✓ **Congratulations! You passed!**

Grade received 100% **To pass** 80% or higher

Autocomplete

Total points 10

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)

   1 / 1 point

   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

2. Given these conditional probabilities

   1 / 1 point

   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) = 0.003

   ○ P(Mary likes cats) = 0.008

   ○ P(Mary likes cats) = 0

   ✓ **Correct**
   Correct.

3. Given these conditional probabilities

   1 / 1 point

   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>) = 0.0036

   ○ P(<s> Mary likes cats </s>) = 0

   ○ P(<s> Mary likes cats </s>) = 0.003

   ○ P(<s> Mary likes cats </s>) = 1

   ✓ **Correct**

4. Given the logarithm of these conditional probabilities:

   1 / 1 point

   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>)) = 2000
- ◯ log(P(<s> Mary likes cats </s>)) = 113
- ◯ log(P(<s> Mary likes cats </s>)) = -112

✓ **Correct**
Correct

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5. 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

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.

1 / 1 point

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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?

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

- ◯ V = (I,am,happy,I,am)
- ⦿ V = (I,am,happy)
- ◯ V = (I,am,happy,learning,can,study,<UNK>)
- ◯ V = (I,am,happy,learning,can,study)

✓ **Correct**
Correct

1 / 1 point

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7. Corpus: "I am happy I am learning"

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) =
- ◯ P(can|I) =1
- ⦿ P(can|I) = 3/(2+3*4)
- ◯ P(can|I) = 3/(3*4)

✓ **Correct**
Correct.

1 / 1 point

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8. Which of the following are applications of n-gram language models?

- ☑ Speech recognitions

✓ **Correct**
Correct

- ☑ Auto-complete

1 / 1 point

☑ 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.

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

`1 / 1 point`

◉ True.

◯ False.

✓ **Correct**
Correct