✓ **Congratulations! You passed!**

Grade received 100%   To pass 80% or higher

Go to next item

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1. Corpus: "In every place of great resort the monster was the fashion. They sang of it in the cafes, ridiculed it in the papers, and represented it on the stage. " (Jules Verne, Twenty Thousand Leagues under the Sea)

In the context of our corpus, what is the probability of word "papers" following the phrase "it in the".

○ P(papers|it in the) = 0

○ P(papers|it in the) =1

○ P(papers|it in the) = 2/3

◉ P(papers|it in the) = 1/2

✓ **Correct**
Correct

1 / 1 point

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2. Given these conditional probabilities

P(Mary)=0.1;   P(likes)=0.2;   P(cats)=0.3 .   P(Mary|likes) =0.2; P(likes|Mary) =0.3; P(cats|likes)=0.1; P(likes|cats)=0.4

Approximate the probability of the following sentence with bigrams: "Mary likes cats"

○ P(Mary likes cats) =1

○ P(Mary likes cats) = 0

◉ P(Mary likes cats) = 0.003

○ P(Mary likes cats) = 0.008

✓ **Correct**
Correct.

1 / 1 point

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3. Given these conditional probabilities

P(Mary)=0.1;   P(likes)=0.2;   P(cats)=0.3

P(Mary|<s>)=0.2;   P(</s>|cats)=0.6

P(likes|Mary) =0.3; P(cats|likes)=0.1

Approximate the probability of the following sentence with bigrams: "<s> Mary likes cats </s>"

○ P(<s> Mary likes cats </s>) = 1

○ P(<s> Mary likes cats </s>) = 0

◉ P(<s> Mary likes cats </s>) = 0.0036

○ P(<s> Mary likes cats </s>) = 0.003

✓ **Correct**

1 / 1 point

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4. Given the logarithm of these conditional probabilities:

log(P(Mary|<s>))=-2;   log(P(</s>|cats))=-1

log(P(likes|Mary)) =-10;   log(P(cats|likes))=-100

Approximate the log probability of the following sentence with bigrams : "<s> Mary likes cats </s>"

◉ log(P(<s> Mary likes cats </s>)) = -113

○ log(P(<s> Mary likes cats </s>)) = -112

○ log(P(<s> Mary likes cats </s>)) = 113

○ log(P(<s> Mary likes cats </s>)) = 2000

✓ **Correct**
Correct

1 / 1 point

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5. Given the logarithm of these conditional probabilities:

log(P(Mary|<s>))=-2;   log(P(</s>|cats))=-1

1 / 1 point

log(P(likes|Mary)) =-10;   log(P(cats|likes))=-100

Assuming our test set is W="<s> Mary likes cats </s>", what is the model's perplexity.

- ○ log PP(W) = -113
- ○ log PP(W) = (-1/5)*(-113)
- ● log PP(W) = (-1/4)*(-113)
- ○ log PP(W) = (-1/5)*113

✓ **Correct**
   Correct.

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6. Given the training corpus and minimum word frequency=2, how would the vocabulary for corpus preprocessed with <UNK> look like?   **1 / 1 point**

"<s> I am happy I am learning </s> <s> I am happy I can study </s>"

- ● V = (I,am,happy)
- ○ V = (I,am,happy,learning,can,study)
- ○ V = (I,am,happy,learning,can,study,<UNK>)
- ○ V = (I,am,happy,I,am)

✓ **Correct**
   Correct

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7. Corpus: "I am happy I am learning"   **1 / 1 point**

In the context of our corpus, what is the estimated probability of word "can" following the word "I" using the bigram model and add-k-smoothing where k=3.

- ○ P(can|I) = 0
- ○ P(can|I) =1
- ● P(can|I) = 3/(2+3*4)
- ○ P(can|I) = 3/(3*4)

✓ **Correct**
   Correct.

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8. Which of the following are applications of n-gram language models?   **1 / 1 point**

- ☑ Speech recognitions

   ✓ **Correct**
      Correct

- ☑ Auto-complete

   ✓ **Correct**
      Correct

- ☑ Auto-correct

   ✓ **Correct**
      Correct

- ☑ Augmentative communication

   ✓ **Correct**
      Correct

- ☐ Sentiment Analysis

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9. The higher the perplexity score the more our corpus will make sense.   **1 / 1 point**

- ● False
- ○ True

✓ **Correct**
   Correct.

10. The perplexity score increases as we increase the number of <UNK> tokens.

1 / 1 point

○ True.

◉ False.

✓ **Correct**
Correct!