MagPie Chatbot Lab

Activity 1: Ideas – Have students go to the chatbots.org site and work answer questions in the lab. Discussion or Ticket out the door: How do you think chatbots work? What String methods do you think are being used?

Activity 2: Lesson on how to use the trim() method. Investigate the API. Look up String, find the trim method. How would you use it?

String word = “ hello everyone”;

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What would word look like after a call to trim?

String word = “hello everyone “;

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

String word = “hello everyone”;

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Questions at the end of Activity 2

Activity 3:

String Explorer:

Some methods they should try:

substring (int num)

substring (int start, int end)

indexOf(int index)

toUpperCase

compareTo(String word)

equals (String word)

equalsIgnoreCase(String word)

replace(char old, char new)

3 other String methods.

Instead of use the activity 3 file, have the students add in the findKeyword method, or give it to them typed and have them copy and paste. This way they are not losing their modifications from Activity 2, and in the end you will have 1 completed file to grade.

Suggestion 1: Give them pseudocode for findKeyword first and trace it, and then trace the code.

Step 1: Trim statement and assign this to phrase.

Step 2: Assign psn to the first occurrence of goal after startPos. Case doesn’t matter. (Be careful if it is part of another word, it still counts. For example, if you are looking for “no” and you find “know”, “no” is in “know”.

Repeat the following while psn >= 0

Set before and after to “ “

if psn > 0

before is the substring that is the character directly in front of where goal is found.

if (psn + the length of goal < phrase’s length – 1)

after is the substring that is the character directly after the end of the goal.

if (before is not a letter a – z and after is not a letter a – z)

return psn and we are done.

psn will be the first occurrence of goal after psn + 1

repeat the above steps

if psn is -1 return -1.

Trace the above with the following:

|  |  |  |
| --- | --- | --- |
| statement | goal | startPos |
| She’s my sister | sister | 0 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| phrase | psn | | before | | after |
|  |  | |  | |  |
| statement | | goal | | startPos | |
| Brother Tom is helpful | | brother | | 0 | |

|  |  |  |  |
| --- | --- | --- | --- |
| phrase | psn | before | after |
|  |  |  |  |

Try with the code:

|  |  |  |
| --- | --- | --- |
| statement | goal | startPos |
| I can’t catch wild cats. | cat | 0 |

|  |  |  |  |
| --- | --- | --- | --- |
| phrase | psn | before | after |
|  |  |  |  |

|  |  |  |
| --- | --- | --- |
| statement | goal | startPos |
| I know nothing about snow plows. | no | 0 |

|  |  |  |  |
| --- | --- | --- | --- |
| phrase | psn | before | after |
|  |  |  |  |

Activity 5: I would have students write the code to add an array instead of the if statement. Also, I would move the private variable to the top. I would also use Math.random() rather than the Random class.