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May 5 Home questions

#1. WAP to test whether a number num (num is entered through keyboard) is a number in the Fibonacci sequence or not.

Code:

```c
#include <stdio.h>
int main()
{
    int fib_285[100],num_285,i_285,j_285,flag=0;
    printf("Please provide your number\n");
    scanf("%d",&num_285);
    fib_285[0]=0;
    fib_285[1]=1;
    fib_285[2]=fib_285[1]+fib_285[0];
    for(i_285=0;i_285<50;i_285++)
    {
        fib_285[i_285+2]=fib_285[i_285+1]+fib_285[i_285];
    }
    for(i_285=0;i_285<50;i_285++)
    {
        if(num_285==fib_285[i_285])
        {
            printf("Yes, %d is in the fibonacci series located on the %d
term\n",num_285,i_285);
            flag++;
            break;
        }
    }
    if(flag==0)
    {
        printf("No, %d is not in the fibonacci series!\n",num_285,i_285);
    }
    return 0;
}
```

Output:

```
PS C:\Users\KIIT\Desktop\Programming\05_may functions> gcc fibonacci.c
PS C:\Users\KIIT\Desktop\Programming\05_may functions> ./a.exe
Please provide your number
16
No, 16 is not in the fibonacci series!
PS C:\Users\KIIT\Desktop\Programming\05_may functions>
```

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```
PS C:\Users\KIIT\Desktop\Programming\05_may functions> ./a.exe
Please provide your number
8
Yes, 8 is in the fibonacci series located on the 6 term
PS C:\Users\KIIT\Desktop\Programming\05_may functions>
```

#2. WAP to compute the power series (e to the power x).
Code:

```c
#include <stdio.h>
#include <math.h>
float fact(float f_285)
{
    float i_285,n_285;
    n_285=f_285;
    for(i_285=1;i_285<f_285;i_285++)
    {
        n_285=n_285*(f_285-i_285);
    }
    return n_285;
}
int main()
{
    float terms_285,x_285,i_285,qoutient_285,sum_285=0;
    printf("How many terms do you want to be added\n");
    scanf("%f",&terms_285);
    printf("What is our 'x'?\n");
    scanf("%f",&x_285);
    for(i_285=1;i_285<=terms_285;i_285++)
    {
        qoutient_285= pow(x_285,i_285)/fact(i_285);
        sum_285=sum_285+qoutient_285;
    }
    printf("%f is the value of e^%f\n",sum_285+1,x_285);
    return 0;
}
```

Output:

```
PS C:\Users\KIIT\Desktop\Programming\05_may functions> gcc exponential.c
PS C:\Users\KIIT\Desktop\Programming\05_may functions> ./a.exe
How many terms do you want to be added
10
What is our 'x'?
10
12842.304688 is the value of e^10.000000
PS C:\Users\KIIT\Desktop\Programming\05_may functions>
```

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#3. WAP to find the LCM of two numbers a and b by using a suitable function (say LCM) for this.
Code:

```c
#include <stdio.h>
void LCM(int a_285,int b_285)
{
    int i_285,result_285;
    for(i_285=1;i_285<5000;i_285++)
    {
        if(i_285%a_285==0 && i_285%b_285==0)
        {
            printf("LCM of %d and %d is %d\n",a_285,b_285,i_285);
            break;
        }
    }
}
int main()
{
    int a_285,b_285;
    printf("Please provide the two numbers\n");
    scanf("%d%d",&a_285,&b_285);
    LCM(a_285,b_285);
    return 0;
}
```

Output:

```
PS C:\Users\KIIT\Desktop\Programming\05_may functions> gcc LCM_function.c
PS C:\Users\KIIT\Desktop\Programming\05_may functions> ./a.exe
Please provide the two numbers

6 10
LCM of 6 and 10 is 30
PS C:\Users\KIIT\Desktop\Programming\05_may functions>
```

```
PS C:\Users\KIIT\Desktop\Programming\05_may functions> ./a.exe
Please provide the two numbers
2 3
LCM of 2 and 3 is 6
PS C:\Users\KIIT\Desktop\Programming\05_may functions>
```

#4. A Fibonacci sequence is defined as follows: the first and second terms in the sequence are 0 and 1. Subsequent terms are found by adding the preceding two terms in the sequence (Fi = Fi−1 + Fi−2).

Code:

```c
#include <stdio.h>
int main()
{
```

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```
    int fib_285[100],num_285,i_285,j_285;
    printf("How many fibonacci terms do you want to be printed out?\n");
    scanf("%d",&num_285);
    fib_285[0]=0;
    fib_285[1]=1;
    fib_285[2]=fib_285[1]+fib_285[0];
    for(i_285=0;i_285<num_285;i_285++)
    {
        fib_285[i_285+2]=fib_285[i_285+1]+fib_285[i_285];
    }
    printf("Your fibonacci series is as follows\n");
    for(i_285=0;i_285<num_285;i_285++)
    {
        printf("%d ",fib_285[i_285]);
    }
    return 0;
}
```

Output:

```
PS C:\Users\KIIT\Desktop\Programming\05_may functions> gcc printing_fibonacci.c
PS C:\Users\KIIT\Desktop\Programming\05_may functions> ./a.exe
How many fibonacci terms do you want to be printed out?
15
Your fibonacci series is as follows
0 1 1 2 3 5 8 13 21 34 55 89 144 233 377
PS C:\Users\KIIT\Desktop\Programming\05_may functions>
```