Revised Project 1.1.6 Chatting with Magpie All Parts

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I will look over #'s Part 1: 2c, 3 (I'll look at your post); Part2: 1d; Part 3: tables in 1, and 2d.
Subtarget 2.1: Extend the functionality of Magpie chatbot while exploring concepts in Natural Language Processing using Java classes and String methods.

The following link explains the 20 hour lab requirement you have for this course. We will do 3 semi-structured labs and one end of the year project to fulfill this requirement. https://apstudent.collegeboard.org/apcourse/ap-computer-science-a/course-details/lab-requirements

Introduction

The Magpie is a species of bird well known for being able to mimic sounds, such as ring tones, whistling, and even human speech. For this project, you will experiment with a Magpie program in BlueJ and Android™ that mimics simple human conversation. Programs such as these are called "chatbots". Your Magpie program is a very simple chatbot, but more complex and sophisticated chatbots can appear to be nearly human in their ability to hold conversations.

Materials

- Computer with BlueJ and Android™ Studio
- Android™ tablet and USB cable, or a device emulator

Project:

Part I: The Magpie Chatbot

The College Board provides programming labs for students taking AP CS-A. To get started with this project, you will interact with the College Board's Magpie Chatbot lab to learn how it behaves, or how its algorithm works. Then, you will change the chatbot's behavior by writing new Java code in BlueJ and Android Studio.

1. Get a copy of the *AP Computer Science A Magpie Chatbot Lab Student Guide*
2. Complete Magpie Student Guide *Activity 1: Getting Acquainted with Chatbots*. Use the chatbots documented in **Activity 1: Exploring Chatbots**. Also find chatbots from other searches; AP suggests exploring chatbots found on chatbots.org. Take your time and try to dig down to figure out, just through using the chatbot, how it might be programmed. Explore at least five in depth, spending at least 5-10 minutes with each chatbot. Give a detailed analysis of each bot you visit by filling out the 3 parts below for each chatbot:
    a. Record your results of your explorations. Give yourself a script of five main questions (or use the prompts they give in the activity), asking each bot these questions (and feel free to give follow up questions based on their responses). Paste the snips of the questions and responses.
    b. Can you identify keywords to which your chatbot responds?

    c. What are several keywords and responses they might cause?

3. Go to the top of your analyses and give the name and link to your 3 favorite chatbots that you found in your exploration, and explain in one or two complete sentences why they are your favorites.
4. Please post your write-up for this on the discussion post called Chatbots Reviews.

Done.

Part 2

Subtarget 2.1: Extend the functionality of Magpie chatbot while exploring concepts in Natural Language Processing using Java classes and String methods.

1. Complete Magpie Student Guide *Activity 2: Introduction to the Magpie Class.* This file is located in our folder for this project. Open it up and follow along. I'll only expect written responses on these pages, but you do need to follow the activities on the AP Student Guide as part of these activities. As you complete the exercises, the guide will pose questions. Record your answers below.
    a. Copy or extract the project files in *1.1.6MagpieActivity2_StarterCode_BlueJ* to your *BlueJProjects* folder. Open the project in BlueJ and compile.

       Done.

    b. Answer questions from the activity here. 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?

    c. Complete the **Exploration**.
       (Here's a link to the interactive Python tutorial on Activity 2: http://interactivepython.org/runestone/static/JavaReview/Labs/magpie2.html)

       Done.

d. Complete the **Exercises**, altering your code as instructed. Fill in the keywords and responses below.

Keyword	Response
"no"	**Why so negative?**
"mother" | "father" | "sister" | "brother"	**Tell me more about your family.**
"cat" | "dog"	**Tell me more about your pets.**
"Mr." | "Mrs." | "Ms."	**He/She sounds like a good teacher.**

e. What happens when more than one keyword appears in another word? Consider the string "My mother has a daughter but no cat periods". Explain how to prioritize responses in the reply method.

Magpie would return "Why so negative?" Because code is run from top to bottom. If a keyword is found it prints the respective output. Therefore only the first keyword is read.

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

The code is looking only of "no" and because the statements above contain "no" within a word the results are not useful.

Part 3

1. Complete Magpie Student Guide *Activity 3: Better Keyword Detection*.
   a. Copy or extract the project files in *1.1.6MagpieActivity3_StarterCode_BlueJ* to your *BlueJProjects* folder. Open the project in BlueJ and compile.

      Done.

   b. Work through the section titled **Exploration: Using the API**.

      Done.

   c. Work through the section titled **Exploration: Understand the new method** and run it using the two statements in the previous step 3f.

      Done.

   d. As instructed in the guide, read through the findKeyword method and trace the following method call:
   findKeyword("She's my sister", "sister", 0);

Iteration	psn	before	after
1	9	“ ”	Empty

   e. Trace: findKeyword("Brother Tom is helpful", "brother", 0);

Iteration	psn	before	after
1	0	Empty	“ ”

   f. Trace: findKeyword("I can't catch wild cats.", "cat", 0);

Iteration	psn	before	after
1	8	“ ”	“e”
2	19	“ ”	“s”

g. Trace: findKeyword("I know nothing about snow plows.", "no", 0);

Iteration	psn	before	after
1	3	"k"	"w"
2	7	" "	"t"
3	22	"s"	"t"

h. Complete **Exercise: Use the new method** to implement the more "intelligent" algorithm when responding to questions about pets and your teacher's name.

Done.

i. Prepare for the next activity according to the Student Guide.

2. Complete Magpie Student Guide *Activity 4: Responses that Transform Statements*.
   a. Copy or extract the project files in *1.1.6MagpieActivity4_StarterCode_BlueJ* to your *BlueJProjects* folder. Open the project in BlueJ and compile.

   Done.

   b. Following the guide, use a statement like, "I want to have pizza for lunch", substituting your favorite food for "pizza".

   Done.

   c. Complete the activity according to the Student Guide.

   Done.

d. Explain your improvement to the algorithm.

Since this is the last question, list all of the features of your Magpie. I should be able to find these features easily through the documentation in your java file. Make sure you have your name and the date and a description of the file at the top of your file, as well. You can either paste your Magpie class code as text below, or submit as a separate text or java file. The file should function with the Magpie Runner class from which I will test your code.