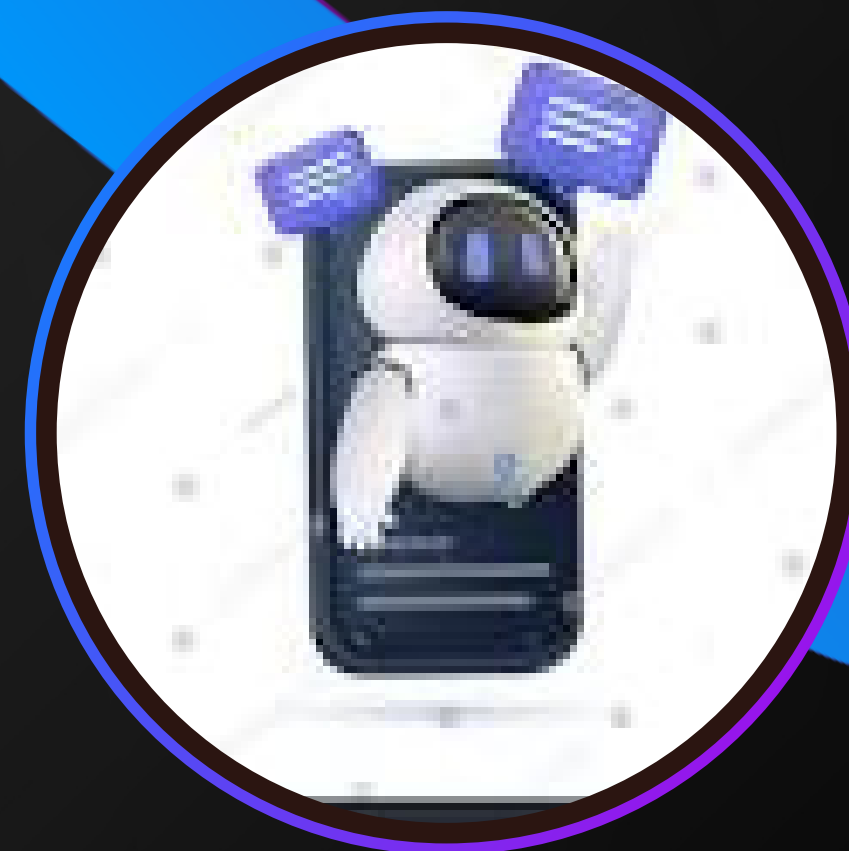




*PHASE 5*

# CHATBOT USING PYTHON



# INTRODUCTION

- Chatbots, also known as conversational agents, are designed with the help of AI (Artificial Intelligence) software. They simulate a conversation (or a chat) with users in a natural language via messaging applications, website. Chatbots represent a potential shift in how people interact with data and services online. While there is currently a surge of interest in chatbot design and development, we lack knowledge about why people use chatbots.



# Goals



## Objective 01

Learn how to test individual chatbot components to ensure they work as expected.



## Objective 02

Find out how to gather feedback from users to improve your chatbot's user experience



# TECHNICAL ARTITECTURE

Choosing the correct architecture depends on what type of domain the chatbot will have. For example, you might ask a chatbot something and the chatbot replies to that. Maybe in mid-conversation, you leave the conversation, only to pick the conversation up later. Based on the type of chatbot you choose to build, the chatbot may or may not save the conversation history. For narrow domains a pattern matching architecture would be the ideal choice. However, for chatbots that deal with multiple domains or multiple services, broader domain. In these cases, sophisticated, state-of-the-art neural network architectures, such as Long Short-Term Memory (LSTMs) and reinforcement learning agents are your best bet. Due to the varying nature of chatbot usage, the architecture will change upon the unique needs of the chatbot.



## Certainly! Here's an innovative idea for a chatbot using Python:

### \*Personalized Virtual Health Assistant:\*

Create a chatbot that acts as a personalized virtual health assistant. Users can interact with the chatbot to monitor and manage their health. The chatbot can do the following:

1. \*Health Recommendations:\* Provide personalized health recommendations based on user inputs, such as diet, exercise, and sleep patterns.
2. \*Symptom Checker:\* Allow users to describe their symptoms, and the chatbot can suggest potential causes and whether they should seek medical attention.
3. \*Medication Reminders:\* Send medication reminders and track medication schedules.

4. *\*Nutrition Planner:* Help users plan healthy meals and provide recipes based on dietary preferences and restrictions.
5. *\*Fitness Tracker:* Integrate with fitness apps or devices to track and analyze workout data, offering fitness tips and progress reports.
6. *\*Mental Health Support:* Offer emotional support and resources for stress management, anxiety, and depression.
7. *\*Emergency Assistance:* In case of urgent situations, guide users on first aid or help locate nearby medical facilities.
8. *\*Medical History Management:* Allow users to store and access their medical history and share it securely with healthcare providers.

This innovative chatbot can improve users' health and well-being by providing personalized guidance and assistance 24/7, making it a valuable tool in the healthcare industry.

# Statistics

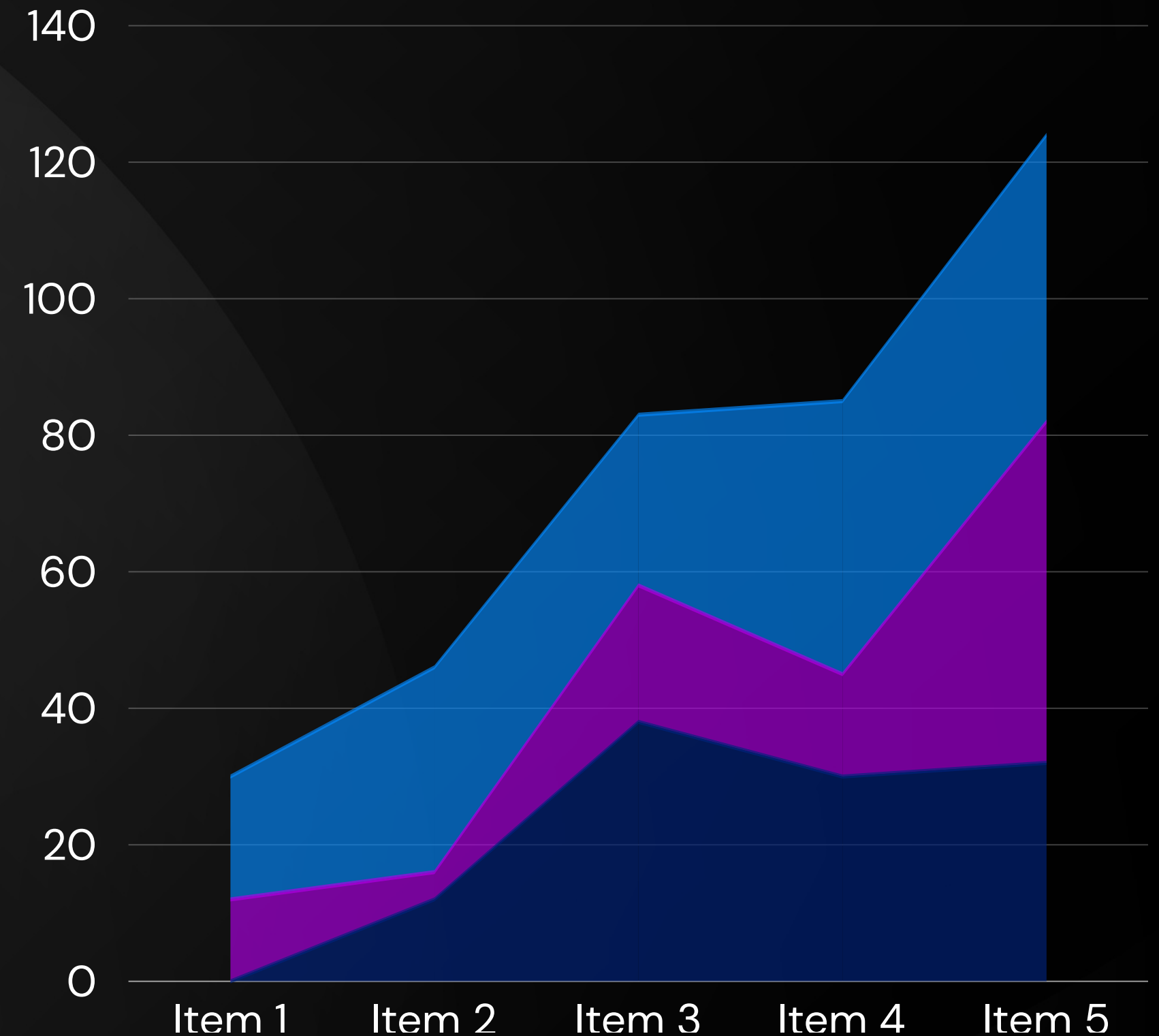
- 1.Data Collection:Gather conversation datasets.
2. Data Preprocessing: Tokenize, clean, lowercase, remove stopwords, and perform lemmatization or stemming.
3. Data Formatting: Create input-output pairs.
4. Build Vocabulary: Create a token vocabulary.
5. Encoding and Padding: Convert text to numbers and pad sequences.
6. Model Training: Choose a model, train on preprocessed data.
7. Evaluation:Assess performance using metrics.
8. Deployment: Deploy the chatbot in an application or platform using Python libraries like TensorFlow, PyTorch, or Hugging Face Transformers.

**75%**

Customer  
Satisfaction

**80%**

Revenue Growth

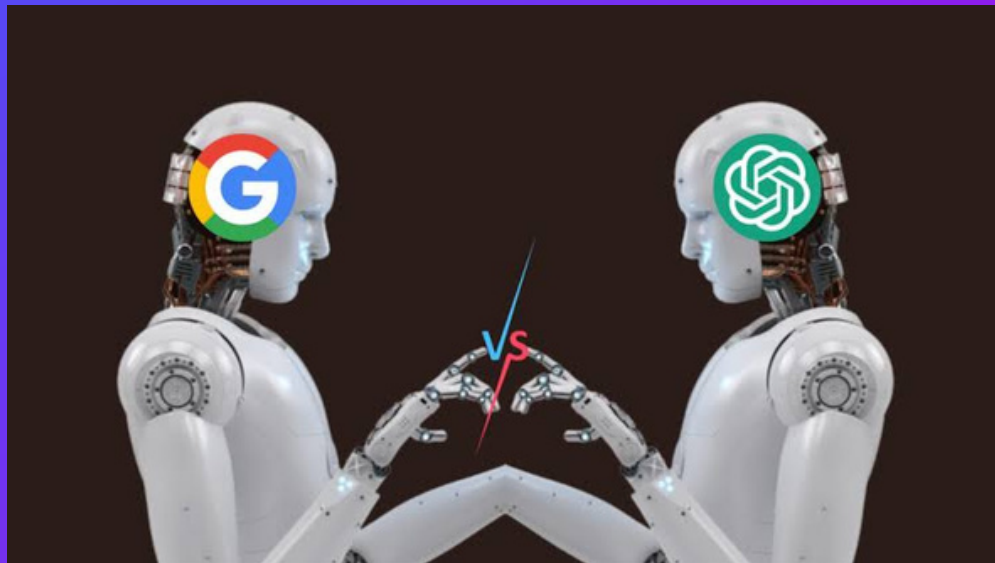
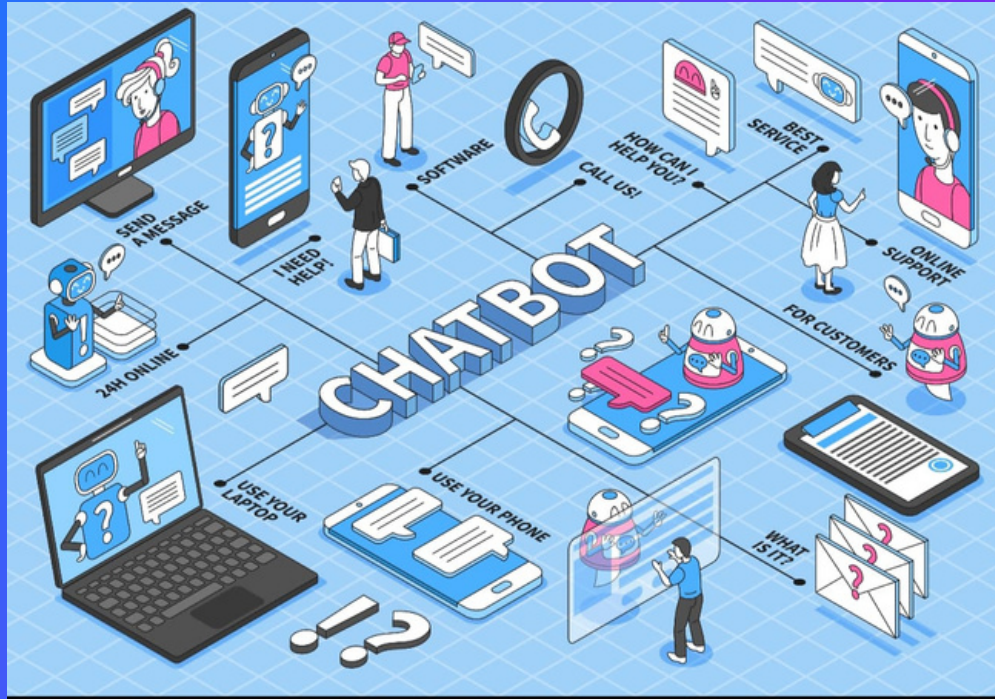


# Sample Python Program Of Chatbot

- import random
- # Define responses
- responses = {
- "hello": ["Hi there!", "Hello!", "Hey!"],
- "how are you": ["I'm just a bot, but I'm doing fine.", "I don't have feelings, but I'm here to help!"],
- "bye": ["Goodbye!", "See you later!", "Bye bye!"],
- "default": ["I'm not sure how to respond to that.", "Could you please rephrase that?", "I'm still



# Strategies



- **# Function to get a response**

- `def get_response(message):`
  1. `message = message.lower()`
- `if message in responses:`
- `return random.choice(responses[message])`
- `else:`
- `return random.choice(responses["default"])`
- **# Main loop**
- `print("Chatbot: Hi there! How can I assist you? (type 'bye' to exit)")`
- `while True:`
- `user_input = input("You: ")`
- `if user_input.lower() == "bye":`
- `print("Chatbot: Goodbye!")`
- `break`
- `response = get_response(user_input)`
- `print("Chatbot:", response)`



# Machine Learning

- 1. **\*Project Definition\***: Define the chatbot's purpose and scope.
- 
- 2. **\*Data Collection\***: Gather conversation data.
- 
- 3. **\*Environment Setup\***: Install Python and necessary tools.
- 
- 4. **\*NLP\***: Use NLP libraries for text processing.
- 
- 5. **\*Data Preprocessing\***: Clean and normalize text data.
- 
- 6. **\*Text Representation\***: Convert text to numerical vectors.
- 
- 7. **\*Model Building\***: Create a chatbot model (rule-based or ML-based).

# ALGORITHM

- import nltk
- from nltk.chat.util import Chat, reflection
- # Define patterns and responses
- pairs = [
  - (r'hello|hi', ['Hello!', 'Hi there!']),
  - (r'how are you?', ['I am good, thank you. How can I help you?']),
  - (r'bye|goodbye', ['Goodbye!', 'See you later.']),
- # Create a chatbot
- chatbot = Chat(pairs, reflections)
- # Interaction loop
  - while True:
  - user\_input = input("You: ")
  - if user\_input.lower() == 'exit':
  - break
  - response = chatbot.respond(user\_input)
  - print("Bot:", response)

Output.

You: Hello

Bot: Hi there!

You: How are you?

Bot: I am good, thank you. How can I help you?

You: Bye

Bot: Goodbye!

You: exit





# **Our team**

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**Sai Raghav s**

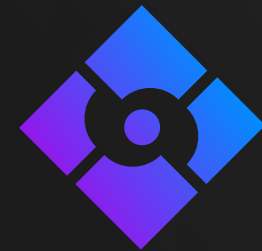
**Pavithran R**

**Rahul G**

**Manoj Kumar B**



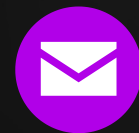




*PHASE 5*

# THANK YOU

For watching this presentation



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