

## CS272 Lab Assignment #6.

The purpose of the lab is to practice using generic classes.

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**1:** Read Chapter 5 from the textbook. Pay more attention to Sections 5.4, 5.5, 5.6.

**2:** In this assignment you will use generic node (`Node< E >`) class explained in Section 5.4, generic `List` class explained in Section 5.4, and generic bag class explained in Section 5.6. The code for classes is provided:

- [Node.java](#)
- [Lister.java](#)
- [LinkedBag.java](#)

**3:** The assignment is based on programming project 3 from Chapter 5 of the textbook. Name your program *RandomSentences.java*. Your program should do the following:

- 1) Prompt the user to enter a list of 10 nouns.
- 2) Then, prompt the user to enter a list of 10 verbs.
- 3) All non-letters should be removed from each word as it is read, and all uppercase letters should be converted to the corresponding lowercase letters.
- 4) Your program will need to use two bags: one to store the nouns and one to store the verbs. Place all nouns in the noun bag and all verbs in the verb bag. You have to use the provided generic `LinkedBag` class for the bags. The class includes the `grab` method that returns a randomly selected element.
- 5) Prompt the user to enter the number of sentences to generate. Let *N* be the number that the user entered.
- 6) Print *N* random sentences of the following form:

The <noun> <verb> the <noun>.

As you see, for each sentence you need to randomly pick two nouns from the noun bag, and randomly pick one verb from the verb bag. For example, if the two nouns picked are “monkey” and “piano” and the picked verb is “eats”, then the following sentence is generated:

The monkey eats the piano.

Needless to say, the sentences are not entirely sensible.

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### What to submit:

- Submit all your .java files electronically on Canvas.