

factorial.c

```
1  #include <stdio.h>
2
3  // write a function to calculate factorial of a number using for loop
4
5  int main(){
6
7      int num;
8      printf("Enter a number: ");
9      scanf("%d", &num);
10
11     // Factorial calculation
12     int fact = 1;
13     for(int i = 1; i <= num; i++){
14         fact = fact * i;
15     }
16     printf("Factorial of %d is %d\n", num, fact);
17     return 0;
18 }
19
20
21 /**
22  * What happens in the loop?
23
24  Loop runs from i = 1 to i = num
25
26  Each time, multiply the current value of fact by i
27
28  This builds the factorial step-by-step
29
30  Example for num = 5:
31
32  i    fact
33  -----
34  1    1 × 1 = 1
35  2    1 × 2 = 2
36  3    2 × 3 = 6
37  4    6 × 4 = 24
38  5    24 × 5 = 120
39
40  Final value = 120
41  */
42
43
```