nested Loop)**

Title: Star patterns in C programming

<https://codeforwin.org/2015/07/star-patterns-program-in-c.html>

Title: C Programming Code To Create Pyramid and Pattern

<https://www.programiz.com/c-programming/examples/pyramid-pattern>

**List of array programming exercises**

1. Write a C program to read and print elements of array
2. Write a C program to print all negative elements in an array.
3. Write a C program to find sum of all array elements
4. Write a C program to find maximum and minimum element in an array.
5. Write a C program to find second largest element in an array.
6. Write a C program to count total number of even and odd elements in an array.
7. Write a C program to count total number of negative elements in an array.
8. Write a C program to copy all elements from an array to another array.
9. Write a C program to insert an element in an array.
10. Write a C program to delete an element from an array at specified position.
11. Write a C program to count frequency of each element in an array.
12. Write a C program to print all unique elements in the array
13. Write a C program to count total number of duplicate elements in an array
14. Write a C program to delete all duplicate elements from an array
15. Write a C program to merge two array to third array
16. Write a C program to find reverse of an array
17. Write a C program to put even and odd elements of array in two separate array
18. Write a C program to search an element in an array
19. Write a C program to sort array elements in ascending or descending order
20. Write a C program to sort even and odd elements of array separately
21. Write a C program to left rotate an array
22. Write a C program to right rotate an array

**Two Dimensional Array Practice problems**

[**C language Two Dimensional (Matrix) solved programs/examples**](https://www.includehelp.com/c-programs/c-programs-two-dimensional-array-or-matrix-programs.aspx)

**List of string programming exercises**

1. Write a C program to find length of a string.
2. Write a C program to copy one string to another string.
3. Write a C program to concatenate two strings.
4. Write a C program to compare two strings.
5. Write a C program to convert lowercase string to uppercase.
6. Write a C program to convert uppercase string to lowercase.
7. Write a C program to toggle case of each character of a string.
8. Write a C program to find total number of alphabets, digits or special character in a string.
9. Write a C program to count total number of vowels and consonants in a string.
10. Write a C program to count total number of words in a string.
11. Write a C program to find reverse of a string.
12. Write a C program to check whether a string is palindrome or not.
13. Write a C program to reverse order of words in a given string.
14. Write a C program to find first occurrence of a character in a given string.
15. Write a C program to find last occurrence of a character in a given string.
16. Write a C program to search all occurrences of a character in given string.
17. Write a C program to count occurrences of a character in given string.
18. Write a C program to find highest frequency character in a string.
19. Write a C program to find lowest frequency character in a string.
20. Write a C program to count frequency of each character in a string.
21. Write a C program to remove first occurrence of a character from string.
22. Write a C program to remove last occurrence of a character from string.
23. Write a C program to remove all occurrences of a character from string.
24. Write a C program to remove all repeated characters from a given string.
25. Write a C program to replace first occurrence of a character with another in a string.
26. Write a C program to replace last occurrence of a character with another in a string.
27. Write a C program to replace all occurrences of a character with another in a string.
28. Write a C program to find first occurrence of a word in a given string.
29. Write a C program to find last occurrence of a word in a given string.
30. Write a C program to search all occurrences of a word in given string.
31. Write a C program to count occurrences of a word in a given string.
32. Write a C program to remove first occurrence of a word from string.
33. Write a C program to remove last occurrence of a word in given string.
34. Write a C program to remove all occurrence of a word in given string.
35. Write a C program to trim leading white space characters from given string.
36. Write a C program to trim trailing white space characters from given string.
37. Write a C program to trim both leading and trailing white space characters from given string.
38. Write a C program to remove all extra blank spaces from given string.

**List of function and recursion programming exercises**

1. Write a C program to find cube of any number using function.
2. Write a C program to find diameter, circumference and area of circle using functions.
3. Write a C program to find maximum and minimum between two numbers using functions.
4. Write a C program to check whether a number is even or odd using functions.
5. Write a C program to check whether a number is prime, Armstrong or perfect number using functions.
6. Write a C program to find all prime numbers between given interval using functions.
7. Write a C program to print all strong numbers between given interval using functions.
8. Write a C program to print all Armstrong numbers between given interval using functions.
9. Write a C program to print all perfect numbers between given interval using functions.
10. Write a C program to find power of any number using recursion.
11. Write a C program to print all natural numbers between 1 to n using recursion.
12. Write a C program to print all even or odd numbers in given range using recursion.
13. Write a C program to find sum of all natural numbers between 1 to n using recursion.
14. Write a C program to find sum of all even or odd numbers in given range using recursion.
15. Write a C program to find reverse of any number using recursion.
16. Write a C program to check whether a number is palindrome or not using recursion.
17. Write a C program to find sum of digits of a given number using recursion.
18. Write a C program to find factorial of any number using recursion.
19. Write a C program to generate nth Fibonacci term using recursion.
20. Write a C program to find GCD (HCF) of two numbers using recursion.
21. Write a C program to find LCM of two numbers using recursion.
22. Write a C program to display all array elements using recursion.
23. Write a C program to find sum of elements of array using recursion.
24. Write a C program to find maximum and minimum elements in array using recursion.