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## 69. Sqrt(x)

Easy 6089 3939 Add to List Share

Given a non-negative integer  $x$ , return the square root of  $x$  rounded down to the nearest integer. The returned integer should be **non-negative** as well.

You **must not use** any built-in exponent function or operator.

- For example, do not use `pow(x, 0.5)` in c++ or `x ** 0.5` in python.

### Example 1:

Input:  $x = 4$

Output: 2

Explanation: The square root of 4 is 2, so we return 2.

### Example 2:

Input:  $x = 8$

Output: 2

Explanation: The square root of 8 is 2.8284..., and since we round it down to the nearest integer, 2 is returned.

### Constraints:

- $0 \leq x \leq 2^{31} - 1$

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```
1 class Solution {
2 public:
3     int mySqrt(int x) {
4         long long ans=0;
5         long long left=0, right=2147483647;
6         while(left<=right){
7             long long mid=(left+right)>>1;
8             if(mid*mid>x) right=mid-1;
9             else{
10                 if(ans<mid) ans=mid;
11                 left=mid+1;
12             }
13         }
14         return (int)ans;
15     }
16 };
```

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