**ASSIGNMENT-7**

**Iterative control statements**

1. Write a program to find the Nth term of the Fibonnaci series.

#include<stdio.h>

int main()

{

    int n,n1=-1,n2=1,f;

    printf("Enter a no:");

    scanf("%d",&n);

    while(n)

    {

        f=n1+n2;

        n1=n2;

        n2=f;

        n--;

    }

    printf("%dth element of fibonnaci series is %d",n,f);

    return 0;

}

1. Write a program to print first N terms of Fibonacci series

#include<stdio.h>

int main()

{

    int n,n1=-1,n2=1,f;

    printf("Enter a no:");

    scanf("%d",&n);

    printf("Fibonnaci series\n");

    while(n)

    {

        f=n1+n2;

        n1=n2;

        n2=f;

        printf("%d ",f);

        n--;

    }

    return 0;

}

1. Write a program to check whether a given number is there in the Fibonacci series or not.

#include<stdio.h>

int main()

{

    int n,n1=-1,n2=1,f=0;

    printf("Enter a no to check it is element of fibonnacci series:");

    scanf("%d",&n);

    while(f<=n)

    {

        f=n1+n2;

        n1=n2;

        n2=f;

        if(f==n)

        {

        printf("%d is element of fibonnaci series",f);

        break;

        }

    }

    if(n!=f)

    printf("%d is not element of fibonnaci series",n);

    return 0;

}

1. Write a program to calculate HCF of two numbers

#include<stdio.h>

int main()

{

    int n1,n2,d,r;

    printf("Enter two no to fid HCF:");

    scanf("%d%d",&n1,&n2);

    if(n1>n2)

    n1=n1+n2-(n2=n1);

    for(;n1!=0;)

    {

        d=n2/n1;

        d=n1\*d;

        r=n2-d;

        n2=n1;

        n1=r;

    }

    printf("%d",n2);

    return 0;

}

1. Write a program to check whether two given numbers are co-prime numbers or not

#include<stdio.h>

int main()

{

    int n1,n2,i,count;

    printf("Enter two nos:");

    scanf("%d%d",&n1,&n2);

    for(i=2,count=0;i<=n1&&i<=n2;i++)

    {

        if(n1%i==0&&n2%i==0)

        {

            printf("Not co-prime no");

            count++;

            break;

        }

    }

    if(count==0)

    printf("co-prime");

    return 0;

}

1. Write a program to print all Prime numbers under 100

#include<stdio.h>

#include<math.h>

int main()

{

    int i,j,count=0;

    printf("prime nos under 100");

    for(i=2;i<100;i++)

    {

        for(j=2,count=0;j<=sqrt(i);j++)

        {

        if(i%j==0)

        count++;

        }

    if(count==0)

    printf("\n%d",i);

    }

    return 0;

}

1. Write a program to print all Prime numbers between two given numbers

#include<stdio.h>

#include<math.h>

int main()

{

    int i,j,count=0,n1,n2;

    printf("Enter two value:");

    scanf("%d%d",&n1,&n2);

    if(n1>n2)

    n1=n1+n2-(n2=n1);

    for(i=n1+1;i<n2;i++)

    {

        for(j=2,count=0;j<=sqrt(i);j++)

        {

        if(i%j==0)

        count++;

        }

    if(count==0)

    printf("\n%d",i);

    }

    return 0;

}

1. Write a program to find next Prime number of a given number

#include<stdio.h>

#include<math.h>

int main()

{

    int i,j,count=0,n;

    printf("Enter a value:");

    scanf("%d",&n);

    for(i=n+1;;i++)

    {

        for(j=2,count=0;j<=sqrt(i);j++)

        {

        if(i%j==0)

        count++;

        }

    if(count==0)

    {

    printf("\n%d",i);

    break;

    }

    }

    return 0;

}

1. Write a program to check whether a given number is an Armstrong number or not

#include<stdio.h>

int main()

{

    int n,l,d=0,i,j,a=1,r,sum=0;

    printf("Enter a value:");

    scanf("%d",&n);

    l=n;

    while(l)

    {

        l=l/10;

        d++;

    }

    l=n;

    for(i=d;i>0;i--)

    {

        r=l%10;

        l=l/10;

        for(j=d,a=1;j>0;j--)

        a\*=r;

        sum+=a;

    }

    if(n==sum)

    printf("%d is Armstrong no",n);

    else

    printf("%d is not Armstrong no",n);

    return 0;

}

1. Write a program to print all Armstrong numbers under 1000

#include<stdio.h>

int main()

{

    int n,l,d=0,i,j,a=1,r,sum=0;

    printf("armstrong nos under 1000\n");

    for(n=1;n<1000;n++)

    {

    d=0;

    sum=0;

    l=n;

    while(l)

    {

        l=l/10;

        d++;

    }

    l=n;

    for(i=d;i>0;i--)

    {

        r=l%10;

        l=l/10;

        for(j=d,a=1;j>0;j--)

        a\*=r;

        sum+=a;

    }

    if(n==sum)

    printf("%d\n",n);

    }

    return 0;

}