Solutions: Assignment 4

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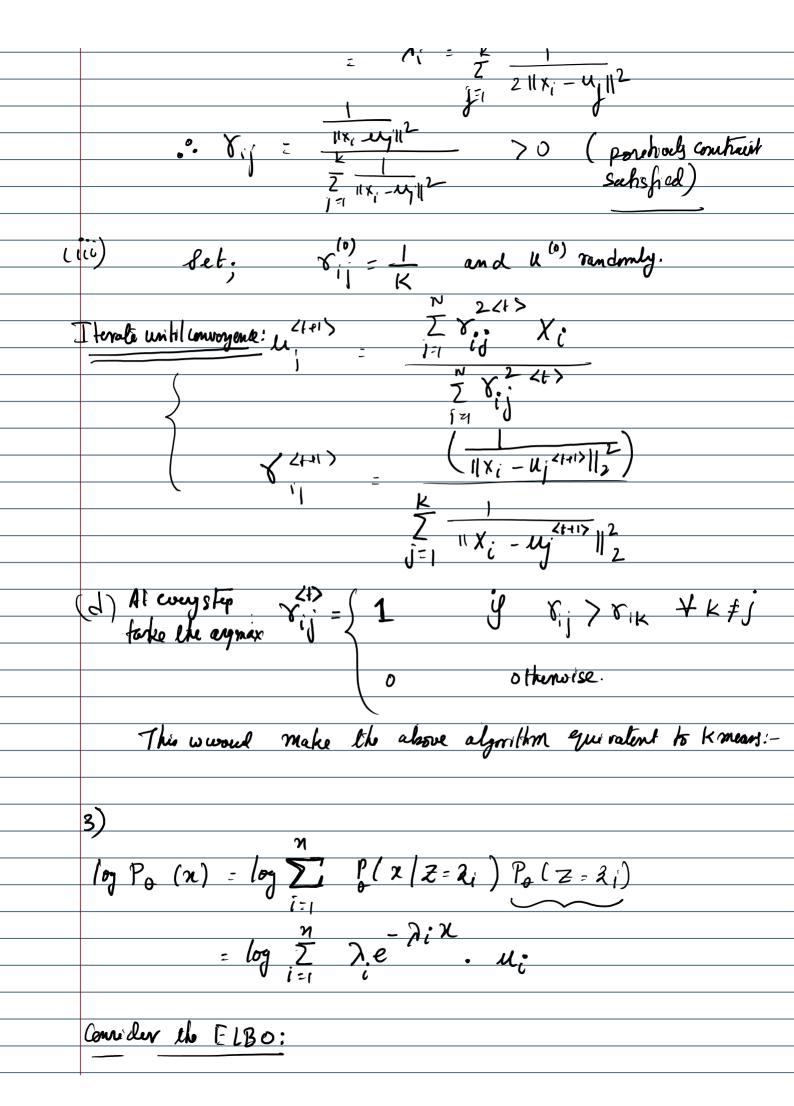
1) Coderg: Find the implementation in the jupy ter notckook.

## Theory

(i) 
$$d = \frac{7}{2} \frac{1}{5} \frac{1}$$

$$\frac{\partial L}{\partial L} = 0$$

$$\frac{\mathcal{U}}{\partial u} = \frac{\partial L^{2} - 2 \sum_{i \neq j} \mathcal{U}_{ij} \left( x_{i} - u_{j} \right) = 0}{\partial u}$$



log Po (x) > Fo (q) = log Po(x) - DKL [9(&|x) | Po (2/x)] Expectation Step: (E-Step) 9 (z|x.) = 9 ((+1) & P(x; |2) Po (2) (1) Maximization step:  $\theta$  (f+1) - argmax  $F_{\theta}(q^{(k+1)})$  g.T  $= \mathbb{E} \mathbb{E} \left[ \log \mathbb{P}_{0}(x|2) \cdot \mathbb{I}(2) \right]$   $= \frac{1}{x_{i}} \mathbb{P}_{x} \mathbb{E} \times \mathbb{I}(2) \times \mathbb{I}(2) \times \mathbb{I}(2)$  $= \frac{1}{N} \frac{\sum_{i=1}^{N} \frac{K}{|x_i|} \left[ \log P_0 = \{u_j, \lambda_i\} \left( x_i \mid \vec{a}_j \right) + \log P_0 \left( x_i \mid \vec{a}_j \right) \right]$ 

