APCS
Magpie Chatbot Lab
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.

Activity 1: Getting Acquainted with Chatbots
Chatbots are programs that are designed to respond like humans to natural language input. Before you write code to create your own chatbot, you will explore some existing chatbots.

Sample Chatbots:

Elbot: http://elbot_e.csoica.artificial-solutions.com/cgi-bin/elbot.cgi?START=normal

Einstein: https://www.pandorabots.com/pandora/talk?botid=ea77c0200e365cfb

Madam Zena: http://www.madamzena.com/

Exploration:
Have several conversations with the chatbots to become familiar with how they respond. You might consider the following questions.
- *Where do you come from?*
- *asdfghjkl;?*
- *What is your favorite activity?*

What is the most interesting response that you get? Are there any peculiar responses?

Consider having two chatbots open at the same time and have them converse with each other.

Questions:
Simple chatbots act and respond to keywords or phrases.
1. Can you identify keywords to which your chatbot responds?

2. Think of several keywords and responses that you might incorporate in a chatbot.

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 key words of your own.

Prepare
Create a new java project in Eclipse called Magpie. You will need the `Magpie` class code and the `MagpieRunner` code from the Magpie folder on the public drive.

Exploration
Get to know the code and the two classes. How does the `MagpieRunner` work? How do you end a conversation?

Have a conversation with Magpie. How does it respond to the following?

1. My sister and I talked last night.

2. I said no!

3. The weather is nice.

4. Do you know my brother?

5. How do you smother a fire?

6. It snowed today.

7. My parents and siblings are the best.

Look at the code in the `Magpie` class. 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.