C program: for.c

**1. A walkthrough table.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| i | i<=4 | num | sum | i = i+1; /i++ |
| 1 | 1<=4 True |  | 0 |  |
|  |  | 11 | 11 | i: 2 |
| 2 | 2<=4 True |  |  |  |
|  |  | 12 | 23 | i: 3 |
| 3 | 3<=4 True |  |  |  |
|  |  | 13 | 36 | i: 4 |
| 4 | 4<=4 True |  |  |  |
|  |  | 14 | 50 | i: 5 |
| 5 | 5<=4 False |  |  |  |

**2. Explain the C program step by step (i.e. line be line).**

**int num, i, sum=0, flag=0;**

**for (i=1; i<=4; i=i+1) { // line number: 3**

**printf( "Please enter an integer: " ); // line number: 4**

**scanf( "%d", &num ); // line number: 5**

**sum = sum + num; // line number: 6**

**printf( "...sum: %d\n", sum ); // line number: 7**

**}**

3: i is set to 1; 1<=4: true

4: printf

5: scanf; num = 11

6: add num to sum; sum = 0+11 = 11

7: printf

3: increment i; i = 2; 2<=4: true

4: printf

5: scanf; num = 12

6: add num to sum; sum = 11+12 = 23

7: printf

3: increment i; i = 3; 3<=4: true

4: printf

5: scanf; num = 13

6: add num to sum; sum = 23+13 = 36

7: printf

3: increment i; i = 4; 4<=4: true

4: printf

5: scanf; num = 14

6: add num to sum; sum = 36+14 = 50

7: printf

3: increment i; i = 5; 5<=4: false; exit the for loop