

C Programming - IDE

C Program to Find Factorial of a

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SIMATS ENGINEERING

C Programming

PATNALA SAI SIVARAMCHAND
192225113

Questions
106. Write a program to find the factorial of a number using recursion.

Factorial	Fibonacci	Natural numbers	GCD
Power	Reverse	Palindrome	Permutations
Combinations	Tower of Hanoi	Sum	Geometric series
Arithmetic series	Even	D to B	Length
Occurrences	Sum Array	Perfect	Reverse

```
1 #include<stdio.h>
2 long int multiplyNumbers(int n);
3 int main() {
4     int n;
5     printf("Enter a positive integer: \n");
6     scanf("%d",&n);
7     printf("Factorial of %d = %ld", n, multiplyNumbers(n));
8     return 0;
9 }
10
11 long int multiplyNumbers(int n) {
12     if (n>=1)
13         return n*multiplyNumbers(n-1);
14     else
15         return 1;
16 }
17
```

Run Save

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C Program to Find Factorial of a

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Questions
107. Write a program to calculate the nth Fibonacci number using recursion.

Factorial	Fibonacci	Natural numbers	GCD
Power	Reverse	Palindrome	Permutations
Combinations	Tower of Hanoi	Sum	Geometric series
Arithmetic series	Even	D to B	Length
Occurrences	Sum Array	Perfect	Reverse

```
1
2 #include <stdio.h>
3 int fib(int n)
4 {
5     int a = 0, b = 1, c, i;
6     if (n == 0)
7         return a;
8     for (i = 2; i <= n; i++) {
9         c = a + b;
10        a = b;
11        b = c;
12    }
13    return b;
14 }
15
16 int main()
17 {
18     int n = 9;
19     printf("%d", fib(n));
20     getchar();
21     return 0;
22 }
```

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```
1 #include <stdio.h>
2
3 int addNumbers(int n);
4
5 int main() {
6
7     int num;
8     printf("Enter a positive integer: ");
9     scanf("%d", &num);
10    printf("Sum = %d", addNumbers(num));
11    return 0;
12 }
13
14 int addNumbers(int n) {
15     if (n != 0)
16         return n + addNumbers(n - 1);
17     else
18         return n;
19 }
20
```

25

Enter a positive integer: Sum = 36

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```
1 #include <stdio.h>
2 int power(int n1, int n2);
3 int main() {
4     int base, a, result;
5     printf("Enter base number: ");
6     scanf("%d", &base);
7     printf("Enter power number(positive integer): ");
8     scanf("%d", &a);
9     result = power(base, a);
10    printf("Kd*Kd = %d", base, a, result);
11    return 0;
12 }
13
14 int power(int base, int a) {
15     if (a != 0)
16         return (base * power(base, a - 1));
17     else
18         return 1;
19 }
20
```

25

Enter base number: Enter power number(positive integer): 8*9 = 134217728

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```
1 #include <stdio.h>
2 #include <string.h>
3 int main()
4 {
5     char str[40];
6     printf (" \n Enter a string to be reversed: ");
7     scanf ("%s", str);
8
9     printf (" \n After the reverse of a string: %s ", strrev(str));
10    return 0;
11 }
```

25

Enter a string to be reversed:
After the reverse of a string: @B@#6B@

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```
1 #include <stdio.h>
2 #include <string.h>
3
4 void check(char [], int);
5
6 int main()
7 {
8     char word[15];
9
10    printf("Enter a word to check if it is a palindrome\n");
11    scanf("%s", word);
12    check(word, 0);
13
14    return 0;
15 }
16
17 void check(char word[], int index)
18 {
19     int len = strlen(word) - (index + 1);
20     if (word[index] == word[len])
21     {
22         if (index + 1 == len || index == len)
23         {
24             printf("The entered word is a palindrome\n");
25             return;
26         }
27         check(word, index + 1);
28     }
29     else
30     {
31         printf("The entered word is not a palindrome\n");
32     }
33 }
```

Your INPUT go's here! Give only values. do not give like a=10

Enter a word to check if it is a palindrome
The entered word is not a palindrome

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Questions

106. Write a program to find the factorial of a number using recursion.

Run Save

```
1 #include<stdio.h>
2 long int multiplyNumbers(int n);
3 int main() {
4     int n;
5     printf("Enter a positive integer: \n");
6     scanf("%d",&n);
7     printf("Factorial of %d = %ld", n, multiplyNumbers(n));
8     return 0;
9 }
10
11 long int multiplyNumbers(int n) {
12     if (n==1)
13         return n*multiplyNumbers(n-1);
14     else
15         return 1;
16 }
17
```

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Questions

107. Write a program to calculate the nth Fibonacci number using recursion.

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```
1 #include <stdio.h>
2 int fib(int n)
3 {
4     int a = 0, b = 1, c, i;
5     if (n == 0)
6         return a;
7     for (i = 2; i <= n; i++) {
8         c = a + b;
9         a = b;
10        b = c;
11    }
12    return b;
13 }
14
15 int main()
16 {
17     int n = 0;
18     printf("%d", fib(n));
19     getchar();
20     return 0;
21 }
22
```

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```
1 #include <stdio.h>
2 #include <string.h>
3 int main()
4 {
5     char str[40];
6     printf (" \n Enter a string to be reversed: ");
7     scanf ("%s", str);
8
9     printf (" \n After the reverse of a string: %s ", strrev(str));
10    return 0;
11 }
```

25

Enter a string to be reversed:
After the reverse of a string: @B@#6@

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```
1 #include <stdio.h>
2 #include <string.h>
3
4 void check(char [], int);
5
6 int main()
7 {
8     char word[15];
9
10    printf("Enter a word to check if it is a palindrome\n");
11    scanf("%s", word);
12    check(word, 0);
13
14    return 0;
15 }
16
17 void check(char word[], int index)
18 {
19     int len = strlen(word) - (index + 1);
20     if (word[index] == word[len])
21     {
22         if (index + 1 == len || index == len)
23         {
24             printf("The entered word is a palindrome\n");
25             return;
26         }
27         check(word, index + 1);
28     }
29     else
30     {
31         printf("The entered word is not a palindrome\n");
32     }
33 }
```

Your INPUT go's here! Give only values, do not give like a=18

Enter a word to check if it is a palindrome
The entered word is not a palindrome

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```
1 #include <stdio.h>
2 #include <string.h>
3 void swap(char* x, char* y)
4 {
5     char temp;
6     temp = *x;
7     *x = *y;
8     *y = temp;
9 }
10 void permute(char* a, int l, int r)
11 {
12     int i;
13     if (l == r)
14         printf("%s\n", a);
15     else {
16         for (i = l; i <= r; i++) {
17             swap((a + l), (a + i));
18             permute(a, l + 1, r);
19             swap((a + l), (a + i));
20         }
21     }
22 }
23 int main()
24 {
25     char str[] = "ABC";
26     int n = strlen(str);
27     permute(str, 0, n - 1);
28     return 0;
29 }
```

Your INPUT go's here! Give only values. do not give like a=10

ABC
ACB
BAC
BCA
CBA
CAB

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```
1 #include <stdio.h>
2 #include <string.h>
3 #define N 10
4
5 void print(int *num, int n)
6 {
7     int i;
8     for (i = 0; i < n; i++)
9         printf("%d ", num[i]);
10    printf("\n");
11 }
12 int main()
13 {
14     int num[N];
15     int *ptr;
16     int temp;
17     int i, n, j;
18     printf("\nEnter how many number you want to enter: ");
19     scanf("%d", &n);
20     printf("\nEnter a list of numbers to see all combinations:\n");
21     for (i = 0; i < n; i++)
22         scanf("%d", &num[i]);
23     for (j = 1; j <= n; j++) {
24         for (i = 0; i < n - j + 1; i++) {
25             temp = num[i];
26             num[i] = num[i + j - 1];
27             num[i + j - 1] = temp;
28             print(num, n);
29         }
30     }
31     return 0;
32 }
```

Your INPUT go's here! Give only values. do not give like a=10

How many number you want to enter:
Enter a list of numbers to see all combinations:

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```
#include <stdio.h>
2
3 void towers(int, char, char, char);
4
5 int main()
6 {
7     int num;
8
9     printf("Enter the number of disks : ");
10    scanf("%d", &num);
11    printf("The sequence of moves involved in the Tower of Hanoi are :\n");
12    towers(num, 'A', 'C', 'B');
13    return 0;
14 }
15 void towers(int num, char frompeg, char topeg, char auxpeg)
16 {
17     if (num == 1)
18     {
19         printf("\n Move disk 1 from peg %c to peg %c", frompeg, topeg);
20         return;
21     }
22     towers(num - 1, frompeg, auxpeg, topeg);
23     printf("\n Move disk %d from peg %c to peg %c", num, frompeg, topeg);
24     towers(num - 1, auxpeg, topeg, frompeg);
25 }
```

3

Enter the number of disks : The sequence of moves involved in the Tower of Hanoi are :

Move disk 1 from peg A to peg C
Move disk 2 from peg A to peg B
Move disk 1 from peg C to peg B
Move disk 3 from peg A to peg C
Move disk 1 from peg B to peg A
Move disk 2 from peg B to peg C
Move disk 1 from peg A to peg C

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Run Save

```
#include <stdio.h>
2 int sum_of_digit(int n)
3 {
4     if (n == 0)
5     return 0;
6     return (n % 10 + sum_of_digit(n / 10));
7 }
8
9 int main()
10 {
11     int num = 12345;
12     int result = sum_of_digit(num);
13     printf("Sum of digits in %d is %d\n", num, result);
14     return 0;
15 }
```

3

Sum of digits in 12345 is 15

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```
#include <stdio.h>
#include <math.h>
int Nth_of_GP(int a, int r, int n) {
    return( a * (int)(pow(r, n - 1)) );
}
int main() {
    int a = 1;
    int r = 2;
    int n = 8;
    printf("The %dth term of the series is: %d", n, Nth_of_GP(a, r, n) );
    return 0;
}
```

The 8th term of the series is: 128

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```
#include <stdio.h>
int nth_ap(int a, int d, int n) {
    return (a + (n - 1) * d);
}
int main() {
    int a = 2;
    int d = 1;
    int n = 5;
    printf("The %dth term of AP :%d", n, nth_ap(a,d,n));
    return 0;
}
```

The 5th term of AP :6

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Run Save

```
1 #include<stdio.h>
2 int SumEven(int num1, int num2)
3 {
4     if(num1>num2)
5         return 0;
6     return num1+SumEven(num1+2,num2);
7 }
8 int main()
9 {
10     int num1=2,num2;
11     printf("Enter your Limit:\n");
12     scanf("%d",&num2);
13     printf("Sum of all Even numbers in the given range is: %d",SumEven(num1,num2));
14 }
```

3

Enter your Limit:
Sum of all Even numbers in the given range is: 30

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Run Save

```
1 #include <stdio.h>
2
3 int decimal_binary(int n)
4 {
5     if (n==0)
6         return 0;
7     else
8         return ((n%2)+10*decimal_binary(n/2));
9 }
10
11 void main()
12 {
13     int no;
14
15     printf("Enter a decimal number\n");
16     scanf("%d",&no);
17     printf("Decimal(%d) = Binary(%d)\n",no,decimal_binary(no));
18 }
```

3

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```
1 #include<stdio.h>
2
3 int find_len (char [], int);
4
5 int main ()
6 {
7     char str[100]="Let's Learn C Programming";
8     int len = 0;
9
10    len = find_len (str, 0);
11
12    printf ("The length of the given string is: %d\n", len);
13    return 0;
14 }
15
16
17 int find_len (char str[], int index){
18     static int l = 0;
19
20     if (str[index] == '\0')
21         return l;
22     else
23         l++;
24     find_len (str, index + 1);
25 }
26
27
```

Your INPUT go's here! Give only values. do not give like a=10

The length of the given string is: 25

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Run Save

```
1
2 #include <stdio.h>
3 #include <string.h>
4
5 int main()
6 {
7     char s[1000],c;
8     int i,count=0;
9
10    printf("Enter the string :\n");
11    gets(s);
12    printf("Enter character to be searched: \n");
13    c=getchar();
14
15    for(i=0;s[i];i++)
16    {
17        if(s[i]==c)
18        {
19            count++;
20        }
21    }
22
23    printf("character '%c' occurs %d times \n ",c,count);
24
25
26    return 0;
27 }
28
```

Your INPUT go's here! Give only values. do not give like a=10

Enter the string :
Enter character to be searched:
character 'l' occurs 2 times

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```

2 #include <math.h>
3 int main()
4 {
5     int n;
6     printf("Enter the number :--> ");
7     scanf("%d", &n);
8     if(pow((int)sqrt(n), 2) == n)
9     {
10         printf("Perfect Square ");
11     }
12     else
13     {
14         printf("Not a perfect square");
15     }
16     return 0;
17 }

```

Your OUTPUT go's here!

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Top Events

ENG IN 10:51 05/08/2023

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```
#include <stdio.h>
#include <math.h>
int reverse(int num);
int main()
{
    int num, rev;
    printf("Enter any number: ");
    scanf("%d", &num);
    rev = reverse(num);
    printf("Reverse of %d = %d", num, rev);
    return 0;
}
int reverse(int num)
{
    int digit = (int) log10(num);
    if(num == 0)
        return 0;
    return ((num%10 * pow(10, digit)) + reverse(num/10));
}
```

Your INPUT go's here! Give only values. do not give like a=10

Enter any number: Reverse of 16 = 61

Activate Windows
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```
#include <stdio.h>
int main() {
    int a, b, temp;
    int *ptr1, *ptr2;
    printf("Enter the value of a and b: ");
    scanf("%d %d", &a, &b);
    printf("\nBefore swapping a = %d and b = %d", a, b);
    ptr1 = &a;
    ptr2 = &b;
    temp = *ptr1;
    *ptr1 = *ptr2;
    *ptr2 = temp;
    printf("\nAfter swapping a = %d and b = %d", a, b);
    return 0;
}
```

5
8

Enter the value of a and b:
Before swapping a = 5 and b = 8
After swapping a = 8 and b = 5

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ENG IN 12:38 05/08/2023

The screenshot shows a web browser window with the address bar displaying '172.18.56.186/courses/c_program/onlineide.php'. The browser's address bar also shows 'C Programming' and a user profile icon for 'PATNALA SAI SIVA RAMCHAND 192225113'. The main content area displays the output of a C program. The program code is visible in a dark-themed editor on the left, and the output is shown in a light-themed area on the right. The output text is: 'Studytonight - Best place to learn', 'Enter the first string:', 'Enter the second string to be concatenated:', 'The string after concatenation is: Studytonight - Best place to learn'. The program code is as follows:

```
1 #include <stdio.h>
2
3 int main()
4 {
5     printf("Studytonight - Best place to learn");
6     char aa[100], bb[100];
7
8     printf("\nEnter the first string: ");
9     gets(aa);
10    printf("\nEnter the second string to be concatenated: ");
11    gets(bb);
12    char *a = aa;
13    char *b = bb;
14    while(*a)
15    {
16        a++;
17    }
18    while(*b)
19    {
20        *a = *b;
21        b++;
22        a++;
23    }
24    *a = '\0';
25    printf("The string after concatenation is: %s ", aa);
26    printf("Coding is Fun !");
27    return 0;
28 }
```

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```
#include <stdio.h>
#define ARRAY_SIZE(a) sizeof(a)/sizeof(a[0])
int main()
{
    int arr[] = { 1, 2, 3, 4, 5 };
    int evenNumCount = 0, oddNumCount = 0;
    int i;
    const int N = ARRAY_SIZE(arr);
    for( i = 0; i < N; i++)
    {
        if(arr[i] % 2 == 0)
        {
            evenNumCount++;
        }
        else
        {
            oddNumCount++;
        }
    }
    printf("Even elements = %d\n", evenNumCount);
    printf("Odd elements = %d", oddNumCount);
    return 0;
}
```

5
8

Your OUTPUT go's here!

Activate Windows
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C Programming - IDE

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SIMATS
ENGINEERING

C Programming

PATNALA SAI SIVA RAMCHAND
192225113

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```
#include <stdio.h>
int main()
{
    int n, s[1000], a = 1, d = 1, i;
    scanf("%d", &n);
    for( i = 0; i < n; i++)
        scanf("%d", &s[i]);
    i = 0;
    while ((a == 1 || d == 1) && i < n - 1) {
        if (s[i] < s[i+1])
            d = 0;
        else if (s[i] > s[i+1])
            a = 0;
        i++;
    }
    if (a == 1)
        printf("The array is sorted in ascending order.\n");
    else if (d == 1)
        printf("The array is sorted in descending order.\n");
    else
        printf("The array is not sorted.\n");
    return 0;
}
```

5
8

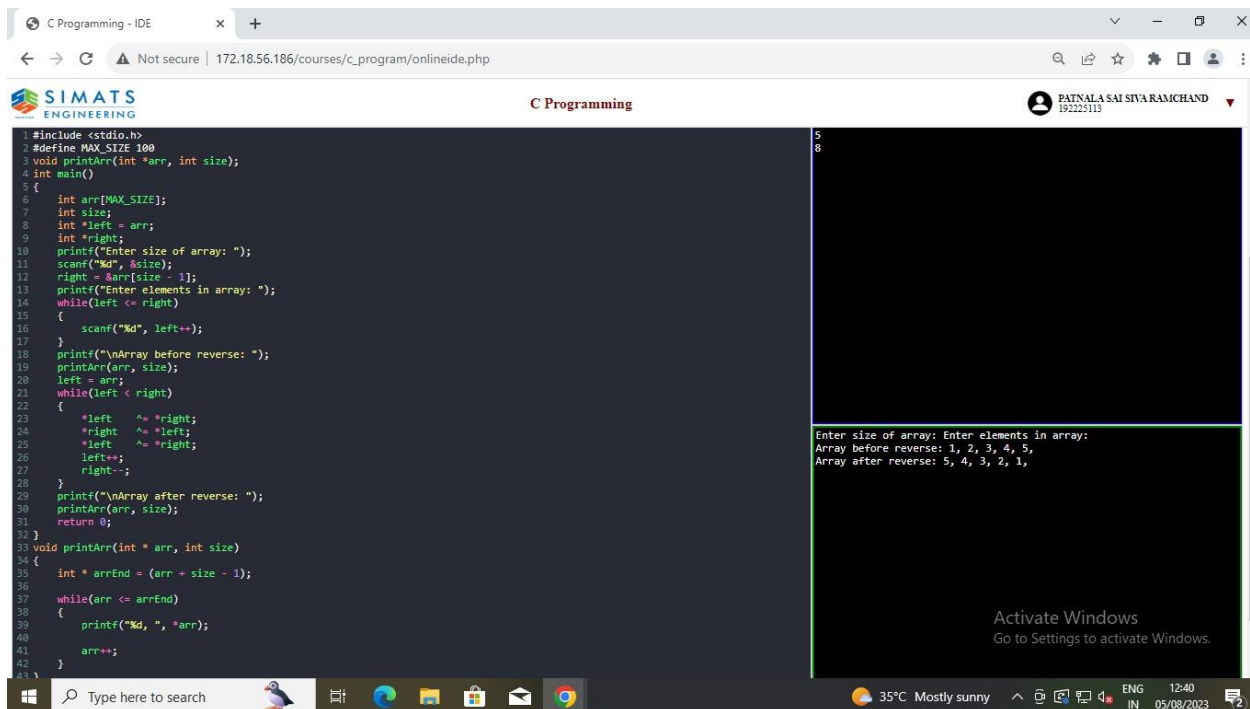
The array is not sorted.

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The screenshot shows a web browser window displaying a C program in an IDE. The browser's address bar shows the URL "http://172.18.56.186/courses/c_program/onlineide.php". The page title is "C Programming". The user profile picture and name "PATNALA SAI SIVA RAMCHANDR" are visible in the top right corner.

The IDE interface has a yellow status bar at the top indicating "Run", "Save", and "Changes Updated, Saved 152". The main editor area contains the following C code:

```
1 #include <stdio.h>
2 #define ROW 2
3 #define COL 3
4 int sum(int(*array)[3]);
5 int main(void)
6 {
7     int a[ROW][COL] = { {1, 2, 3},
8                         {4, 5, 6} };
9     printf("sum = %d\n", sum(a));
10    return 0;
11 }
12 int sum(int(*array)[3])
13 {
14     int i,j, sum = 0;
15     for(i=0; i<ROW; i++) {
16         for(j=0; j<COL; j++) {
17             sum = sum + *(array+i)-j);};
18         }
19     }
20 }
```

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```
#include <stdio.h>
2 int main()
3 {
4     char str[100];
5     char *ptr=str;
6     int count=0;
7     printf("Enter the string:\n");
8     gets(str);
9     while(*ptr!='\0')
10     {
11         count++;
12         ptr++;
13     }
14     printf("Length of string= %d",count);
15     return 0;
16 }
```

Your INPUT go's here! Give only values, do not give like a=10

Enter the string:
Length of string= 3

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```
#include <stdio.h>
2 void sort(int n, int* ptr)
3 {
4     int i, j, t;
5     for (i = 0; i < n; i++) {
6         for (j = i + 1; j < n; j++) {
7             if (*(ptr + j) < *(ptr + i)) {
8                 t = *(ptr + i);
9                 *(ptr + i) = *(ptr + j);
10                *(ptr + j) = t;
11            }
12        }
13    }
14    for (i = 0; i < n; i++)
15        printf("%d ", *(ptr + i));
16 }
17
18 int main()
19 {
20     int n = 5;
21     int arr[] = { 0, 23, 14, 12, 9 };
22     sort(n, arr);
23     return 0;
24 }
```

Your INPUT go's here! Give only values, do not give like a=10

0 9 12 14 23

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SIMATS ENGINEERING C Programming

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```
#include <stdio.h>
2 int sum (int a);
3 int main()
4 {
5     int num, result;
6
7     printf("Enter the number:\n ");
8     scanf("%d", &num);
9     result = sum(num);
10    printf("Sum of digits in %d is %d\n", num, result);
11    return 0;
12 }
13 int sum (int num)
14 {
15     if (num != 0)
16     {
17         return (num % 10 + sum (num / 10));
18     }
19     else
20     {
21         return 0;
22     }
23 }
```

22

Enter the number:
Sum of digits in 22 is 4

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Top Events

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```
#include <stdio.h>
2 int power(int n1, int n2);
3 int main() {
4     int base, a, result;
5     printf("Enter base number:\n ");
6     scanf("%d", &base);
7     printf("Enter power number(positive integer):\n ");
8     scanf("%d", &a);
9     result = power(base, a);
10    printf("%d*d = %d", base, a, result);
11    return 0;
12 }
13
14 int power(int base, int a) {
15     if (a != 0)
16         return (base * power(base, a - 1));
17     else
18         return 1;
19 }
20
```

Your INPUT go's here! Give only values. do not give like a=10

Enter base number: Enter power number(positive Integer): 5*3 = 125

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```
#include <stdio.h>
int hcf(int n1, int n2);
int main() {
    int n1, n2;
    printf("Enter two positive integers: ");
    scanf("%d %d", &n1, &n2);
    printf("G.C.D of %d and %d is %d.", n1, n2, hcf(n1, n2));
    return 0;
}

int hcf(int n1, int n2) {
    if (n2 != 0)
        return hcf(n2, n1 % n2);
    else
        return n1;
}
```

Your INPUT go's here! Give only values. do not give like a=10

Enter two positive integers: G.C.D of 0 and 16 is 16.

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recursive permutations recursive string reverse recursive tower of Hanoi recursive permutations
recursive sum of even recursive B to D recursive Fibonacci sum recursive Sudoku

Run Save Changes Updated, Saved 206

```
#include <stdio.h>
#define ARRAY_SIZE(a) sizeof(a)/sizeof(a[0])
int sumArrayElements(int arr[], const int N)
{
    if (N <= 0)
    {
        return 0;
    }
    return (sumArrayElements(arr, N - 1) + arr[N - 1]);
}

int main()
{
    int arr[] = { 1, 2, 3, 4, 5 };
    const int N = ARRAY_SIZE(arr);
    printf("%d\n", sumArrayElements(arr, N));
    return 0;
}
```

Your INPUT go's here! Give only values. do not give like a=10

15

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```
1 #include <stdio.h>
2
3 void towers(int, char, char, char);
4
5 int main()
6 {
7     int num;
8
9     printf("Enter the number of disks : ");
10    scanf("%d", &num);
11    printf("The sequence of moves involved in the Tower of Hanoi are :\n");
12    towers(num, 'A', 'C', 'B');
13    return 0;
14 }
15 void towers(int num, char frompeg, char topeg, char auxpeg)
16 {
17     if (num == 1)
18     {
19         printf("\n Move disk 1 from peg %c to peg %c", frompeg, topeg);
20         return;
21     }
22     towers(num - 1, frompeg, auxpeg, topeg);
23     printf("\n Move disk %d from peg %c to peg %c", num, frompeg, topeg);
24     towers(num - 1, auxpeg, topeg, frompeg);
25 }
```

ram

Enter the number of disks : The sequence of moves involved in the Tower of Hanoi are :

- Move disk 1 from peg A to peg C
- Move disk 2 from peg A to peg B
- Move disk 1 from peg C to peg B
- Move disk 3 from peg A to peg C
- Move disk 1 from peg B to peg A
- Move disk 2 from peg B to peg C
- Move disk 1 from peg A to peg C

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```
1 #include <stdio.h>
2 #include <string.h>
3 void swap(char* x, char* y)
4 {
5     char temp;
6     temp = *x;
7     *x = *y;
8     *y = temp;
9 }
10 void permute(char* a, int l, int r)
11 {
12     int i;
13     if (l == r)
14         printf("%s\n", a);
15     else {
16         for (i = l; i <= r; i++) {
17             swap((a + l), (a + i));
18             permute(a, l + 1, r);
19             swap((a + l), (a + i));
20         }
21     }
22 }
23 int main()
24 {
25     char str[] = "ABC";
26     int n = strlen(str);
27     permute(str, 0, n - 1);
28     return 0;
29 }
```

ram

ABC
ACB
BAC
BCA
CBA
CAB

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```
1 #include <stdio.h>
2 void SumOfEven(int a[],int num,int sum);
3 void main()
4 {
5     int i,[100],num,sum=0;
6     printf("Enter number of Array Elements\n");
7     scanf("%d",&num);
8     printf("Enter Array Elements\n");
9     for(i=0;i<num;i++)
10    {
11        scanf("%d",&a[i]);
12    }
13    SumOfEven(a,num-1,sum);
14 }
15
16 void SumOfEven(int a[],int num,int sum)
17 {
18     if(num==0)
19     {
20         if((a[num])%2==0)
21         {
22             sum+=a[num];
23         }
24         SumOfEven(a,num-1,sum);
25     }
26     else
27     {
28         printf("Sum=%d\n",sum);
29         return;
30     }
31 }
32 }
```

5
1 2 3 4 5

Enter number of Array Elements
Enter Array Elements
Sum=6

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```
1 #include <stdio.h>
2 int calculateEvenSum(int n)
3 {
4     if (n <= 0)
5         return 0;
6     int fibo[2 * n + 1];
7     fibo[0] = 0, fibo[1] = 1;
8
9     int sum = 0;
10
11     for (int i = 2; i <= 2 * n; i++) {
12         fibo[i] = fibo[i - 1] + fibo[i - 2];
13
14         if (i % 2 == 0)
15             sum += fibo[i];
16     }
17
18     return sum;
19 }
20
21 int main()
22 {
23     int n;
24     scanf("%d",&n);
25     printf("Even Indexed Fibonacci Sum upto %d terms: %d\n", n, calculateEvenSum(n));
26     return 0;
27 }
28
29
30
```

5

Even indexed Fibonacci Sum upto 5 terms: 88

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```
31 }
32 int solveSudoku(int grid[N][N], int row, int col)
33 {
34     if (row == N - 1 && col == N)
35         return 1;
36     if (col == N)
37     {
38         row++;
39         col = 0;
40     }
41     if (grid[row][col] > 0)
42         return solveSudoku(grid, row, col + 1);
43     for (int num = 1; num <= N; num++)
44     {
45         if (isSafe(grid, row, col, num)==1)
46         {
47             grid[row][col] = num;
48             if (solveSudoku(grid, row, col + 1)==1)
49                 return 1;
50         }
51         grid[row][col] = 0;
52     }
53     return 0;
54 }
55
56 int main()
57 {
58     int grid[N][N] = { { 3, 0, 6, 5, 0, 8, 4, 0, 0 },
59                        { 5, 2, 0, 0, 0, 0, 0, 0, 0 },
60                        { 0, 8, 7, 0, 0, 0, 0, 3, 1 },
61                        { 0, 0, 3, 0, 1, 0, 0, 0, 0 },
62                        { 0, 0, 0, 8, 6, 3, 0, 0, 5 },
63                        { 0, 5, 0, 0, 9, 0, 6, 0, 0 },
64                        { 1, 3, 0, 0, 0, 0, 2, 5, 0 },
65                        { 0, 0, 0, 0, 0, 0, 0, 7, 4 },
66                        { 0, 0, 5, 2, 0, 6, 3, 0, 0 } };
67
68     if (solveSudoku(grid, 0, 0)==1)
69         print(grid);
70     else
71         ;
```

Your INPUT go's here! Give only values. do not give like a=10

```
3 1 6 5 7 8 4 9 2
5 2 9 1 3 4 7 6 8
4 8 7 6 2 9 5 3 1
2 6 3 4 1 5 9 8 7
9 7 4 8 6 3 1 2 5
8 5 1 7 9 2 6 4 3
1 3 8 9 4 7 2 5 6
6 9 2 3 5 1 8 7 4
7 4 5 2 8 6 3 1 9
```

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```
1 #include <stdio.h>
2
3 int find(int decimal_number)
4 {
5     if (decimal_number == 0)
6         return 0;
7     else
8         return (decimal_number % 2 + 10 *
9                 find(decimal_number / 2));
10 }
11 int main()
12 {
13     int decimal_number;
14     scanf("%d", &decimal_number);
15     printf("%d", find(decimal_number));
16     return 0;
17 }
18
```

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5

101

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SEARCH

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ENGINEERING

C Programming

PATNALA SAI SIVA RAMCHAND

192222113

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```
1 #include <stdio.h>
2
3 int count_ways(int nums[], int target, int index, int size) {
4     if (target == 0) {
5         return 1;
6     }
7     if (index == size) {
8         return 0;
9     }
10    int count = 0;
11    count += count_ways(nums, target - nums[index], index + 1, size);
12    count += count_ways(nums, target, index + 1, size);
13    return count;
14 }
15
16 int main() {
17     int nums[] = {1, 2, 3, 4, 5};
18     int target = 7;
19     int size = sizeof(nums) / sizeof(nums[0]);
20     int ways = count_ways(nums, target, 0, size);
21     printf("Number of ways to reach target sum: %d\n", ways);
22     return 0;
23 }
```

Your INPUT go's here! Give only values, do not give like a=10

Number of ways to reach target sum: 3

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```
1 #include <stdio.h>
2 void checkPrime(int N)
3 {
4     int flag = 1;
5     for (int i = 2; i <= N / 2; i++) {
6         if (N % i == 0) {
7             flag = 0;
8             break;
9         }
10    }
11    if (flag) {
12        printf("The number %d is a Prime Number\n", N);
13    }
14    else {
15        printf("The number %d is not a Prime Number\n", N);
16    }
17    return;
18 }
19
20 int main()
21 {
22     int N;
23     scanf("%d", &N);
24     checkPrime(N);
25     return 0;
26 }
```

15

The number 15 is not a Prime Number

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