S.No: 40	Exp. Name: ***Write a program to calculate x^n***	Date:2023-01-10

Aim:

Write a **C** program to calculate `x^n` using functions.

Sample Input and Output:

```
Enter value of x : 1.5
Enter value of  : 2
1.500000^2 = 2.250000
```

Note-1: Let us consider `x` as real number and `n` as integer number.

Note-2: Write the function **power()** in `FunctionsExample5a.c`.

Source Code:

FunctionsExample5.c

```
#include <stdio.h>
#include "FunctionsExample5a.c"
void main() {
   float result, x;
   int n;
   printf("Enter value of x : ");
   scanf("%f", &x);
   printf("Enter value of  : ");
   scanf("%d", &n);
   result = power(x, n);
    printf("%f^%d = %f\n", x, n, result);
}
```

FunctionsExample5a.c

```
float power(float x,int y);
float power(float x,int y)
{
   int i;
   float result=x;
   for(i=1;i<y;i++)
   result=result*x;
   return result;
}
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Enter value of x : 1.5
Enter value of : 2
1.500000^2 = 2.250000

Test Case - 2
User Output
Enter value of x : 3.57
Enter value of : 3
3.570000^3 = 45.499290

Test Case - 3
User Output
Enter value of x : 25.75
Enter value of : 3
25.750000^3 = 17073.859375