/*Implement int sqrt(int x).

Compute and return the square root of x.

x is guaranteed to be a non-negative integer.

Example 1:

Input: 4

Output: 2

Example 2:

Input: 8

Output: 2

Explanation: The square root of 8 is 2.82842..., and since we want to return an integer, the decimal part will be truncated.*/

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- 思想：
- (1) 直接调用库函数速度比较慢，所以使用二分法来做比较快
- (2) 为了防止溢出，示例代码中使用了除法比较代替了乘法比较

```
public int mySqrt(int x) {
    if (x == 0) {
        return 0;
    }
    int start = 1;
    int end = x;
    // Find the last postion whose square is <= x
    while(start + 1 < end) {
        int mid = start + (end - start) / 2;
        //Same to mid * mid >x. Use divide to avoid overflow
        if(mid > x / mid) {
            end = mid;
        } else {
            start = mid;
        }
    }

    //Same to end * end >x. Use divide to avoid overflow
    if(end <= x / end) {
        return end;
    }
    return start;
}
```