Create a CHATBOT using python

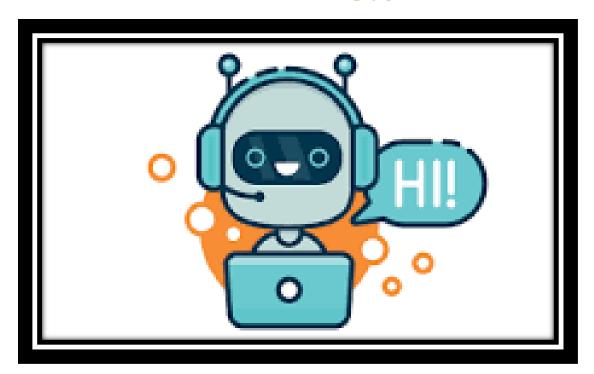## TEAM MEMBER

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PHASE_1 Document submission

Project: create a chatBot using python

OBJECTIVES:

Chatbots have become a pivotal technology in various industries, from customer service to personal assistance. This abstract presents a modular approach for creating a chatbot using Python, which provides flexibility, scalability, and ease of maintenance. The chatbot is constructed as a collection of distinct modules, each serving a specific purpose in the conversational AI

system. These modules can be customized and combined to build chatbots tailored to different applications.

Phase_1: Problem Definition and Design Thinking

Problem Definition: The problem is to build an AI-powered diabetes prediction system that uses machine learning algorithms to analyze medical data and predict the likelihood of an individual developing diabetes. The system aims to provide early risk assessment and personalized preventive measures, allowing individuals to take proactive actions to manage their health.

Design Thinking:

Functionality:

The scope of the chatbot's abilities encompasses a range of functions aimed at assisting users in understanding, managing, and seeking information related to diabetes. Here's an overview of its capabilities:

Risk Assessment and Predictions: The chatbot can assess the user's risk of developing diabetes by asking for relevant health information, such as age, weight, diet, and family history. It can then provide a risk assessment and highlight potential risk factors.

Symptom Evaluation: Users can describe their symptoms or discomfort, and the chatbot can provide information about whether these symptoms might be related to diabetes. It can also recommend seeking medical advice for a proper diagnosis.

General Diabetes Information: The chatbot can answer common questions about diabetes, such as its causes, types (Type 1, Type 2, gestational), symptoms, and common treatments. It can provide basic educational content to enhance the user's understanding of the condition.

Lifestyle Guidance: Based on user-provided information and general health guidelines, the chatbot can offer personalized advice on maintaining a healthy lifestyle to reduce the risk of diabetes or manage the condition better. This

advice may include diet recommendations, exercise tips, and stress management techniques.

Dietary Guidance: Users can inquire about suitable diets for diabetes management or prevention. The chatbot can provide information on carbohydrate counting, meal planning, and portion control.

Medication Information: The chatbot can explain common diabetes medications, their functions, and potential side effects. It can also remind users about medication schedules and the importance of compliance.

Monitoring and Self-Care Tips: Users can learn about self-monitoring techniques, such as glucose level testing and tracking. The chatbot can provide guidance on how to interpret glucose readings and adjust lifestyle or medication accordingly.

Medical Appointment Assistance: The chatbot can help users find and schedule appointments with healthcare professionals, including endocrinologists, nutritionists, and diabetes educators.

Emergency Assistance: In cases of urgent health concerns, the chatbot can guide users on appropriate actions to take and when to seek immediate medical attention.

Resource Navigation: The chatbot can direct users to trusted sources of information, such as diabetes associations, government health agencies, and reputable websites for further reading and support.

Language Support: If available, the chatbot can communicate in multiple languages to cater to a diverse user base.

Privacy and Data Security: The chatbot must assure users of the security and confidentiality of their health-related information, complying with relevant data protection regulations.

The chatbot's scope is not limited to answering static questions but extends to providing personalized guidance and recommendations based on user input and context. It serves as a valuable resource for individuals looking to prevent,

manage, or gain knowledge about diabetes while promoting healthy living and responsible healthcare decisions.

User Interface : Create wireframes and prototypes for the chatbot's user interface, considering the target platform (web, mobile, messaging apps). Focus on user-centric design, accessibility, and responsiveness to different devices.

NLP (Natural Language Processing) :

Thinking: Choose appropriate NLP libraries (e.g., spaCy, NLTK) or pre-trained models (e.g., BERT) for text preprocessing, sentiment analysis, and entity recognition. Develop or integrate intent recognition to understand user requests accurately.

Import nlp libraries:

```
pip install nltk
```

.....

```
Requirement already satisfied: nltk in /usr/local/lib/python3.10/dist-
packages (3.8.1)
Requirement already satisfied: click in /usr/local/lib/python3.10/dist-
packages (from nltk) (8.1.7)
Requirement already satisfied: joblib in /usr/local/lib/python3.10/dist-
packages (from nltk) (1.3.2)
Requirement already satisfied: regex>=2021.8.3 in
/usr/local/lib/python3.10/dist-packages (from nltk) (2023.6.3)
Requirement already satisfied: tqdm in /usr/local/lib/python3.10/dist-
packages (from nltk) (4.66.1)
```

.....

```
pip install newspaper3k
```

....

```
Collecting newspaper3k
  Downloading newspaper3k-0.2.8-py3-none-any.whl (211 kB)
  ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━
211.1/211.1 kB 3.9 MB/s eta 0:00:00
Requirement already satisfied: beautifulsoup4>=4.4.1 in
/usr/local/lib/python3.10/dist-packages (from newspaper3k) (4.11.2)
Requirement already satisfied: Pillow>=3.3.0 in
/usr/local/lib/python3.10/dist-packages (from newspaper3k) (9.4.0)
```

```
Requirement already satisfied: PyYAML>=3.11 in
/usr/local/lib/python3.10/dist-packages (from newspaper3k) (6.0.1)
Collecting cssselect>=0.9.2 (from newspaper3k)
  Downloading cssselect-1.2.0-py2.py3-none-any.whl (18 kB)
Requirement already satisfied: lxml>=3.6.0 in
/usr/local/lib/python3.10/dist-packages (from newspaper3k) (4.9.3)
Requirement already satisfied: nltk>=3.2.1 in
/usr/local/lib/python3.10/dist-packages (from newspaper3k) (3.8.1)
Requirement already satisfied: requests>=2.10.0 in
/usr/local/lib/python3.10/dist-packages (from newspaper3k) (2.31.0)
Collecting feedparser>=5.2.1 (from newspaper3k)
  Downloading feedparser-6.0.10-py3-none-any.whl (81 kB)
                              ────────────────────────────────────
81.1/81.1 kB 8.6 MB/s eta 0:00:00
Collecting tldextract>=2.0.1 (from newspaper3k)
  Downloading tldextract-3.6.0-py3-none-any.whl (97 kB)
                              ────────────────────────────────────
97.4/97.4 kB 11.3 MB/s eta 0:00:00
Collecting feedfinder2>=0.0.4 (from newspaper3k)
  Downloading feedfinder2-0.0.4.tar.gz (3.3 kB)
  Preparing metadata (setup.py) ... done
Collecting jieba3k>=0.35.1 (from newspaper3k)
  Downloading jieba3k-0.35.1.zip (7.4 MB)
                              ────────────────────────────────────
7.4/7.4 MB 44.7 MB/s eta 0:00:00
  Preparing metadata (setup.py) ... done
Requirement already satisfied: python-dateutil>=2.5.3 in
/usr/local/lib/python3.10/dist-packages (from newspaper3k) (2.8.2)
Collecting tinysegmenter==0.3 (from newspaper3k)
  Downloading tinysegmenter-0.3.tar.gz (16 kB)
  Preparing metadata (setup.py) ... done
Requirement already satisfied: soupsieve>1.2 in
/usr/local/lib/python3.10/dist-packages (from beautifulsoup4>=4.4.1-
>newspaper3k) (2.5)
Requirement already satisfied: six in /usr/local/lib/python3.10/dist-
packages (from feedfinder2>=0.0.4->newspaper3k) (1.16.0)
Collecting sgmllib3k (from feedparser>=5.2.1->newspaper3k)
  Downloading sgmllib3k-1.0.0.tar.gz (5.8 kB)
  Preparing metadata (setup.py) ... done
Requirement already satisfied: click in /usr/local/lib/python3.10/dist-
packages (from nltk>=3.2.1->newspaper3k) (8.1.7)
Requirement already satisfied: joblib in /usr/local/lib/python3.10/dist-
packages (from nltk>=3.2.1->newspaper3k) (1.3.2)
Requirement already satisfied: regex>=2021.8.3 in
/usr/local/lib/python3.10/dist-packages (from nltk>=3.2.1->newspaper3k)
(2023.6.3)
Requirement already satisfied: tqdm in /usr/local/lib/python3.10/dist-
packages (from nltk>=3.2.1->newspaper3k) (4.66.1)
Requirement already satisfied: charset-normalizer<4,>=2 in
/usr/local/lib/python3.10/dist-packages (from requests>=2.10.0-
>newspaper3k) (3.2.0)
Requirement already satisfied: idna<4,>=2.5 in
/usr/local/lib/python3.10/dist-packages (from requests>=2.10.0-
>newspaper3k) (3.4)
```

```
Requirement already satisfied: urllib3<3,>=1.21.1 in
/usr/local/lib/python3.10/dist-packages (from requests>=2.10.0-
>newspaper3k) (2.0.4)
Requirement already satisfied: certifi>=2017.4.17 in
/usr/local/lib/python3.10/dist-packages (from requests>=2.10.0-
>newspaper3k) (2023.7.22)
Collecting requests-file>=1.4 (from tldextract>=2.0.1->newspaper3k)
  Downloading requests_file-1.5.1-py2.py3-none-any.whl (3.7 kB)
Requirement already satisfied: filelock>=3.0.8 in
/usr/local/lib/python3.10/dist-packages (from tldextract>=2.0.1-
>newspaper3k) (3.12.2)
Building wheels for collected packages: tinysegmenter, feedfinder2,
jieba3k, sgmllib3k
  Building wheel for tinysegmenter (setup.py) ... done
  Created wheel for tinysegmenter: filename=tinysegmenter-0.3-py3-none-
any.whl size=13541
sha256=ecbb7bdd01bb9b0c345faf7271dacb1367aabc63340ef2f741e5e5406800f26d
  Stored in directory:
/root/.cache/pip/wheels/c8/d6/6c/384f58df48c00b9a31d638005143b5b3ac62c3d25
fb1447f23
  Building wheel for feedfinder2 (setup.py) ... done
  Created wheel for feedfinder2: filename=feedfinder2-0.0.4-py3-none-
any.whl size=3339
sha256=7d90abea9312213dffa51e8b0c2c9a149693ad532682ca249b0cd02aed66d51b
  Stored in directory:
/root/.cache/pip/wheels/97/02/e7/a1ff1760e12bdbaab0ac824fae5c1bc933e41c4cc
d6a8f8edb
  Building wheel for jieba3k (setup.py) ... done
  Created wheel for jieba3k: filename=jieba3k-0.35.1-py3-none-any.whl
size=7398380
sha256=dc7c1327df86ec55fd90336a8408db454c8ff8c3e8f905ddf64ed8707b4e97aa
  Stored in directory:
/root/.cache/pip/wheels/7a/c4/0c/12a9a314ecac499456c4c3b2fcc2f635a3b45a39d
fbd240299
  Building wheel for sgmllib3k (setup.py) ... done
  Created wheel for sgmllib3k: filename=sgmllib3k-1.0.0-py3-none-any.whl
size=6047
sha256=5fa9ab451fd9b71e94c0fc73bd185e9c1ebc215516a92fc353b5320e9cf65b59
  Stored in directory:
/root/.cache/pip/wheels/f0/69/93/a47e9d621be168e9e33c7ce60524393c0b92ae83c
f6c6e89c5
Successfully built tinysegmenter feedfinder2 jieba3k sgmllib3k
Installing collected packages: tinysegmenter, sgmllib3k, jieba3k,
feedparser, cssselect, requests-file, feedfinder2, tldextract, newspaper3k
Successfully installed cssselect-1.2.0 feedfinder2-0.0.4 feedparser-6.0.10
jieba3k-0.35.1  newspaper3k-0.2.8  requests-file-1.5.1  sgmllib3k-1.0.0
tinysegmenter-0.3 tldextract-3.6.0
```

....

Responses Module:Thinking: Implement a response generation system that combines rule-based templates and machine learning models (e.g., GPT-3). Consider personalization and response variation for a natural conversation flow.

Integration Module:

Thinking: Develop connectors for databases (SQL, NoSQL) and APIs to retrieve and update data. Integrate with messaging platforms (e.g., Slack, Facebook Messenger) or build custom frontends for seamless interactions.

Python program:

#import the lib

```
from newspaper import Article

import random

import string

import nltk

from sklearn.feature_extraction.text import CountVectorizer

from sklearn.metrics.pairwise import cosine_distances

import numpy as np

import warnings

warnings.filterwarnings('ignore')
```

#download the punkt package

```
nltk.download('punkt',quiet=True)
```

output:

true.

#article reference

```
article = Article('https://www.medicalnewstoday.com/articles/323627')

article.download()

article.parse()

article.nlp()

corpus = article.text
```

#print articles text

```
print(corpus)
```

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RECALL OF METFORMIN EXTENDED RELEASE In May 2020, the Food and Drug
Administration (FDA) recommended that some makers of metformin extended
release remove some of their tablets from the U.S. market. This is because
an unacceptable level of a probable carcinogen (cancer-causing agent) was
found in some extended-release metformin tablets. If you currently take
this drug, call your healthcare provider. They will advise whether you
should continue to take your medication or if you need a new prescription.
Diabetes is a condition that impairs the body's ability to process blood
glucose, otherwise known as blood sugar. There are several types of
diabetes, which have various treatments. In the United States, the
estimated number of people of all ages living with diagnosed and
undiagnosed diabetes is 34.2 million . Without ongoing, careful
management, diabetes can lead to a buildup of sugars in the blood, which
can increase the risk of dangerous complications, including stroke and
heart disease. Different kinds of diabetes can occur, and how people
manage the condition depends on the type. Not all forms of diabetes stem
from a person being overweight or leading an inactive lifestyle. Some are
present from childhood. The most common types of diabetes include type 1,
type 2, and gestational diabetes, which we cover in more detail below.
Less common types of diabetes include monogenic diabetes and cystic
fibrosis-related diabetes.

Type 2 diabetes People with type 2 diabetes do not make or use insulin
effectively. According to the National Institute of Diabetes and Digestive
and Kidney Diseases (NIDDK) , this is the most common type of diabetes,
and it has strong links with obesity. A person living with type 2 diabetes
may or may not need insulin. In many cases, medication along with changes
in exercise and diet can help manage the condition. Anyone, including
children and adults, can develop type 2 diabetes. The most common risk
factors for type 2 diabetes include: age 45 or older

overweight

family history Learn about the early warning signs of type 2 diabetes here.

Gestational diabetes Gestational diabetes occurs during pregnancy when an individual becomes less sensitive to insulin. According to the Centers for Disease Control and Prevention (CDC), between 2–10% of pregnancies each year result in gestational diabetes. Individuals who are overweight going into their pregnancy have an elevated risk of developing the condition. The CDC adds that around 50% of people with gestational diabetes will later develop type 2 diabetes. During pregnancy, individuals can take steps to manage the condition. These include: staying active

monitoring the growth and development of the fetus

adjusting their diet

monitoring blood sugar levels Gestational diabetes can increase a person's risk of developing high blood pressure during pregnancy. It can also cause: premature birth

increased birth weight

blood sugar issues with the newborn, which typically clear up within a few days

increased risk of the baby developing type 2 diabetes later in life Learn the signs and symptoms of gestational diabetes here.

Prevention A person cannot prevent type 1 diabetes. However, people can take some steps to help prevent type 2 diabetes. Some ways to help prevent type 2 diabetes include : maintaining a moderate weight

eating a balanced diet low in added sugars, saturated fats, and processed foods

exercising regularly To reduce the risk of developing gestational diabetes, a person should maintain a moderate weight before becoming pregnant. While these steps can help, it is important to note that people may still develop either type 2 or gestational diabetes.

How insulin problems develop Doctors do not know the exact causes of type 1 diabetes. However, insulin resistance, which can lead to type 2 diabetes, has clearer causes. Insulin allows the glucose from a person's food to access the cells in their body to supply energy. Insulin resistance is usually a result of the following cycle: A person has genes or an environment that make it more likely for them to be unable to produce enough insulin to cover how much glucose, or sugar, they eat. The body tries to make extra insulin to process the excess blood sugar. The pancreas cannot keep up with the increased demands, and the excess blood sugar starts to circulate in the blood, causing damage. Over time, insulin becomes less effective at introducing glucose to cells, and blood sugar

levels continue to rise. With type 2 diabetes, insulin resistance takes place gradually. This is why doctors often recommend making lifestyle changes in an attempt to slow or reverse this cycle. Learn more about the function of insulin here.

Exercise and diet tips If a doctor diagnoses somone with diabetes, they will often recommend making lifestyle changes to support weight management and overall health. A doctor may refer a person living with diabetes or prediabetes to a nutritionist. A specialist can help people living with diabetes lead an active, balanced lifestyle and manage the condition. Steps a person can take to stay healthy with diabetes include: Eating a diet high in fresh, nutritious foods, including whole grains, fruits, vegetables, lean proteins, low-fat dairy, and healthy fat sources, such as nuts.

Avoiding high-sugar foods that provide empty calories or calories that do not have other nutritional benefits, such as sweetened sodas, fried foods, and high-sugar desserts.

Refraining from drinking excessive amounts of alcohol or keeping intake to less than one drink a day for females or two drinks a day for males.

Engaging in at least 30 minutes of exercise per day on at least 5 days of the week, such as walking, aerobics, riding a bike, or swimming.

Recognizing signs of low blood sugar when exercising, including dizziness, confusion, weakness, and profuse sweating. Some people can also take steps to reduce their body mass index (BMI) if needed, which can help those with type 2 diabetes manage the condition without medication.

Using insulin All people living with type 1 diabetes and some people living with type 2 diabetes need to administer insulin to keep their blood sugar levels from becoming too high. Various types of insulin are available, and most are grouped by how long their effect lasts. There are rapid-acting, short-acting, intermediate-acting, long-acting, and mixed insulins. Some people will use long-acting insulin to maintain consistently low blood sugar levels. Others may use short-acting insulin or a combination of insulin types. Whatever the type, a person will usually check their blood sugar levels to determine how much insulin they need. To check blood sugar levels, a person can use a blood glucose monitor, which involves pricking their skin, or a combination of a continuous blood glucose monitor (CGM) and skin pricks. A CGM takes blood sugar readings regularly throughout the day. They can help a person make any adjustments to their medications. Self-monitoring is the only way a person can find out their blood sugar levels. Assuming the level from any physical symptoms that occur may be dangerous unless a person suspects extremely low sugar and thinks they need a rapid dose of glucose. Learn more about the discovery of insulin here. How much is too much? Insulin helps people living with diabetes live an active lifestyle. However, it can lead to serious side effects, especially if a person administers too much. Excessive insulin can cause hypoglycemia, or extremely low blood sugar, and lead to nausea, sweating, and shaking. It is essential that people measure insulin carefully, adjust their medications based on their

needs, and eat a consistent diet that helps to balance blood sugar levels as much as possible.

Other medications In addition to insulin, other types of medication are available that can help people manage their condition. Metformin A doctor may prescribe metformin in pill form to a person with type 2 diabetes. It contributes to: lowering blood sugar

making insulin more effective People living with diabetes may also have other health risks, which they may also need medication to control. A doctor will advise the individual about their needs. SGLT2 inhibitors and GLP-1 receptor agonists In 2018, new guidelines also recommended prescribing additional drugs for people with: atherosclerotic cardiovascular disease

chronic kidney disease These are sodium-glucose cotransporter 2 (SGLT2) inhibitors or glucagon-like peptide-1 (GLP-1) receptor agonists. For those with atherosclerotic cardiovascular disease and a high risk of heart failure, the guidelines advise doctors to prescribe an SGLT2 inhibitor. GLP-1 receptor agonists work by increasing the amount of insulin the body produces and decreasing the amount of glucose that enters the bloodstream. It is an injectable medication. People may use it with metformin or alone. Side effects include gastrointestinal problems, such as nausea and a loss of appetite. SLGT2 inhibitors are a new type of drug for lowering blood sugar levels. They work separately from insulin, and may be useful for people who are not ready to start using insulin. People can take it by mouth. Side effects include a higher risk of urinary and genital infections and ketoacidosis. Learn more about other medications and treatments for managing diabetes here.

Self-monitoring tips Self-monitoring blood sugar levels is vital for effective diabetes management , helping to regulate meal scheduling, physical activity, and when to take medication, including insulin. While self-monitoring blood glucose machines vary, they will generally include a meter and test strip for generating readings. It will also involve using a lancing device to prick the skin for obtaining a small quantity of blood. Precautions People should refer to the specific instructions of a meter in every case, as machines will differ. However, the following precautions and steps will apply to many devices on the market: Making sure both hands are clean and dry before touching the test strips or meter.

Using a test strip once only and keeping them in their original canister to avoid any external moisture changing the result.

Keeping canisters closed after testing.

Checking the expiration date before use.

Checking whether the machine requires coding before use, which may apply to older varieties

Storing the meter and strips in a dry, cool area.

Taking the meter and strips to consultations so that a primary care physician or specialist can check their effectiveness. Tips People checking their blood sugar levels with a blood glucose meter will also use a device called a lancet to prick their finger. While the idea of drawing blood might cause distress for some people, lancing the skin to obtain a blood sample should be a gentle, simple procedure. Many meters require only a teardrop-sized sample of blood. A person may also find the following tips useful: Using their fingertips to obtain a blood sample. While some meters allow samples from other test sites, such as the thighs and upper arms, the fingertips or outer palms produce more accurate results.

Cleaning their skin with soapy, warm water to avoid food residue entering the device and distorting the reading.

Choosing a small, thin lancet for maximum comfort.

Adjusting the lancet's depth settings for comfort.

Taking blood from the side of their finger, as this causes less pain. Using the middle finger, ring finger, and little finger may be more comfortable.

Teasing blood to the surface in a "milking" motion rather than placing pressure at the lancing site.

Following local regulations for disposing of sharp objects, including lancets. While remembering to self-monitor involves people making lifestyle adjustments, it need not be an uncomfortable process.

Outlook Diabetes is a serious, chronic condition. According to the American Diabetes Association (ADA), the condition was the seventh leading cause of death in the U.S. in 2017. While diabetes is manageable, its complications can severely impact daily living, and some can be fatal if not treated immediately. Complications of diabetes include: dental and gum diseases

eye problems and sight loss

foot problems, including numbness, leading to ulcers and untreated injuries and cuts

heart disease

nerve damage, such as diabetic neuropathy

stroke

kidney disease Kidney disease can lead to water retention when the body does not dispose of water correctly, difficulties with bladder control, and kidney failure. Regularly monitoring blood sugar levels and moderating glucose intake can help people prevent the more damaging complications of

diabetes. For those living with type 1 diabetes, administering insulin is the main way to help them manage the condition.

…….

#tokenization

text = corpus

sentence_list = nltk.sent_tokenize(text) # A list of sentences

#print the list of sentences

print(sentence_list)

 # a function to return a random greeting response to a users greeting

def greeting_response(text):

  text = text.lower()

  #bots greeting response

  bot_greetings = ['howdy','hii','hello','hola']

  #users greeting

  user_greetings = ['hi','hey','hola','hello','greeting','wassup']

  for word in text.split():

   if word in user_greetings:

    return random.choice(bot_greetings)

def index_sort(list_var):

  length = len(list_var)

  list_index = list(range(0, length))

  x = list_var

```python
    for i in range(length):

      for j in range(length):

        if x[list_index[i]] > x[list_index[j]]:

          #swap

          temp = list_index[i]

          list_index[i] = list_index[j]

          list_index[j] = temp

  return  list_index

# create the bots responds

def bot_response(user_input):

  user_input = user_input.lower()

  sentence_list.append(user_input)

  bot_response = ''

  cm = CountVectorizer().fit_transform(sentence_list)

  similarity_scores = cosine_similarity(cm[-1], cm)

  similarity_scores_list = similarity_scores.flatten()

  index = index_sort(similarity_scores_list)
```

```
pip install Cosine_similarity
….

Collecting Cosine_similarity
  Downloading cosine_similarity-0.1.2-py3-none-any.whl (5.1 kB)
Installing collected packages: Cosine_similarity
Successfully installed Cosine_similarity-0.1.2

….
```

```python
from sklearn.metrics.pairwise import cosine_similarity

user_input = ' Hello world '

sentence_list.append(user_input)

bot_response = ''

cm = CountVectorizer().fit_transform(sentence_list)

similarity_scores = cosine_similarity(cm[-1], cm)

similarity_scores_list = similarity_scores.flatten()

index = index_sort(similarity_scores_list)

index = index[1:]

response_flag = 0

j = 0

for i in range(len(index)):
  if similarity_scores_list[index[i]] > 0.0:
    bot_response = bot_response+' '+sentence_list[index[i]]
    response_flag = 1
    j = j+1
  if j > 2
    break
 if response_flag == 0:
   bot_response = bot_response+' '+"I apologize, I don't understand"
sentense_list.remove(user_input)
 return bot_response
```

Testing Module:

Thinking: Plan for unit testing, integration testing, and user acceptance testing. Develop test cases that cover various user scenarios and edge cases. Implement continuous integration (CI) to automate testing processes.

#start the chat

```
print('Doc Bot:i am Docter Bot. I will answer your queries about diabetes
disease.If you want to exit,type bye.')


exit_list = ['exit','see you later','bye','quit','break']


while(True):
  user_input = input()
  if user_input.lower() in exit_list:
    print('Doc Bot: Chat with you later !')
    break
  else:
   if greeting_response(user_input) != None:
     print('Doc Bot :' +greeting_response(user_input))
   else:
```

```
    print('Doc Bot: '+bot_response(user_input))
```

output:

Doc Bot:i am Docter Bot. I will answer your queries about diabetes disease.If you want to exit,type bye.

hi

Doc Bot :hii

bye

Doc Bot: Chat with you later !

Improvement Module:

Thinking: Collect user feedback through chatbot interactions and implement mechanisms for users to provide input and ratings. Use analytics tools to gather insights into user behavior and performance. Continuously update and fine-tune the chatbot based on user feedback and data analysis.

CONCLUSION:

In Phase 1, we have established a clear understanding of our goal: creating a CHATBOT using python which used in health care example of diabetes prediction,providing guidanceand etc...including NLP,user interface,functionalites,testing andimprovement modules, This sets the stage for our project's successful execution in subsequent phases.