Problem 1 X; 6 {0,1}
The generation model is to Categorical (た, え2, ... えk) Xilt = k ~ Bernoulli CPk, i) Parameter of naive Bayes decompose: Z, Pi,i, Pa,i, Pa,i, Pk,i Problem 2. MLE for naive Boyes: argmax 1(0) = argmax log 1(0) = arg max \$\frac{20}{m=1}\$ hog P(X(m), two) = argmax & log[P(tim). P(xim) tim)] = argmax & [log P(tw) + log P(xm) tw)] = argmax [& log P(ton) + & log P(xhow Ithou)]

$$\widehat{\Pi}_{k} = \frac{2}{m!} \frac{1(t^{n}=k)}{m} \quad \text{for } k=1, \dots k$$

$$\widehat{\Pi}_{k} = \frac{\sum_{m=1}^{m} 1\{t^{m} = k\}}{m} \quad \text{for } k = 1, \dots k$$

$$\widehat{P}_{k,i} = \frac{\sum_{m=1}^{m} 1\{x_{i}^{m} = x \mid t^{m} = k\}}{\sum_{m=1}^{m} 1\{t^{m} = k\}}$$