



# Basaveshwar Engineering College

## Bagalkote-587102



A  
Title Presentation  
On

**CHATBOTS**

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# Topics to be covered:

- ☐ Overview of Chatbots
- ☐ Introduction to Chatbots
- ☐ Types of Chatbots
- ☐ How to develop Chatbots
- ☐ Programming Languages used in Chatbots
- ☐ Tool and Frameworks
- ☐ How Chatbots work
- ☐ Advantages of Chatbots
- ☐ Disadvantages of Chatbots
- ☐ Example of Chatbots
- ☐ Visual examples of Chatbots
- ☐ Future of Chatbots
- ☐ Impact of Chatbots on communication
- ☐ Chatbot References
- ☐ Conclusion

# Overview of Chatbots

- Chatbots are artificial intelligence programs created to mimic human conversation.
- They have become essential in customer service, offering rapid responses and enhancing user experience on various platforms.
- Chatbots are bridge between humans and technology through natural conversation.



# Introduction to Chatbots

## 1 Definition

Chatbots are software applications that interact with users via chat interfaces, using predefined rules or AI to generate responses.

## 2 Purpose

They serve various functions, including customer support, information retrieval, and entertainment, streamlining interactions.

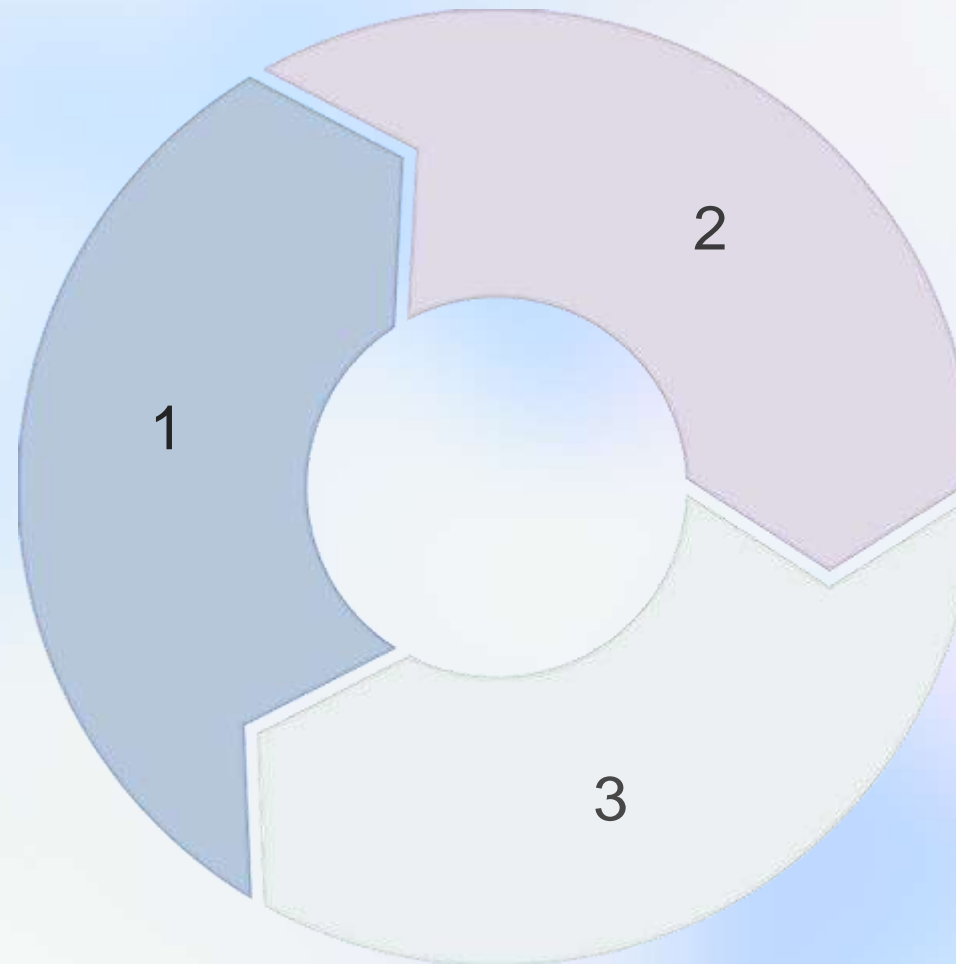
## 3 Evolution

Over the years, chatbots have evolved from simple rule-based systems to complex AI-driven applications, enhancing their capabilities and user engagement.

# Types of Chatbots

Rule-Based Chatbots

These bots follow predefined scripts and rules to respond to user inquiries.



AI-Based Chatbots

Utilizing machine learning and natural language processing, these chatbots provide dynamic responses.

Hybrid Chatbots

Combining both rule-based and AI approaches, hybrid chatbots offer flexible interactions.

# How to develop Chatbots:

1. Identify purpose and target audience for the chatbot.
2. Choose chatbot type: Rule-based, AI-based, or Hybrid.
3. Select development platform or framework (e.g., Dialogflow, Rasa)
4. Design conversation flow and intents.
5. Integrate Natural Language Processing (NLP).
6. Test and deploy the chatbot.
7. Monitor performance and improve based on feedback.



# Programming Languages Used in Chatbots:

**1.Python** – Popular for AI and NLP libraries like TensorFlow, spaCy, and NLTK.

**2.JavaScript** – Used for web-based chatbot integration and interactivity.

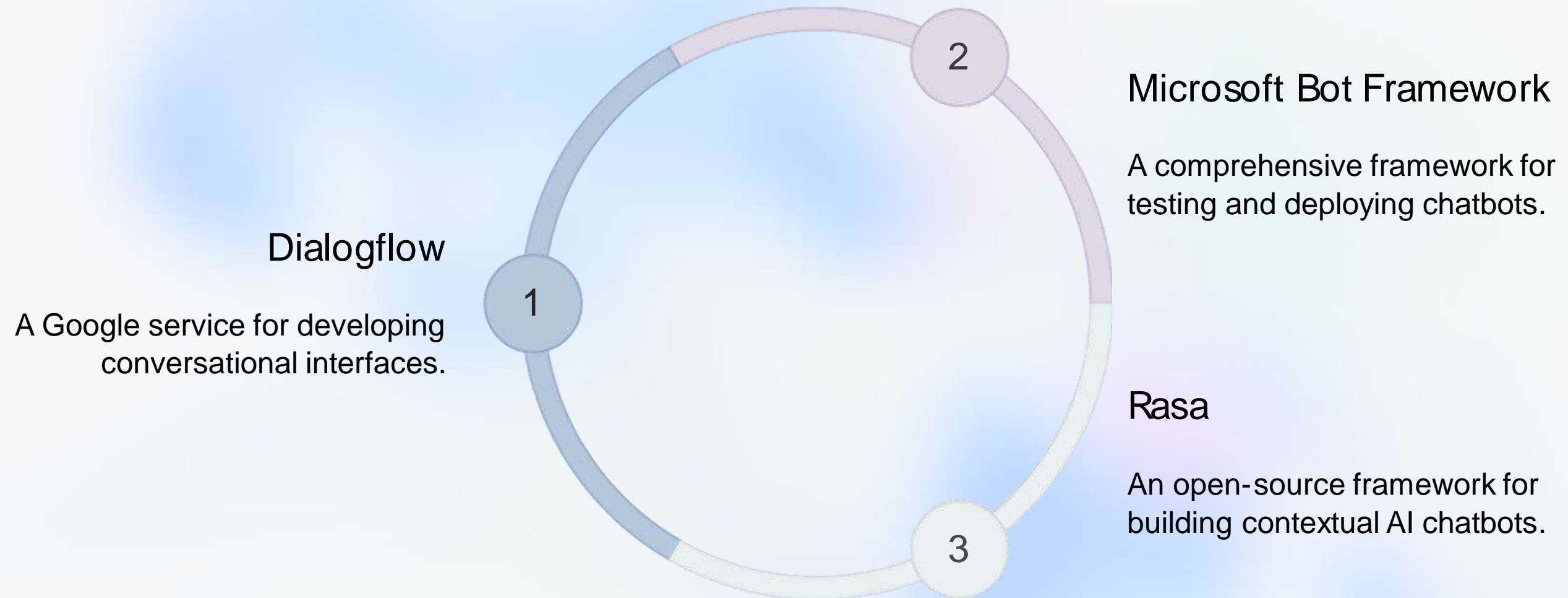
**3.Java** – Reliable for enterprise-grade chatbot applications.

**4.C#** – Commonly used with Microsoft Bot Framework.

**5.PHP** – Useful for integrating chatbots into websites.

**6.Ruby** – Used for simple and lightweight chatbot applications.

# Tools and Frameworks





# How Chatbots work:

- 1.User Input** – The user sends a message via chat interface (text or voice).
- 2.Input Processing** – Chatbot processes the message to identify intent and extract key information.
- 3.Natural Language Processing (NLP)** – Converts user's language into structured data the bot can understand.
- 4.Decision Engine** – Uses rules, AI models, or both to decide the response.
- 5.Response Generation** – Creates an appropriate reply, either from a pre-defined script or AI-generated text.
- 6.Output Delivery** – Sends the response back to the user in the chat interface.
- 7 Learning & Improvement** – AI-based bots update and improve through user

# Advantages of Chatbots

## 24/7 Availability

Chatbots can operate around the clock, providing instant support and information regardless of time constraints, enhancing user satisfaction.

## Cost Efficiency

By automating routine tasks, chatbots reduce the need for human agents, saving businesses money on customer service operations.

## Scalability

Chatbots can handle multiple inquiries simultaneously, allowing businesses to scale their customer service efforts without additional resources.

# Disadvantages of Chatbots

While chatbots offer convenience and efficiency, there are several notable disadvantages that impact user experience and effectiveness. These include limited understanding of complex inquiries, lack of personal touch compared to human agents, and the necessity for ongoing maintenance and updates to ensure performance and relevance.



## Limited Understanding

Rule-based chatbots may struggle with complex inquiries, leading to frustrating user experiences if the bot cannot provide satisfactory answers.



## Lack of Personal Touch

AI chatbots may still fail to replicate the empathy and understanding that human agents offer, potentially impacting customer relationships.



## Maintenance and Updates

Regular updates and training are necessary to keep AI chatbots relevant and effective, requiring ongoing investment in technology and resources.

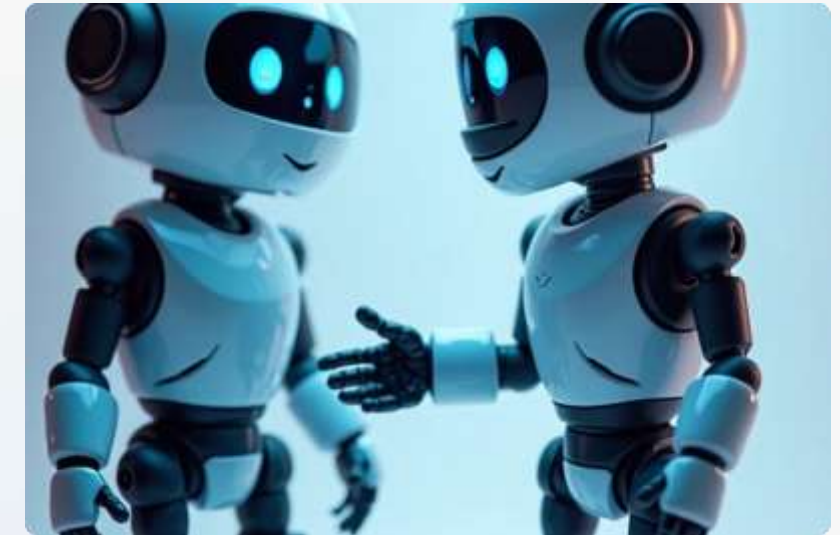
# Examples of Chatbots



**Customer Support Bots**  
Handle inquiries, improving response times.



**E-commerce Bots**  
Assist users in shopping and enhance their experience.



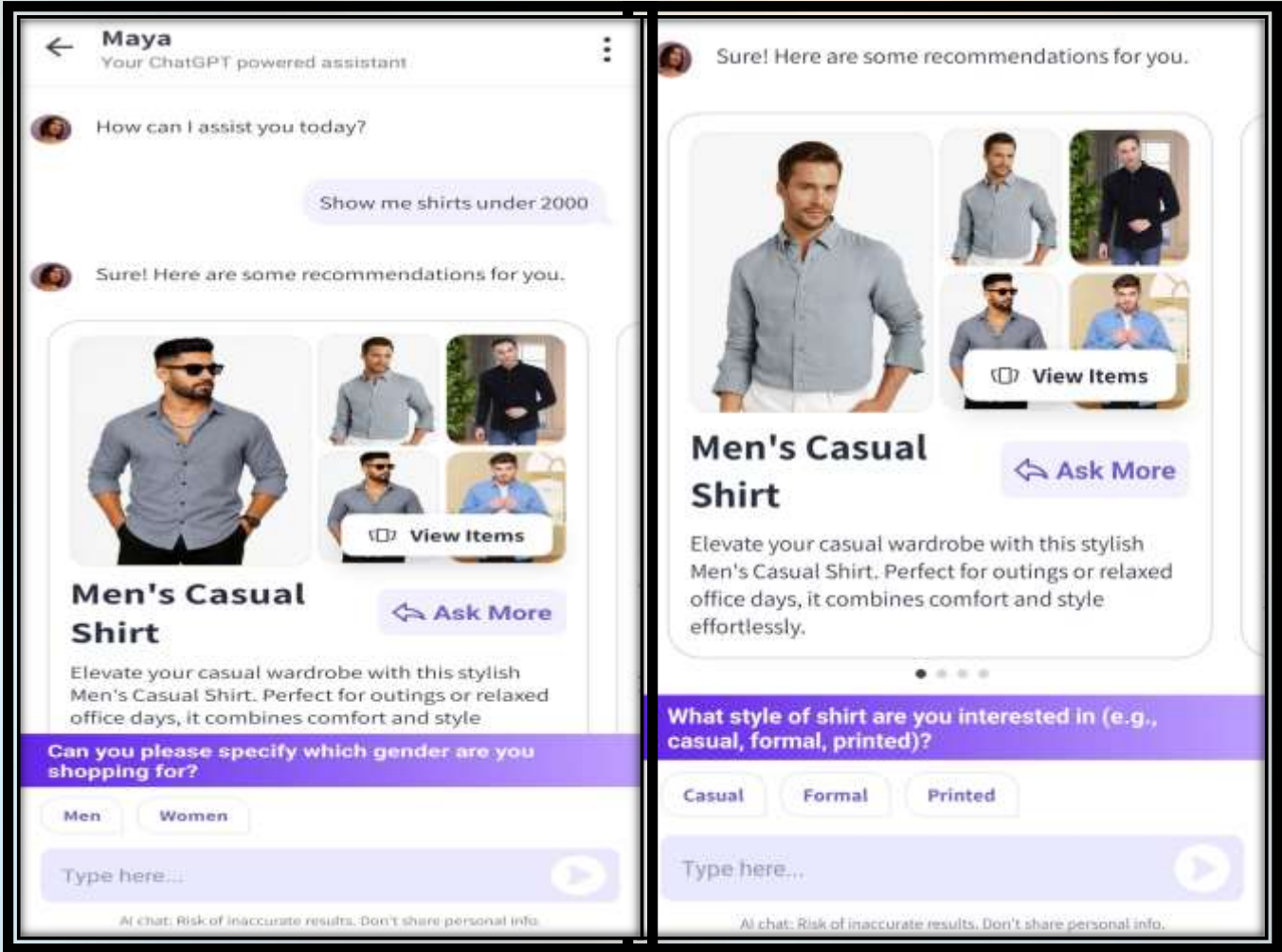
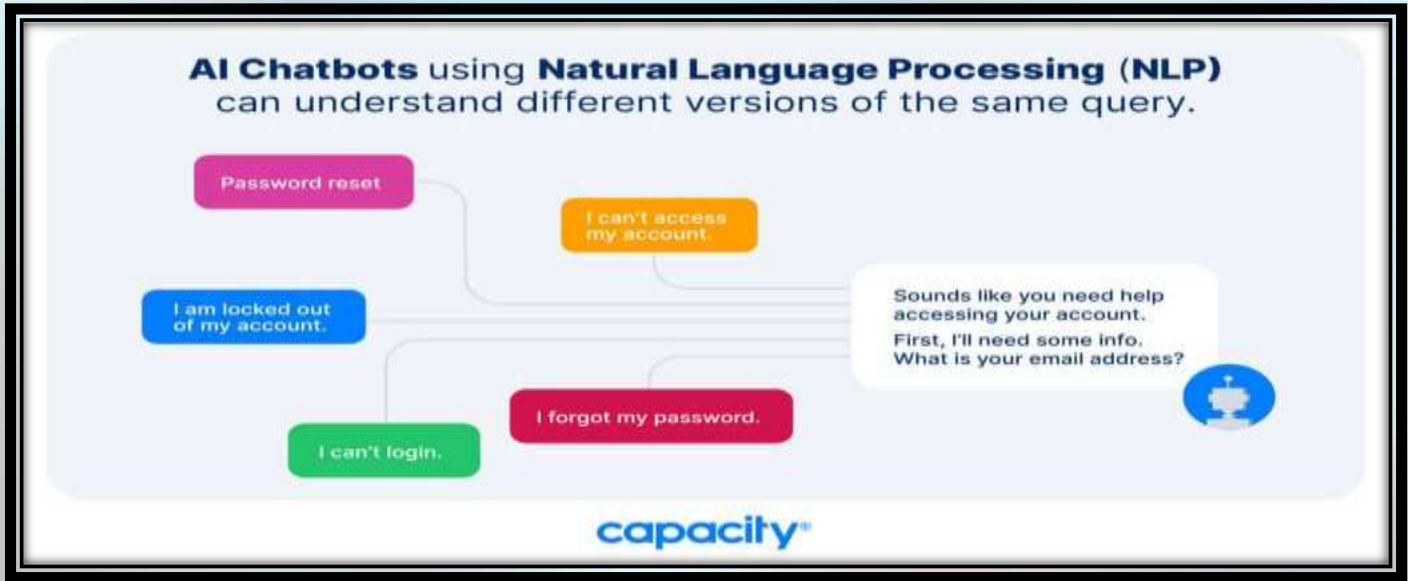
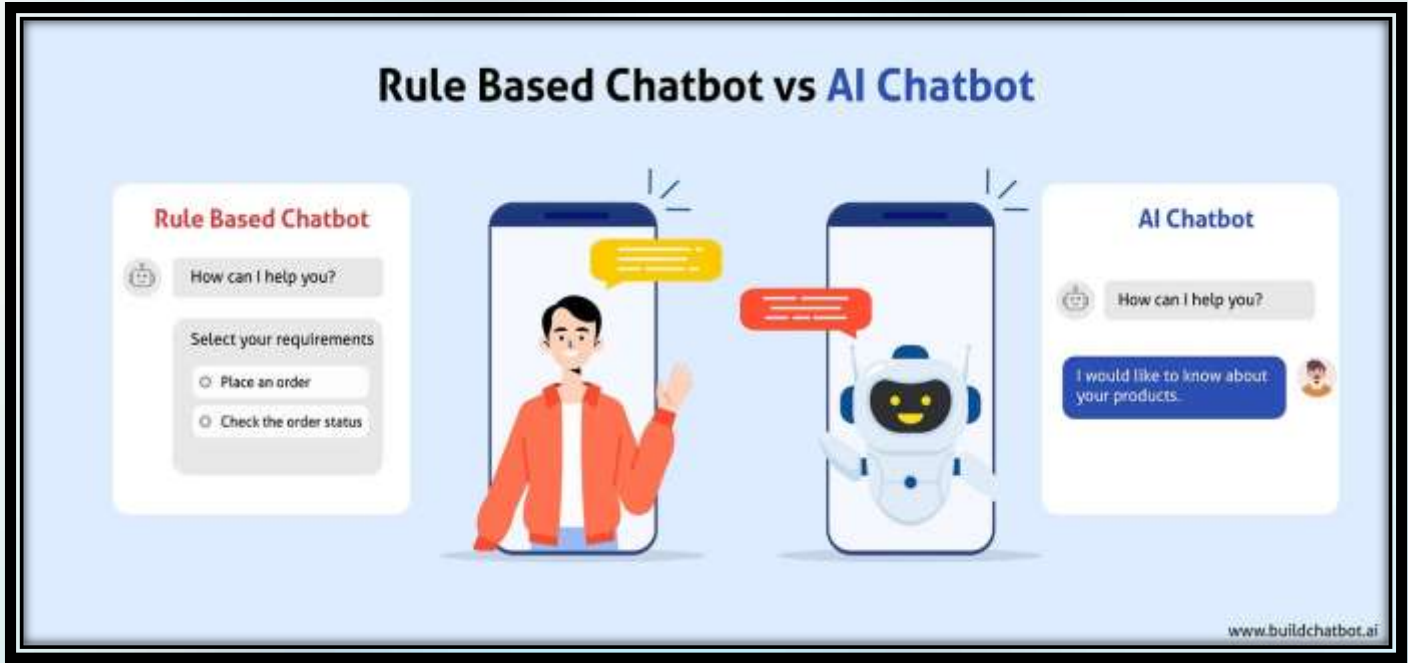
**Entertainment Bots**  
Offer companionship and interactive dialogue.

## SOME OTHER EXAPLES

- ✓AI-based: ChatGPT, Google Gemini, Replica... ..
- ✓Rule-based: Airtel Thanks app, FAQ bots on websites... ..
- ✓Hybrid Chatbots: Myntra's maya chtbot, swiggy/Zomato chat support... ..



# Visual Examples of Chatbots:

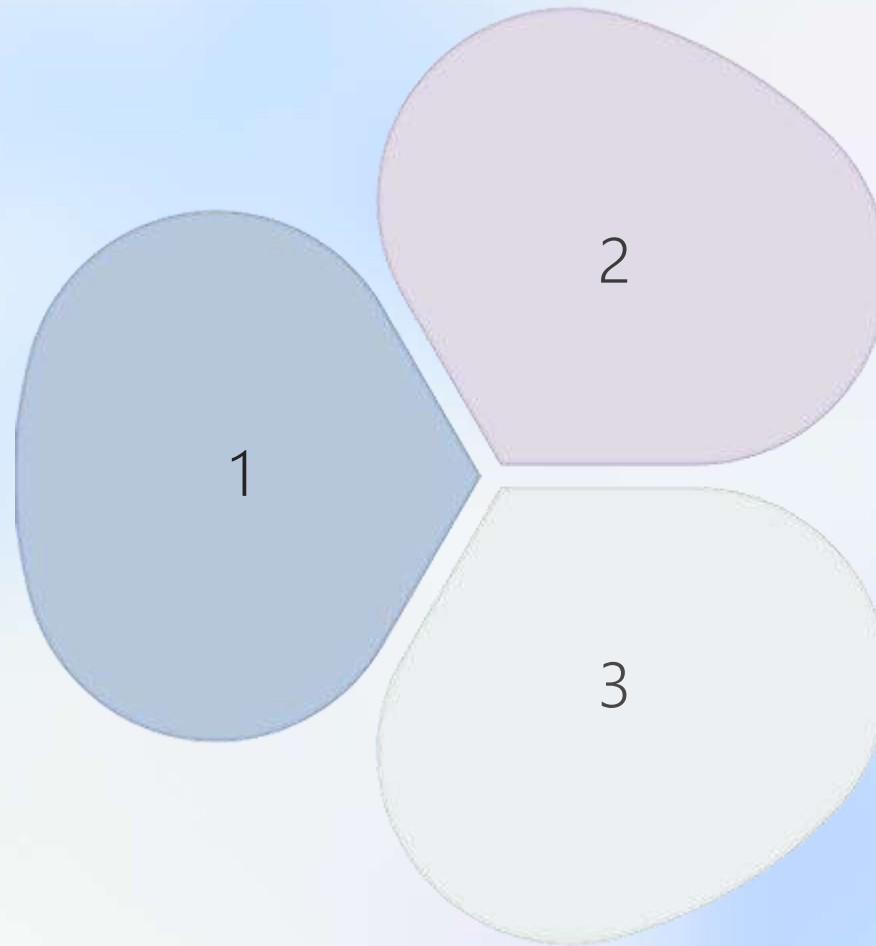


HYBRID CHATBOT

# Future of Chatbots

**Continued AI Advancements**

Chatbots will become more sophisticated with improved emotional understanding.



**Integration with Other Technologies**

Increased connections with voice recognition and augmented reality will enhance user experience.

**Wider Adoption Across Industries**

Various industries will implement chatbots, changing customer interactions.



# Impact of Chatbots on Communication

Chatbots represent a significant technological advancement in communication, offering numerous benefits such as efficiency and scalability. Despite some limitations, their ongoing evolution and integration into various sectors will shape the future of customer interaction and support.

Technological Advancement

Benefits of Chatbots

Efficiency and scalability

Future of Customer  
Interaction



# Chatbot References

## 1 Books

1. Dale, R. (2021). The Conversational Interface: Talking to Smart Devices. Springer.
2. Shevat, A. (2017). Designing Bots: Creating Conversational Experiences. O'Reilly Media.

## 2 Research papers

1. Adamopoulou, E., & Moussiades, L. (2020). "Chatbots: History, technology, and Machine Learning with Applications,
2. Følstad, A., & Brandtzaeg, P. B. (2017). "Chatbots and the new world of HCI." Interactions, 24(4), 38–42.

## 3 Web references

1. IBM Cloud Docs – What is a chatbot?  
<https://www.ibm.com/cloud/learn/chatbots>
2. Oracle – Chatbots explained.  
<https://www.oracle.com/chatbots/>

# Conclusion:

- Transform business communication with instant, scalable, and cost-efficient service.
- Evolved from simple rules to AI-driven systems, meeting the demand for intelligent automation.
- Future-ready technology set to become more integrated into daily life across industries..

THANK YOU