MENTAL HEALTH ASSISTING AGENT

Under Guidence Of

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INTRODUCTION

BACKGROUND OF THE PROBLEM

Depression affects many students, leading to poor motivation and hasty decision-making. To address this, we are developing a chatbot to provide personal assistance and support for managing depressive feelings. This chatbot aims to help students make more informed decisions by offering timely and appropriate guidance. By promoting mental well-being, it can improve academic and personal outcomes. This tool will be a valuable resource for students in need.

INTRODUCTION

PROBLEM FORMULATION

What are the types of Chat-bots and what are the explanations?

RESEARCH PURPOSES

To provide the Cognitive behaviour therapy

CHALLENGES FACED BY STUDENTS AND INDIVIDUALS WITH DEPRESSION

- Academic Stress
- Social Isolation
- Financial Concerns
- Lack of Support
- Change in Food Habbits
- Incorrect Decisions

THE ROLE OF TECHNOLOGY IN MENTAL HEALTH SUPPORT

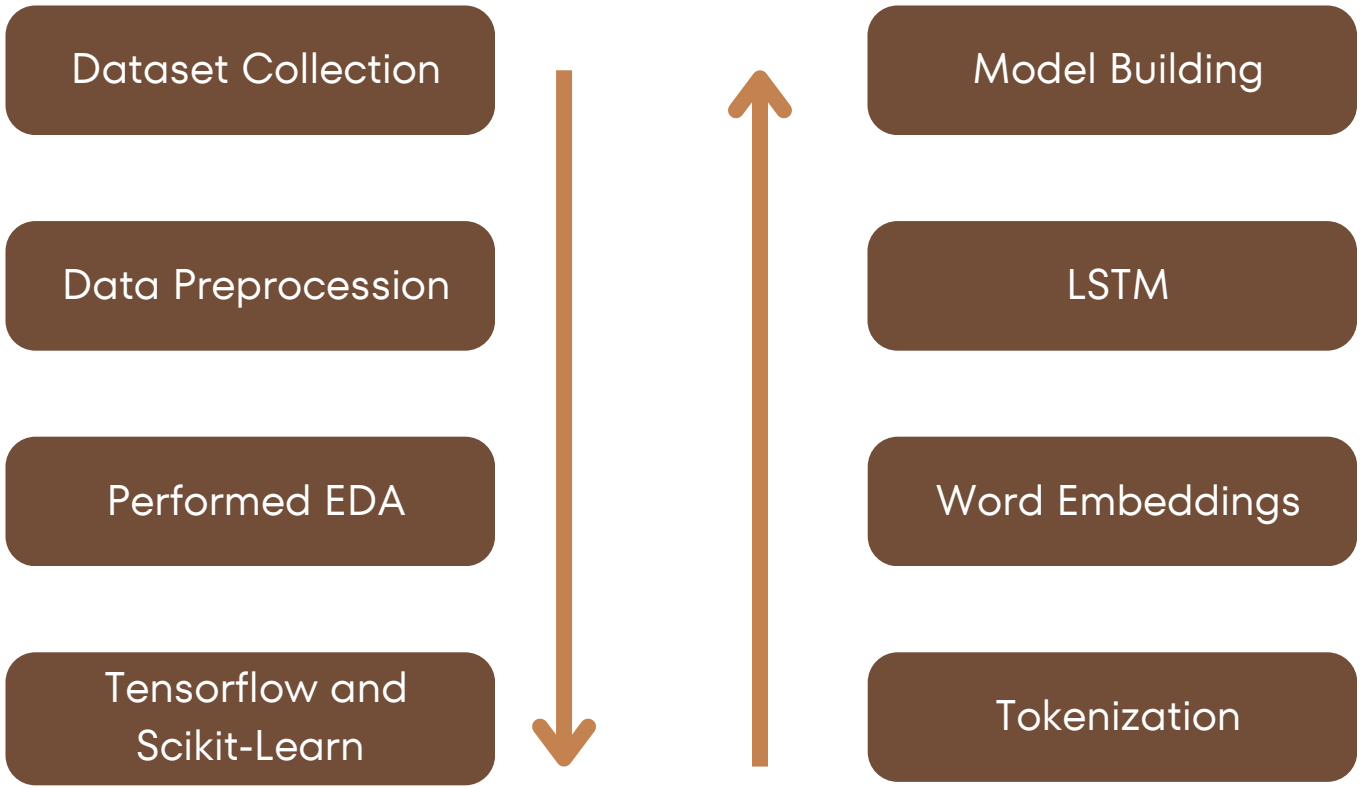
ACCESSIBILITY

Chat-bots provide 24/7 access to mental health resources, breaking down barriers to traditional therapy.

PERSONALIZED SUPPORT

AI algorithms can tailor responses based on individual needs and preferences, enhancing engagement and effectiveness.

APPROACH


Dataset Collection
Data Preprocession
Performed EDA
Tensorflow and Scikit-Learn
Model Building
LSTM
Word Embeddings
Tokenization

SAMPLE RAW DATA

```
# Sample JSON-like data
data = {
    "intents": [
        {
            "tag": "greeting",
            "patterns": ["Hello Hello","How are you"],
            "responses": ["Hello!", "Hi there!", "Greetings!"]
        }
    ]
}
```

DATA PREPROCESSING

Tokenization

```
--------------------------------------------------
Word Index:
{'hello': 1, 'how': 2, 'are': 3, 'you': 4}
--------------------------------------------------
tokenizer
<keras.src.legacy.preprocessing.text.Tokenizer object at 0x0000023C686CCB20>
--------------------------------------------------

Vocabulary Size:
4
```

DATA PREPROCESSING

Text to Sequences

```
--------------------------------------------------------------------------------


Text to Sequences:
[[1, 1], [2, 3, 4]]
--------------------------------------------------------------------------------
```

DATA PREPROCESSING

Padding

```
Padded Sequences:
[[1 1 0]
 [2 3 4]]
----------------------------------------------------
```

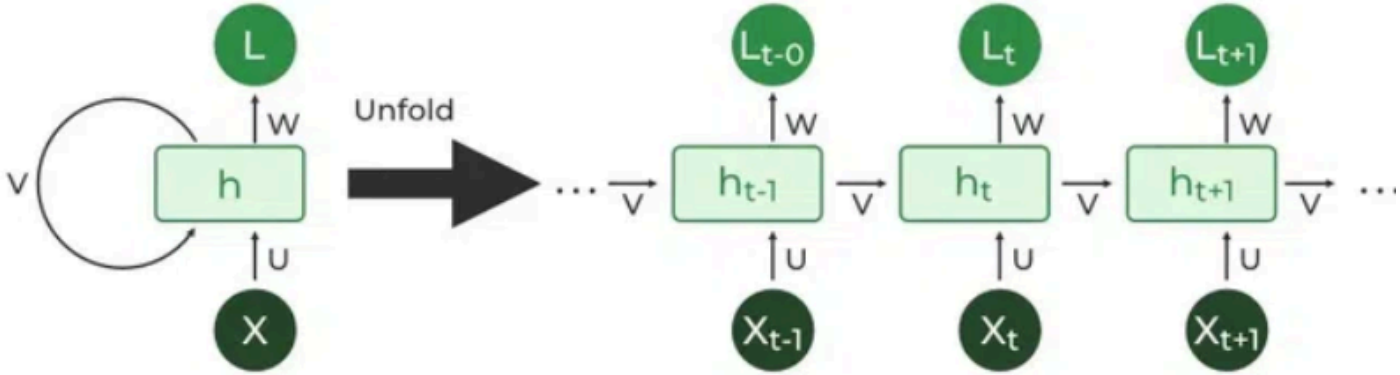
DATA PREPROCESSING

Encoding

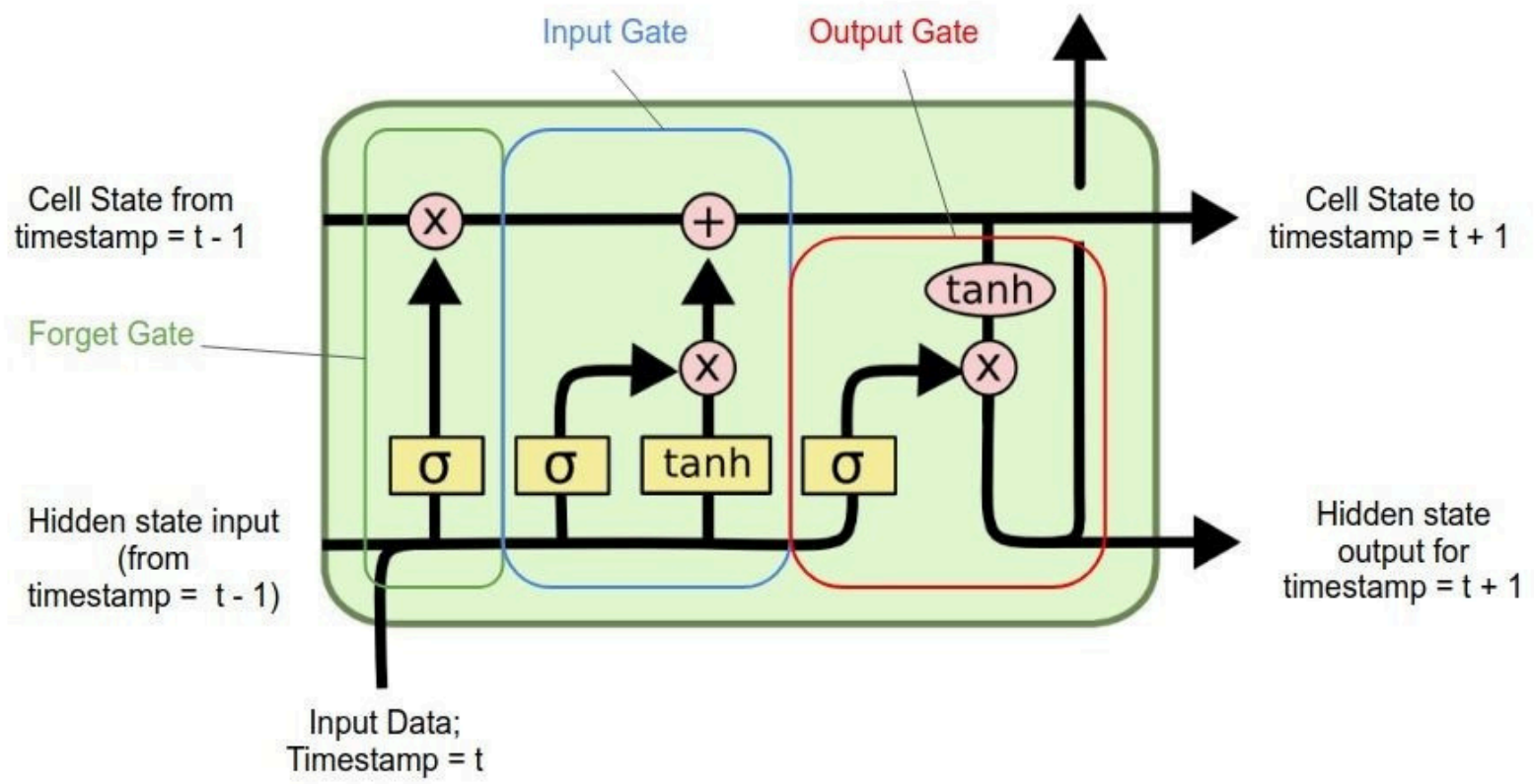
```
Encoded Labels:
[0 0]
----------------------------------------

Number of Classes:
1
```

RECURRENT NEURAL NETWORK



LONG SHORT-TERM MEMORY



GATING MECHANISMS

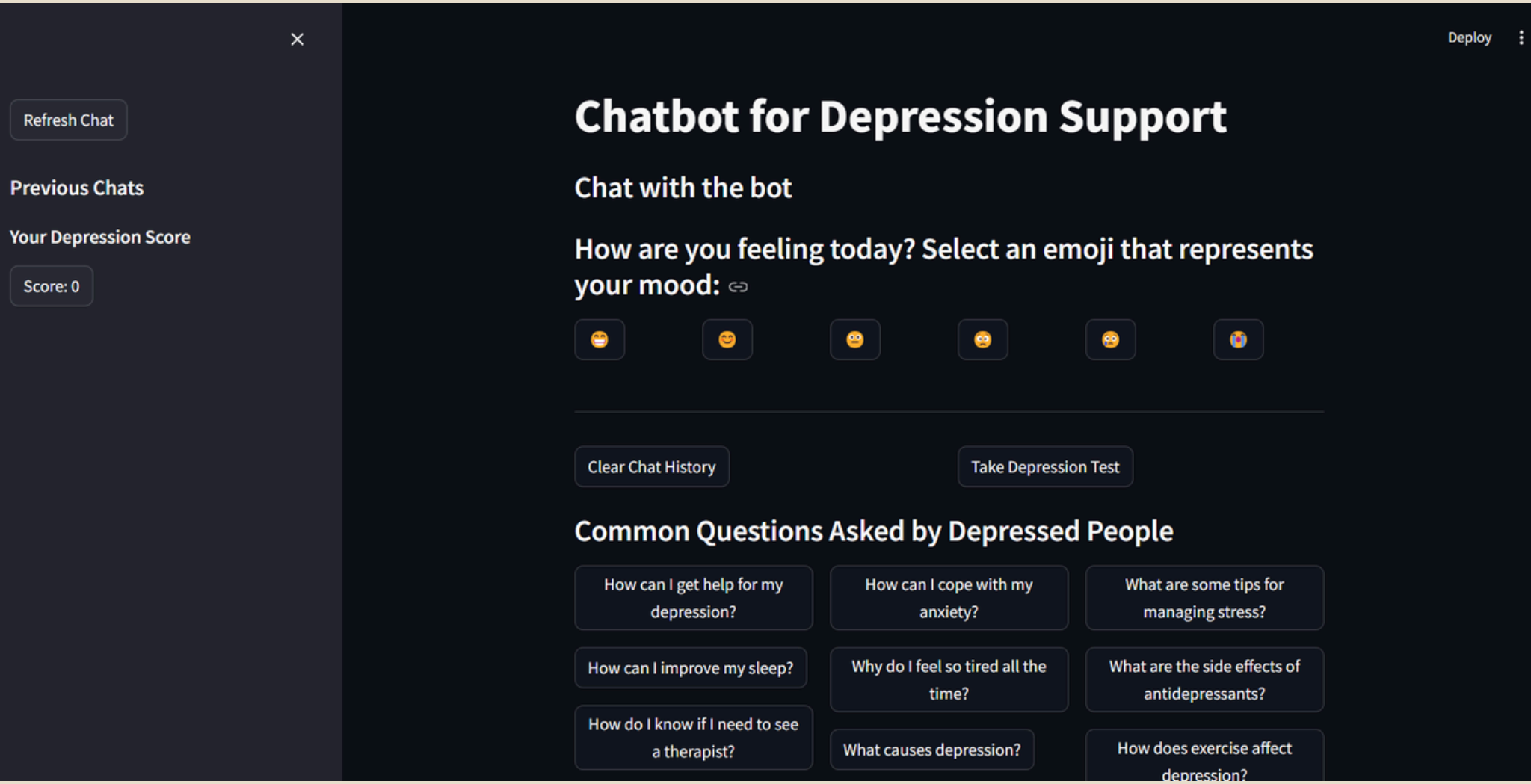
LSTMS HAVE THREE MAIN GATES:

- Forget Gate: Decides what information to discard from the cell state.
- Input Gate: Determines what new information to add to the cell state.
- Output Gate: Controls what information from the cell state to output as the hidden state.

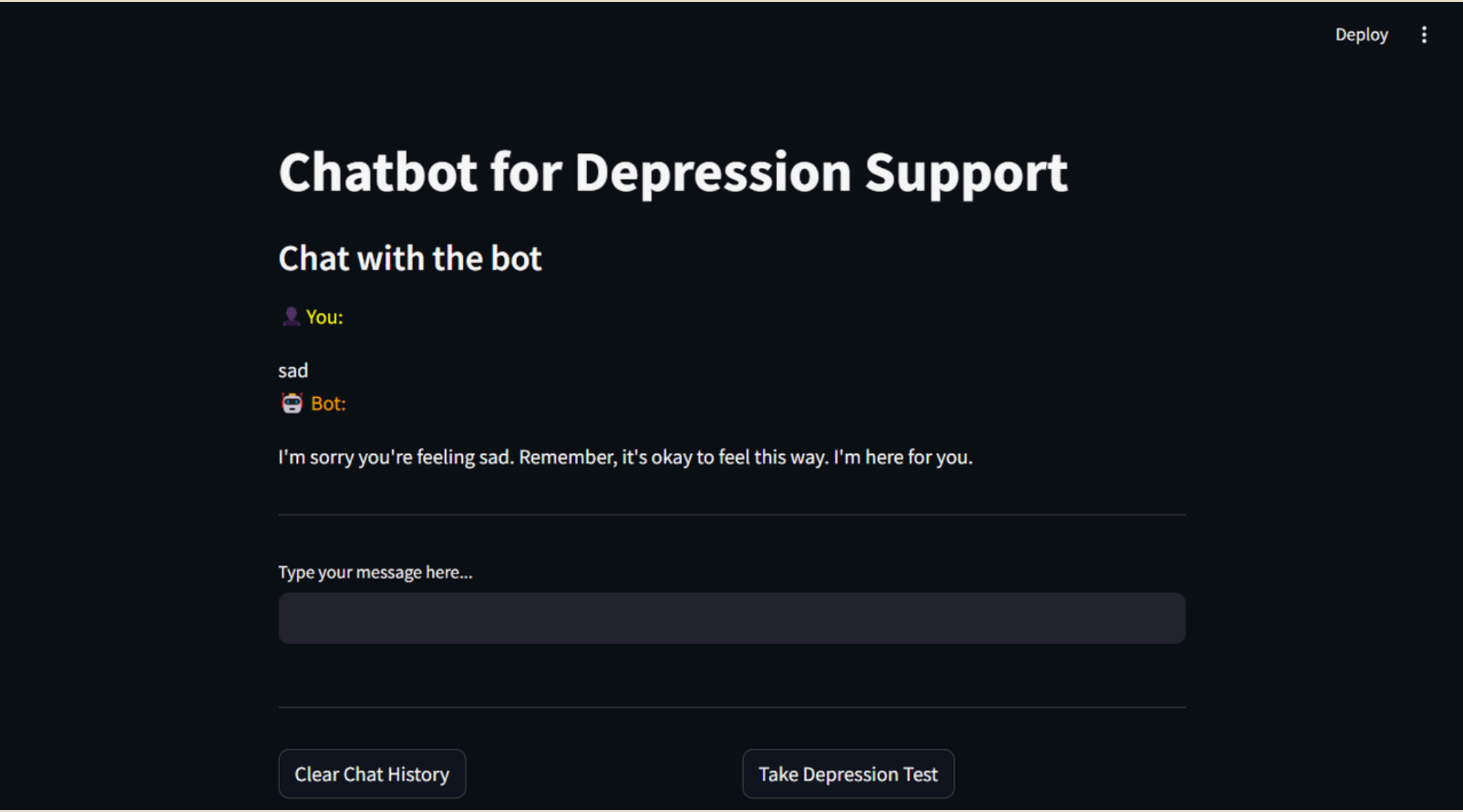
ARCHITECTURE

```
model = Sequential()
model.add(Input(shape=(X.shape[1],)))
model.add(Embedding(input_dim=vacab_size+1,output_dim=100))
model.add(LSTM(64, return_sequences=True))
model.add(LayerNormalization())
model.add(LSTM(64, return_sequences=True))
model.add(LayerNormalization())
model.add(LSTM(64, return_sequences=True))
model.add(LayerNormalization())
model.add(LSTM(64))
model.add(LayerNormalization())
model.add(Dense(256, activation="relu"))
model.add(LayerNormalization())
model.add(Dense(128, activation="relu"))
model.add(LayerNormalization())
model.add(Dropout(0.2))
model.add(Dense(num_classes, activation="softmax"))
```

INTERFACE


Refresh Chat
Previous Chats
Your Depression Score
Score: 0
Deploy
Chatbot for Depression Support
Chat with the bot
How are you feeling today? Select an emoji that represents your mood:
Clear Chat History
Take Depression Test
Common Questions Asked by Depressed People
How can I get help for my depression?
How can I cope with my anxiety?
What are some tips for managing stress?
How can I improve my sleep?
Why do I feel so tired all the time?
What are the side effects of antidepressants?
How do I know if I need to see a therapist?
What causes depression?
How does exercise affect depression?

CHAT SECTION



Depression Test

Please answer the following questions based on how you have felt over the past two weeks:

How often have you felt little interest or pleasure in doing things?

Not at all

How often have you felt down, depressed, or hopeless?

Not at all

How often have you had trouble falling asleep, staying asleep, or sleeping too much?

Not at all

How often have you felt tired or had little energy?

Not at all

How often have you had a poor appetite or overeating?

Not at all

How often have you felt bad about yourself or that you are a failure or have let yourself or your family down?

Not at all

How often have you had trouble concentrating on things, such as reading the newspaper or watching television?

Not at all

How often have you had trouble concentrating on things, such as reading the newspaper or watching television?

Not at all

How often have you moved or spoken so slowly that other people could have noticed? Or the opposite—being so fidgety or restless that you have been moving around a lot more than usual?

Not at all

How often have you had thoughts that you would be better off dead or of hurting yourself in some way?

Not at all

Submit Test

Refresh Chat

Previous Chats

Your Depression Score

Score: 0

KEY FEATURES AND FUNCTIONALITIES OF THE CHATBOT

MOTIVATIONAL MESSAGES

The chatbot delivers positive affirmations, encouraging self-reflection and promoting a growth mindset.

COGNITIVE BEHAVIORAL TECHNIQUES

It incorporates CBT techniques to help users identify and challenge negative thought patterns.

KEY FEATURES AND FUNCTIONALITIES OF THE CHATBOT

STRESS MANAGEMENT STRATEGIES

The chatbot provides guidance on relaxation techniques, mindfulness practices, and healthy coping mechanisms.

PERSONAL ASSISTANCE

It offers personal Assistance to Users by providing the relevant information.

BENEFITS OF USING THE MOTIVATIONAL CHATBOT

INCREASED ACCESSIBILITY

The chatbot provides 24/7 support, eliminating geographical and time constraints.

REDUCED STIGMA

Anonymity promotes open communication, reducing the stigma associated with seeking mental health help.

BENEFITS OF USING THE MOTIVATIONAL CHATBOT

IMPROVED SELF-MANAGEMENT

The chatbot empowers users to actively manage their mental health through personalized strategies and resources.

ENHANCED WELL-BEING

Regular interaction with the chatbot can lead to improved mood, reduced symptoms of depression, and increased overall well-being.

CONCLUSION AND FUTURE DEVELOPMENTS

The motivational chat-bot holds immense potential to transform mental health support for students and individuals struggling with depression.

Future developments include the expansion of the chatbot's functionality to address a wider range of mental health concerns.

THANK YOU