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1 from data_class import Data
2 from loadingModule_2 import loadingAnimation
3 import sys
4 import string
5 import time
6
7 # method that returns the question-type like 'what', 'when', where' etc...
8 def printAllQuestionType(processed_data):
9     if len(processed_data.get("QT")) == 1:
10         return "" + processed_data.get("QT").__getitem__(0) + ""
11     else:
12         result = "mix of "
13         try:
14             for c in range(len(processed_data.get("QT")) - 1):
15                 result += "" + processed_data.get("QT").__getitem__(c) + ", "
16                 result += "and " + processed_data.get("QT").__getitem__(len(processed_data.get("QT")) - 1) + ""
17         except IndexError:
18             print("\nI had an issue processing your query. Please re-run the program and rephrase your sentence.")
19             sys.exit()
20     return result
21
22 # method that returns any possible places that the user mentioned in their original statement ~ improves specific
    contextualization
23 def printPossibleMentions(saved_input, list):
24     matches = [place for place in list if place.lower() in saved_input.lower()]
25
26     if len(matches) == 1:
27         return matches[0]
28     elif matches:
29         return ", ".join(matches)
30     else:
31         return ""
32
33 # method that checks if the given word is in the possibleList matrix to ensure that it can proceed with "what is"
34 def validateItemAbsent(word, data_instance):
35     for q in range(len(data_instance.possibleList)):
36         for w in range(len(data_instance.possibleList[q])):
37             for e in word:
38                 if e == data_instance.possibleList[q][w]:
39                     return False
40     return True
41
42 # introductory instructions and terms/conditions
43 print("QUESTION ANALYZER: \n1.) Enter a question that you might ask a Google Assistance, Alexa, Siri, Cortana, etc..."
44       "\n2.) The system will process your response.\n3.) It will give you it's understanding of the question by categorizing it
    using basic Natural Language Processing (NLP) algorithm.\n")
45 print("This is a first step taken to complete a part of 'robotics data interpretation' and will be built upon modularly.\n")
46 print("This model is still in BETA; some questions might not be recognizable by the system. More updates will be rolling out soon
    . [Version: 2.0]\n\n")
47 user_input = input("Ask me anything: ")
48 data_instance = Data()
49 rowCategory = None
50
51 # timer started - to be used to calculate how long this program was used
52 start_time = time.time()
53
54 # loop helps the user continue asking more questions for system categorization
55 while user_input != "stop":
56     saved_input = user_input
57     user_input = user_input.lower()
58     processed_data = data_instance.parsedData(data_instance.stemWord(user_input), saved_input)
59
60     # ensures there are no error, else, redirect the issue
61     if processed_data.get("I") != None:
62         loadingAnimation()
63         for row in range(len(data_instance.possibleList)):
64             for column in range(len(data_instance.possibleList[row])):
65                 for a in processed_data.get("I"):
66                     if data_instance.possibleList[row][column] == a:
67                         rowCategory = str(row)
68             if rowCategory == None and not saved_input.__contains__("what if") and saved_input.split()[0] != "if" and not
    saved_input.__contains__("what is"):
69                 user_input = input("\nI wasn't able to understand your question. I can comprehend the question type but I couldn't
    find any identifiers that can help process this query.\nTry again or type 'stop': ")
70             else:
71                 print(f"\n\nI understand that you are trying to ask a question that starts with a {printAllQuestionType(
    processed_data)} and I am supposed to give a(n) ")
72                 place_mentions = printPossibleMentions(saved_input, data_instance.specificPlaceList)
73                 pop_culture_mentions = printPossibleMentions(saved_input, data_instance.specificPopCultureList)
74
75                 # list of possible type of questions extracted from user input [non-exhaustive]
76                 if saved_input.__contains__("what if") or saved_input.split()[0] == "if":
77                     if pop_culture_mentions != "":
78                         print("thoughtful, speculative answer based on logical reasoning, established facts, and potential
    scenarios of " + str(pop_culture_mentions) + ".")
79                     elif place_mentions != "" and pop_culture_mentions == "":
80                         print("thoughtful, speculative answer based on logical reasoning, established facts, and potential
    scenarios of " + str(place_mentions) + ".")
81                     else:
82                         print("thoughtful, speculative answer based on logical reasoning, established facts, and potential

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82 scenarios.")
83         elif (saved_input.__contains__("what is") and (validateItemAbsent(data_instance.correctedWord, data_instance) or
len(saved_input.split()) == 3)) or saved_input.__contains__("definition"):
84             clean_text = saved_input.translate(str.maketrans('', '', string.punctuation))
85             if clean_text.split().__getitem__(len(clean_text.split()) - 1).isupper():
86                 clean_text = clean_text.upper()
87             print("definition and explanation for " + clean_text.split().__getitem__(len(clean_text.split()) - 1) +
".")
88         elif rowCategory == "0":
89             if place_mentions != "" and pop_culture_mentions != "":
90                 print("clear and succinct response providing general insights into situations, activities, individuals,
or weather conditions and forecasts for locations like " + str(place_mentions) + " and Iconic References like " + str(
pop_culture_mentions) + ".")
91             elif place_mentions != "":
92                 print("clear and succinct response providing general insights into situations, activities, individuals
, or weather conditions and forecasts for locations like " + str(place_mentions) + ".")
93             elif pop_culture_mentions != "":
94                 print("clear and succinct response providing general insights into situations, activities, individuals
, or weather conditions and forecasts for Iconic References like " + str(pop_culture_mentions) + ".")
95             else:
96                 print("clear and succinct response providing general insights into locations, situations, activities,
individuals, or weather conditions and forecasts, grounded in established facts.")
97         elif rowCategory == "1":
98             print("insightful, evidence-based response addressing personal or health-related inquiries about diet,
lifestyle, and well-being.")
99             if place_mentions != "" or pop_culture_mentions != "":
100                 print("You mentioned places and/or Iconic References like, yet I don't see any relevancy of these
mentions to the personal or health-related inquiries you asked.")
101         elif rowCategory == "2":
102             if place_mentions != "" and pop_culture_mentions != "":
103                 print("productivity-focused response designed to enhance health, work, or performance efficiency, based
on logical reasoning, proven strategies, and relevancy to the following places: " + str(place_mentions) + " and Iconic
References: " +
104                     str(pop_culture_mentions))
105             elif place_mentions != "":
106                 print("productivity-focused response designed to enhance health, work, or performance efficiency, based
on logical reasoning, proven strategies, and relevancy to the following places:" + str(place_mentions) + ".")
107             elif pop_culture_mentions != "":
108                 print("productivity-focused response designed to enhance health, work, or performance efficiency, based
on logical reasoning, proven strategies, and relevancy to the following Iconic References: " + str(pop_culture_mentions) + ".")
109             else:
110                 print("productivity-focused response designed to enhance health, work, or performance efficiency, based
on logical reasoning and proven strategies.")
111         elif rowCategory == "3":
112             if place_mentions != "" and pop_culture_mentions != "":
113                 print("engaging, mood-enhancing response tailored to improving your leisure and overall well-being,
based on entertainment preferences and refined for the following places: " + str(place_mentions) + " and Iconic References: " +
114                     str(pop_culture_mentions))
115             elif place_mentions != "":
116                 print("engaging, mood-enhancing response tailored to improving your leisure and overall well-being,
based on entertainment preferences and refined for the following places: " + str(place_mentions) + ".")
117             elif pop_culture_mentions != "":
118                 print("engaging, mood-enhancing response tailored to improving your leisure and overall well-being,
based on entertainment preferences and refined for the following Iconic References: " + str(pop_culture_mentions) + ".")
119             else:
120                 print("engaging, mood-enhancing response tailored to improving your leisure and overall well-being,
based on entertainment preferences.")
121         elif rowCategory == "4":
122             print("concise or detailed mathematical response addressing a concept or calculation, based on established
principles and logical reasoning.")
123             if place_mentions != "" or pop_culture_mentions != "":
124                 print("You mentioned places and/or Iconic References, although I am not sure the relevancy of this in
the context of mathematical calculation, therefore, I am disregarding them.")
125         elif rowCategory == "5":
126             if place_mentions != "" and pop_culture_mentions != "":
127                 print("informative response aimed at enhancing your understanding of key details related to current or
past events and information for places like " + str(place_mentions) + " and Iconic References like " + str(pop_culture_mentions
) + ".")
128             elif place_mentions != "":
129                 print("informative response aimed at enhancing your understanding of key details related to current or
past events and information for places like " + str(place_mentions) + ".")
130             elif pop_culture_mentions != "":
131                 print("informative response aimed at enhancing your understanding of key details related to current or
past events and information for Iconic References like " + str(pop_culture_mentions) + ".")
132             else:
133                 print("informative response aimed at enhancing your understanding of key details related to current or
past events and information, grounded in factual accuracy and context.")
134         elif rowCategory == "6":
135             if place_mentions != "" and pop_culture_mentions != "":
136                 print("practical and insightful advice designed to offer you the most effective guidance for better
decision-making and results regarding the following places: " + str(place_mentions) + ".")
137             print("However, you mentioned Iconic References like " + str(pop_culture_mentions) + ", yet I
disregarded them due its irrelevancy to advice giving.")
138             elif place_mentions != "":
139                 print("practical and insightful advice designed to offer you the most effective guidance for better
decision-making and results in the following places: " + str(place_mentions) + ".")
140             elif pop_culture_mentions != "":
141                 print("practical and insightful advice designed to offer you the most effective guidance for better
decision-making and results.")
142             print("However, you mentioned Iconic References like " + str(pop_culture_mentions) + ", yet I

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142 disregarded them due its irrelevancy to advice giving.")
143         else:
144             print("practical and insightful advice designed to offer you the most effective guidance for better
decision-making and results.")
145             user_input = input("\nIs my understanding right? Type 'Y' for Yes or 'N' for No: ")
146             print("Glad I am doing it right. Data has been noted!") if user_input == "Y" else input("In what way should I
have interpreted the response: ")
147             print("Thank you for your feedback!\n")
148             user_input = input("\nAsk me anything (or type 'stop' to end): ").lower()
149     else:
150         user_input = input("\nThis question is unrecognizable. Try again or type 'stop': ").lower()
151
152 # post-program time display and feedback system
153 end_time = time.time()
154 total_time = int(end_time - start_time)
155 min = str(int(total_time / 60))
156 sec = f"0{int(total_time % 60)}" if (total_time % 60) < 10 else str(int(total_time % 60))
157 user_input = input(f"Now that you have used the program for {min}:{sec}, let me know how well I did: ")
158 print("Your feedback will help in improving this QuerySense Model. Thank you.")
159
160
161
162
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