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May 7_9 Lab questions

#1. 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\09_may_recursion> gcc LCM_again.c
PS C:\Users\KIIT\Desktop\Programming\09_may_recursion> ./a.exe
Please provide the two numbers
10 20
LCM of 10 and 20 is 20
PS C:\Users\KIIT\Desktop\Programming\09_may_recursion>
```

```
PS C:\Users\KIIT\Desktop\Programming\09_may_recursion> ./a.exe
Please provide the two numbers
2 3
LCM of 2 and 3 is 6
PS C:\Users\KIIT\Desktop\Programming\09_may_recursion>
```

#2. WAP to find out the sum of n elements of an integer array a[] by using recursion.

Code:

```c
#include <stdio.h>
int SUM(int A_285[],int n_285)
```

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```
{
    int sum_285,b;
    if(n_285==0)
    {
        return A_285[0];
    }
    else
    {
        sum_285=A_285[n_285]+SUM(A_285,n_285-1);
    }
    return sum_285;
}
int main()
{
    int i,A_285[30],num_285,sum_285;
    printf("Please provide the number of your elements\n_285");
    scanf("%d",&num_285);
    printf("Please provide the elements of your list\n_285");
    for(i=0;i<num_285;i++)
    {
        scanf("%d",&A_285[i]);
    }
    sum_285=SUM(A_285,num_285-1);
    printf("The sum of your elements is %d\n_285",sum_285);
}
```

Output:

```
PS C:\Users\KIIT\Desktop\Programming\09_may_recursion> gcc sum_recursion.c
PS C:\Users\KIIT\Desktop\Programming\09_may_recursion> ./a.exe
Please provide the number of your elements
5
Please provide the elements of your list
5 6 7 8 9
The sum of your elements is 35
PS C:\Users\KIIT\Desktop\Programming\09_may_recursion>
```

#3. WAP by designing a recursive function to calculate the sum of all even digits of any given integer.

Code:

```
#include <stdio.h>
int SUM(int count_285, int arr_285[])
{
    int i,total;
    if(count_285<=0)
        return 0;
    total= arr_285[count_285-1]+SUM(count_285-1,arr_285);
    return total;
}
int main()
{
    int num_285,sum,arr_285[20],i,rem_285,count_285;
    printf("Please provide an integer\n");
    scanf("%d",&num_285);
    for(i=0;num_285!=0;)
    {
```

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```
        rem_285=num_285%10;
        if(rem_285%2==0)
        {
            arr_285[i]=rem_285;
            count_285++;
            i++;
        }
        num_285=num_285/10;
    }
    sum=SUM(count_285,arr_285);
    printf("The sum of the digits in your integer is %d\n",sum);
    return 0;
}
```

Output:

```
PS C:\Users\KIIT\Desktop\Programming\09_may_recursion> gcc sum_digit_function.c
PS C:\Users\KIIT\Desktop\Programming\09_may_recursion> ./a.exe
Please provide an integer
123456789
The sum of the digits in your integer is 20
PS C:\Users\KIIT\Desktop\Programming\09_may_recursion>
```

```
PS C:\Users\KIIT\Desktop\Programming\09_may_recursion> ./a.exe
Please provide an integer
1111112
The sum of the digits in your integer is 2
PS C:\Users\KIIT\Desktop\Programming\09_may_recursion>
```

#4. WAP to generate the first n terms of the sequence by writing a suitable user defined function (say fib) to be used to get nth term Fibonacci value.

Code:

```
#include <stdio.h>
void fib(int n)
{
    int term1_285,term2_285,term3_285,i,fibn[100];
    term1_285=0;
    fibn[0]=term1_285;
    term2_285=1;
    fibn[1]=term2_285;
    term3_285=term1_285+term2_285;
    for(i=2;i<n;i++)
    {
        fibn[i]=fibn[i-1]+fibn[i-2];
    }
    for(i=0;i<n;i++)
    {
        printf("%d ",fibn[i]);
    }
}
int main()
{
    int n;
    printf("Provide the number of fibonacci terms u want=\n");
    scanf("%d",&n);
    fib(n);
```

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```
    return 0;
}
```

Output:

```
PS C:\Users\KIIT\Desktop\Programming\09_may_recursion> gcc fibonacci_function.c
PS C:\Users\KIIT\Desktop\Programming\09_may_recursion> ./a.exe
Provide the number of fibonacci terms u want=
10
0 1 1 2 3 5 8 13 21 34
PS C:\Users\KIIT\Desktop\Programming\09_may_recursion>
```

#5. WAP to change the value of constant integer using pointers.
Code:

```
#include <stdio.h>
int main()
{
    const float pi_285=3.14;
    float *ptr_285;
    ptr_285=&pi_285;
    printf("The value of pi is %f\n",*ptr_285);
    printf("But its okay, give your own desired value to pi\n");
    scanf("%f",ptr_285);
    printf("=-=-==-=-=-=-=-=-=-==-=-=-=-=-=-\n");
    printf("The new value you have given is = %f\n",*ptr_285);
    printf("=-=-==-=-=-=-=-=-=-==-=-=-=-=-=-\n");
    return 0;
}
```

Output:

```
PS C:\Users\KIIT\Desktop\Programming\09_may_recursion> cd "c:\Users\KIIT\Desktop\Programming\09_may_recursion\" ; if ($?) { gcc valuechange_
rs.c -o valuechange_pointers } ; if ($?) { .\valuechange_pointers }
valuechange_pointers.c: In function 'main':
valuechange_pointers.c:6:12: warning: assignment discards 'const' qualifier from pointer target type [-Wdiscarded-qualifiers]
    6 |     ptr_285=&pi_285;
      |            ^
The value of pi is 3.140000
But its okay, give your own desired value to pi
10000.12343
=-=-==-=-=-=-=-=-=-==-=-=-=-=-=-
The new value you have given is = 10000.123047
=-=-==-=-=-=-=-=-=-==-=-=-=-=-=-
PS C:\Users\KIIT\Desktop\Programming\09_may_recursion>
```