# finalexamchallenge

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KTMG in Uncategorized October 8, 2018 1,088 Words

# Protected: Omega

Follow these instructions. For this challenge we assume that you are using Java and have version 1.7 or later. Any references to Java API will be for the 7th edition.

Note: When we refer to methods in this file we use the following syntax: methodName(). This only means that we are referencing a method, not that the method has no input parameters–methods we refer to may or may not accept input parameters. If we ask you to write a method it is up to you to determine if the method needs any input parameters or not.

1. Navigate to the following web address: http://www.gutenberg.org/cache/epub/5200/pg5200.txt (http://www.gutenberg.org/cache/epub/5200/pg5200.txt)

a. Note this address is a direct link to a text file, but may redirect you to a download page. If you are redirected to the download page, click the link "Plain Text UTF-8" to get to the appropriate page.

b. Copy and paste the contents of this page into a new text file called metamorphosis.txt

i. Note: "Ctrl + A" is a typical keyboard shortcut that selects all text in a given page. "Ctrl + C" copies all highlighted text to the clipboard. "Ctrl + V" pastes all contents of clipboard to current file

c. Save metamorphosis.txt to an easily accessible location (e.g. your desktop folder. All examples that follow will assume that you save this file to your desktop folder).

2. Create a new class called Hunt3.

a. Declare the following instance variables:

i. An instance of the File class called metamorphosis. Make the necessary import of the File class from the java.io package.

ii. An int called wordsModified. Set this to 0.

iii. An int called charactersRemoved. Set this to 0.

3. Create the default constructor for the Hunt3 class.

a. Initialize the metamorphosis variable using one of the constructors provided in the File class. Note

that we want this variable to represent the metamorphosis.txt file that we saved in step 1.

i. Details about the File class: https://docs.oracle.com/javase/7/docs/api/java/io/File.html (https://docs.oracle.com/javase/7/docs/api/java/io/File.html)

ii. Note that path names input as Strings are platform dependent. Absolute paths to the desktop for the three major platforms follow–replace <username> with your specific username.

1. Windows: "C:/Users/<username>/Desktop/metamorphosis.txt"

2. Mac: "/Users/<username>/Desktop/metamorphosis.txt"

3. Linux: "/home/<username>/Desktop/metamorphosis.txt:"

4. Create a method called extract() that returns an ArrayList<String>.

a. Note: the ArrayList class is in the java.util package. Additionally, the diamond brackets <> indicate a generic type class. Simply put, you can substitute any class for String and it will make a ArrayList of objects in that class. You cannot make a ArrayList of primitive data types. For a detailed use of the ArrayList class use this link: https://docs.oracle.com/javase/7/docs/api/java/util/ArrayList.html (https://docs.oracle.com/javase/7/docs/api/java/util/ArrayList.html)

b. This method should do the following:

c. Use an instance of a Scanner to get every nth word of the metamorphosis file, where n is a natural number.

i. Details about the Scanner class: https://docs.oracle.com/javase/7/docs/api/java/util/Scanner.html (https://docs.oracle.com/javase/7/docs/api/java/util/Scanner.html)

ii. Be sure to make the necessary import of the Scanner class from the java.util package.

iii. Finally you must add a throws FileNotFoundException clause to the method after the method name.

1. The throws FileNotFoundException clause must be added to prevent a critical error during runtime. If this error is thrown to the console while you are testing your code check to see if you misspelled the path name when initializing your metamorphosis variable and that you have a file called metamorphosis.txt saved to your desktop folder.

2. For a detailed explanation in specifying exceptions thrown by a method see this resource: https://docs.oracle.com/javase/tutorial/essential/exceptions/declaring.html (https://docs.oracle.com/javase/tutorial/essential/exceptions/declaring.html)

d. Make all of the characters in the String lowercase.

e. Remove all the punctuation and numbers from the String.

i. For every word that removes one or more numbers or punctuation marks, increment the value of wordsModified.

ii. Increment the value of charactersRemoved for every number or punctuation mark that is removed.

5. Write a method called intToString() that converts the following ints to the following Strings. If an int is input that doesn't match any on this list, return "your".

a. 18523 -> "left"

b. 3156 -> "began"

c. 646 -> "must"

d. 794 -> "journey"

e. 12976 -> "right"

f. 5037 -> "take"

g. 91 -> "when"

h. 12593 -> "where"

i. 7382 -> "door"

j. 18141 -> "script"

k. 2065 -> "code"

l. 2735 -> "hunt"

6. Write the main() method. Note that this method must also add the throws FileNotFoundException This method should:

a. Create an empty ArrayList<String> called secretMessage.

b. Make an ArrayList<String> of every 5th word in the metamorphosis.txt file. Store the values in a variable called fifthWords.

i. Add the word at the 280th index of fifthWords to secretMessage.

ii. Convert the value of wordsModified to a String and add that String to secretMessage.

iii. Convert the value of charactersRemoved to a String and add that String to secretMessage.

iv. Add the word at the 3301th index of fifthWords to secretMessage.

c. Make an ArrayList of every 2nd word in the metamorphosis.txt file. Store the values in a variable called twoWords.

i. Add the word at the 2410th index of twoWords to secretMessage.

ii. Add the word at the 7058th index of twoWords to secretMessage.

iii. Convert the value of twoWords.size() to a String and add that String to secretMessage.

iv. Convert the value of wordsModified to a String and add that String to secretMessage.

v. Convert the value of charactersRemoved to a String and add that String to secretMessage.

d. Make an ArrayList<String> of every 10th word in the metamorphosis.txt file. Store the values in a variable called tenWords.

i. Add the word at the 2005th index of tenWords to secretMessage.

ii. Add the word at the 285th index of tenWords to secretMessage.

e. Remove all of the words that appear in both the list twoWords and the list fifthWords from the list twoWords.

i. Convert the value of charactersRemoved to a String and add that String to secretMessage.

ii. Convert the value of wordsModified to a String and add that String to secretMessage.

iii. Convert the value of twoWords.size() to a String and add that String to secretMessage.

f. Print each String in secretMessage to reveal the secret message.



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