

Module chatbot

Sub-modules

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Module chatbot.QAPairs

QAPair module used to perform similarity-based question lookup to provide the user with the best possible answer. The similarity-based functionality is based on a set of pre-defined Q/As in a CSV file. The similarity-based component is based on the bag-of-words model, tf/idf, and cosine similarity.

Functions

Function get_answer

```
def get_answer(  
    question: str  
) -> str
```

Interface function used to obtain the answer for the question provided, running similarity-based lookup in the background.

:param question: User question (as String) :return: Answer to user question (as String)

Function get_real_question_id

```
def get_real_question_id(  
    question: str  
) -> int
```

Perform the similarity-based lookup for the real question from our QA list based on the user-entered question.

Similarity based lookup based on bag of words and cosine similarity is used to determine the question the user most likely wanted to ask. User question is appended to the question list and sparse matrix is created and passed to the pandas data frame. Afterwards the cosine similarity is calculated using sklearn, our question is removed from the question list and similarity list (as it's score is always 1.00). Finally, the index with biggest score is returned.

:param question: User question to apply similarity-based lookup on (as String) :return: Index of question in _questions list best matching to User question input

Function load_qa_csv

```
def load_qa_csv(  
    filepath: str  
) -> None
```

Function used to load qa csv file into module

:param filepath: Path to csv file

Function load_qa_pair

```
def load_qa_pair(  
    question: str,  
    answer: str  
) -> None
```

Load the QA pair into QAPair module

:param question: Question (as String) :param answer: Answer (as String)

Function `print_qa_pairs`

```
def print_qa_pairs() -> None
```

Print QA Pairs for debug purposes

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