NLP - Ex2

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Question 1:

Pseudo code:

Input: $n, q(w|t,u,v), e(x|s)$

Defintions: $K_{-2} = K_{-1} = K_0 = \{*\}, K_k = K \; \forall \, k = 1 \ldots n$

$V - the\, set\, of\, possible\, words$

Initialization: $\pi(0,*,*,*) = 1$

Algorithm:

1. $For\, k = 1...n,$

   (a) $For\, t \in K_{k-2}, u \in K_{k-1}, v \in K_k$

      i. $\pi(k,t,u,v) = \max_{x \in V} \left\{ \max_{w \in K_{k-3}} \left\{ \pi\left(k-1,w,t,u\right) \times q\left(v|\, w,t,u\right) \times e\left(x|\, v\right) \right\} \right\}$

2. ***Return*** $\max_{t \in K_{k-2}, u \in K_{k-1}, v \in K_k} \left\{ \pi\left(n,t,u,v\right) \times q\left(STOP|\, t,u,v\right) \right\}$