

## Square Root (Integral)

**Problem Description:** Given a number  $N$ , find its square root. You need to find and print only the integral part of square root of  $N$ .

For example, if the number given is 18, its square root is 4.

### How to approach?

You are given a number  $N$ , for which you have to find its integral square root, so, take a variable output which will be your final answer, initialize this variable with 0 and loop until  $\text{output} * \text{output}$  becomes greater than  $N$ .

1. Take the number  $N$ , as input from the user.
2. Now, initialize your output by 0.
3. Run a while loop till the  $\text{output} * \text{output}$  becomes greater than  $N$ .
4. In each iteration of this loop, increment the output by 1.
5. The final output will be 1 less than the output obtained.

Pseudo Code for this problem:

*Input =  $N$*

*output=0*

*While  $\text{output} * \text{output}$  is less than equal to 0:*

*$\text{output} = \text{output} + 1$*

*print( $\text{output} - 1$ )*

❑ Let us dry run the code:

$N=18$

- $\text{output}=0$
- $0*0 \leq 18$   
 $\text{output}=0+1=1$
- $1*1 \leq 18$   
 $\text{output}=1+1=2$
- $2*2 \leq 18$

$\text{output}=2+1=3$

- $3*3 \leq 18$   
 $\text{output}=3+1=4.$
- $4*4 \leq 18$   
 $\text{output}=4+1=5$
- $5*5 > 18$
- Final output:  
 $5-1=4$