C Problems For Beginners

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Simple Problems:

1. Print Hello World using printf () function.
2. Print an integer number using printf () function.
3. Print an integer number using printf () function which is taken from the user.
4. Take input of 3 integer number using scanf () function and calculate sum of them.
5. Take a character input and print its corresponding ASCII value.
6. Take an integer (0<N<128) input and print its corresponding Character.
7. Print a floating point number using printf () function.
8. Print slash (/) and backslash (\) using printf () function.
9. Take 10 input of any type of number and find out the average of them.
10. Take two integer numbers. Calculate the sum, subtraction, multiplication and division of them. Print the results in each new line.
11. Take character input using scanf () function and print the character.
12. Take a character input and print its corresponding ASCII value.
13. Print the multiplication of (a)10000 and 5000, (b)13526.325 and 132625.36
14. Take input of 5 marks of a student and print out the percentage marks. Assume that maximum mark in each subject is 200.
15. Take two integer A and B and swap them using XOR (^) operator.
    Hints: T = A^B
    A = T^A
    B = T^B

IF……..ELSE:

1. Find out the maximum and minimum number between two integer numbers.
2. Take input of an integer number. Find out whether it is positive or not.

3. Determine whether a number is odd or even.
4. Find out the maximum and minimum number between three integer numbers.
5. Take a character input. Find out whether it is UPPERCASE or NOT.
6. You have to take input of a letter. Print the same letter if the input is valid. Otherwise it will give an error message.
7. Take two integer input and find out whether they are equal or not.
8. Take Local Time (Hour, Minute and Second) as input and print GMT Time as output.
9. Take Local Time (Year, Month, Day, Hour, Minute and Second) as input and print GMT Time as output.
10. Take two integer number A and B as input and print YES if A is divisible by B and NO if not.
11. Take Year as an input and determine whether it is Leap year or not.
12. Take two integer and make the following menu
    A. addition
    B. subtraction
    C. Multiplication.
    D. division.

Now take the user choice i.e. A, B etc and print the result.

13. Take two integer and make the following menu
    1. addition
    2. subtraction
    3. Multiplication.
    4. division.

Now take the user choice i.e. 1, 2 etc and print the result.

SWITCH:

1. Take two integer and make the following menu
    A. addition
    B. subtraction
    C. Multiplication.
    D. division.

   Now take the user choice i.e. A, B etc and print the result.
2. Take two integer and make the following menu
    1. addition
    2. subtraction

3. Multiplication.
4. division.

Now take the user choice i.e. 1, 2 etc and print the result.

3. Take two integer input . Print EQUAL if the numbers are equal otherwise print NOT EQUAL.
4. . Take two integer input A and B. Print YES if A is divisible by B otherwise print NO.

FOR LOOP / WHILE LOOP:

1. 1+2+3+…….+n=? Take n as an input integer.
2. $1^2+2^2+3^2+\ldots\ldots+n^2$=? Take n as an input integer.
3. 1+3+5+……..+n=? Take n as an input integer.
4. Take two input a and d and show the following series:
   a + (a+d)+ (a+2d) + (a+3d) + ……..

5. 1.2+2.3+3.5+4.8+5.12+……..=? Take n as an input integer.
6. 1+2-3+4-……+n=? Take n as an input integer.
7. Take an integer input n and find out the sum of individual digit.
   Example: if n = 453 then Your output will be 4+5+3 = 12.
8. Find out the factorial value of input integer.
9. Take an integer input and print YES if it is a PRIME Number and NO if not.
10. Take an integer input N and print N number of PRIME number.

11. Print prime numbers up to N where N is given input.
12. Take an integer input and print it's all factors .
13. Find out the prime factors of an input integer.
14. Find out the value of X^N. Take input of X and N.
15. Print the Fibonacci series.
16. Series:
    - **Sinx,**
    - **Cosx**
    - **e^x**
    - **logx**
    - **tanx**
    - **$Log_e x$.**

17. Take an integer input and print YES if it is a Perfect Number and NO if not.
18. Take an integer input N and print N number of perfect number.
19. Take an integer(DECIMAL) input and convert it to
    - Binary number.
    - Octal number.

20. Take an integer(BINARY) input and convert it to
    - Decimal number.
    - Octal number.

21. Take an integer(OCTAL) input and convert it to
    - Binary number.
    - Decimal number.

22. Pyramids:

a. 1
   12
   123
   1234

b. 4
   43
   432
   4321

c. *
   **
   ***
   ****

d. 1 1
   12 21
   123 321
   1234321

e. 1
   1 2 1
   1 2 3 2 1
   1 2 3 4 3 2 1

f.
```
1 2 3 4 3 2 1
  1 2 3 2 1
    1 2 1
      1
```

h.
```
    4
  3 4
  2 3 4
1 2 3 4
```

h.
```
      1
    1 2 1
  1 2 3 2 1
1 2 3 4 3 2 1
  1 2 3 2 1
    1 2 1
      1
```

i.
```
1
2 3
4 5 6
7 8 9 10
```

i.
```
1
0 1
0 1 0
1 0 1 0
```

j.
```
a
b c
d e f
g h i j
```

k.
```
*
* *
* * *
      *
      * *
      * * *
            *
        * *
          * * *
```

Here, input = 3.

l.
```
1234321
123  321
12    21
1      1
```

m.
```
1234321
123  321
12    21
1      1
12    21
123  321
1234321
```

m. Take an integer N to make the following triangle according to the value of N. Your program should work for 0<N<21

```
  /\
 /__\
```
if N =1

```
   /\
  /  \
 /____\
```
if N=2;

```
   /\
  /  \
 /    \
/______\
```
if N=3

23. Write a program to display word "MIST" which blink continuously until any key pressed. Hints: See sample file BLINK.exe, use function kbhit ().
24. Write a program to display word "MIST" which move towards the right side of the screen and then bounce back from the screen until any key pressed. Hints: See sample file ANIMATION.exe.

FUNCTION:

1. Make a function named DISPLAY() and call it from main() function to print the word MIST.
2. Take an integer input and pass it to function and print it's value.
3. Take an character input and pass it to function and print it's value.
4. Take two integer inputs and pass them to a function and print their sum and average.
5. Repeat problem no 1-4 **from If….Else block** using function.
6. Take two integer inputs and calculate their sum in addition( ) function and print the sum in the main() function.
7. Take a character and make it UPPERCASE if it is a LOWERCASE letter or LOWERCASE if it is UPPERCASE and print the converted character in the main() function.
8. Write the LEAPYEAR( ) function to determine whether the input year is leap year or not.
9. Write the LEAPYEAR( ) function to determine whether the input year is leap year or not and print in the main( ) function
10. Write a function to take an integer(DECIMAL) input and convert it to
    - Binary number.
    - Octal number.

10. Write a function to take an integer (BINARY) input and convert it to
    - Decimal number
    - Octal number

11. Write a function to Take an integer (OCTAL) input and convert it to
    - Binary number.
    - Decimal number

12. Take input integer in the main( ) function, Write a function to determine whether the input integer is **perfect** or not and print **YES** in main( ) function if it is **perfect** otherwise print **NO**.

14. Take input integer in the main ( ) function. Write a function to determine whether the input integer is **prime** or not and print **YES** in main ( ) function if it is **prime** otherwise print **NO**.

15. Take input integer in the main ( ) function .Write a function to calculate the sum of the individual digits. Print out the result in the main( ) function.

16. Write different function for addition, subtraction, multiplication, division and modulus of two integer. Take two integer in the main() function and make the following menu
    1. addition
    2. subtraction
    3. Multiplication.
    4. division.
    5. Modulus.

In the function called menu() using **if statement**.Now take the user choice i.e. 1, 2 etc in the menu function and print the result in the main() function. .

17. Repeat the previous program using **switch statement**.

ARRAY:

1. Declare an array of integer of 5 numbers and print the numbers.
2. Declare an array of character of 5 numbers and print the characters.
3. Declare an array of float numbers of 5 numbers and print the float number.
4. Declare an array of integer for 5 numbers and calculate the sum of them.
5. Declare an array of integer for 5 numbers and find out the maximum number.
6. Declare an array of integer for 5 numbers and find out the minimum number.
7. Declare two array of integers. Print the **UNION** set of these two array.
8. Declare two array of integers. Print the **INTRESECTION** set of these two array.
9. Declare two array of integers. Remove the common elements from the first array and print out the rest of the numbers.
10. Take ten integers in an array and find out the frequency of numbers.
    Example: 1 1 2 2 2 3 0

0 occurred 1 times
1 occurred 2 times
2 occurred 3 times
3 occurred 1 times

11. Take your name as input using gets () function and print using puts() function. HINTS: Use string.h
12. Take a string as input and find out it's length without using built in function.
13. Take a string as input and convert all the **LOWERCASE** letters to **UPPERCASE** letter if any without using any built in function.
14. Take a string as input and convert all the **UPPERCASE** letters to **LOWERCASE** letter if any without using any built in function.
15. Take a string as input. Reverse the string within the same array and then print it. HINTS: Use SWAP.
16. Take a string input. Determine whether it is **palindrome** or not. EXAMPLE: Palindrome is a sequence of characters which is remains same if we reverse it i.e. MADAM
17. Take a string input and find out the frequency of characters..
    Example: aaabb33cddd
    a occurred 3 times
    b occurred 2 times
    c occurred 1 times
    d occurred 3 times
    3 occurred 2 times
18. Take a string input and then take a character and find out the number of occurrence of character in the input string.
19. Take two string and find out whether the second string is a **SUBSTRING** of the first string or not.
20. Take two string and print the followings:
    0 if both are equal
    1 if first string is greater than second string
    -1 if first string is less than second string
    Hints: a>b, b>c,…..,y>z.
    Example: "ab" is greater than "ac" but "ab" is less than "abd".
21. Take two string as input and store their **CONCATENATION** in a different array. Then print it as a string.
22. Take two string as input and then find out the sum of them.
    Example: "12345" + "345" = "12690"
23. Take two string as input and then find out the subtraction of them.
    Example: "12345" - "345" = "12000"

24. Take two string as input and then find out the multiplication of them. Example: “12” * ”15” = ”180”
25. Take a sentence in a string as input and convert the every first letter to UPPERCASE letter. Example: “I eat rice. You eat bread” will be printed as “I Eat Rice. You Eat Bread”
26. Take a **3**X**3** matrix (2 dimensional array) as input and then print it.
27. Take two integer **m** and **n** and then take a (**m** x **n**) matrix as input. Then print it
28. Take M x N matrix as input and find out it’s transpose.
29. Take M x N matrix and find out it’s determinant.
30. Take two matrix as input and print their sum.
31. Take two matrix **M** x **N** and **P** x **Q** as input and print their multiplication.

RECURSION:

1. Take an input **n** and print the numbers from **1** to **n**.
2. Take an input **n** and print the numbers from **n**. to **1**.
3. Take an input **n** and find out the sum of 1+2+3+…..+n.
4. Write a recursive function to find out the factorial of input **n**.
5. Write a recursive function to calculate the sum of individual digits of a number.
6. Write recursive function to find **GCD** of two integer **a** and **b.**
7. Write a recursive function to print the **Fibonacci** series.
8. Write a recursive function to calculate the value of series **Sin**x
9. Write a recursive function to calculate the value of series **Cos**x
10. Write a recursive function to print the following series :
    - 1+5+9+…….+29
    - 3+6+9+……+36
    - 1-3+5-7+……+/-25
11. Write a recursive function to perform the following conversion:
    - Decimal to Binary
    - Decimal to Octal
    - Decimal to Hexadecimal
    - Binary to Decimal
    - Octal to Decimal
12.