Name :- Harsh Shah

Class:- TE Computer

ERP :-67

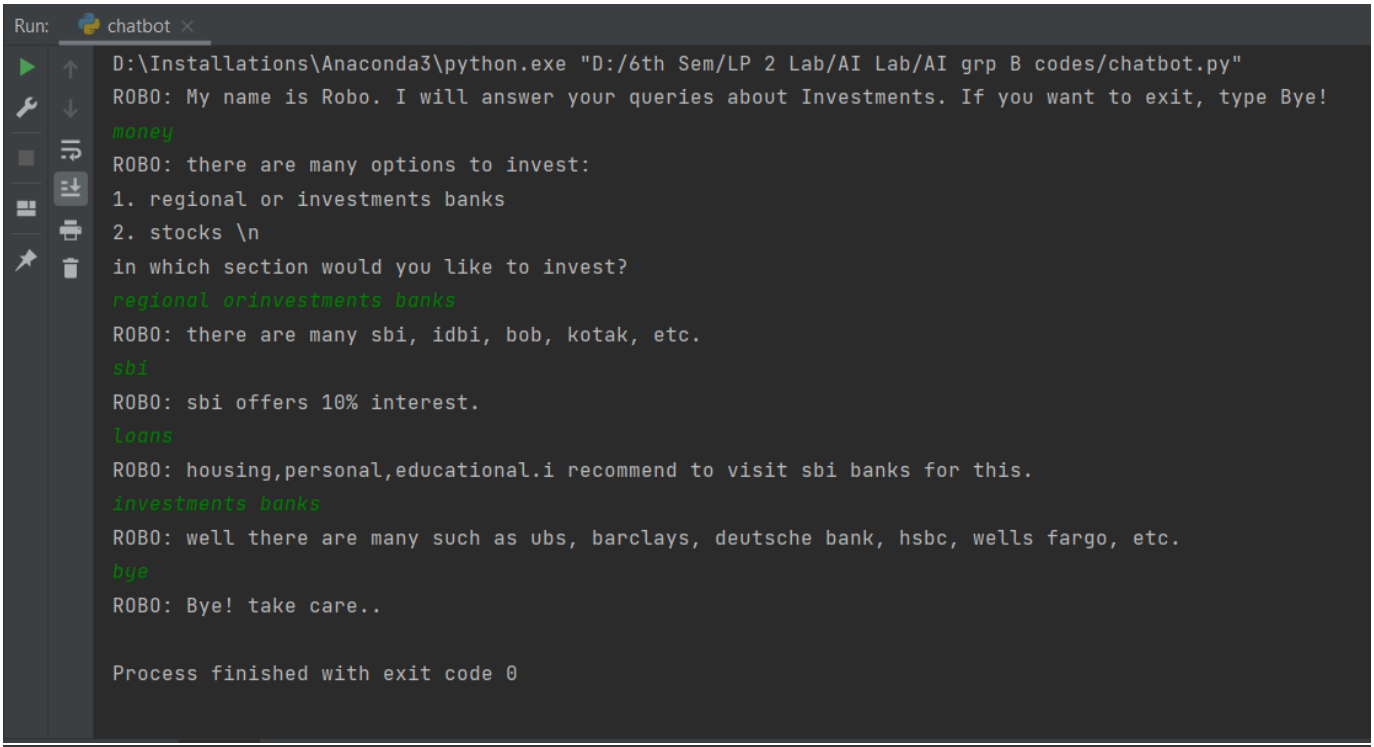
Subject :-LP2(AI) (Chatbot)

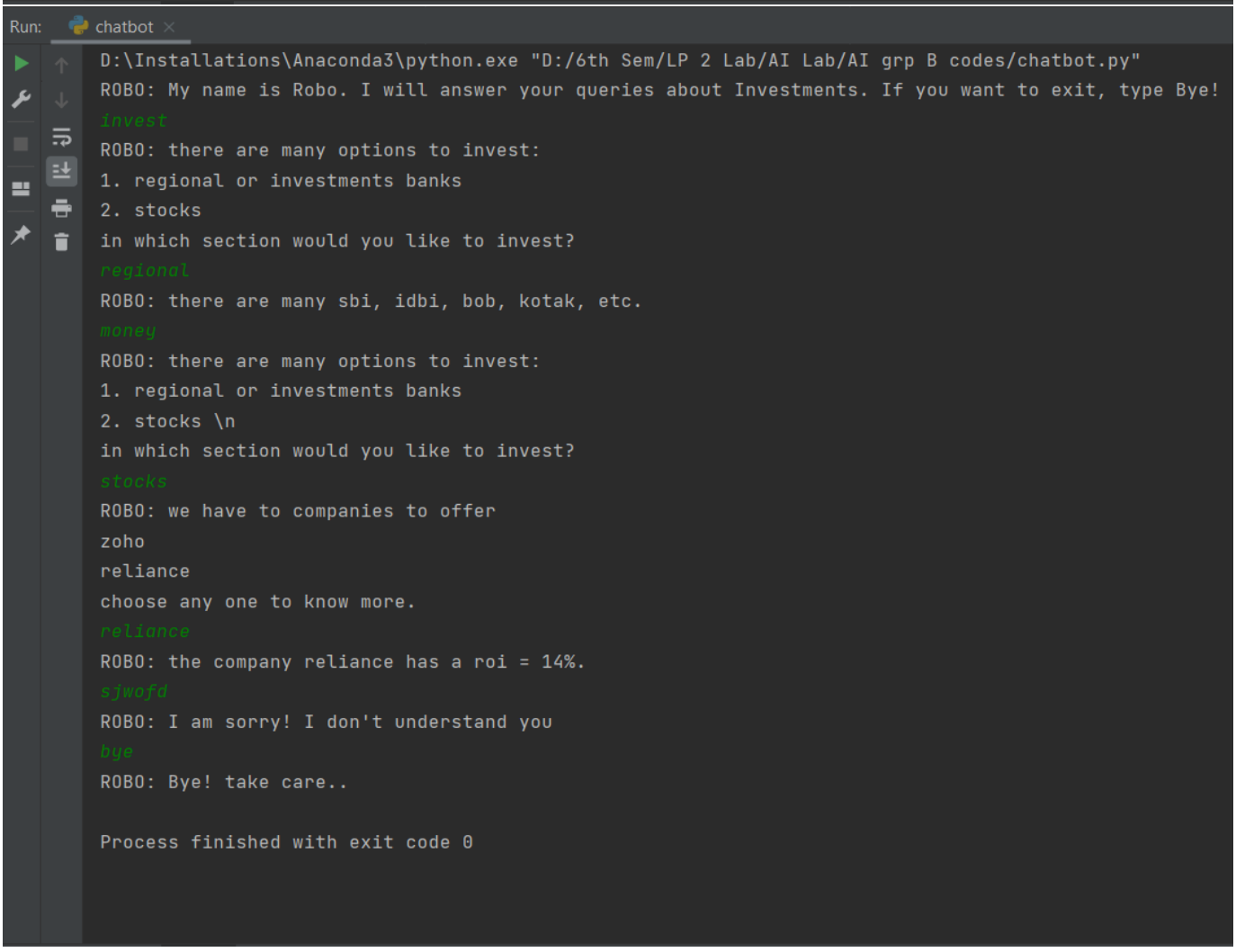
Code:-

```
import io
import random
import string
import warnings
import numpy as np
from sklearn.feature_extraction.text import TfidfVectorizer
from sklearn.metrics.pairwise import cosine_similarity
import warnings
warnings.filterwarnings('ignore')
import nltk
from nltk.stem import WordNetLemmatizer
# nltk.download('popular', quiet=True)
# nltk.download('punkt')
# nltk.download('wordnet')

with open('chatbot.txt','r', encoding='utf8', errors ='ignore') as fin:
    raw = fin.read().lower()

#Tokenisation
sent_tokens = nltk.sent_tokenize(raw)
word_tokens = nltk.word_tokenize(raw)

# Preprocessing
lemmer = 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)))


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

def greeting(sentence):
    for word in sentence.split():
        if word.lower() in GREETING_INPUTS:
            return random.choice(GREETING_RESPONSES)
```

```
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 Robo. I will answer your queries about Investments. 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="")
                res = response(user_response)
                nlines = res.count('\n')
                if nlines > 0:
                    res = res.split("\n",1)[1]
                print(res)
                sent_tokens.remove(user_response)
    else:
        flag=False
        print("ROBO: Bye! take care..")
```

Output:-


Run:
chatbot
D:\Installations\Anaconda3\python.exe "D:/6th Sem/LP 2 Lab/AI Lab/AI grp B codes/chatbot.py"
ROBO: My name is Robo. I will answer your queries about Investments. If you want to exit, type Bye!
money
ROBO: there are many options to invest:
1. regional or investments banks
2. stocks \n
in which section would you like to invest?
regional orinvestments banks
ROBO: there are many sbi, idbi, bob, kotak, etc.
sbi
ROBO: sbi offers 10% interest.
loans
ROBO: housing,personal,educational.i recommend to visit sbi banks for this.
investments banks
ROBO: well there are many such as ubs, barclays, deutsche bank, hsbc, wells fargo, etc.
bye
ROBO: Bye! take care..
Process finished with exit code 0


Run:
chatbot
D:\Installations\Anaconda3\python.exe "D:/6th Sem/LP 2 Lab/AI Lab/AI grp B codes/chatbot.py"
ROBO: My name is Robo. I will answer your queries about Investments. If you want to exit, type Bye!
invest
ROBO: there are many options to invest:
1. regional or investments banks
2. stocks
in which section would you like to invest?
regional
ROBO: there are many sbi, idbi, bob, kotak, etc.
money
ROBO: there are many options to invest:
1. regional or investments banks
2. stocks \n
in which section would you like to invest?
stocks
ROBO: we have to companies to offer
zoho
reliance
choose any one to know more.
reliance
ROBO: the company reliance has a roi = 14%.
sjwofd
ROBO: I am sorry! I don't understand you
bye
ROBO: Bye! take care..
Process finished with exit code 0