CHATBOT (NLP)

Import libraries & read file

```
import nltk
import warnings
warnings.filterwarnings("ignore")
```

```
import numpy as np
import random
import string
```

```
f=open('chat.txt','r',errors = 'ignore')
raw=f.read()
raw=raw.lower()
```


```
from nltk import word_tokenize,sent_tokenize
sent_tokens = nltk.sent_tokenize(raw)
```

```
word_tokens = nltk.word_tokenize(raw)
sent_tokens[:2]
word_tokens[:5]
```

```
['hii', '.', 'my', 'name', 'is']
```

```
sent_tokens[0]
```

```
'\nhii.'
```

```
word_tokens[:5]
```

```
['hii', '.', 'my', 'name', 'is']
```

Word Pre-processing

```
lemmer = nltk.stem.WordNetLemmatizer()
def LemTokens(tokens):
    return [lemmer.lemmatize(token) for token in tokens]
remove_punct_dict = dict((ord(punct), None) for punct in string.punctuation)
def LemNormalize(text):
    return LemTokens(nltk.word_tokenize(text.lower().translate(remove_punct_dict)))

words=LemNormalize(raw)
```

Greeting

```
GREETING_INPUTS = ("hello", "hi", "greetings", "sup", "what's up","hey",)
GREETING_RESPONSES = ["hi", "hey", "*nods*", "hi there", "hello", "I am glad! You are talking to me"]

def greeting(sentence):
    """If user's input is a greeting, return a greeting response"""
    for word in sentence.split():
        if word.lower() in GREETING_INPUTS:
            return random.choice(GREETING_RESPONSES)
```


```
from sklearn.feature_extraction.text import TfidfVectorizer
from sklearn.metrics.pairwise import cosine_similarity

def response(user_response):
    robo_response=''
    sent_tokens.append(user_response)
    TfidfVec = TfidfVectorizer(tokenizer=LemNormalize, stop_words='english')
    tfidf = TfidfVec.fit_transform(sent_tokens)
    vals = cosine_similarity(tfidf[-1], tfidf)
    idx=vals.argsort()[0][-2]
    flat = vals.flatten()
    flat.sort()
    req_tfidf = flat[-2]
    if(req_tfidf==0):
        robo_response=robo_response+"I am sorry! I don't understand you"
        return robo_response
    else:
        robo_response = robo_response+sent_tokens[idx]
        return robo_response
```

```
flag=True
print("ROBO: My name is Chatty. I will answer your queries about Chatbots. If you want to exit, type Bye!")

while(flag==True):
    user_response = input()
    user_response=user_response.lower()
    if(user_response!='bye'):
        if(user_response=='thanks' or user_response=='thank you' ):
            flag=False
            print("ROBO: You are welcome..")
        else:
            if(greeting(user_response)!=None):
                print("ROBO: "+greeting(user_response))
            else:
                print("ROBO: ",end="")
                print(response(user_response))
                sent_tokens.remove(user_response)
    else:
        flag=False
        print("ROBO: Bye! take care..")
```

ROBO: My name is Chatty. I will answer your queries about Chatbots. If you want to exit, type Bye!
hi
ROBO: hey
where do you live
ROBO: i live/ belong to artificial world.
what do you love
ROBO: i love to talk.
which is your favourite place
ROBO: my favourite place is sky.
what do you like to eat
ROBO: i like to eat pasta.
bye
ROBO: Bye! take care..


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THANK YOU