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2. Markov Models

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## 2. Markov Models

### Markov Models



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## Markov Symbols

1/1 point (graded)

To specify a Markov language model, what additional symbols do we need to add to our set of possible symbols?

(Choose all that apply.)

☒ a start symbol

☒ an end symbol

☒ a symbol for unknown words

☐ a symbol for complicated words



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✓ Correct (1/1 point)

## Transition Probabilities

1/2 points (graded)

|           |        | $w_i$ |        |     |     |       |
|-----------|--------|-------|--------|-----|-----|-------|
|           |        | ML    | course | is  | UNK | <end> |
| $w_{i-1}$ | <beg>  | 0.7   | 0.1    | 0.1 | 0.1 | 0.0   |
|           | ML     | 0.1   | 0.5    | 0.2 | 0.1 | 0.1   |
|           | course | 0.0   | 0.0    | 0.7 | 0.1 | 0.2   |
|           | is     | 0.1   | 0.3    | 0.0 | 0.6 | 0.0   |
|           | UNK    | 0.1   | 0.2    | 0.2 | 0.3 | 0.2   |

Using a first order Markov model specified above, what is the probability of generating the following sentence <beg> ML course UNK <end>?

☒ 0.007☐ 0.01☐ 0.003☐ 0.005

Which of the following sentences are possible to generate?  
(Choose all those apply.)

☒ <beg> course ML is UNK <end>☒ <beg> <end>☐ course is ML <end>☒ <beg> ML course <end>

You have used 2 of 2 attempts

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\* Partially correct (1/2 points)

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## Maximum Likelihood

1/1 point (graded)

Suppose our training examples are the following three sentences.

ML courses are cool.

Humanities courses are cool.

But some courses are boring.

Using a bigram model, what is the maximum likelihood estimate for the probability that the next word is 'cool', given that the previous word is 'are'?

☒  $\frac{2}{3}$ ☐ 1☐  $\frac{1}{3}$ ☐  $\frac{1}{4}$ [Submit](#)

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✓ Correct (1/1 point)

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misspelling wording on "Which of the following sentences are possible to generate?"

1

I think that you should use "probable" rather than "possible". Because, events that are impos...

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