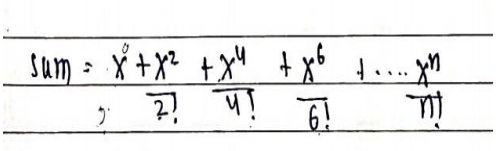
Day 8
Lab Assignments

Q#	Experiment Details	Input	Output
1.	WAP to print Fibonacci series up to n terms.	SET 1 n=5 SET 2 n=10	SET 1 0 1 1 2 3 SET 2 0 1 1 2 3 5 8 13 21 34
2	WAP to test whether a number is Perfect Number or not. (A number is said to be Perfect when the sum of factors excluding the number itself is equal to the original number. Ex-6)	SET 1 n=7 SET 2 n=28	SET 1 The given number is not Perfect SET 2 The given number is Perfect
3	WAP to check whether a number n is prime number or not.	Set 1: Enter a number:17 Set 2 : Enter a number:25	Set 1: You have entered 17, 17 is a prime number Set 2: You have entered 25, 25 is NOT a prime number
4	The first few numbers of the Lucas sequence which is a variation on the Fibonacci sequence are: 1 3 4 7 11 18 29 … WAP to generate the Lucas sequence.	1 3 4 7 11 18 29 …	1 3 4 7 11 18 29 …
5	WAP to print GCD and LCM of two numbers.	12 18	GCD of 12 and 18 is 6 LCM of 12 and 18 is 36
6	WAP to find out factorial of a number.	SET 1 n=5 SET 2 n=4	SET 1 Factorial is 120 SET 2 Factorial is 24
7	WAP to test whether an inputted number is a strong	SET 1 n=145	SET 1 The given number is

	number or not. (A number is said to be Strong if sum of factorial of digits is equal to the original number)	SET 2 n=121	Strong SET 2 The given number is not Strong

Home Assignments

Q#	Experiment Details	Input	Output
1.	WAP to sum the following series S=1+(1+2)+(1+2+3)+...+(1+2+3+...+n)	Enter the value of n: 4	20
2.	WAP to find out 1/n!	Enter the value of n: 6	The value of 1/6! is 0.001389
3.	WAP to find out x^n/n!	Enter the value of x and n: 2 2	The value is 2.0
4.	WAP to find out sum of series up to n terms. (1+1/2+1/3.....)	Enter the range: 13	The sum of series is 3.180134
5.	WAP to find out sum of series up to n terms. 	Enter the value of x and n: 2 2	The value is 4.0

Logic of the lab assignment-8

1. Fibonacci Series in C: In case of fibonacci series, next number is the sum of previous two numbers for example 0, 1, 1, 2, 3, 5, 8, 13, 21 etc. The first two numbers of fibonacci series are 0 and 1.

Logic

```
for(i=2;i<number;++i)//loop starts from 2 because 0 and 1 are already printed
 {
  n3=n1+n2;
  printf(" %d",n3);
  n1=n2;
  n2=n3;
 }
```

2.

Logic sum of factor

```
for(i = 1; i < num; i++)
                {
                        rem = num % i;
                        if (rem == 0)
                                {
                                        sum = sum + i;
                                }
                }
```

3. Logic for prime number

```
m=n/2;
for(i=2;i<=m;i++)
{
if(n%i==0)
{
printf("Number is not prime");
flag=1;
break;
}
}
```

5. LCM

```
while (1) {
        if ((max % n1 == 0) && (max % n2 == 0)) {
            printf("The LCM of %d and %d is %d.", n1, n2, max);
            break;
        }
        ++max;
    }
```

GCD

```
for(i=1; i <= n1 && i <= n2; ++i)
    {
        // Checks if i is factor of both integers
        if(n1%i==0 && n2%i==0)
            gcd = i;
    }
```

6.

```
// shows error if the user enters a negative integer
    if (n < 0)
        printf("Error! Factorial of a negative number doesn't exist.");
    else {
        for (i = 1; i <= n; ++i) {
```

```
            fact *= i;
        }
        printf("Factorial of %d = %llu", n, fact);
    }
```