Lab 2

(1) Trigram $w_1\ w_2\ w_3\ w_4 \cdots$

$$P(w_1) \times P(w_2|w_1) \times P(w_3|w_1 w_2)$$

$$\times \cdots$$

$$P(w_3|w_1 w_2) = \frac{C(w_1 w_2, w_3)}{C(w_1, w_2)}$$

(4) The perplexity is a measurement of how well the test set fits the LM. Calculated by Inversed prob of test set, normalised by the number of words.

$$\sqrt[N]{\frac{1}{\prod P(w_2|w_1)}}$$

bigram perplexity.

(6) $\sqrt[10]{\frac{1}{\left(\frac{91}{100}\right)^9 \cdot \frac{1}{100}}}$

$= \sqrt[10]{\frac{100^{10}}{(91)^9}}$

$= \frac{100}{\sqrt[10]{91^9}} = 1.72$ //