More on functions in C Language

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

```c
#include<stdio.h>
int lcm(int,int);
int main()
{
    int a, b, l;
    printf("Enter two numbers : ");
    scanf("%d%d", &a, &b);
    l = lcm(a,b);
    printf("LCM of %d and %d is %d", a, b, l);
    return 0;
}
//below function is to calculate LCM
int lcm(int x, int y)
{
    int i;
    for (i = x > y ? x : y; i <= x * y; i = i + (x > y ? x : y))
    {
        if (i % x == 0 && i % y == 0)
        {
            break;
        }
    }
    return (i);
}
```

```
Output:
Enter two numbers : 18 24
LCM of 18 and 24 is 72
```

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

```c
#include<stdio.h>
int hcf(int,int);
int main()
{
    int a, b, h;
    printf("Enter two numbers : ");
    scanf("%d%d", &a, &b);
    h = hcf(a,b);
    printf("HCF of %d and %d is %d", a, b, h);
    return 0;
}
//below function is to calculate HCF
int hcf(int x, int y)
{
    int i;
    for (i = x < y ? x : y; i >= 1; i--)
    {
        if (x % i == 0 && y % i == 0)
        {
            return (i);
            break;
        }
    }
}
```

```
Output:
Enter two numbers : 144 24
HCF of 144 and 24 is 24
```

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

```
#include <stdio.h>
int checkPrime(int);
int main()
{
    int n, p;
    printf("Enter a number to check prime or not : ");
    scanf("%d", &n);
    p = checkPrime(n);
    p == 1 ? printf("Prime Number") : printf("Not prime number");
    return 0;
}
// below function is to check prime or not
int checkPrime(int x)
{
    int i = 2;
    while (i <= x / 2)
    {
        if (x % i == 0)
        {
            break;
        }
        i++;
    }
    if (i == ((x / 2) + 1))
        return (1);
    else
        return (0);
}
```

```
Output:
Enter a number to check prime or not : 97
Prime Number
```

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

```
#include <stdio.h>
int nextPrime(int);
int main()
{
    int n, nxt;
    printf("Enter a number : ");
    scanf("%d", &n);
    nxt = nextPrime(n);
    printf("Next prime number is %d", nxt);
    return 0;
}
// below function is to find next prime number
int nextPrime(int x)
{
    int i, j;
    for (i = x + 1; 1; i++)
    {
        for (j = 2; j < i; j++)
        {
            if (i % j == 0)
            {
                break;
            }
        } // end inner loop
        if (i == j)
        {
            return (i);
```

```
        }
    } // end outer loop
}
```

```
Output:
Enter a number : 101
Next prime number is 103
```

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

```c
#include <stdio.h>
void nPrime(int);
int main()
{
    int n;
    printf("Enter a number : ");
    scanf("%d", &n);
    nPrime(n);
    return 0;
}
// below function is to print first n prime numbers
void nPrime(int x)
{
    int i, j, count= 0;
    for (i = 2; 1; i++)
    {
        for (j = 2; j < i; j++)
        {
            if (i % j == 0)
            {
                break;
            }
        } // end inner loop
        if (i == j)
        {
            printf("%d ", i);
            count++;
            if (count == x)
            {
                break;
            }
        }
    } // end outer loop
}
```

```
Output:
Enter a number : 7
2 3 5 7 11 13 17
```

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

```c
#include <stdio.h>
void prime(int, int);
int main()
{
    int a, b;
    printf("Enter two numbers to print all prime numbers between them : ");
    scanf("%d%d", &a, &b);
    prime(a,b);
    return 0;
}
// below function is to calculate prime numbers between two numbers
void prime(int x, int y)
{
    int i, j;
```

```
    for (i = x + 1; i < y; i++)
    {
        for (j = 2; j < i; j++)
        {
            if (i % j == 0)
            {
                break;
            }
        } // end inner loop
        if (i == j)
        {
            printf("%d ", i);
        }
    } // end outer loop
}
```

```
Output:
Enter two numbers to print all prime numbers between them : 20 30
23 29
```

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

```
#include<stdio.h>
void fibonacciSerise(int);
int main()
{
    int n;
    printf("Enter a number : ");
    scanf("%d", &n);
    fibonacciSerise(n);
    return 0;
}
// below function is to calculate fibonacci series
void fibonacciSerise(int x)
{
    int i, a = -1, b = 1, s = 0;
    for (i = 1; i <= x; i++)
    {
        s = a + b;
        printf("%d ", s);
        a = b;
        b = s;
    }
}
```

```
Output:
Enter a number : 7
0 1 1 2 3 5 8
```

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

```
#include <stdio.h>
int fact(int);
void pascalTriangle(int);
int main()
{
    int n;
    printf("Enter number of rows to print PASCAL Triangle : ");
    scanf("%d", &n);
    pascalTriangle(n);
    return 0;
}
// below function is to print pascal triangle
void pascalTriangle(int x)
{
```

```
    for (int i = 0; i < x; i++)
    {
        for (int j = 0; j <= i; j++)
        {
            if (j <= i)
                printf("%d ", fact(i) / (fact(j) * fact(i - j)));
            else
                printf(" ");
        } // end inner loop
        printf("\n");
    } // end outer loop
}
// below function is to calculate factorial
int fact(int a)
{
    int i = 1, s = 1;
    while (i <= a)
    {
        s = s * i;
        i++;
    }
    return (s);
}
```

```
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

```
#include <stdio.h>
int square(int);
int main()
{
    int n, sqr;
    printf("Enter a number to calculate square : ");
    scanf("%d", &n);
    sqr = square(n);
    printf("Square of %d is %d", n, sqr);
    return 0;
}
// below function is to calculate square of a number
int square(int x)
{
    return (x * x);
}
```

```
Output:
Enter a number to calculate square : 9
Square of 9 is 81
```

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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 sum();
int main()
{
    printf("find the sum of 1!/1+2!/2+3!/3+4!/4+5!/5\n");
    sum();
    return 0;
}
```

```
// below function is to find factorial
int fact(int a)
{
    int i = 1, s = 1;
    while (i <= a)
    {
        s = s * i;
        i++;
    }
    return (s);
}
// below function is to calculate sum of the series
void sum()
{
    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", sum);
}
```

==========

```
Output:
find the sum of 1!/1+2!/2+3!/3+4!/4+5!/5
The sum of the series is : 34
```