CSCI 232 Lab 4

Due Thursday June 1st @ 11:59 PM. Please submit this assignment (.java files) to the appropriate dropbox on D2L

Background and Instructions

In this lab, you will use Java's HashMap library to build a program that will convert Emoji Codes (:GrinningFace:) to Emojis 😀. A user will be able to supply a sentence to your program with one-to-many Emoji Codes, and the program will display the same sentence, but with the Emojis substituted properly.

You will use Lab4Demo.java as a starting point, which can be found in the "Starting Code" section.

You will need to define the `EmojiTranslator` class, which **must** use a `HashMap` to hold mappings of emoji codes (Strings) to emojis (Strings). Then you must define the following methods:

1. **`public HashMap<String,String> loadHashTable()`**. This method reads in from a text file (emojis.txt), and fills the HashMap with the proper Key Value pairs. The keys of your HashMap will be the Emoji Codes (:GrinningFace:), and the value linked to the key will be the actual Emoji (😀). This method needs to return the filled HashMap. You can call this method from the constructor of the EmojiConverterClass.

2. **`public String convert(String sentence)`**. This method takes in a sentence and will convert any word that is an emoji code to the actual emoji using the HashMap you built earlier. You can assume an emoji code will always be a word that begins and ends with a colon. This method needs to return the new sentence with the proper emojis. For example,

```
"Go Cats Go! :CatFaceWithWrySmile: Go Cats Go! :CatFaceWithWrySmile: :FlexedBiceps: :GrinningFace:"
```

Gets converted to:

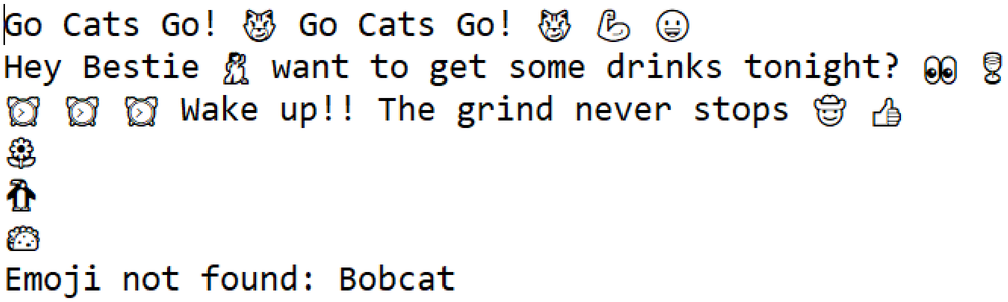
```
Go Cats Go! 😼 Go Cats Go! 😼 💪 😀
```

3. **`public String getEmoji(String code)`**. This method takes in a String and will attempt to pull the Emoji who's Emoji Code matches the argument. When **`getEmoji("Taco")`**, is called, it will attempt to find the :Taco: emoji and then return the Taco Emoji (if it exists) 🌮**.** If the Emoji does not exist, then a "`Emoji not found`" error should be printed out (see sample output)

Test your code to make sure it works how you want it to before you turn it in.

Sample Output

When you run your program, it should look exactly like the screenshot below. Once you have verified the correctness of your output, you can try your own sentences/emojis



```
Go Cats Go! 😾 Go Cats Go! 😾 💪 😀
Hey Bestie 👯 want to get some drinks tonight? 👀 🍷
⏰ ⏰ ⏰ Wake up!! The grind never stops 🤠 👍
🌼
🐧
🌮
Emoji not found: Bobcat
```

Restrictions

You are not allowed to use any data structure that is **not** a HashMap. The one exception is that you are allowed to use an Array while reading in from `emojis.txt` when using the `.split()` method.

Starting Code

- **Lab4Demo:** https://www.cs.montana.edu/pearsall/classes/summer2023/232/labs/Lab4Demo.java
- **Emojis.txt (input file you are reading from in part 1)** https://www.cs.montana.edu/pearsall/classes/summer2023/232/labs/emojis.txt

Grading

Grading will be done as follows:

• The **`loadHashTable`** () method is correct - 3 points

• The **`convert`** () method is correct - 4 points

• The **`getEmoji`** () method is correct - 3 points

NOTE: If your code does not compile, correctness cannot be verified, and you won't receive any points for your code. Turn in code that compiles!

Hints

- You can use the .charAt() method to check the character at the beginning and end of a word.
- You may find the official HashMap documentation to be helpful: https://docs.oracle.com/javase/8/docs/api/java/util/HashMap.html