N-Grams: Predictive Text

Quiz, 10 questions

1 point

1. Here is the code for runMarkovZero.

```
1   public void runMarkovZero() {
2  FileResource fr = new FileResource();
3  String st = fr.asString();
4  st = st.replace('\n', ' ');
5  MarkovZero markov = new MarkovZero();
6  markov.setTraining(st);
7  for(int k=0; k < 3; k++) {
8    String text = markov.getRandomText(500);
9    printOut(text);
10  }
11  }
```

Suppose the line

```
1  markov.setRandom(18);
```

is put between lines 7 and 8, as the first line in the body of the for loop. Which one of the following options best describes how this line affects the program?

- Each of three randomly generated texts will all be identical.
- You will get three distinct randomly generated texts.
- You will get three randomly generated texts, but the second generated text has one new letter and then is identical to the first text minus one letter, and the third generated text has one new letter and then is identical to the second text minus two letters.
- **(selected)** You will get three randomly generated texts, but the second generated text has the first line with new random text, but the remaining lines are identical to the first n-1 lines where the first text had n lines. The third generated text has the first line with new random text, but the remaining lines are identical to the first n-1 lines of the second text.

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1 point

2. In the **MarkovRunner** class in the **runMarkovZero** method, set the random seed to 1024 and run this method on the file **confucius.txt**.

What is the first line of text output when this program runs?

eeuefmespwhsfoyu, s giowhersa eell; bma s.7shni:.at.ttdr.w aknf

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1 point

3. In the Tester class, run the program **testGetFollowsWithFile** with the string "o" and the file **confucius.txt**.

What is the size of the ArrayList of characters that follow "o"?

0

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1 point

4. In the Tester class, run the program **testGetFollowsWithFile** with the string "he" and the file **confucius.txt**.

What is the size of the ArrayList of characters that follow "he"?

3715

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1 point

5. After the completion of the **MarkovOne** class to generate random text by finding all the characters that follow one character, set the random seed in the **runMarkovOne** method in the **MarkovRunner** class to 365. Then run **runMarkovOne** on the file **romeo.txt**.

What is the first line generated?

y O wirs bloay Ger. fo. tifthy The, A My; st- ie d, s. bloulate,

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1 point

6. After the completion of the **MarkovFour** class to generate random text by finding all the characters that follow four characters, set the random seed in the **runMarkovFour** method in the **MarkovRunner** class to 715. Then run **runMarkovFour** on the file **romeo.txt**.

What is the first line of text generated?

man in a green, for that haste, for a foot in her from Tybalt!

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1 point

7. After the completion of the **MarkovModel** class to generate random text by finding all the characters that follow N characters, set the random seed in the **runMarkovModel** method in the **MarkovRunner** class to 953 and pass in N as 7. Then run **runMarkovModel** on the file **romeo.txt**.

What is the first line of text generated?

man in a green, for that haste, for a foot in her from Tybalt!

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1 point

8. For the class **EfficientMarkovModel**, which one of the following is the best place to call the **buildMap** method?

- In the **setTraining** method.
- In the constructor.
- In the **getRandomText** method before the for loop.
- **(selected)** In the **getRandomText** method as the first line in the for loop.
- In the **setRandomText** method after **myRandom** is set.

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1 point

9. In the **EfficientMarkovModel** class, comment out the print statements in the **printHashMapInfo** method that prints out the map. Make sure **printHashMapInfo** is called right after the HashMap is built. Then in the **MarkovRunnerWithInterface** class call the **runModel** method on an **EfficientMarkovModel** of order 6 with seed 792 on the file **confucius.txt**.

How many keys are in the HashMap?

45252

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1 point

10. In the **EfficientMarkovModel** class, comment out the print statements in the **printHashMapInfo** method that prints out the map. Make sure **printHashMapInfo** is called right after the HashMap is built. Then in the **MarkovRunnerWithInterface** class call the **runModel** method on an **EfficientMarkovModel** of order 5 with seed 531 on the file **confucius.txt**.

What was the size of the largest ArrayList in the HashMap?

1549

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