**Assignment-11 Solution Name: Om Pant**

1. Write a function to calculate LCM of two numbers. (TSRS)

Ans –

// 1.   Write a function to calculate LCM of two numbers. (TSRS)

#include<stdio.h>

int lcm(int n1,int n2){

    int max;

        max = (n1 > n2) ? n1 : n2;

    while(1){

        if((max % n1 == 0) && ( max % n2 == 0)){

            return max;

            break;

        }

        ++max;

    }

}

int main(){

    int num1,num2,result;

    printf("Enter two number to find LCM\n");

    scanf("%d%d",&num1,&num2);

    result = lcm(num1,num2);

    printf("LCM of %d and %d is: %d\n",num1,num2,result);

    return 0;

}

1. Write a function to calculate HCF of two numbers. (TSRS)

Ans-

// 2. Write a function to calculate HCF of two numbers. (TSRS)

#include<stdio.h>

int hcf(int num1,int num2){

    int least;

    least = (num1<num2) ? num1 : num2 ;

    while(least>0){

        if(num1% least==0 && num2%least==0){

            return least;

        }

        least--;

    }

}

int main(){

    int num1,num2,result;

    printf("Enter two number\n");

    scanf("%d%d",&num1,&num2);

    result = hcf(num1,num2);

    printf("HCF of %d and %d is: %d\n",num1,num2,result);

    return 0;

}

1. Write a function to check whether a given number is Prime or not. (TSRS)

Ans-

// 3. Write a function to check whether a given number is Prime or not. (TSRS)

#include<stdio.h>

int checkPrime(int n){

    int i,x=1;

    for(i=2;i<n;i++){

        if(n%i == 0 && n!=2){

            x = 0;

        }

    }

    return x;

}

int main(){

    int num,result;

    printf("Enter a number\n");

    scanf("%d",&num);

    result = checkPrime(num);

    if(result)

        printf("It's a Prime Number\n");

    else

        printf("It's not a Prime number\n");

    return 0;

}

1. Write a function to find the next prime number of a given number. (TSRS)

Ans –

// 4. Write a function to find the next prime number of a given number. (TSRS)

#include<stdio.h>

int nextPrime(int n){

    int x=0;

    for(int i=n+1;i>0;i++){

        for(int j=2;j<i;j++){

            if(i%j == 0 && i!=2){

                x = 0;

                break;

            }

            else{

                x = 1;

            }

        }

        if(x || i==2 ){

            return i;

        }

    }

}

int main(){

    int num,result;

    printf("Enter a Prime number\n");

    scanf("%d",&num);

    result = nextPrime(num);

    printf("Next Prime no. of %d is %d\n",num,result);

    return 0;

}

1. Write a function to print first N prime numbers (TSRN)

Ans-

// 5. Write a function to print first N prime numbers (TSRN)

#include<stdio.h>

int printPrime(int n){

    int i = 3, count, c;

    if(n >= 1)

    {

        printf("\n\nFirst %d prime numbers are :  ", n);

        printf("2 ");

    }

    for(count = 2; count <= n; i++)

    {

        for(c = 2; c < i; c++)

        {

            if(i%c == 0)

                break;

        }

        if(c == i)

        {

            printf("%d ", i);

            count++;

        }

    }

}

int main(){

    int num;

    printf("Enter a number\n");

    scanf("%d",&num);

    printPrime(num);

    return 0;

}

1. Write a function to print all Prime numbers between two given numbers. (TSRN)

Ans-

// 6. Write a function to print all Prime numbers between two given numbers. (TSRN)

#include<stdio.h>

int primeBetween(int n1 ,int n2){

    int i,j;

    for(i=n1;i<=n2;i++){

        for(j=2;j<i;j++){

            if(i%j == 0 && i!=2){

                break;

            }

        }

        if(j == i ){

            printf("%d ",i);

        }

    }

}

int main(){

    int num1,num2,result;

    printf("Enter two numbers\n");

    scanf("%d%d",&num1,&num2);

    primeBetween(num1 ,num2);

    return 0;

}

1. Write a function to print first N terms of Fibonacci series (TSRN)

Ans-

// 7. Write a function to print first N terms of Fibonacci series (TSRN)

#include<stdio.h>

void nFibonacci(int n){

    int i=3,sum,t1,t2;

    sum = 0;

    t1=0;

    t2=1;

    if(n==1){

         printf("%d",t1);

    }

    else if(n==2){

        printf("%d %d ",t1, t2);

    }

    else{

        printf("%d %d ",t1, t2);

        while(i<=n){

            sum = t1 + t2;

            t1 = t2;

            t2 = sum;

            printf("%d ",sum);

            i++;

            }

    }

}

int main(){

    int n;

    printf("Enter a number\n");

    scanf("%d",&n);

    nFibonacci(n);

    return 0;

}

1. Write a function to print PASCAL Triangle. (TSRN)

Ans-

// 8. Write a function to print PASCAL Triangle. (TSRN)

#include<stdio.h>

void pascalTriangle(int rows){

    int coef = 1, space, i, j;

    for(i=0; i<rows; i++)

    {

    for(space=1; space <= rows-i; space++)

    printf(" ");

    for(j=0; j <= i; j++)

    {

    if (j==0 || i==0)

    coef = 1;

    else

    coef = coef\*(i-j+1)/j;

    printf("%4d", coef);

    }

    printf("\n\n");

    }

}

int main(){

    int rows;

    printf("\nEnter the number of rows : \n");

    scanf("%d",&rows);

    pascalTriangle(rows);

    return 0;

}

1. Write a program in C to find the square of any number using the function.

Ans-

// 9. Write a program in C to find the square of any number using the function.

#include<stdio.h>

void printSquare(int n){

    printf("Square of %d is: %d\n",n,n\*n);

}

int main(){

    int n;

    printf("Enter a number to find it's Square\n");

    scanf("%d",&n);

    printSquare(n);

    return 0;

}

1. Write a program in C to find the sum of the series 1! /1+2!/2+3!/3+4!/4+5!/5 using the function.

Ans –

// 10. Write a program in C to find the sum of the series 1!/1 + 2!/2 + 3!/3 + 4!/4 + 5!/5 using the function.

#include <stdio.h>

int fact(int);

void main()

{

    int sum;

    sum = fact(1)/1 + fact(2)/2 + fact(3)/3 + fact(4)/4 + fact(5)/5;

    printf("The sum of the series is : %d\n\n",sum);

}

int fact(int n)

    {

        int num=0,f=1;

        while(num<=n-1)

        {

            f =f+f\*num;

            num++;

        }

    return f;

    }