| S.No: 19 | Exp. Name: ***Write a C program to compute the sum of this geometric progression: 1+x+x^2+x^3+.....+x^n.*** | Date:2023-01-04 |
|---|---|---|





## Aim:

Write a **C** program to read in two numbers, x and n, and then compute the sum of this geometric progression: **$1+x+x^2+x^3+.....+x^n$**.

For example: if n is 3 and x is 5, then the program computes **1+5+25+125**.

At the time of execution, the program should print the message on the console as:

```
Enter x value :
```

For example,
if the user gives the **input** as:

```
Enter x value : 3
```

Now, the program should print the message on the console as:

```
Enter n value :
```

For example, if the user gives the **input** as:

```
Enter n value : 5
```

then the program should **print** the result as:

```
Sum of the series 1 + x + .... + x ^ 5 = 364
```

## Source Code:

SumOfSeries.c

```
#include<stdio.h>
#include<math.h>
int main()
{
   int x,n,i=1,sum=1,result;
   printf("Enter x value : ");
   scanf("%d",&x);
   printf("Enter n value : ");
   scanf("%d",&n);
   while(i<=n)
   {
      result=pow(x,i);
      sum=sum+result;
      i++;
 }
   printf("Sum of the series 1 + x + .... + x ^ %d = %d\n",n,sum);
}
```

## Execution Results - All test cases have succeeded!

| Test Case - 1 |
|---|
| User Output |

| |
|---|
| Enter x value : 3 |
| Enter n value : 5 |
| Sum of the series 1 + x + .... + x ^ 5 = 364 |

| Test Case - 2 |
|---|
| User Output |
| Enter x value : 2 |
| Enter n value : 5 |
| Sum of the series 1 + x + .... + x ^ 5 = 63 |