

## Worked Example: Computing $P(\text{cat} \mid \text{the})$

### Step 1: Count in Corpus

*"...the cat sat...the dog ran...the cat jumped..."*

### Step 2: Count Bigrams

`count("the")`

**= 3**

`count("the cat")`

**= 2**

### Step 3: Apply MLE Formula

$$\begin{aligned} P(\text{cat} \mid \text{the}) &= \text{count}(\text{the, cat}) / \text{count}(\text{the}) \\ &= 2 / 3 = 0.667 \end{aligned}$$

**Result: 66.7% probability**

*"the" followed by "cat" in 2 out of 3 cases*