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What is the time complexity of below code?

```
void fun(int n)
{
    int j = 1, i = 0;
    while (i < n)
    {
        // Some O(1) task
        i = i + j;
        j++;
    }
}
```
Run on IDE

The loop variable 'i' is incremented by 1, 2, 3, 4, … until i becomes greater than or equal to n.

The value of i is $x(x+1)/2$ after x iterations. So if loop runs x times, then $x(x+1)/2 < n$. Therefore time complexity can be written as $\Theta(\sqrt{n})$.

This article is contributed by **Piyush Gupta**. Please write comments if you find anything incorrect, or you want to share more information about the topic discussed above