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```
import nltk
from nltk.chat.util import Chat, reflections
from sys import version_info
from string import punctuation
from nltk.corpus import stopwords
from nltk.tokenize import word_tokenize
from nltk.stem import PorterStemmer, WordNetLemmatizer
```

```
pairs = [
    [
        r"How can I avail internet reservation facility through credit cards?",
        ['Recently internet reservation facility has started on Indian Railways. The web site http://www.irctc.co.in is operat
    ],
    [
        r"Why are PNR and reservation availability queries not available after certain timings at night?",
        ['The online PNR and seat availability queries are fetched from the computerized reservation applications. These onli
    ],
    [
        r"How can I avail the enquiries, through SMS on mobile phones?",
        ['Now all the enquiries offered on the web site www.indianrail.gov.in are available on your mobile phone through SMS faci
    ],
    [
        r"Why do sometimes the fonts, colors schemes and java scripts behave differently in some browser or browsers?",
        ['This web site is best viewed with Microsoft Internet Explorer 6.0 and above. It might not give desired results with oth
    ],
    [
        r'Where can I get the latest arrival and departure timings of trains, when they get delayed?',
        ['The latest arrival and departure timings of delayed trains, alongwith diverted routes etc. will be made available short
    ],
    [
        r'Where can I lodge complaint against any type of grievances in the Trains, Platforms, officials for problems on this web
        ['The complaint software is presently under development. We try our best to forward your grievances to the concerned depa
    ],
]
```

```
def unique(list1):
    # intilize a null list
    unique_list = []
    # traverse for all elements
    for x in list1:
        # check if exists in unique_list or not
        if x not in unique_list:
            unique_list.append(x)
    return(unique_list)
lemmatiser = WordNetLemmatizer()
def preprocessing (sent) :
    rem_words = ['get', 'avail', 'who' , 'where', 'how' , 'what', 'why' , 'when', 'I', 'can']
    ##print(sent)
    # remove punctuation
    # convert to lower
    for p in list(punctuation):
        sent=sent.replace(p,'')
    sent=sent.lower().split()
    #remove stop words
    stop_words = set(stopwords.words('english'))
    sent = [i for i in sent if not i in stop_words]
    sent = [i for i in sent if not i in rem_words]
    # lemmatise
    #[item.upper() for item in mylis]
    sent = [lemmatiser.lemmatize(item, pos="v") for item in sent ]
    return(unique(sent))
```

```
import nltk
nltk.download('stopwords')
```

```
[nltk_data] Downloading package stopwords to /root/nltk_data...
[nltk_data] Unzipping corpora/stopwords.zip.
True
```

```
import nltk
nltk.download('wordnet')
```

```
nltk.download('omw-1.4') # recommended for newer NLTK
```

```
[nltk_data] Downloading package wordnet to /root/nltk_data...
[nltk_data] Downloading package omw-1.4 to /root/nltk_data...
True
```

```
import nltk
```

```
resources = [
    "punkt",
    "punkt_tab",
    "stopwords",
    "wordnet",
    "omw-1.4",
    "words"
]
```

```
for r in resources:
    nltk.download(r)
```

```
[nltk_data] Downloading package punkt to /root/nltk_data...
[nltk_data] Package punkt is already up-to-date!
[nltk_data] Downloading package punkt_tab to /root/nltk_data...
[nltk_data] Package punkt_tab is already up-to-date!
[nltk_data] Downloading package stopwords to /root/nltk_data...
[nltk_data] Package stopwords is already up-to-date!
[nltk_data] Downloading package wordnet to /root/nltk_data...
[nltk_data] Package wordnet is already up-to-date!
[nltk_data] Downloading package omw-1.4 to /root/nltk_data...
[nltk_data] Package omw-1.4 is already up-to-date!
[nltk_data] Downloading package words to /root/nltk_data...
[nltk_data] Package words is already up-to-date!
```

```
def tellme_bot():
    while(1):
        response = input("Tell Me. [q to quit]>")
        if response == 'q':
            break
        i=0
        chosen = len(pairs)
        matches = 0
        list_response=preprocessing(response)
        while (i<len(pairs)):
            loc_matches = 0
            x=pairs[i][0] + " ".join(pairs[i][1])
            list_pair=preprocessing(x)
            for word in list_pair:
                if word in list_response:
                    loc_matches=loc_matches+1
            if ( loc_matches > matches ):
                chosen = i
                matches = loc_matches
            i = i + 1
        if ( chosen <len(pairs) ) :
            ans=pairs[chosen][1]
            print(ans[0] )
        else :
            print("Unable to answer this question" )
            break
#Let us now call our bot with input "CAN I RESERVE RAILWAYS BOOKING" and see its response.
tellme_bot()
#prints Tell Me. [q to quit]>CAN I RESERVE RAILWAYS BOOKING
#Recently internet reservation facility has started on Indian Railways. The web site http://www.irctc.co.in
#is operational, wherein you can get the railway reservation done through Credit Cards.For more on Reservation
#through credit cards click here Internet Reservation
```

```
Tell Me. [q to quit]>CAN I RESERVE RAILWAYS BOOKING
Recently internet reservation facility has started on Indian Railways. The web site http://www.irctc.co.in is operational, wh
```

