

# NLP Project 1, Part 4

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## 1 GOOD TURING

Probability of observe new fish is  $\frac{1}{27}$  according to slide formula, and probability of Trout, Eel and Salmon according to  $c^*$  formula is:

$$P = \frac{(c+1)(N_2)}{N_1} = \frac{1}{27}$$

And for Whitefish:

$$P = \left(\frac{3 * c}{3}\right) = \frac{3}{18}$$

Just there is a bug, sum of probabilities was  $\frac{28}{27}$  cause we can't smoothing all of fishes.