

# CHATBOT DEPLOYMENT WITH IBM

## CLOUD WATSON ASSISTANT

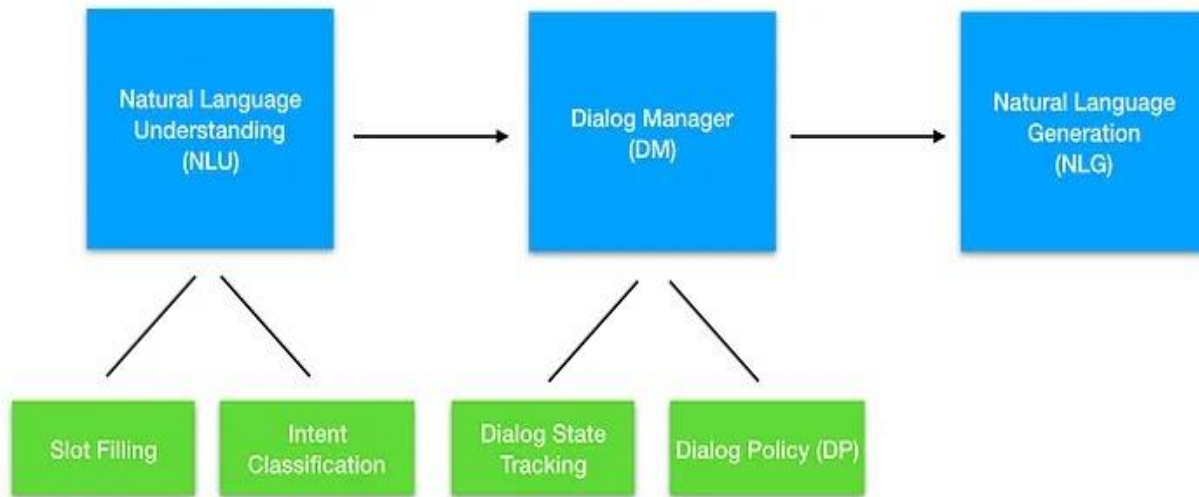
### INTRODUCTION:

At the most basic level, a chatbot is a computer program that simulates and processes human conversation (either written or spoken), allowing humans to interact with digital devices as if they were communicating with a real person. Chatbots can be as simple as rudimentary programs that answer a simple query with a single-line response, or as sophisticated as digital assistants that learn and evolve to deliver increasing levels of personalization as they gather and process information.

### TYPES OF CHATBOTS:

**Task-oriented (declarative) chatbots**: They are single-purpose programs that focus on performing one function. Using rules, NLP, and very little ML, they generate automated but conversational responses to user inquiries. Interactions with these chatbots are highly specific and structured and are most applicable to support and service functions—think robust, interactive FAQs. Task-oriented chatbots can handle common questions, such as queries about hours of business or simple transactions that don't involve a variety of variables. Though they do use NLP so end users can experience them in a conversational way, their capabilities are

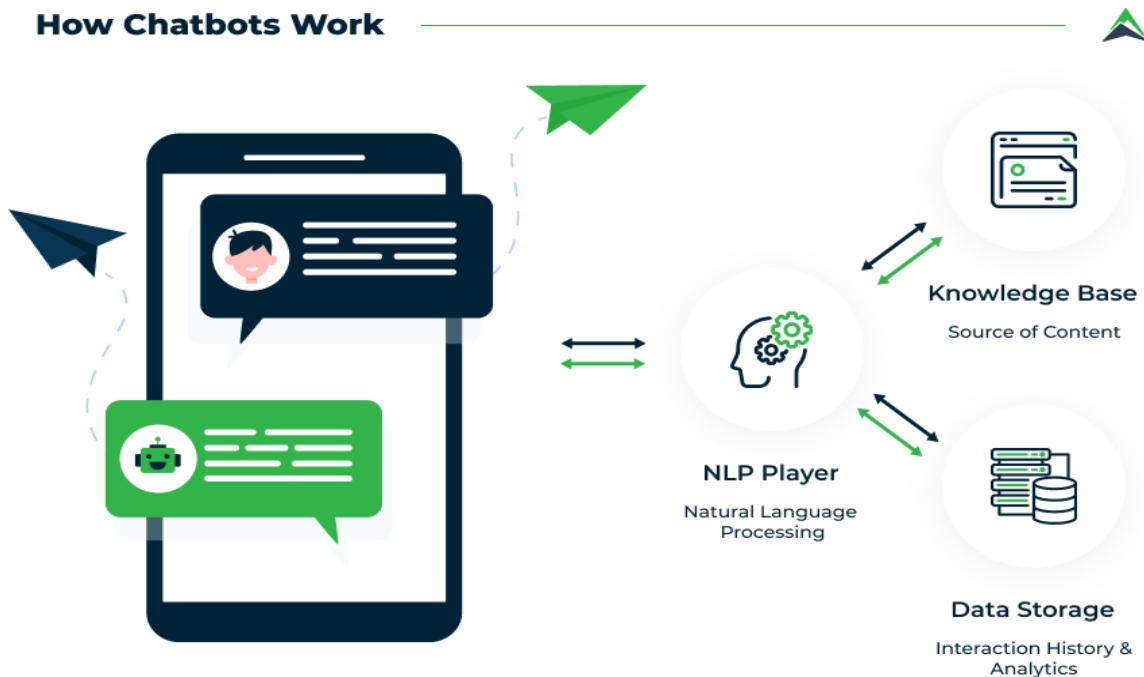
fairly basic. These are currently the most commonly used chatbots.



**Data-driven and predictive (conversational) chatbots:** They are often referred to as virtual assistants or digital assistants, and they are much more sophisticated, interactive, and personalized than task-oriented chatbots. These chatbots are contextually aware and leverage natural-language understanding (NLU), NLP, and ML to learn as they go. They apply predictive intelligence and analytics to enable personalization based on user profiles and past user behavior. Digital assistants can learn a user's preferences over time, provide recommendations, and even anticipate needs. In addition to monitoring data and intent, they can initiate conversations. Apple's Siri and Amazon's Alexa are examples of consumer-oriented, data-driven, predictive chatbots.

Advanced digital assistants are also able to connect several single-purpose chatbots under one umbrella, pull disparate information from each of them, and then combine this information to perform a task while still maintaining context—so the chatbot doesn't

become “confused.”



## OBJECTIVES:

- **BUSINESS**

Chatbots boost operational efficiency and bring cost savings to businesses while offering convenience and added services to internal employees and external customers. They allow companies to easily resolve many types of customer queries and issues while reducing the need for human interaction.

With chatbots, a business can scale, personalize, and be proactive all at the same time—which is an important differentiator. For example, when relying solely on human power, a business can serve a limited number of people at one time. To be cost-

effective, human-powered businesses are forced to focus on standardized models and are limited in their proactive and personalized outreach capabilities.

- **CUSTOMERS**

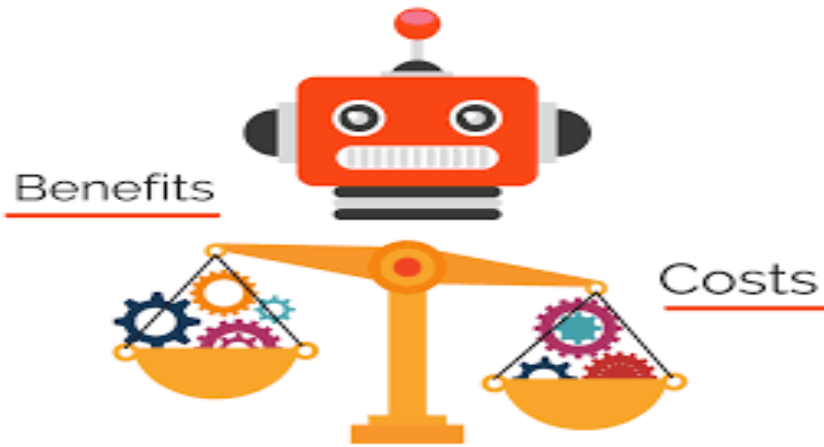
By contrast, chatbots allow businesses to engage with an unlimited number of customers in a personal way and can be scaled up or down according to demand and business needs. By using chatbots, a business can provide humanlike, personalized, proactive service to millions of people at the same time.

## **MERITS:**

**1. 24/7 Availability:** Chatbots can operate round the clock, providing users with assistance and information at any time, enhancing customer service and user satisfaction.



**2. Cost Efficiency:** Chatbots can handle a large volume of inquiries simultaneously, reducing the need for human customer support agents and potentially lowering operational costs.



**3. Scalability:** Chatbots hosted in the cloud can easily scale to handle increased traffic and demand without significant infrastructure investment.

**4. Consistency:** Chatbots provide consistent responses, ensuring that users receive accurate information and follow predefined business rules.

**5. Quick Responses:** Chatbots can provide instant responses to user queries, improving response times and reducing user frustration.

**6. Multi-Platform Accessibility:** Chatbots can be integrated into various platforms, including websites, messaging apps, and voice assistants, making them accessible to users on their preferred channels.

**7. Data Collection:** Chatbots can gather user data and preferences, which can be used for personalized marketing, product recommendations, and improving user experiences.

**8. Efficient Routing:** Chatbots can efficiently route inquiries to the appropriate department or human agent, reducing response times and improving issue resolution.

**9. Reduced Human Error:** Chatbots can eliminate or minimize human errors in tasks like data entry, calculations, and repetitive processes.

## **DEMERITS:**

**1. Limited Understanding:** Chatbots may struggle to understand complex or nuanced user queries, especially those that require human-level comprehension, empathy, or creativity.

**2. Lack of Context:** Chatbots often lack contextual awareness, which can lead to misunderstandings when users provide incomplete or ambiguous information.

**3. Inability to Handle Unpredictable Scenarios:** Chatbots may struggle when faced with unexpected or unscripted user interactions, resulting in frustration for users.

**4. Dependency on Data Quality:** The effectiveness of chatbots depends on the quality and accuracy of the data used to train and feed them. Inaccurate or biased data can lead to incorrect responses.

**5. Privacy Concerns:** Chatbots collect user data, raising privacy concerns if not handled properly. Users may be uncomfortable sharing sensitive information with a bot.

**6. Initial Setup and Development Costs:** Developing and deploying a chatbot can incur initial setup and development costs, which may be a barrier for some organizations.

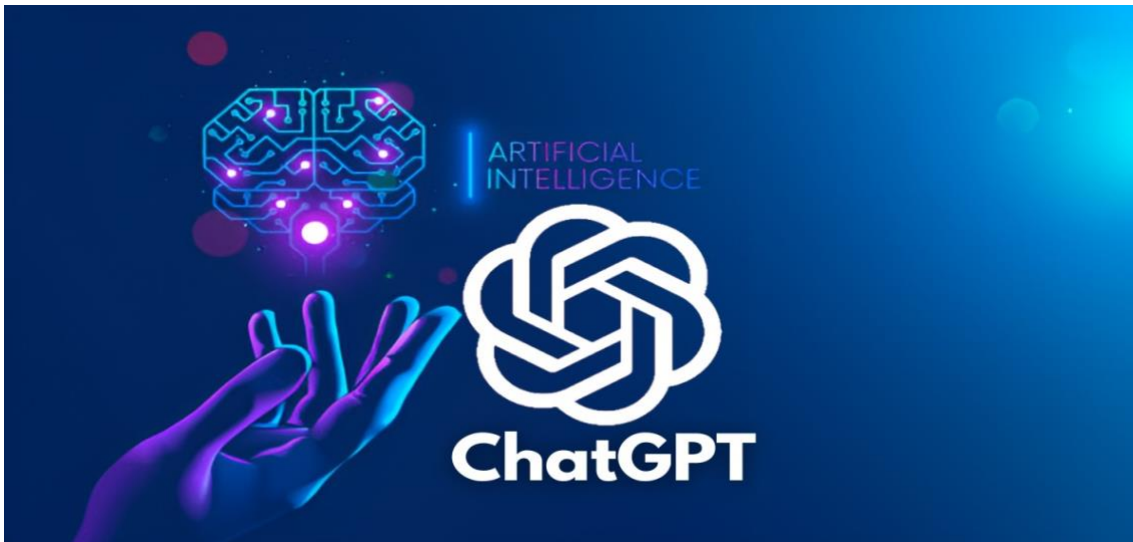
**7. Maintenance Complexity:** Chatbots require ongoing maintenance, including updates to accommodate changing user needs and improving performance, which can be resource-intensive.

**8. Over-Reliance on Automation:** Organizations that rely too heavily on chatbots may risk depersonalizing customer interactions, leading to reduced customer satisfaction.

**9. Loss of Human Touch:** For some users, especially in sensitive or emotional situations, the absence of human interaction can be a drawback.

## **APPLICATIONS:**

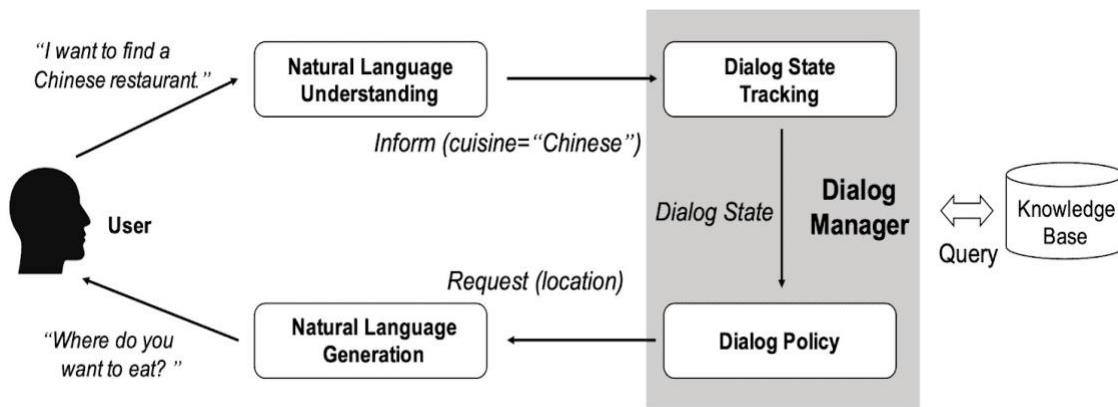
### **01.ChatGPT**



Deploying a chatbot with IBM Cloud Watson Assistant can be valuable in various applications across industries. Here are some common use cases:

**02.Customer Support:** Use a chatbot to provide instant responses to customer inquiries, troubleshoot common issues, and escalate to human agents when necessary. This reduces response times and improves customer satisfaction.





**03.E-commerce:** Enhance the shopping experience by guiding customers through product selection, answering product-related questions, and facilitating the checkout process.

**04.Healthcare:** Assist patients with appointment scheduling, provide medication reminders, offer health advice, and answer frequently asked questions.

**05.Finance:** Help users check account balances, track expenses, and provide financial advice. Chatbots can also assist with basic banking transactions.

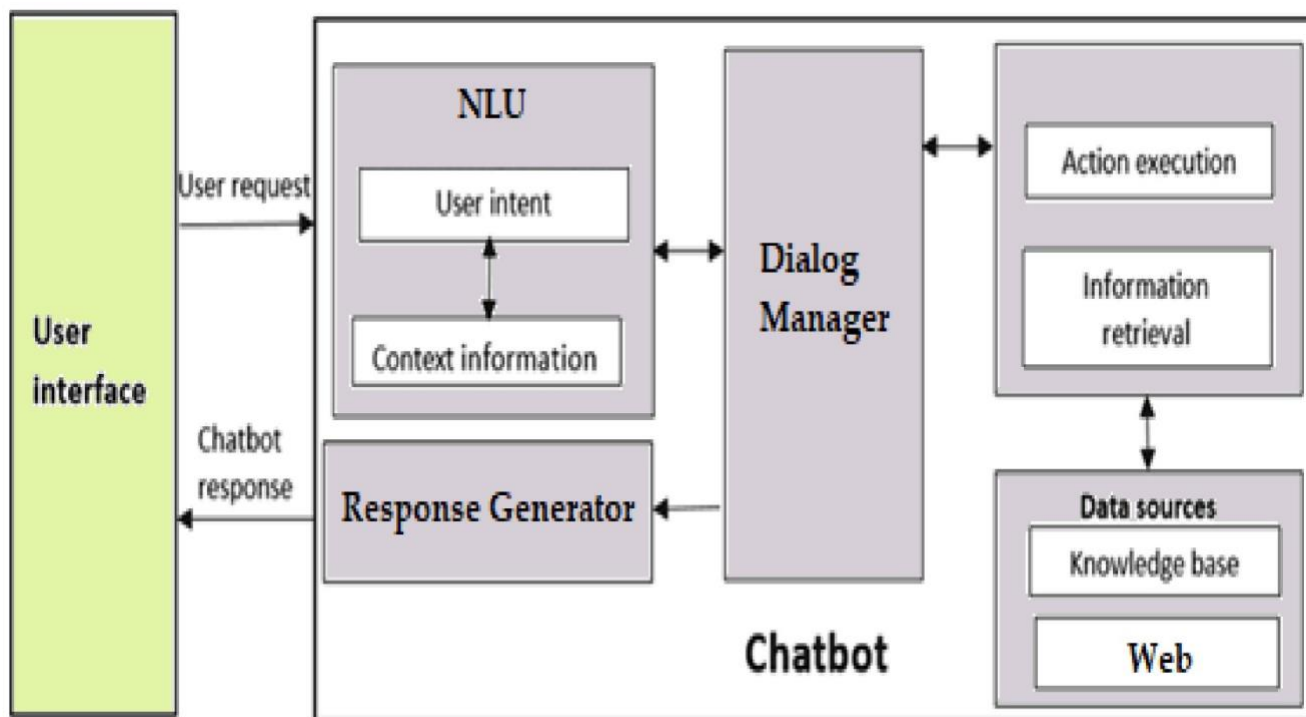
**06.Travel and Hospitality:** Assist travelers with booking flights, hotels, and car rentals. Provide travel recommendations, weather updates, and local information.

**07.Human Resources:** Streamline HR processes by handling employee inquiries about benefits, policies, and leave requests.

**08.Education:** Support students with course enrolment answer academic queries, and offer study resources.

**09.IT Support:** Provide IT helpdesk support by guiding users through troubleshooting steps for common technical issues.

**10.Sales and Lead Generation:** Qualify leads, engage with website visitors, and gather information for sales teams to follow up.



## CONCLUSION:

To sum everything up, I thoroughly enjoyed testing the IBM Watson chatbot out. In my opinion, this tool (in its free version) will be enough for anybody making their very first steps with chatbots, as well as those looking to make slightly more advanced

moves. Given t the tool offers a free trial and even a free plan, I guess it won't hurt you much if you decide to give it a go even if you end up not liking it.

