

**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
$25.750000^3 = 17073.859375$