

Assignment - 11

More on functions in C Language

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

```
#include<stdio.h>
int lcm(int, int);
int main()
{
    int a = 4, b = 28;
    printf("\nLcm of %d and %d is: %d", a, b, lcm(a, b));
}
int lcm(int x, int y)
{
    int i;
    for (i = 1; i < x*y; i++)
    {
        if (i%x==0 && i%y==0)
        {
            return i;
        }
    }
}
```

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

```
#include<stdio.h>
int hcf(int, int);
int main()
{
    int a = 24, b = 18;
    printf("HCF of %d and %d is: %d", a, b, hcf(a, b));
}
int hcf(int x, int y)
{
    int i, lcm, hcf;
    for (i = 1; i <= x*y; i++)
    {
        if (i%x==0 && i%y==0)
        {
            lcm=i;
            break;
        }
    }
    hcf=lcm;
    for(i=i;i>1;i--)
    {
        if(lcm%i==0)
        {
            hcf=i;
            break;
        }
    }
}
```

```

        }
    }

    hcf = (x*y)/lcm;
    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 n, check;
    printf("\nEnter number: ");
    scanf("%d", &n);
    check = prime(n);
    if (check == 1)
    {
        printf("\nNot a Prime Number");
    }
    else
    {
        printf("\nprime number");
    }
}

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

```

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, check;
printf("\nEnter number: ");
scanf("%d",&n);
check = nextprime(n);
printf("\nNext prime number is %d",check);
}

int nextprime(int n)
{
    int i,j,flag;
    for ( i = n+1; i < n+10; i++)
    {
        for ( j = 2; j <= i-1; j++)
        {
            if (i%j==0)
            {
                flag = 1;
                break;
            }
            else
            {
                flag = 0;
            }
        }
        if (flag == 0)
        {
            return i;
        }
    }
}

```

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

```

#include<stdio.h>
void nextprime(int) ;
int main()
{
    int n;
    printf("\nEnter number: ");
    scanf("%d",&n);
    nextprime(n);
}

void nextprime(int n) {
    int count , c, i = 3;

```

```

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++;
    }
}
}

```

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

```

#include<stdio.h>
void nextprime(int, int);
int main()
{
    int n1, n2;
    printf("\nEnter start number and end number: ");
    scanf("%d %d", &n1, &n2);
    nextprime(n1, n2);
}

void nextprime(int n1, int n2)
{
    int i, j, k=0, flag;
    for ( i = n1; i <= n2; i++)
    {
        for ( j = 2; j <= i-1; j++)
        {
            if (i%j==0)
            {
                flag = 1;
                break;
            }
        }
        if(flag == 0)
            printf("%d ", i);
    }
}

```

```

        }
    else
    {
        flag = 0;
    }
}
if (flag == 0)
{
    printf("%d\t", i);
}
}
}

```

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

```

#include<stdio.h>
void fibo(int) ;
int main()
{
    int n;
    printf("\nEnter n term to print: ");
    scanf("%d", &n);
    fibo(n);
}
void fibo(int n)
{
    int i,fibo = 0, t1 = 0, t2 = 1;
    for ( i = 0; i < n; i++)
    {
        fibo = t1 + t2;
        t1 = t2;
        t2 = fibo;
        printf("%d\t", fibo);
    }
}

```

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

```

#include<stdio.h>
void pascal(int) ;
int fact(int) ;
int combi(int,int) ;
int main()

```

```

{
    pascal(10);
}

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

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

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

```

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

```
#include<stdio.h>
void sqr(int) ;
int main()
{
    int a;
    printf("\nEnter number: ");
    scanf("%d", &a);
    sqr(a);
}
void sqr(int a)
{
    printf("\nSquare of number is : %d", a*a);
}
```

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>
void series();
int main()
{
    int n = 5, fact = 1, sum = 0, i;
    for (i = 1; i <= n; i++)
    {
        fact = fact * i;
        sum = sum + fact/i;
    }
    printf("\nsum of the series is : %d", sum);
}
```