**Magpie Chatbot Lab: Student Guide**

**Introduction**

From Eliza in the 1960s to Siri and Watson today, the idea of talking to computers in natural language has fascinated people. More and more, computer programs allow people to interact with them by typing English sentences. The field of computer science that addresses how computers can understand human language is called Natural Language Processing (NLP).

NLP is a field that attempts to have computers understand natural (i.e., human) language. There are many exciting breakthroughs in the field. While NLP is a complicated field, it is fairly easy to create a simple program to respond to English sentences.

For this lab, you will explore some of the basics of NLP. As you explore this, you will work with a variety of methods of the String class and practice using the if statement. You will trace a complicated method to find words in user input. For the last activity, you will work with arrays and ArrayLists.

We are skipping activity 1 as we did this as a class exploring chatbots. Start with Activity 2 on the next page.

**Activity 2: Introduction to the Magpie Class**

In this activity, you will work Magpie, with a simple implementation of a chatbot. You will see how it works with some keywords and add keywords of your own.

**Prepare**

Have available:

* the code for the Magpie2.java and MagpieRunner2.java
* a computer with your Java development tools

Create a project and folder for your files named LastnameMagpieTwo

Name your copy of this word document LastnameMagpieChatbotTwo.docx.

**Start**

Get to know the Magpie class. Run it, using the instructions provided by your teacher. How does it respond to:

* My mother and I talked last night. Tell me more about your family.
* I said no! Why so negative?
* The weather is nice. Interesting, tell me more.
* Do you know my brother?  Why so negative?

=> Be sure to place your answer in each of the above underline areas.

**Exploration**

 Look at the code. See how the if statement assigns a value to the response and returns that response. The method getRandomResponse picks a response from a group of String objects.

**Exercises**  Alter the code:

• Have it respond “Tell me more about your pets” when the statement contains the word “dog” or “cat.” For example, a possible statement and response would be:

Statement: I like my cat Mittens.

Response: Tell me more about your pets.

* Have it respond favorably when it sees the name of your teacher. Be sure to use appropriate pronouns! For example, a possible statement and response would be:

Statement: Mr. Finkelstein is telling us about robotics.

Response: He sounds like a good teacher.

* Have the code check that the statement has at least one character. You can do this by using the trim method to remove spaces from the beginning and end, and then checking the length of the trimmed string. If there are no characters, the response should tell the user to enter something. For example, a possible statement and response would be:

Statement:

Response: Say something, please.

* Add two more noncommittal responses to the possible random responses.
* Pick three more keywords, such as “no” and “brother” and edit the getResponse method to  respond to each of these. Enter the three keywords and responses below.

Keyword Response

1) \_no\_\_\_\_\_\_\_\_ \_\_Why not?\_\_\_\_\_\_\_\_\_\_\_

2) \_brother\_\_\_\_ \_\_Tell me more about your brother.\_\_\_\_\_\_\_\_\_\_\_

3) \_mother\_\_\_\_\_ \_\_Tell me more about your mother.\_\_\_\_\_\_\_\_\_\_\_

• What happens when more than one keyword appears in a string? Consider the string “My mother has a dog but no cat.” Explain how to prioritize responses in the reply method.

\_\_You can prioritize a response by placing it earlier in the if else if chain.\_\_\_\_\_

**Question**

1. What happens when a keyword is included in another word? Consider statements like “I know all the state capitals” and “I like vegetables smothered in cheese.” Explain the problem with the responses to these statements.

\_I have already fixed the problem with the no checker, the main problem was that it wasn’t checking if it was a standalone word, or part of another word.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Zip your project and submit in Edmodo along with your Magpie Chatbot word document in the Magpie Chatbot Two assignment.