**ASSIGNMENT 11**

**1) Write a program to calculate sum of first N natural numbers.**

#include<stdio.h>

int lcm(int, int);

int main(){

int a, b;

printf("Enter numbers: ");

scanf("%d %d", &a, &b);

printf("LCM of %d and %d is %d", a, b, lcm(a,b));

return 0;

}

int lcm(int a, int b){

for(int i=2; i<=a\*b; i++)

{

if(i%a==0 && i%b==0)

{

return i;

break;

}

}

}

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

#include<stdio.h>

int hcf(int, int);

int main(){

int a, b;

printf("Enter numbers: ");

scanf("%d %d", &a, &b);

printf("HCF of %d and %d is %d", a, b, hcf(a,b));

return 0;

}

int hcf(int a, int b){

int hcf=1;

int min=(a<b)?a:b;

for(int i=1; i<=min; i++)

{

if(a%i==0 && b%i==0)

{

hcf=i;

}

}

return hcf;

}

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

#include<stdio.h>

int prime(int);

int main(){

int a,c;

printf("Enter number: ");

scanf("%d", &a);

c=prime(a);

if(c==0) printf("%d is prime", a);

else printf("%d is not prime", a);

return 0;

}

int prime(int n){

int flag=0;

for(int i=2; i<=n/2; i++){

if(n%i==0){

flag=1;

}

}

if(flag==0) return 0;

else return 1;

}

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

#include<stdio.h>

int prime(int);

int main(){

int a,c;

printf("Enter number: ");

scanf("%d", &a);

printf("Next prime after %d is %d", a, prime(a));

return 0;

}

int prime(int n){

int i;

for(i=n+1; 1; i++)

{

int flag=0;

for(int j=2; j<=i/2; j++){

if(i%j==0)

{

flag=1;

break;

}

}

if(flag==0) return i;

}

}

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

#include<stdio.h>

void natural(int);

int main(){

int a;

printf("Enter number: ");

scanf("%d", &a);

natural(a);

return 0;

}

void natural(int n){

for(int i=1; i<=n; i++){

printf("%d ", i);

}

}

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

#include<stdio.h>

void fibo(int);

int main(){

int a;

printf("Enter number: ");

scanf("%d", &a);

fibo(a);

return 0;

} //0 1 1 2 3 5 8

void fibo(int n){

int a=0, b=1, c=0;

printf("%d ", a);

for(int i=2; i<=n; i++){

a=b; //a=1 a=0 a=1 a=1

b=c; //b=0 b=1 b=1 b=2

c=a+b; //c=1 c=1 c=2 c=3

printf("%d ", c);

}

}

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

#include<stdio.h>

int pascal(int);

int fact(int);

int comb(int, int);

int main(){

int n;

printf("Enter number of items: ");

scanf("%d", &n);

pascal(n);

return 0;

}

int fact(int n){

int fact=1;

for(int i=1; i<=n; i++){

fact\*=i;

}

return fact;

}

int comb(int n, int r){

return fact(n)/(fact(n-r)\*fact(r));

}

int pascal(int n){

int i,j;

for(i=0; i<=n; i++){

for(j=0; j<=i; j++){

printf(" %d " ,comb(i,j));

}

printf("\n");

}

}

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

#include<stdio.h>

int square(int);

int main(){

int a;

printf("Enter number: ");

scanf("%d", &a);

printf("Square of %d is %d", a, square(a));

return 0;

}

int square(int n){

return n\*n;

}

**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 a();

int fact(int);

int main(){

a();

return 0;

}

int fact(int n){

int fact=1;

for(int i=1; i<=n; i++){

fact\*=i;

} return fact;

}

int a(){

int s=0, a;

for(int i=1; i<=5; i++)

{

s=s+fact(i)/i;

}

printf("%d", s);

}