

Find Square root of an integer

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/*Floor square root */
#include <stdio.h>
#include <stdlib.h>

int squareRoot(int num)
{
    if(num == 0 || num == 1)
        return num;

    int start = 1, end = num, result, middle;

    while( start <= end)
    {
        middle = (start + end) / 2;
        if(middle * middle == num)
            return middle;

        if(middle * middle < num)
        {
            start = middle + 1;
            result = middle;
        }
        else
            end = middle - 1;
    }
    return result;
}

int main()
{
    int num;
    printf("Enter number to find square root\n");
    scanf("%d", &num);

    printf("Square root of number is = %d", squareRoot(num));
    return 0;
}
```

Time complexity:  $O(\log n)$

Space Complexity:  $O(1)$