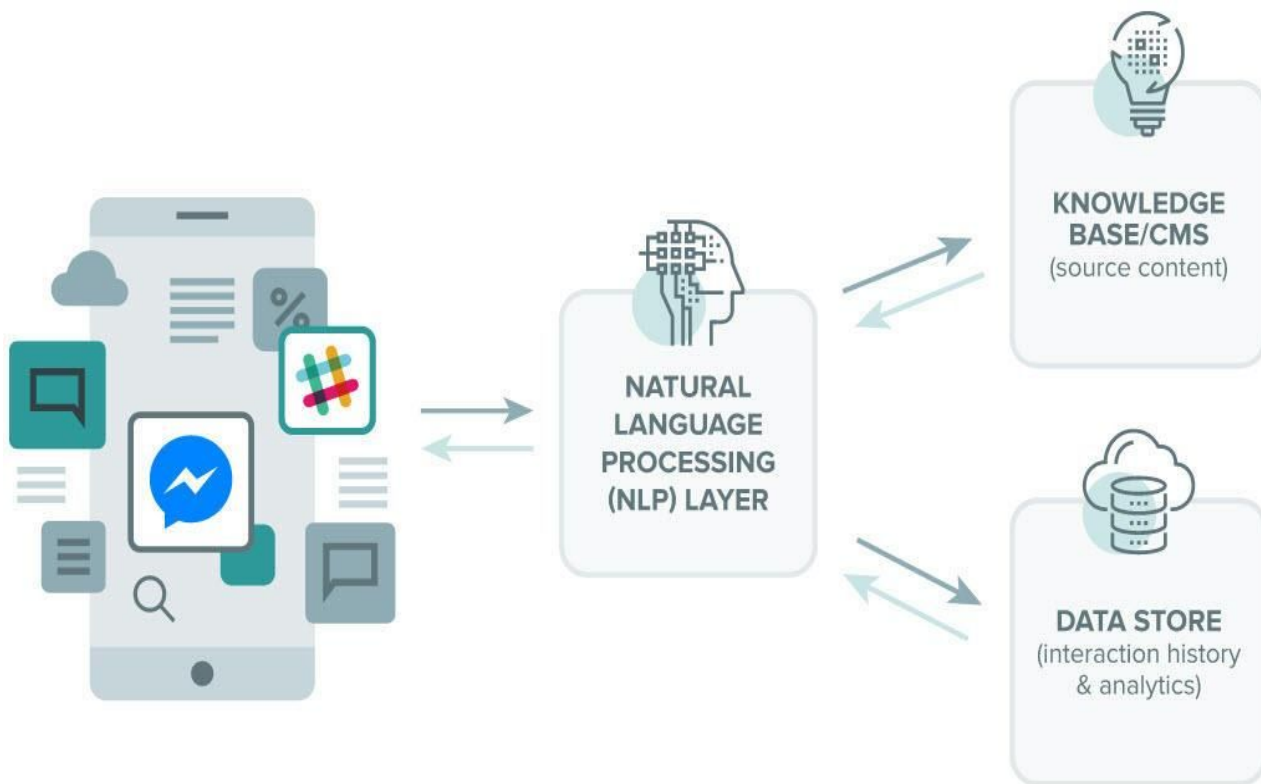# Systems available for building chatbots

"*Chatbots replacing human lives and are the future of next generations*" Chatbots – also known as "conversational agents" – are software applications that mimic written or spoken human speech for the purposes of simulating a conversation or interaction with a real person. There are two primary ways chatbots are offered to visitors: via web-based applications or standalone apps. Today, chatbots are used most commonly in the customer service space, assuming roles traditionally performed by living, breathing human beings such as Tier-1 support operatives and customer satisfaction reps.

Chatbots process the text presented to them by the user (a process known as "parsing"), before responding according to a complex series of algorithms that interprets and identifies what the user said, infers what they mean and/or want, and determine a series of appropriate responses based on this information.

25 Chatbot Systems Used

25 of the best-known platforms for building chatbots, such as
- IBM Watson
- Microsoft Bot Framework
- LUIS
- Rebot
- Api.ai
- Chatfuel
- Pandora

IBM Watson Conversation Service: It is built on a neural network (one billion Wikipedia words) and has three main components:
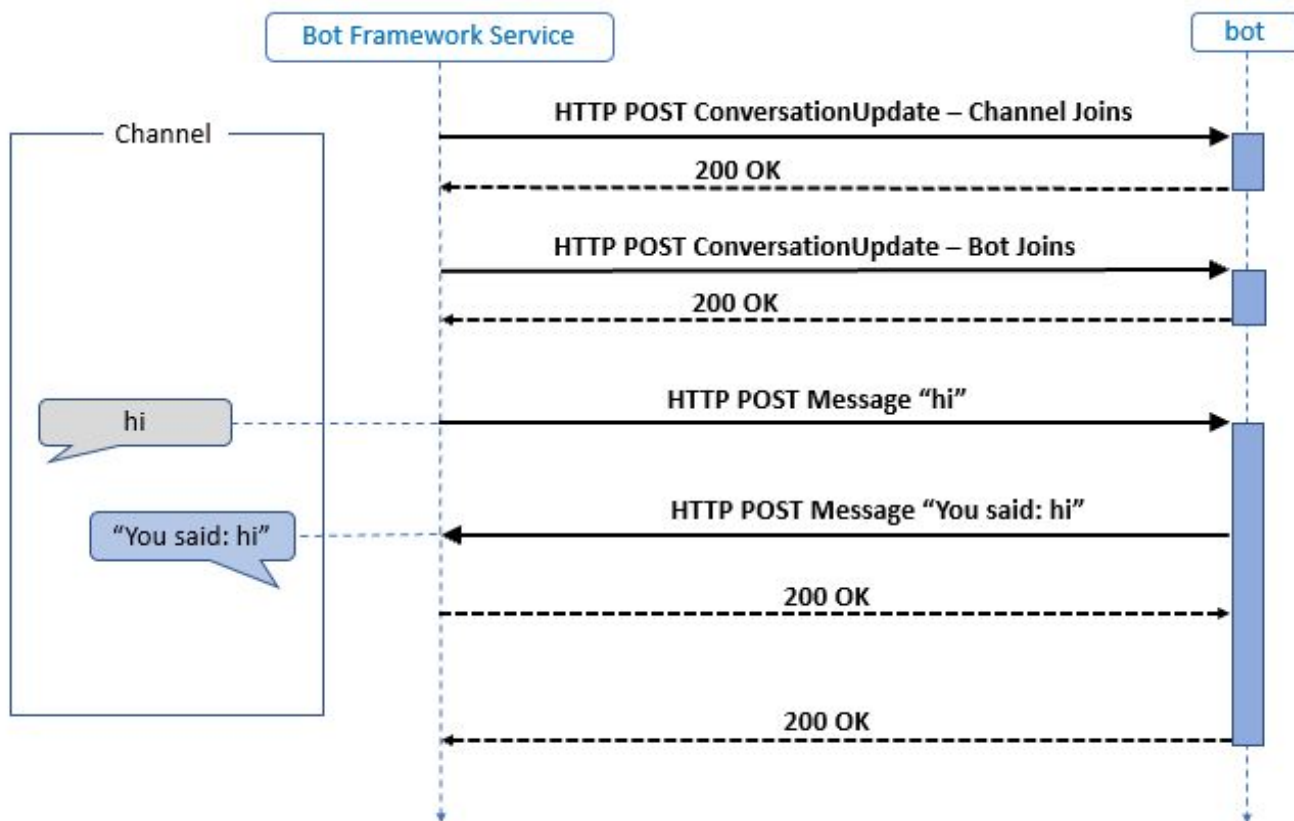
- Intents
- Entities
- Dialog

Programming languages / Apps / Integration:

- Node SDK
- Java SDK
- Python SDK
- iOS SDK
- Unity SDK

Microsoft Bot Framework: " Understands the user's intent to give the bot more human-like senses and then the bot can incorporate LUIS for natural language understanding, Cortana for voice, and the Bing APIs for search." Azure Bot Service provides an integrated environment that is purpose-built for bot development, enabling you to build, connect, test, deploy, and manage intelligent bots, all from one place. Azure Bot Service leverages the Bot Framework SDK with support for C# and JavaScript.
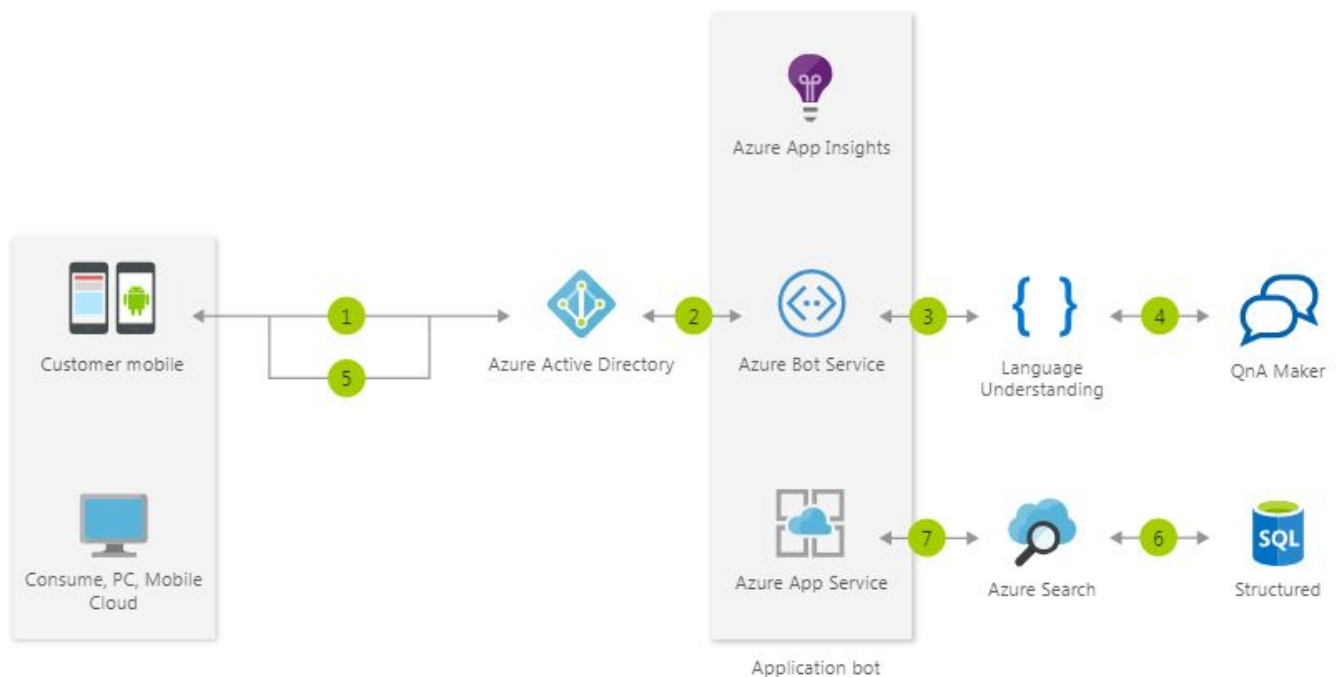
A bot is an app that users interact with in a conversational way, using text, graphics (such as cards or images), or speech. Every interaction between the user and the bot generates an *activity*. The Bot Framework Service, which is a component of the Azure Bot Service, sends information between the user's bot-connected app (such as Facebook, Skype, Slack, etc. which we call the *channel*) and the bot. Each channel may include additional information in the activities they send. Before creating bots, it is important to understand how a bot uses activity objects to communicate with its users. Let's first take a look at activities that are exchanged when we run a simple echo bot.

Two activity types illustrated here are: *conversation update* and *message*.

Microsoft Language Understanding Intelligent Service (LUIS): "LUIS is very good at understanding people's intent, which was an important point for us. It also has a learning capability, which allows us to continually improve our service."

"Uses intents and entities. All LUIS applications are centered around a domain-specific topic or content related. Active learning. You can use pre-existing, world-class, pre-built models from Bing and Cortana. Deploy models to an HTTP endpoint with one click. LUIS returns easy-to-use JSON." LUIS offers a set of programmatic REST APIs that can be used by developers to automate the application creation process. "LUIS is very good at understanding people's intent, which was an important point for us. It also has a learning capability, which allows us to continually improve our service."
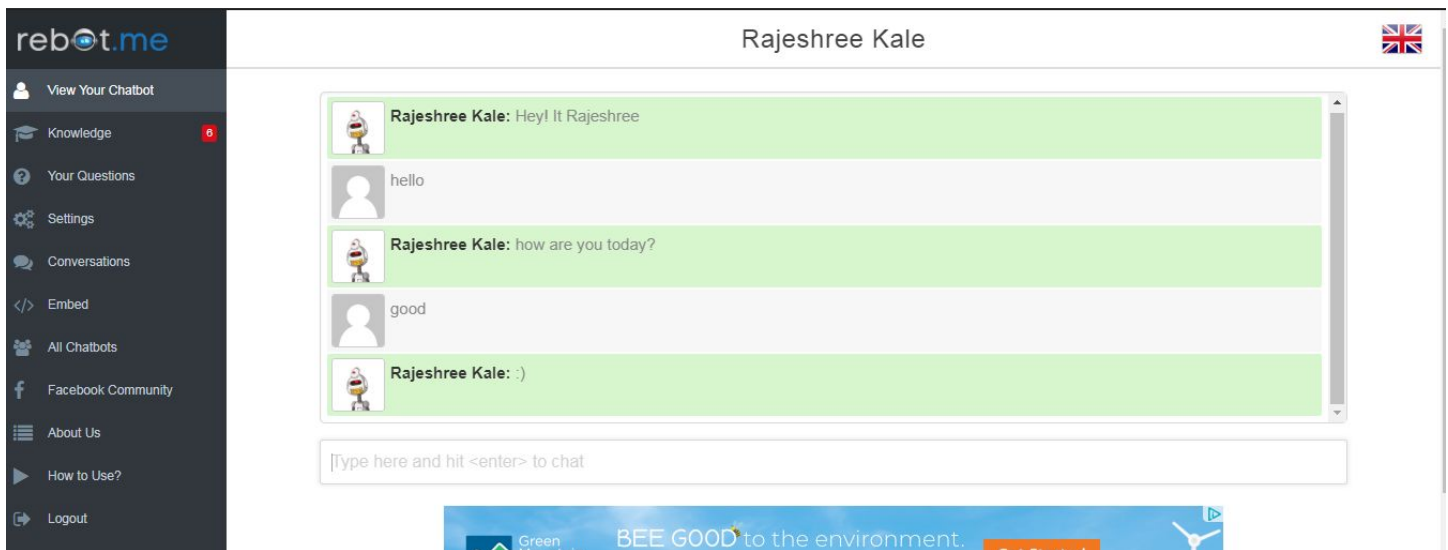

This Informational Bot can answer questions defined in a knowledge set or FAQ using Cognitive Services QnA Maker and answer more open-ended questions using Azure Search.

Rebot.me: The platform allows you to create a chatbot and train it by entering questions and corresponding answers. It also offers a chat log so that you can see the results of previous conversations. Rebot.me is a great new service which basically allows you to create your own chatbot for free.
Typically, people have a wrong notion that creating and managing a chatbot is a difficult and involves complex programming. However, we at Rebot.me ensure developing a chatbot is very simple which can be done by anyone.

Rebot Framework:

Api.ai:

API.AI matches the query to the most suitable intent based on information contained in the intent (examples, entities used for annotations, contexts, parameters, events) and the agent's machine learning model.

API.AI transforms the query text into actionable data and returns output data as a JSON response object.

Leverage predefined knowledge packages collected over several years. Giving users new ways to interact with the product by building engaging voice and text-based conversational interfaces, such as voice apps and chatbots, powered by AI. Connecting with users on the website, mobile app, the Google Assistant, Amazon Alexa, Facebook Messenger, and other popular platforms and devices.

Dialogflow is user-friendly, intuitive, and just makes sense. Its natural language processing (NLP) is the best we've tried.
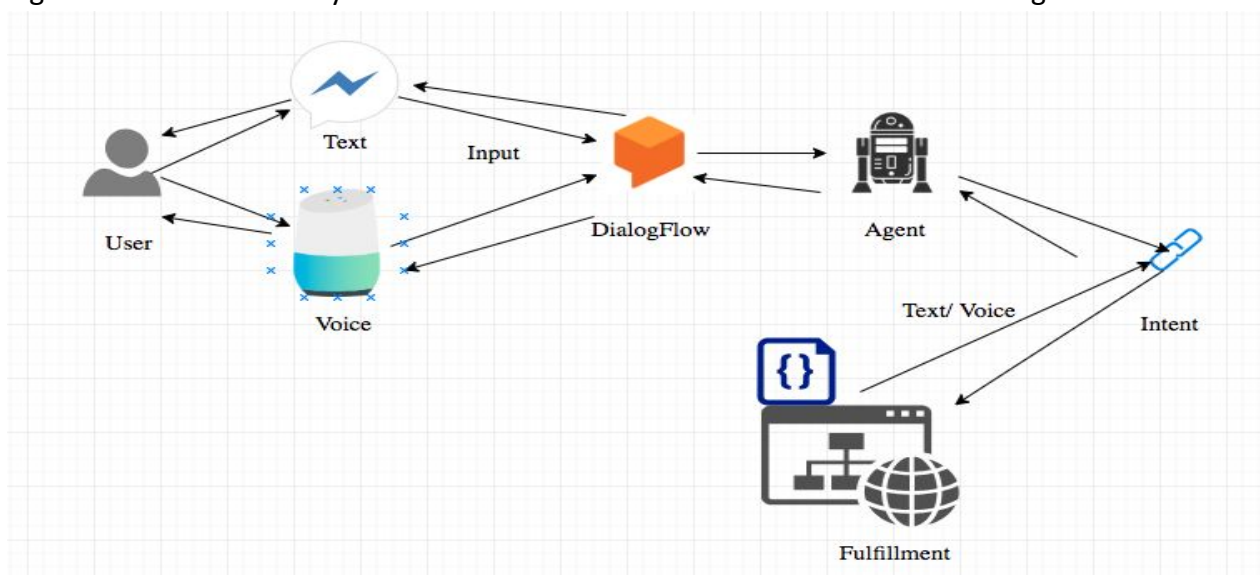
- **Powered by Google's machine learning**
  Dialogflow incorporates Google's machine learning expertise and products such as Google Cloud Speech-to-Text.
- **Built on Google infrastructure**
  Dialogflow is a Google service that runs on Google Cloud Platform, letting you scale to hundreds of millions of users.
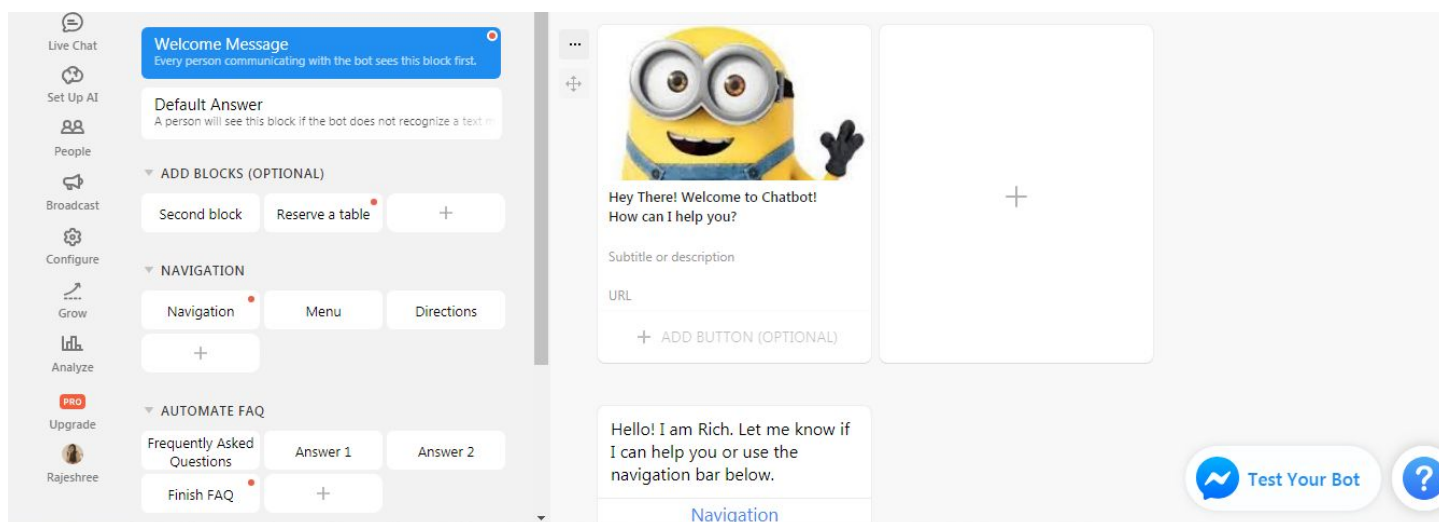- **Optimized for the Google Assistant**
  Dialogflow is the most widely used tool to build Actions for more than 400M+ Google Assistant devices.
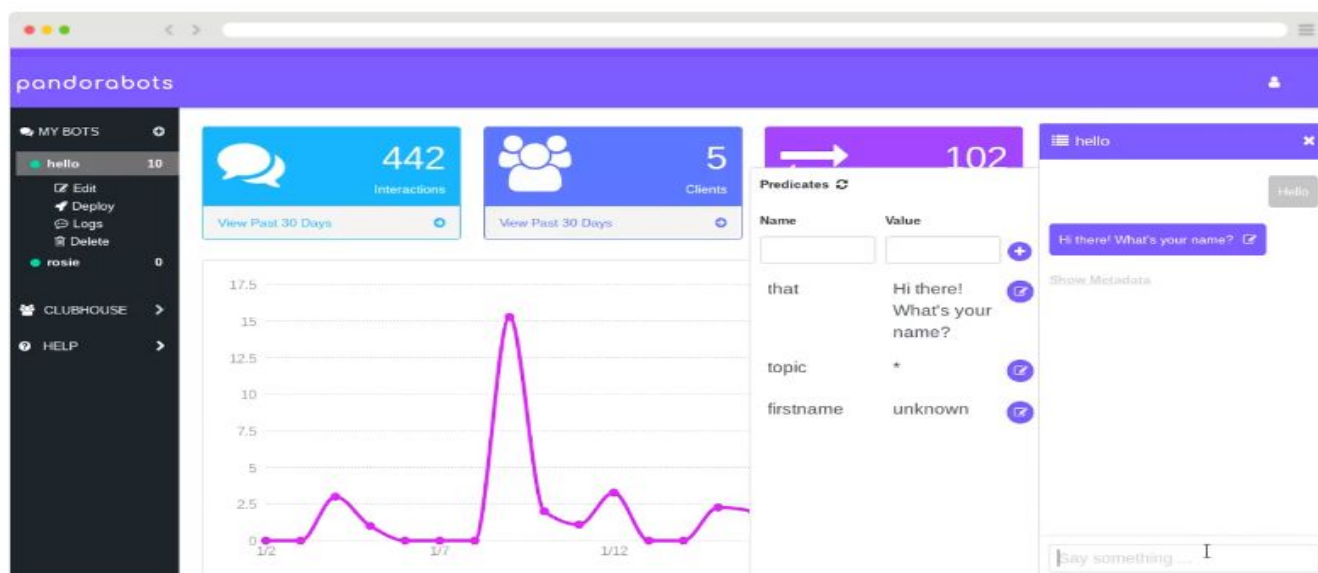
Chatfuel: "A block is a basic building block of your bot. It consists of one or more message cards that are sent together to a bot user. You can link blocks with each other using buttons in text cards or in gallery cards."

Chatfuel was born in the summer of 2015 with the goal of making bot-building easy for anyone. Today, it is one of the leading platform for building bots on Facebook Messenger.
Bots automate communication with humans through messaging applications. Since messengers have become the most heavily used mobile apps, bots have emerged as effective instruments that are changing the world of digital marketing. Messenger Marketing today is what email marketing and landing pages were a decade ago. It's fundamentally changing the way businesses interact with their prospects and customers. Our customers are using bots to increase sales, improve conversions, qualify leads, and automate support on Facebook.

Chatfuel's clients range from small and medium businesses to the world's most recognizable brands. Some of our largest customers include Adidas, TechCrunch, T–Mobile, LEGO, Golden State Warriors, and many others.

Pandorabots: "AIML (Artificial Intelligence Markup Language) Includes A.L.I.C.E."
The Pandorabots API allows you to integrate our bot hosting service and natural language processing engine into your own application. Pandorabots offers a wide spectrum of services to meet your business needs, from DIY solutions to fully turnkey chatbot development, to everything in between.

Q 1: Did you get all the information you wanted using the system?

IBM Watson	Rebot	Api.ai	Chatfuel	Louis	Pandorabot
Yes. It gave accurate response	Somewhat informative.	Yes. It gave accurate responses*	Yes. It was very informative	Yes. It gave some accurate responses	Could not respond to all the questions

Q2 Do you think the system understood what you asked?

IBM Watson	Rebot	Api.ai	Chatfuel	Louis	Pandorabot
Yes.	The system partially understood response from the user and	Yes. The model was trained & performed well for similar user inputs.	Yes. It gave information for user inputs in textual as well as pictorial format	The system was performing best at trained user inputs	The model was unable to respond to similar inputs

Q3 How easy was it to obtain the information you wanted?
0-5:: Easy-Difficult

IBM Watson	Rebot	Api.ai	Chatfuel	Louis	Pandorabot
1	1	4	4	2	2

Q4 Was it easy to reformulate your questions when you were invited to?

IBM Watson	Rebot	Api.ai	Chatfuel	Louis	Pandorabot
yes	Yes	Yes.	Yes.	yes	No

Q5 Overall, are you satisfied with the system?

IBM Watson	Rebot	Api.ai	Chatfuel	Louis	Pandora bot
Satisfied	Somewhat satisfied	Yes.	Yes. It was very informative	Yes but the documentation needs detailing	Somewhat satisfied

Q6 Do you think you would use this system again?

IBM Watson	Rebot	Api.ai	Chatfuel	Louis	Pandorabot
Yes	No	Yes.	Yes.	Yes.	No

Q7 Was the pace of interaction with the system appropriate?

IBM Watson	Rebot	Api.ai	Chatfuel	Louis	Pandorabot
Yes	Somewhat satisfied	Yes.	Yes. It was very informative	Yes	Yes

Q8 How easy it was to design a chatbot from scratch?

IBM Watson	Rebot	Api.ai	Chatfuel	Louis	Pandorabot
Easy	Easy	Medium	Hard	Medium	Medium

Q9 Was the chatbot able to integrate with any IM platforms? If yes, Name the platforms ?

IBM Watson	Rebot	Api.ai	Chatfuel	Louis	Pandorabot
Yes Slack watson platform	No.	Yes. Slack, Whatsapp, Messenger	Yes. Facebook Messenger	Yes Slack	No. In progress

Best model based on the systems used for building chatbots:

IBM Watson:

The Natural Language Processor(NLP) understands the user intent and then directs the system to respond. It is the most important part of the chatbot conversations. The chatbot learns from a series of conversations. There might be questions asked to the bot that has not been fed in. But what the NLP does is, it keeps on feeding in new data as per the conversations. So, the next time the person asks the same questions, it has an answer for it. The NLP could also gain insights from the user's emotion and respond accordingly. But it is important for you to select the best API to create chatbot. IBM gets the user input an trains itself.