Massachusetts Institute of Technology
6.042J/18.062J: Mathematics for Computer Science
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Handout 37
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Mini-Quiz 8

1. Write your name:

2. How many strings are there of lowercase letters of length 4 or less?

Solution:

Assuming that we are dealing with the English language, there are 26 letters to choose from. We need to figure out how many different strings there are of lenght $0, 1, 2, 3,$ and 4.

- Strings of length 0: 1 (the empty string)
- Strings of length 1: $26^1 = 26$.
- Strings of length 2: $26^2 = 676$.
- Strings of length 3: $26^3 = 17576$.
- Strings of length 4: $26^4 = 456976$.
- Grand total: $475,255$ different strings, that is, $\sum_{i=0}^{4} 26^i$