



## APCS w/ Mr. Ascione

### Magpie - Activity 4++: Better Keyword Detection

#### Mr. A's Translation:

In this activity, they basically give you a model to follow for each of two exercises.

#### “I Want Something”

In exercise 1 below, they ask you to build a *transformIWantStatement(String statement)* method. This is almost identical to the *transformIWantToStatement(String statement)* method that they gave you... so take a look at the code, make sure you understand it, and build the additional method. You will then add a call to this method in the extended-if for the *getResponse()* method. Pay careful attention to how you order it – remember, that these evaluate from top-down.

#### “I Something You”

In exercise 2 below, they ask you to build a *transformIYouStatement(String statement)* method. This is almost identical to the *transformYouMeStatement(String statement)* that they gave you... so take a look at the code, make sure you understand it, and build the additional method. You will then add a call to this method in the extended-if for the *getResponse()* method.

#### Activity 4: Responses that Transform Statements

As stated previously, single keywords are interesting, but better chatbots look for groups of words. Statements like “I like cats,” “I like math class,” and “I like Spain” all have the form “I like *something*.” The response could be “What do you like about *something*?” This activity will respond to groupings of words.

#### Prepare

Have available:

- the API for the `Magpie` class
- the API for the `String` class
- `Magpie4.java`
- `MagpieRunner4.java`

#### Exploration

Get to know the revised `Magpie` class. Run it, using the instructions provided by your teacher.

How does it respond to:

- I want to build a robot.

- I want to understand French.
- Do you like me?
- You confuse me.

### Exercises

Look at the code. See how it handles “I want to” and you/me statements.

Alter the code:

1. Have it respond to “I want *something*” statements with “Would you really be happy if you had *something*?” In doing this, you need to be careful about where you place the check. Be sure you understand why. For example:

Statement: I want fried chicken.

Response: Would you really be happy if you had fried chicken?

2. Have it respond to statements of the form “I *something* you” with the restructuring “Why do you *something* me?” For example:

Statement: I like you.

Response: Why do you like me?

Find an example of when this structure does not work well. How can you improve it?

3. Mr. A’s extension: The method `getRandomResponse()` is pretty poorly coded at the moment. A better design would involve building an array of Strings where each element is a response and then randomly selecting an index to return a String from the array. Build a `String[]` and then modify the method to randomly select one of the elements in the array. We did this in Java... remember the Crystal Ball applet? Do it up!