

Cosc 310

Assignment 3

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Overview:

The purpose of this project is to create a Chat agent that will respond reasonably well to the user input. The specific topic of conversation for the chat agent is to simulate a first date.

The way this program handles the user input is it uses a database of keywords to find responses. The program searches the user input and compares it to each keyword, if a keyword is found then it looks up the matching response and returns it. We also implement a secondary keyword to refine a response that is given to the user.

Instructions:

Import project folder into eclipse, and run the main in `\src\main\java\chat\main.java`

Limitations:

- The response of the chat program is completely dependent on the size of the database. Currently the database is quite small and therefore doesn't respond to the full extent that it could.
- The input for the games have to be quite restricted right now. The POS tagger is quite restrictive, and not very smart about it's tags. This system actually works better when given a sentence. The synonym game requires perfect spelling to work.
- does not take into consideration previous input and only looks at the current sentence

Features that have been implemented into an API:

- 1) The sentence parser & responder: Takes in a sentence and compares them to a database. It then responds accordingly.
- 2) ChatGUI: A simple gui that allows for a more visually pleasing experience. Provides the basic needs for a chat program.
- 3) POS: a simple class that implements the POS-tagger quite smoothly and provides methods to make using the system easier.
- 4) Synonym Game: a Class that creates and runs a simple game revolving around synonyms.
- 5) Madlib Game: Provides all the tools needed to make a madlib. Takes in user input and uses a

predefined blank mad lib to make a full mad lib. Uses the POS to tag the user input.

New Features:

New API's:

1) Barrett's Grammer Gauntlet: Added this to the games repitour that the chat bot has.

STRANGER: Read the sentence below. How many adverbs can you identify within?

Write the number of adverbs, or all of the correct adverbs in the sentence.

"Brian and his friend like to commit crime."

USER: 0

STRANGER: Congrats, you got all 0 of the adverbs right!

adverb(s):

2) Barrett's Find The Synonym: Added this to the games repitour that the chat bot has.

3)Wikipedia: If the chat doesn't understand the keyword it will search wikipedia for what you gave it.

ex:

STRANGER: Which one of the following four word/synonym pairs IS CORRECT (ie.(a=b)==TRUE))?

Write one of the words from the pair to answer:

a) orchestras=reenactment

b) ginkgoes=ginkgo

c) charlatanry=relate

d) fumers=gouache

USER: ginkgo

STRANGER: You are correct!!

USER: cool

STRANGER: I'm a little unclear what you meant, which of these did you mean?

0) Coolio

- 1) Coolie
- 2) Cooling tower
- 3) Cool & Dre
- 4) Cool
- 5) Cool jazz
- 6) Coolant
- 7) Cool Hand Luke
- 8) Coolgardie, Western Australia
- 9) Coolmore Stud

USER: 1

STRANGER: A coolie (alternatively spelled cooli, cooly, kuli, quli, koelie and other such variations), during the 19th and early 20th century, was a label applied to a person from Asia, particularly if they were from Southern China, the Indian subcontinent, the Philippines or Indonesia. Today, the term is usually interpreted as an insult or a racial slur towards a person or people of Asian descent throughout many nations in the world, but it is most particularly offensive when used in South Africa.

Due to the spread of the Coolie trade, this resulted in many Diasporas of Asians throughout the world especially Chinese and Indians in the Carribean, East and Southern Africa, the African island nations, Oceania, other parts of Asia especially Southeast Asia, and The Americas.

4) Yahoo answers: if asked a question it doesn't know it will look it up on yahoo answers.

ex:

USER: integrate x?

STRANGER: Just integrate with respect to the inner most variable first, followed by the second.

$$\begin{aligned}
 & 1) \int_0^{\pi/2} \int_0^{\pi/2} \sin(x+y) \, dy \, dx \\
 &= \int_0^{\pi/2} [-\cos(x+y)]_{y=0}^{y=\pi/2} \, dx \\
 &= \int_0^{\pi/2} [\cos x - \cos(x+\pi/2)] \, dx \\
 &= \int_0^{\pi/2} [\cos x - (\cos x \cos \pi/2 - \sin x \sin \pi/2)] \, dx \\
 &= \int_0^{\pi/2} (\cos x + \sin x) \, dx \\
 &= (\sin x - \cos x) \Big|_{x=0}^{x=\pi/2}
 \end{aligned}$$

$$= 2.$$

$$2) \int_{x=0}^y \int_{y=0}^1 x e^x \, dx \, dy$$

$$= \int_{y=0}^1 (x e^x - e^x) \{ \text{for } x = 0 \text{ to } y \} \, dy, \text{ integration by parts (} u = x, \, dv = e^x \, dx \text{)}$$

$$= \int_{y=0}^1 (y e^y - e^y + 1) \, dy$$

$$= [(y e^y - e^y) - e^y + y] \{ \text{for } y = 0 \text{ to } 1 \}$$

$$= (y e^y - 2e^y + y) \{ \text{for } y = 0 \text{ to } 1 \}$$

$$= 3 - e.$$

I hope this helps!