ASSIGNMENT – 7

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

#include<stdio.h>

int main()

{

    int n,i,a=0,b=1,c;

    printf("Enter a number : ");

    scanf("%d",&n);

    for ( i = 3; i <= n; i++)

    {

        c=a+b;

        a=b;

        b=c;

    }

    if(n==1)

        printf("%d fibonacci number is : 0",n);

    else if(n==2)

        printf("%d fibonacci number is : 1",n);

    else

        printf("%d fibonacci number is : %d",n,c);

}

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

#include<stdio.h>

int main()

{

    int n,i,a=0,b=1,c;

    printf("Enter a number : ");

    scanf("%d",&n);

    printf("Required Fibonacci series is : \n");

    printf("%d %d ",a,b);

    for ( i = 3; i <= n; i++)

    {

        c=a+b;

        a=b;

        b=c;

        printf("%d ",c);

    }

}

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

#include<stdio.h>

int main()

{

    int n,i,a=0,b=1,c;

    printf("Enter a number to check whether it is a fibonacci number or not : ");

    scanf("%d",&n);

    if(n==a || n==b)

        printf("It is in Fibonacci series");

    else

    {

        for ( i = 1; i <= n; i++)

        {

            c=a+b;

            a=b;

            b=c;

            if(c==n)

            {

                printf("%d is there in the Fibonacci series",n);

                break;

            }

            else if(c>n)

                break;

        }

        if (c>n)

        {

            printf("%d is not in fibonacci series",n);

        }

    }

}

4. Write a program to calculate HCF of two numbers

#include<stdio.h>

int main()

{

    int n,m,i,hcf,min;

    printf("Enter two numbers : ");

    scanf("%d %d",&n,&m);

    min=(n<m)?n:m;

    for ( i = 1; i <= min; i++)

    {

        if(n%i==0 && m%i==0)

            hcf=i;

    }

    printf("HCF of %d and %d is : %d",n,m,hcf);

}

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

#include<stdio.h>

int main()

{

    int n,m,i,hcf,min;

    printf("Enter two numbers : ");

    scanf("%d %d",&n,&m);

    min=(n<m)?n:m;

    for ( i = 1; i <= min; i++)

    {

        if(n%i==0 && m%i==0)

            hcf=i;

    }

    if(hcf==1)

        printf("%d and %d are co-prime numbers",n,m);

    else

        printf("%d and %d are not co-prime numbers",n,m);

}

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

#include<stdio.h>

int main()

{

    int n,i,count=0;

    printf("Prime numbers upto 100 are : \n");

    for ( n = 2; n <= 100; n++)

    {

        count=0;

        for ( i = 2; i <= n/2; i++)

        {

            if(n%i==0)

                count++;

        }

        if(count==0)

            printf("%d ",n);

    }

}

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

#include<stdio.h>

int main()

{

    int n,m,i,count=0;

    printf("Enter two no. b/w which you want to find the prime no. : ");

    scanf("%d %d",&n,&m);

    printf("Prime numbers between %d and %d are : ",n,m);

    for ( n=n+1 ; n < m; n++)

    {

        count=0;

        for ( i = 2; i <= n/2; i++)

        {

            if(n%i==0)

                count++;

        }

        if(count==0)

            printf("%d ",n);

    }

}

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

#include<stdio.h>

int main()

{

    int n,i,count=0;

    printf("Enter a number : ");

    scanf("%d",&n);

    printf("Prime number next to %d is : ",n);

    for (n=n+1;;n++)

    {

        count=0;

        for ( i = 2; i <= n/2; i++)

        {

            if(n%i==0)

                count++;

        }

        if(count==0)

        {

            printf("%d ",n);

            break;

        }

    }

}

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

#include<stdio.h>

int main()

{

    int n,rem,sum=0,n1;

    printf("Enter a number : ");

    scanf("%d",&n);

    n1=n;

    while(n1>0)

    {

        rem=n1%10;

        sum+=(rem\*rem\*rem);

        n1/=10;

    }

    if(sum==n)      //153 , 370 , 407 , 371

        printf("%d is an Armstrong number",n);

    else

        printf("%d is not an Armstrong number",n);

}

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

#include<stdio.h>

int main()

{

    int n=0,n1,sum=0,rem;

    printf("Armstrong numbers upto 1000 are : \n");

    while(n<=1000)

    {

        n1=n;

        sum=0;

        while(n1>0)

        {

            rem=n1%10;

            sum+=(rem\*rem\*rem);

            n1/=10;

        }

        if(sum==n)

            printf("%d ",n);

        n++;

    }

}