Assignment 11

More functions

```c
#include <stdio.h>

// Function to calculate the LCM of two numbers
int calculateLCM(int a, int b) {
    int max = (a > b) ? a : b;
    while (1) {
        if (max % a == 0 && max % b == 0) {
            return max;
        }
        max++;
    }
}

// Function to calculate the HCF of two numbers
int calculateHCF(int a, int b) {
    int temp;
    while (b != 0) {
        temp = b;
        b = a % b;
        a = temp;
    }
    return a;
}

// Function to check whether a given number is prime or not
int isPrime(int num) {
    if (num <= 1) {
        return 0;
```

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

// Function to find the next prime number after a given number
int findNextPrime(int num) {
    while (1) {
        num++;
        if (isPrime(num)) {
            return num;
        }
    }
}

// Function to print the first N prime numbers
void printNPrimes(int N) {
    int num = 2;
    int count = 0;
    while (count < N) {
        if (isPrime(num)) {
            printf("%d ", num);
            count++;}
        num++;
    }
    printf("\n\n");}
```

```c
// Function to print all prime numbers between two given numbers
void printPrimesInRange(int start, int end) {
    for (int num = start; num <= end; num++) {
        if (isPrime(num)) {
            printf("%d ", num);
        }
    }
    printf("\n\n");
}

// Function to print the first N terms of the Fibonacci series
void printNFibonacci(int N) {
    int a = 0, b = 1;
    printf("First %d terms of the Fibonacci series: ", N);
    for (int i = 0; i < N; i++) {
        printf("%d ", a);
        int temp = a + b;
        a = b;
        b = temp;
    }
    printf("\n\n");
}


// Function to calculate the square of a number
int calculateSquare(int num) {
    return num * num;
}
```

```c
// Function to find the sum of the series 1!/1 + 2!/2 + 3!/3 + 4!/4 + 5!/5
double calculateSeriesSum(int N) {
    double sum = 0;
    for (int i = 1; i <= N; i++) {
        double term = 1.0;
        for (int j = 1; j <= i; j++) {
            term *= (double)j;
        }
        sum += term / (double)i;
    }
    return sum;
}



// Driver
int main() {
    int num1, num2, num, N, startRange, endRange;

    printf("Enter two numbers to calculate their LCM: ");
    scanf("%d %d", &num1, &num2);
    printf("LCM of %d and %d: %d\n\n", num1, num2, calculateLCM(num1, num2));

    printf("Enter two numbers to calculate their HCF: ");
    scanf("%d %d", &num1, &num2);
    printf("HCF of %d and %d: %d\n\n", num1, num2, calculateHCF(num1, num2));

    printf("Enter a number to check if it's prime: ");
```

```c
scanf("%d", &num);
if (isPrime(num)) {
    printf("%d is a prime number.\n\n", num);
} else {
    printf("%d is not a prime number.\n\n", num);
}

printf("Enter a number to find the next prime number after it: ");
scanf("%d", &num);
printf("Next prime number after %d: %d\n\n", num, findNextPrime(num));

printf("Enter N to print the first N prime numbers: ");
scanf("%d", &N);
printNPrimes(N);

printf("Enter the start and end range to print prime numbers in between: ");
scanf("%d %d", &startRange, &endRange);
printPrimesInRange(startRange, endRange);

printf("Enter N to print the first N terms of the Fibonacci series: ");
scanf("%d", &N);
printNFibonacci(N);

printf("Enter a number to calculate its square: ");
scanf("%d", &num);
printf("Square of %d: %d\n\n", num, calculateSquare(num));

printf("Enter N to calculate the sum of the series: ");
scanf("%d", &N);
printf("Sum of the series: %.2lf\n", calculateSeriesSum(N));
```

```
    return 0;
}
```

```
Enter two numbers to calculate their LCM: 12
48
LCM of 12 and 48: 48

Enter two numbers to calculate their HCF: 48
56
HCF of 48 and 56: 8

Enter a number to check if it's prime: 51
51 is not a prime number.

Enter a number to find the next prime number after it: 54
Next prime number after 54: 59

Enter N to print the first N prime numbers: 10
2 3 5 7 11 13 17 19 23 29

Enter the start and end range to print prime numbers in between: 58
100
59 61 67 71 73 79 83 89 97

Enter N to print the first N terms of the Fibonacci series: 10
First 10 terms of the Fibonacci series: 0 1 1 2 3 5 8 13 21 34

Enter a number to calculate its square: 14
Square of 14: 196

Enter N to calculate the sum of the series: 7
Sum of the series: 874.00
```