Assignment 6

```c
#include <stdio.h>

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

    // Calculate sum of first N natural numbers
    int sumNaturals = 0;
    for (int i = 1; i <= n; i++) {
        sumNaturals += i;
    }
    printf("Sum of first %d natural numbers: %d\n\n", n, sumNaturals);

    // Calculate sum of first N even natural numbers
    int sumEvenNaturals = 0;
    for (int i = 2; i <= 2 * n; i += 2) {
        sumEvenNaturals += i;
    }
    printf("Sum of first %d even natural numbers: %d\n\n", n, sumEvenNaturals);

    // Calculate sum of first N odd natural numbers
    int sumOddNaturals = 0;
    for (int i = 1; i <= 2 * n; i += 2) {
        sumOddNaturals += i;
    }
    printf("Sum of first %d odd natural numbers: %d\n\n", n, sumOddNaturals);
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// Calculate sum of squares of first N natural numbers
int sumSquares = 0;
for (int i = 1; i <= n; i++) {
    sumSquares += i * i;
}
printf("Sum of squares of first %d natural numbers: %d\n\n", n, sumSquares);

// Calculate sum of cubes of first N natural numbers
int sumCubes = 0;
for (int i = 1; i <= n; i++) {
    sumCubes += i * i * i;
}
printf("Sum of cubes of first %d natural numbers: %d\n\n", n, sumCubes);

// Calculate factorial of a number
int factorialNum = 1;
for (int i = 1; i <= n; i++) {
    factorialNum *= i;
}
printf("Factorial of %d: %d\n\n", n, factorialNum);

// Count digits in a given number
int num;
printf("Enter a number to count its digits: ");
scanf("%d", &num);
int digitCount = 0;
while (num != 0) {
    num /= 10;
    digitCount++;}
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 printf("Number of digits is: %d\n\n", digitCount);
// Check whether a given number is a Prime number or not
 printf("Enter a number to check if it is prime: ");
 scanf("%d", &num);
 int isPrime = 1;
 if (num <= 1) {
     isPrime = 0;
 } else {
     for (int i = 2; i * i <= num; i++) {
         if (num % i == 0) {
             isPrime = 0;
             break;}
     }
 }
 if (isPrime) {
     printf("%d is a prime number.\n\n", num);
 } else {
     printf("%d is not a prime number.\n\n", num);
 }

 // Calculate LCM of two numbers
 int a, b;
 printf("Enter two numbers to find their LCM: ");
 scanf("%d %d", &a, &b);
 int max = (a > b) ? a : b;
 while (1) {
     if (max % a == 0 && max % b == 0) {
         printf("LCM of %d and %d: %d\n\n", a, b, max);
         break;
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        }
        max++; }
    // Reverse a given number
    printf("Enter a number to reverse: ");
    scanf("%d", &num);
    int reversed = 0;
    while (num != 0) {
        reversed = reversed * 10 + num % 10;
        num /= 10;
    }
    printf("Reverse of %d: %d\n\n", num, reversed);

    return 0;
}
```

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Enter a positive integer N: 10
Sum of first 10 natural numbers: 55

Sum of first 10 even natural numbers: 110

Sum of first 10 odd natural numbers: 100

Sum of squares of first 10 natural numbers: 385

Sum of cubes of first 10 natural numbers: 3025

Factorial of 10: 3628800

Enter a number to count its digits: 9990291532
Number of digits is: 10

Enter a number to check if it is prime: 6245
6245 is not a prime number.

Enter two numbers to find their LCM: 17
35
LCM of 17 and 35: 595

Enter a number to reverse: 6842
Reverse of 0: 2486
```