AI_PHASE 4 : CREATION OF CHATBOT USING MACHINE-LEARNING ALGORITMS

Chatbot in Python using the Naive Bayes algorithm :

- The Naive Bayes algorithm is a simple and effective machine learning algorithm that can be used for a variety of tasks, including classification and prediction.
- It is a good choice for tasks where there is a large number of classes, and where the features are independent of each other.

Create a Chatbot Using Python ChatterBot :

To get started with your chatbot project, create and activate a virtual environment, then install chatterbot and pytz:

Windows PowerShell

```
PS> python -m venv venv
PS> venv\Scripts\activate
(venv) PS> python -m pip install chatterbot==1.0.4 pytz
```

- After the installation is complete, running python -m pip freeze should bring up list of installed dependencies that's similar to what you can find in the provided sample code's requirements.txt file.
- With the installation out of the way, and ignoring some of the issues that the library currently has, you're ready to get started! Create a new Python file, call it bot.py, and add the code that you need to get a basic chatbot up and running :

Python

```python
# bot.py

from chatterbot import ChatBot

chatbot = ChatBot("Chatpot")

exit_conditions = (":q", "quit", "exit")
while True:
    query = input("> ")
    if query in exit_conditions:
        break
    else:
        print(f"🪴 {chatbot.get_response(query)}")
```

By the same way , the chatbot created by using Naïve bayes algorithm is also implemented but there are some silght changes in program.

The training data is a CSV file that contains a list of questions and answers. The classifier is trained on the training data, and then it can be used to predict the answer to a new question.

```
import pandas as pd
from sklearn.naive_bayes import GaussianNB

# Import the training data
df = pd.read_csv('training_data.csv')

# Create the Naive Bayes classifier
nb = GaussianNB()

# Train the classifier
nb.fit(df['question'], df['answer'])

# Get a new question from the user
question = input('What is your question? ')

# Predict the answer to the question
answer = nb.predict([question])[0]

# Print the answer
print(answer)
```

- A simple conversation dataset is used in this program which is in csv format.
- As soon as the program is executed , the algoritms gets trained by the dataset in which the function GaussianNB() is used .
- Now let us check the result by running the commands:

```
Text

> hi, how are you doing?
I'm fine. how about yourself?
> what school do you go to ?
I go to pcc
> do you like it there ?
it's okay. it's a really big campus
> how's it going?
I'm doing well.
> which school do you attend?
I'm attending pcc right now.
> good luck with school
thank you very much
```

Hence the Chatbot is trained successfully by using a machine-learning alogorithms which is naïve bayes alogoritm

Dataset :

hi, how are you doing? i'm fine. how about yourself?
i'm fine. how about yourself? i'm pretty good. thanks for asking.
i'm pretty good. thanks for asking. no problem. so how have you been?
no problem. so how have you been? i've been great. what about you?
i've been great. what about you? i've been good. i'm in school right now.
i've been good. i'm in school right now. what school do you go to?
what school do you go to? i go to pcc.
i go to pcc. do you like it there?
do you like it there? it's okay. it's a really big campus.
it's okay. it's a really big campus. good luck with school.
good luck with school. thank you very much.
how's it going? i'm doing well. how about you?
i'm doing well. how about you? never better, thanks.
never better, thanks. so how have you been lately?
so how have you been lately? i've actually been pretty good. you?
i've actually been pretty good. you? i'm actually in school right now.
i'm actually in school right now.which school do you attend?
which school do you attend? i'm attending pcc right now.
i'm attending pcc right now. are you enjoying it there?
are you enjoying it there? it's not bad. there are a lot of people there.
it's not bad. there are a lot of people there. good luck with that.
good luck with that. thanks.

Revising with Different Datasets :

```
import pandas as pd
from sklearn.naive_bayes import GaussianNB
# Import the training data
df = pd.read_csv('dialogs.csv')
# Create the Naive Bayes classifier
nb = GaussianNB()
```

```
# Train the classifier
nb.fit(df['question'], df['answer'])
# Get a new question from the user
question = input('What is your question? ')
# Predict the answer to the question
answer = nb.predict([question])[0]
# Print the answer
print(answer)
```

Output :

Dataset :

this friday, i'm throwing a party.	oh really? i didn't know that.
oh really? i didn't know that.	are you serious?
are you serious?	i haven't heard anything about it.
i haven't heard anything about it.	can you make it?
can you make it?	what time does it start?
what time does it start?	the party starts at 8.
the party starts at 8.	yeah, i think i'll go.
yeah, i think i'll go.	am i going to see you there?
what's going on?	nothing really, you?
nothing really, you?	i'm throwing a party next saturday.
i'm throwing a party next saturday.	is that right?
is that right?	yeah, are you going to come?
yeah, are you going to come?	i'm sorry, i can't.

i'm sorry, i can't. why not?
why not? i don't really want to.
i don't really want to. well, why don't you?
well, why don't you? i hate going to parties.
i hate going to parties. well, that's okay.
well, that's okay. yeah, sorry.
what's up? nothing, how about you?
nothing, how about you? next saturday, i'm going to have a party.

Dataset exported from Whatsapp Chat :

```
import pandas as pd

from sklearn.naive_bayes import GaussianNB

# Import the training data

df = pd.read_csv('chat.csv')

# Create the Naive Bayes classifier

nb = GaussianNB()

# Train the classifier

nb.fit(df['question'], df['answer'])

# Get a new question from the user

question = input('What is your question? ')

# Predict the answer to the question

answer = nb.predict([question])[0]

# Print the answer

print(answer)
```

Output:

```
Text
> hi
Welcome, friend 😊
> thanks for the green welcome
I let you
> you let me be here?
It's a monsters!
> did you mean monstera?
The leafs are getting dryer and dryer. But she's growing new ones
> who?
Do raindrops touch their leaves?
> very philosophical!
Lol
> ;)
I don't grow any crop at home
> no crops in pots
Ah, gotcha!
> ah, I just thought you meant that
But water makes sense
```

Dataset :

Text

```
9/15/22, 14:50 - Messages and calls are end-to-end encrypted.
↪ No one outside of this chat, not even WhatsApp, can read
↪ or listen to them. Tap to learn more.
9/15/22, 14:49 - Philipp: Hi Martin, Philipp here!
9/15/22, 14:50 - Philipp: I'm ready to talk about plants!
9/15/22, 14:51 - Martin: Oh that's great!
9/15/22, 14:52 - Martin: I've been waiting for a good convo about
↪ plants for a long time
9/15/22, 14:52 - Philipp: We all have.
9/15/22, 14:52 - Martin: Did you know they need water to grow?
...
```