**May 5 Lab questions**

#1.WAP to generate all the prime numbers between 1 and n by using a user

defined function (say isPRIME) to be used for prime number testing, where n

is a value supplied by the user.

Code:

#include <stdio.h>

void PRIME(int n)

{

    int i\_285,count\_285,j\_285;

    for(i\_285=2;i\_285<=n;i\_285++)

    {

        count\_285=0;

        for(j\_285=1;j\_285<=i\_285;j\_285++)

        {

            if(i\_285%j\_285==0)

            {

                count\_285++;

            }

        }

        if(count\_285==2)

        {

            printf("%d ",i\_285);

        }

    }

}

int main()

{

    int num;

    printf("Please provide the range of prime numbers you want to be printed out\n");

    scanf("%d",&num);

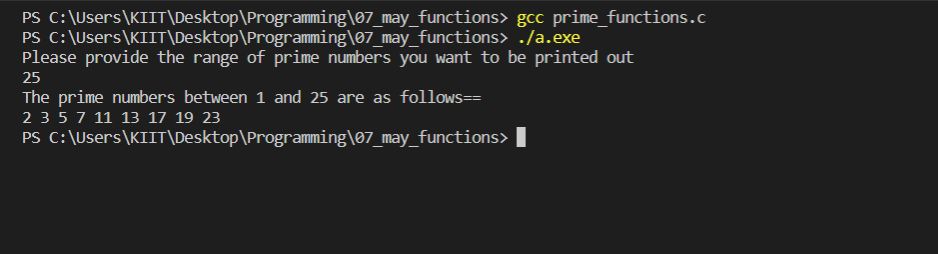
    printf("The prime numbers between 1 and %d are as follows==\n",num);

    PRIME(num);

    return 0;

}

Output:



#2. WAP to compute the cosine series using function.

Code:

#include <stdio.h>

#include <math.h>

const float PI = 3.142;

float fact(int f)

{

    float i\_285,n;

    n=f;

    for(i\_285=1;i\_285<f;i\_285++)

    {

        n=n\*(f-i\_285);

    }

    return n;

}

float COS(float x, float n)

{

    int i\_285,j;

    float sum\_285,qoutient\_285,a,b,c;

    x = x \* (PI / 180.0);

    sum\_285=0;

    for(i\_285=1;i\_285<n;i\_285++)

    {

        if((i\_285%2)!=0)

        {

            c=i\_285\*2;

            a=-(pow(x,c));

            b=fact(c);

            qoutient\_285=a/b;

        }

        else if((i\_285%2)==0)

        {

            c=i\_285\*2;

            a=pow(x,c);

            b=fact(c);

            qoutient\_285=a/b;

        }

        sum\_285=sum\_285+qoutient\_285;

    }

    return sum\_285;

}

int main()

{

    float num,n;

    float result;

    printf("Please provide the number of terms u want to add\n");

    scanf("%f",&n);

    printf("cosine of which number do you want to be printed\n");

    scanf("%f",&num);

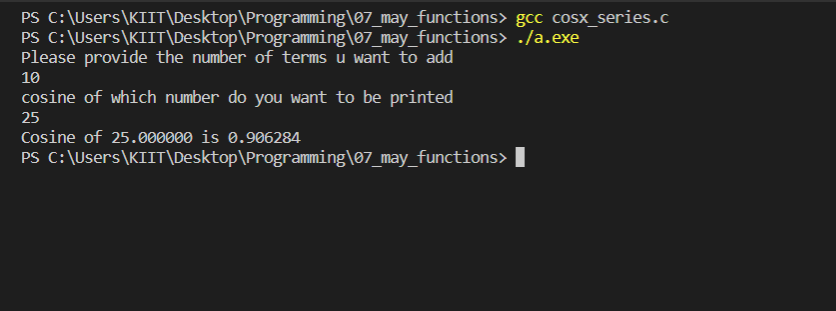
    result=1+COS(num,n);

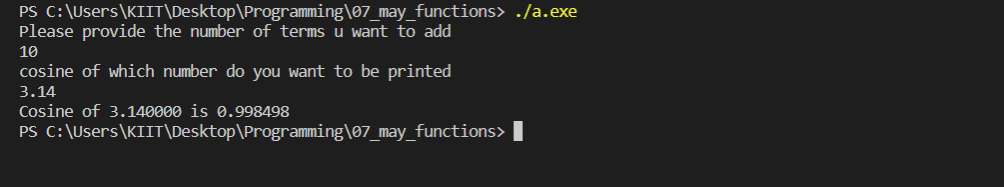
    printf("Cosine of %f is %f\n",num,result);

    return 0;

}

Output:





#3. WAP to count number of digits of a positive integer n by using recursion.

Code:

#include<stdio.h>

int count(int num\_285)

{

    int digit\_285;

    if(num\_285==0)

    {

        return 0;

    }

    else

    {

        digit\_285=1+count(num\_285/10);

    }

    return digit\_285;

}

int main()

{

    int numb\_285,n\_285;

    printf("Please provide the number\n");

    scanf("%d",&numb\_285);

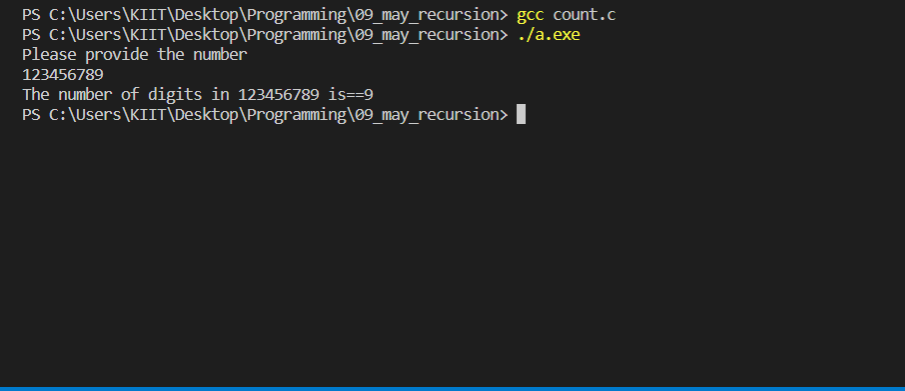
    n\_285=count(numb\_285);

    printf("The number of digits in %d is==%d\n",numb\_285,n\_285);

    return 0;

}

Output:



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

recursion.

Code:

#include <stdio.h>

int SUM(int A\_285[],int n\_285)

{

    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]);

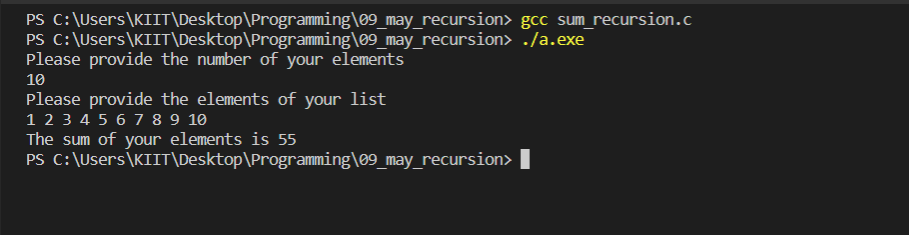
    }

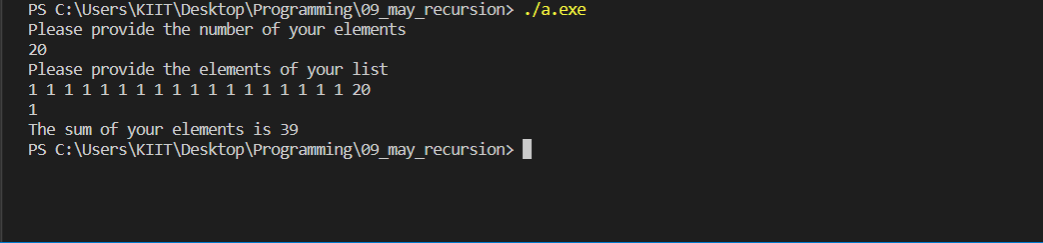
    sum\_285=SUM(A\_285,num\_285-1);

    printf("The sum of your elements is %d\n\_285",sum\_285);

}

Output:





#5. WAP to add two numbers using call by reference.

Code:

#include<stdio.h>

int main()

{

    int num1\_285, num2\_285, sum\_285;

    int \*ptr1\_285, \*ptr2\_285;

    printf("Enter any two Number: ");

    scanf("%d%d", &num1\_285, &num2\_285);

    ptr1\_285 = &num1\_285;

    ptr2\_285 = &num2\_285;

    sum\_285 = \*ptr1\_285 + \*ptr2\_285;

    printf("\nSum of %d and %d is %d", \*ptr1\_285, \*ptr2\_285, sum\_285);

    return 0;

}

Output:

