

## Assignment - 11 A Job Ready Bootcamp in C++, DSA and IOT MySirG More on functions in C Language

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

Program -

```
#include<stdio.h>

int lcm(int,int);

int main()
{
    int a , b;

    printf("Enter two numbers: ");
    scanf ("%d%d",&a,&b) ;

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

    return 0;
}

int lcm(int x , int y)
{
    int l;

    for(l = x > y ? x : y ; l <= x * y ; l++)
    {
        if(l % x == 0 && l % y == 0)
        {
            return l;
        }
    }
}
```

Output -

Enter two numbers: 9 12  
LCM of 9 and 12 is 36

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

Program -

```
#include<stdio.h>

int HCF(int,int);

int main()
{
    int a , b;
```

```

    printf("Enter two numbers: ");
    scanf("%d%d",&a,&b);

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

    return 0;
}

int HCF(int x , int y)
{
    int rem , num , divisor;

    if(x >= y)
    {
        num = x;
        divisor = y;
    }
    else
    {
        num = y;
        divisor = x;
    }

    rem = num % divisor;

    while(rem)
    {
        num = divisor;
        divisor = rem;
        rem = num % divisor;
    }
    return divisor;
}

```

#### Output -

Enter two numbers: 24 36  
HCF of 24 and 36 is 12

---

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

#### Program -

```

#include<stdio.h>

int checkPrime(int);

int main()
{
    int num;

```

```

printf("Enter a number: ");
scanf("%d", &num);

if(checkPrime(num))
    printf("%d is a Prime number", num);
else
    printf("%d is not a Prime number", num);

return 0;
}

int checkPrime(int n)
{
    int i;
    for(i = 2 ; i <= n ; i++)
    {
        if(n % i == 0)
            break;
    }
    if(i == n)
        return 1;
    else
        return 0;
}

```

#### Output -

Enter a number: 17  
17 is a Prime number

---

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

##### Program -

```

#include<stdio.h>

int nextPrime(int);

int main()
{
    int num;

    printf("Enter a number: ");
    scanf("%d", &num);

    printf("Next prime number after %d is %d", num, nextPrime(num));

    return 0;
}

```

```

int nextPrime(int n)
{
    int i;
    while(1)
    {
        n++;
        for(i = 2 ; i <= n ; i++)
        {
            if(n % i == 0)
                break;
        }
        if(i == n)
        {
            return n;
            break;
        }
    }
}

```

#### Output -

Enter a number: 8

Next prime number after 8 is 11

---

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

##### Program -

```
#include<stdio.h>
```

```
void printPrime(int) ;
```

```

int main()
{
    int N;
    printf("Enter the value of N: ");
    scanf("%d", &N);
    printf("First %d prime numbers are\n", N);
    printPrime(N);

    return 0;
}

```

```

void printPrime(int n)
{
    int j = 1;

    while(n)
    {
        int i;

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

```

```

        if(j % i == 0)
            break;
    }
    if(i == j)
    {
        printf("%d ",j);
        n--;
    }
    j++;
}
}

```

### Output -

Enter the value of N: 10

First 10 prime numbers are

2 3 5 7 11 13 17 19 23 29

---

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

### Program -

```
#include<stdio.h>
```

```
void printPrime(int,int);
```

```
int main()
```

```
{
    int a , b;

    printf("Enter two numbers: ");
    scanf("%d%d",&a,&b);

    printPrime(a,b);

    return 0;
}
```

```
void printPrime(int x , int y)
```

```
{
    int i , j , start, end;
    if(x < y)
    {
        start = x;
        end = y;
    }
    else
    {
        start = y;
        end = x;
    }
}
```

```

for(i = start + 1 ; i < end ; i++)
{
    for(j = 2 ; j <= i ; j++)
    {
        if(i % j == 0)
            break;
    }
    if(j == i)
        printf("%d ",i);
}
}

```

### Output -

Enter two numbers: 10 100

11 13 17 19 23 29 31 37 41 43 47 53 59 61 67 71 73 79 83 89 97

---

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

### Program -

```

#include<stdio.h>

void printFibo(int);

int main()
{
    int N;

    printf("Enter the value of N: ");
    scanf("%d",&N);

    printFibo(N);

    return 0;
}

void printFibo(int n)
{
    int a = -1 , b = 1 , c , i;

    for(i = 1 ; i <= n ; i++)
    {
        c = a + b;
        printf("%d ",c);
        a = b;
        b = c;
    }
}

```

**Output -**

Enter the value of N: 10

0 1 1 2 3 5 8 13 21 34

---

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

```
#include <stdio.h>

int fact(int);
int combi(int,int);
void printPascal(int);

int main()
{
    printPascal(5);
    return 0;
}

void printPascal(int lines)
{
    int i , j , k , r;

    for(i = 1 ; i <= lines ; i++)
    {
        int k = 1 , r = 0;
        for(j = 1 ; j <= 2*lines-1 ; j++)
        {
            if(j >= lines+1-i && j <= lines-1+i && k)
            {
                printf("%d",combi(i-1,r));
                r++;
                k = 0;
            }
            else
            {
                printf(" ");
                k = 1;
            }
        }
        printf("\n");
    }
}

int fact(int num)
{
    int f = 1;

    while(num)
    {
        f *= num;
    }
}
```

```

        num--;
    }
    return f;
}

int combi(int n , int r)
{
    return fact(n) / (fact(n-r) * fact(r));
}

```

**Output -**

```

    1
  1 1
 1 2 1
1 3 3 1
1 4 6 4 1

```

---

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

**Program -**

```

#include<stdio.h>

int square(int);

int main()
{
    int N;
    printf("Enter a number: ");
    scanf("%d",&N);

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

    return 0;
}

int square(int n)
{
    return n * n;
}

```

**Output -**

```

Enter a number: 7
Square of 7 is 49

```

---



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.

**Program-**

```
#include<stdio.h>

void SumOfSeries();
int fact(int);

int main()
{
    SumOfSeries();
    return 0;
}

void SumOfSeries()
{
    int i , sum = 0;
    for(i = 1 ; i <= 5 ; i++)
        sum += fact(i)/i;

    printf("1!/1+2!/2+3!/3+4!/4+5!/5 = %d",sum);

    return 0;
}

int fact(int n)
{
    int f = 1;
    while(n)
    {
        f *= n;
        n--;
    }
    return f;
}
```

**Output -**

1!/1+2!/2+3!/3+4!/4+5!/5 = 34