As the input to an algorithm increases, the time required to run the algorithm may also increase.

Nested loops

For I in range

For j in range

Will increases the lines dramatically

The rate of increase of an algorithm is also referred to as the **order** of the algorithm

For example, instead of saying "this relationship has a linear rate of increase", we could instead say, "the order of this relationship is linear".

 O Notation, and you'll see that the "O" in the name refers to the **o**rder of the rate of increase.

Length of input to my function

O(2n+2) > n=10 -> 22

 In n^2 + 5*n*2+5, the 55 has very little impact on the total efficiency—especially as the input size gets larger and larger. Asking the computer to do 10,005 operations vs. 10,000 operations makes little difference. Thus, it is the n^2*n*2 that we really care about the most, and the + 5+5 makes little difference

Efficiency is actually about O(n) Interviewer wants us to think about efficiency.

Some

run time analysis

O(3N) space efficiency (copying code)

Int , float 4 bytes

char 1 byte