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Semester = 2

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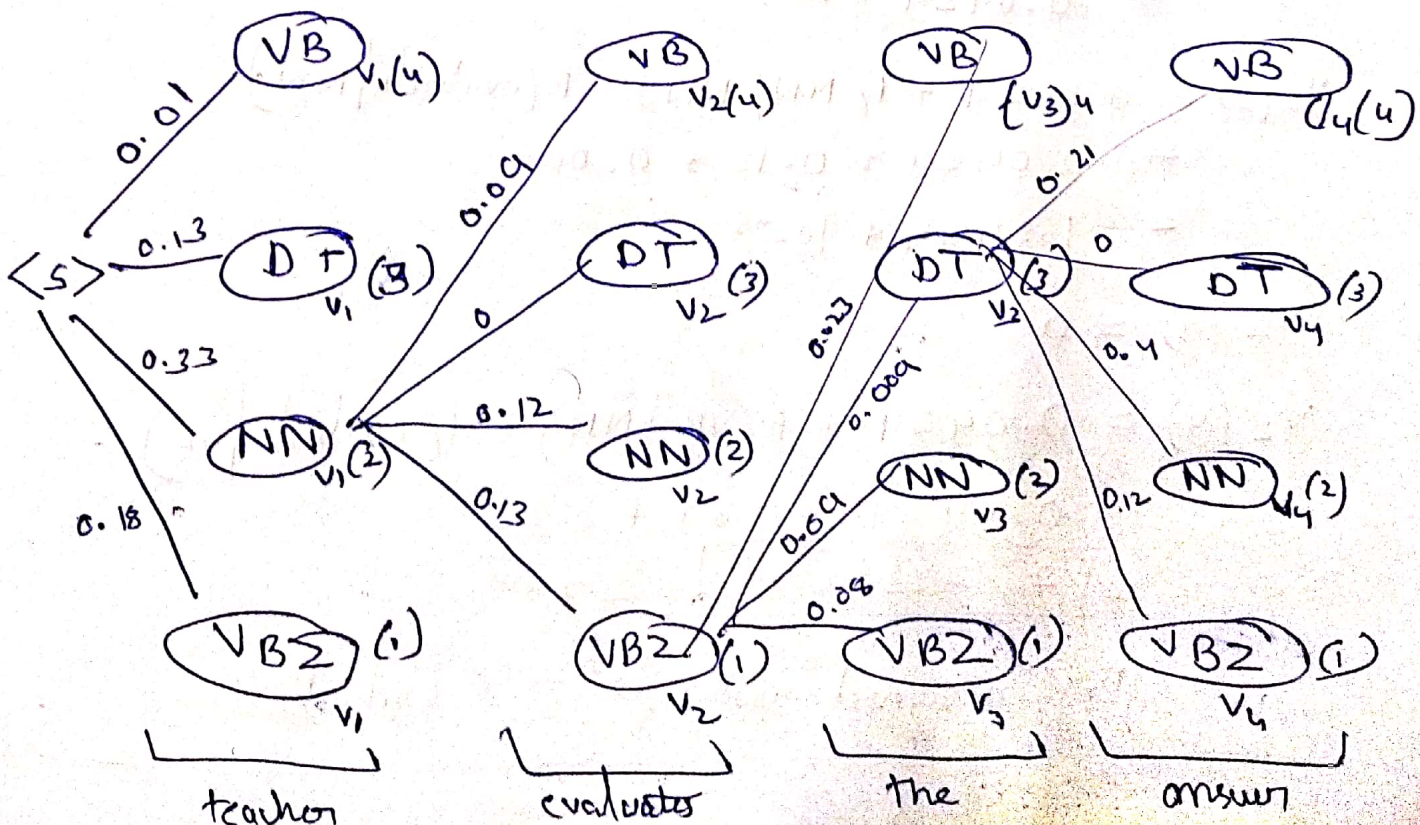
Date = 29 May 2020

Assignment = 4

→ teacher evaluates the answers

	VB	DT	NN	VBZ
<S>	0.01	0.13	0.33	0.18
VB	0	0.008	0.11	0
DT	0.21	0	0.4	0.12
NN	0.09	0	0.12	0.13
VBZ	0.0023	0.009	0.09	0.08

	the	evaluates	teacher	answer
VB	0	0.02	0	0.08
DT	0.12	0	0	0
NN	0	0.03	0.13	0.091
VBZ	0	0.12	0.08	0.002



$$\begin{aligned}
 v_1(1) &= P(<S>) + P(VB2 | <S>) * P(\text{teacher} | VB2) \\
 &= 1 * 0.18 * 0.08 \\
 &= 0.0144
 \end{aligned}$$

$$\begin{aligned}
 v_1(2) &= P(<S>) + P(NN | <S>) * P(\text{teacher} | NN) \\
 &= 1 * 0.33 * 0.13 \\
 &= \boxed{0.0429} \text{ --- max}
 \end{aligned}$$

$$\begin{aligned}
 v_1(3) &= P(<S>) + P(DT | <S>) * P(\text{teacher} | DT) \\
 &= 1 * 0.13 * 0 \\
 &= 0
 \end{aligned}$$

$$\begin{aligned}
 v_1(4) &= P(<S>) + P(VB | <S>) * P(\text{teacher} | VB) \\
 &= 0
 \end{aligned}$$

Tag assigned with NN = "Teacher"

$$\begin{aligned}
 v_2(1) &= 0.0429 + P(VB2 | NN) * P(\text{evaluate} | VB2) \\
 &= 0.0429 + 0.13 * 0.12 \\
 &= 6.6924 * 10^{-4}
 \end{aligned}$$

$$\begin{aligned}
 v_2(2) &= 0.0429 + P(NN | NN) * P(\text{evaluate} | NN) \\
 &= 0.0429 + 0.12 * 0.003 \\
 &= 1.5444 * 10^{-5}
 \end{aligned}$$

$$v_2(3) = 0$$

$$\begin{aligned}
 v_2(4) &= 0.0429 + P(VB | NN) * P(\text{evaluate} | VB) \\
 &= 0.0429 + 0.04 * 0.02 \\
 &= \boxed{7.722 * 10^{-5}} \text{ --- max}
 \end{aligned}$$

Tag assigned with VB2 = "evaluate"

$$V_3(1) = 6.6924 \times 10^{-4} + P(VB2|VB2) + P(the|VB2) \\ = 0$$

$$V_3(2) = 6.6924 \times 10^{-4} + P(NN|VB2) + P(the|NN) \\ = 0$$

$$V_3(3) = 6.6924 \times 10^{-4} + P(DT|VB2) + P(the|DT) \\ = 6.6924 \times 10^{-4} + 0.009 + 0.12 \\ = \boxed{7.227792 \times 10^{-7}} \text{ --- max}$$

$$V_3(4) = 6.6924 \times 10^{-4} + P(VB|VB2) + P(the|VB) \\ = 0$$

Tag assigned with DT = "The"

$$V_4(1) = 7.227792 \times 10^{-7} + P(VB2|DT) + P(answers|VB2) \\ = 7.227792 \times 10^{-7} + 0.12 + 0.002 \\ = 1.73467 \times 10^{-10}$$

$$V_4(2) = 7.227792 \times 10^{-7} + P(NN|DT) + P(answers|NN) \\ = 7.227792 \times 10^{-7} + 0.4 + 0.041 \\ = \boxed{2.6309 \times 10^{-8}} \text{ --- max}$$

$$V_4(3) = 0$$

$$V_4(4) = 7.227792 \times 10^{-7} + P(VB|DT) + P(answers|VB) \\ = 7.227792 \times 10^{-7} + 0.21 + 0.08 \\ = 1.214269036 \times 10^{-8}$$

Tag assigned with NN = "Answers"

Probable tag sequence is:

teacher	evaluate	the	Answers
NN	VBZ	DT	NN