



# Dialogflow

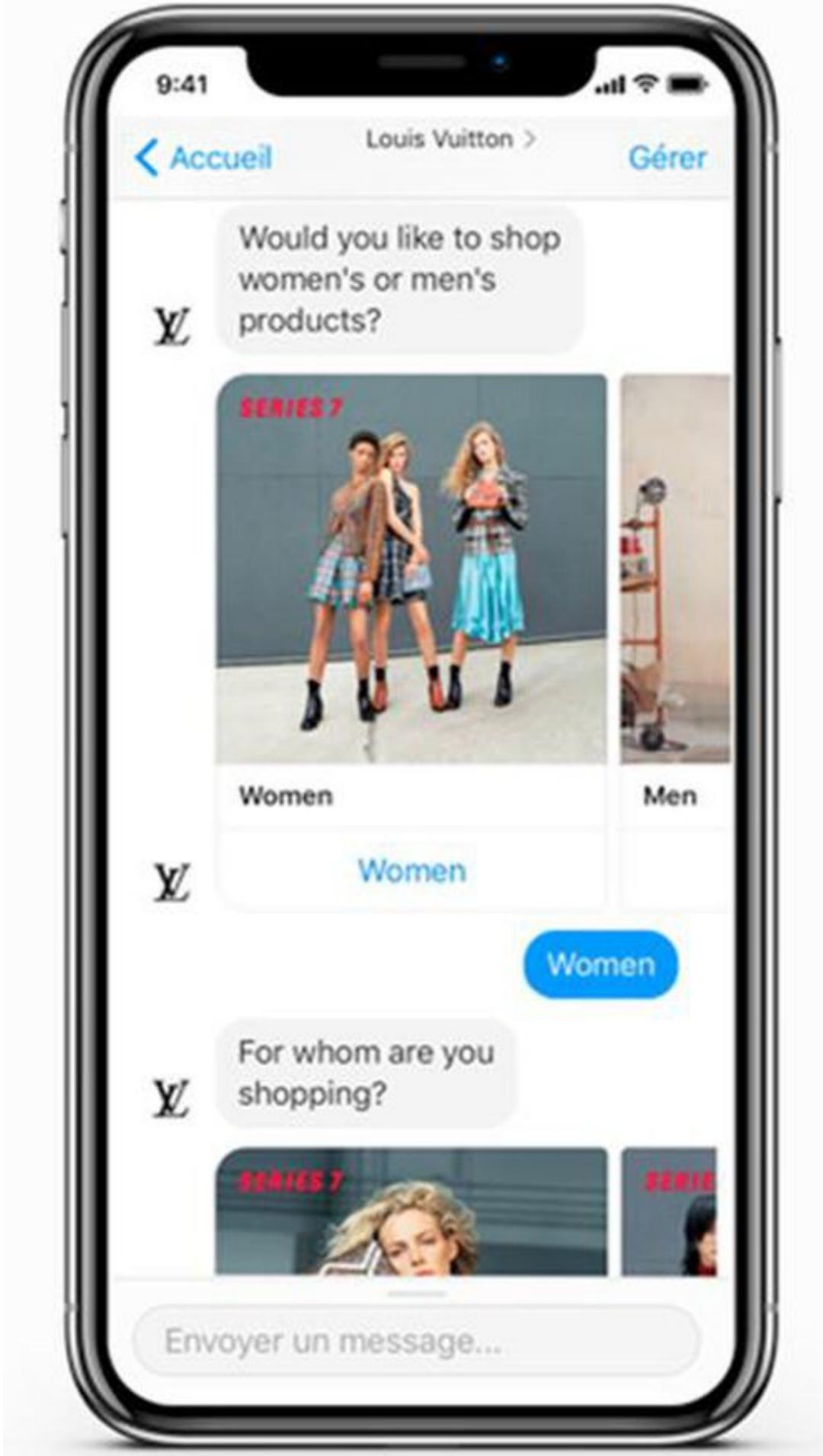
## GOOGLE API DIALOGFLOW

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*Yelyzaveta*

# DIALOGFLOW

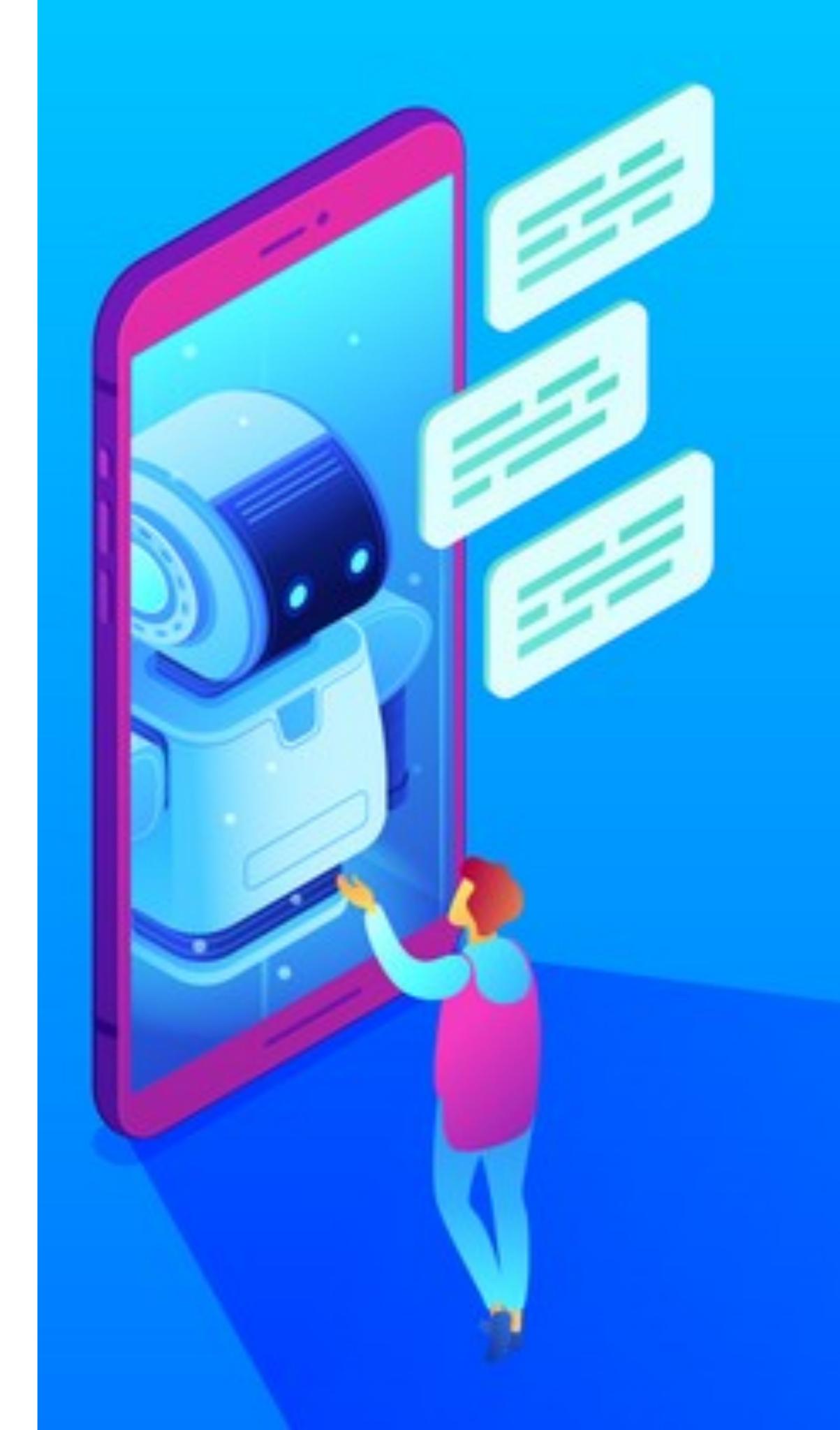
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- (formerly Api.ai, Speaktoit) is a Google-owned developer of human-computer interaction technologies based on natural language conversations.
- The company is best known for creating the Assistant (by Speaktoit), a virtual buddy for Android, iOS, and Windows Phone smartphones that performs tasks and answers users' questions in a natural language.
- Speaktoit has also created a natural language processing engine that incorporates conversation context like dialogue history, location and user preferences.

# WHY CHOOSE DIALOGFLOW?

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# THERE ARE SEVERAL REASONS FOR CHOOSING **DIALOGFLOW**:

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- **Price:** If you just want to learn building a Chatbot or you don't have many users, a Standard Edition is totally free. As you can see below

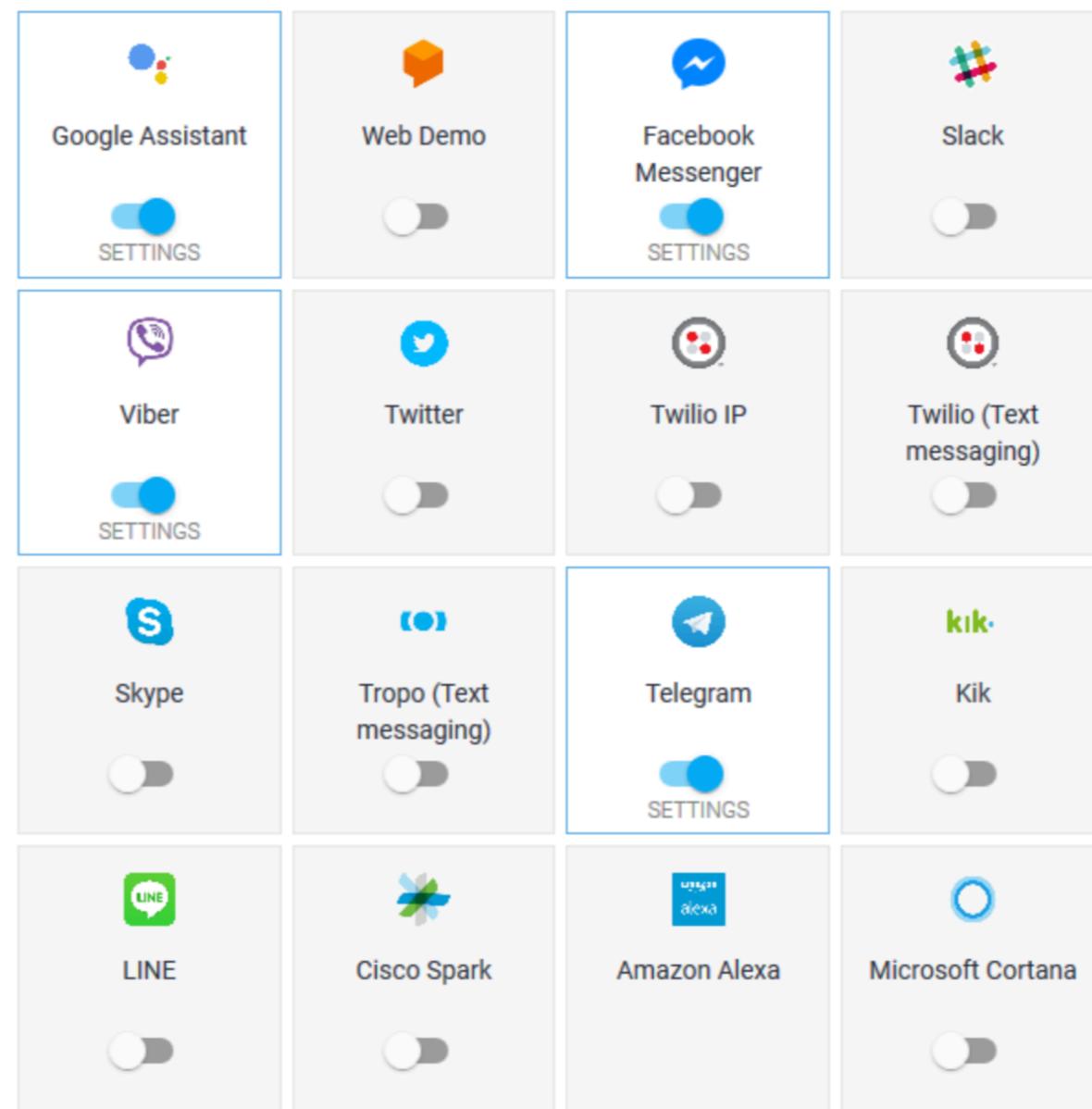
|                                | Free<br>Standard Edition   | Pay as you go<br>Enterprise Edition  |
|--------------------------------|--|--|
| Text queries                   | Free usage with unlimited requests   | Unlimited requests at \$0.002 per request  |
| Voice interaction              | Free usage up to 1,000 requests per day with a maximum of 15,000 requests per month  | Unlimited <a href="#">Cloud Speech-to-Text</a> requests at \$0.0065 per 15 seconds ( <a href="#">see details</a> ) |
| Default quota for text queries | 3 queries per second (averaged over a minute)  | 10 queries per second (averaged over a minute)   |
| Service level agreement        | None   | <a href="#">Dialogflow Enterprise Edition Service Level Agreement (SLA)</a>  |
| Support                        | Community and email support  | Eligible for <a href="#">Google Cloud Support</a>  |
| Terms of Service               | <a href="#">Dialogflow ToS</a>   | <a href="#">Google Cloud Platform ToS</a>  |
| Choose a plan →                | Ideal for small to medium businesses or those who want to experiment with Dialogflow | Ideal for businesses that need to easily scale to support changes in demand from their users                       |

[START NOW](#)

[LEARN MORE](#)

► **Multi-channel easy integration:** Dialogflow provides one-click integrations to most popular messaging Apps like Facebook Messenger, Slack, Twitter, Kik, Line, Skype, Telegram, Twilio and Viber. Even to some voice assistants like Google Assistant, Amazon Alexa and Microsoft Cortana.

One-click integrations

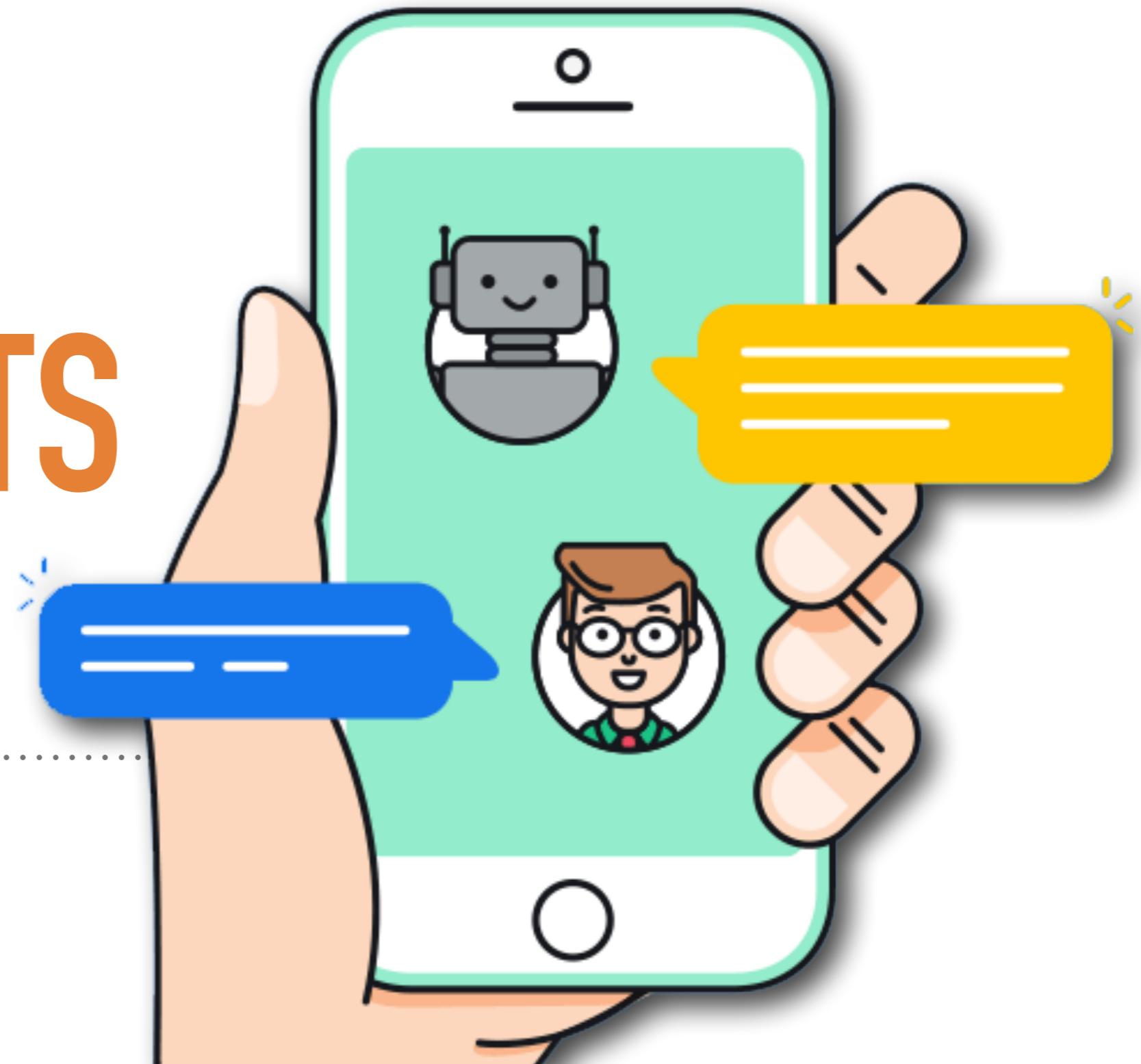


- **Natural Language Processing(NLP):** Compared to some platforms which works on predefined questions like Chatfuel, Dialogflow can offer better user experience with NLP. DialogFlow Agents are pretty good at NLP.



# HOW DO CHATBOTS WORK?

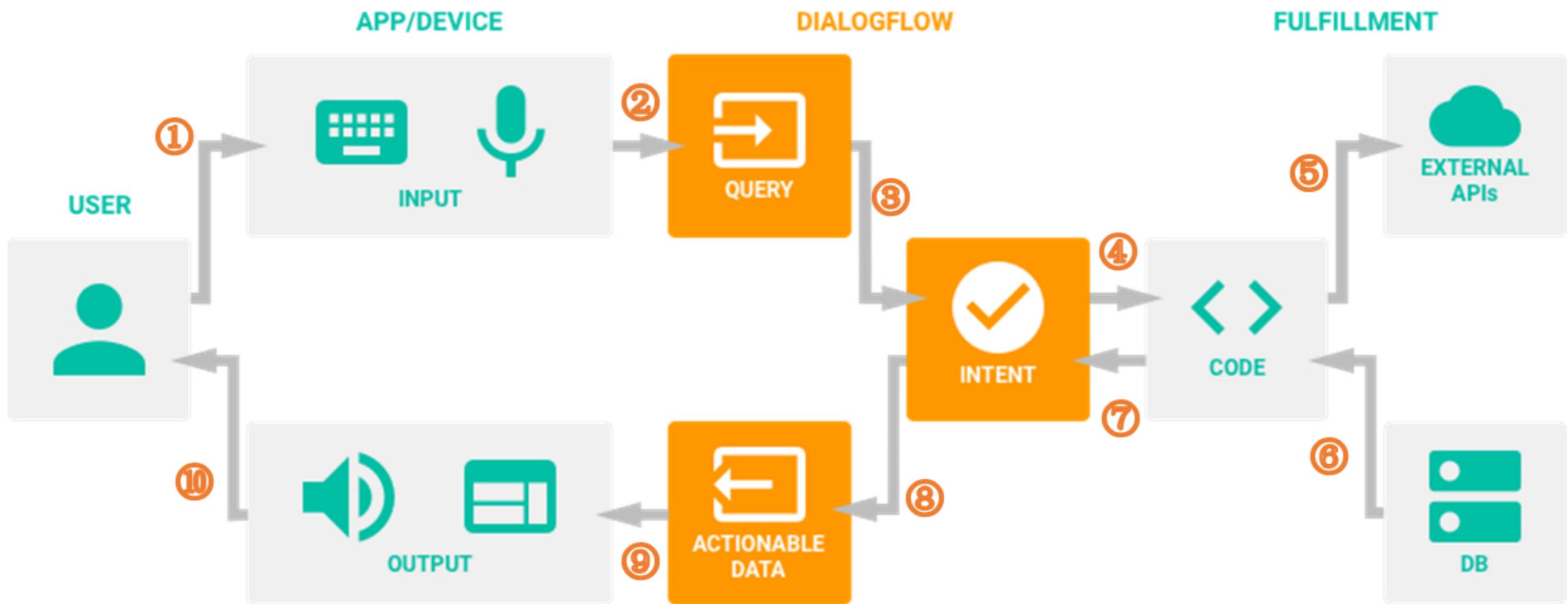
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# THERE ARE DETAILED STEPS:

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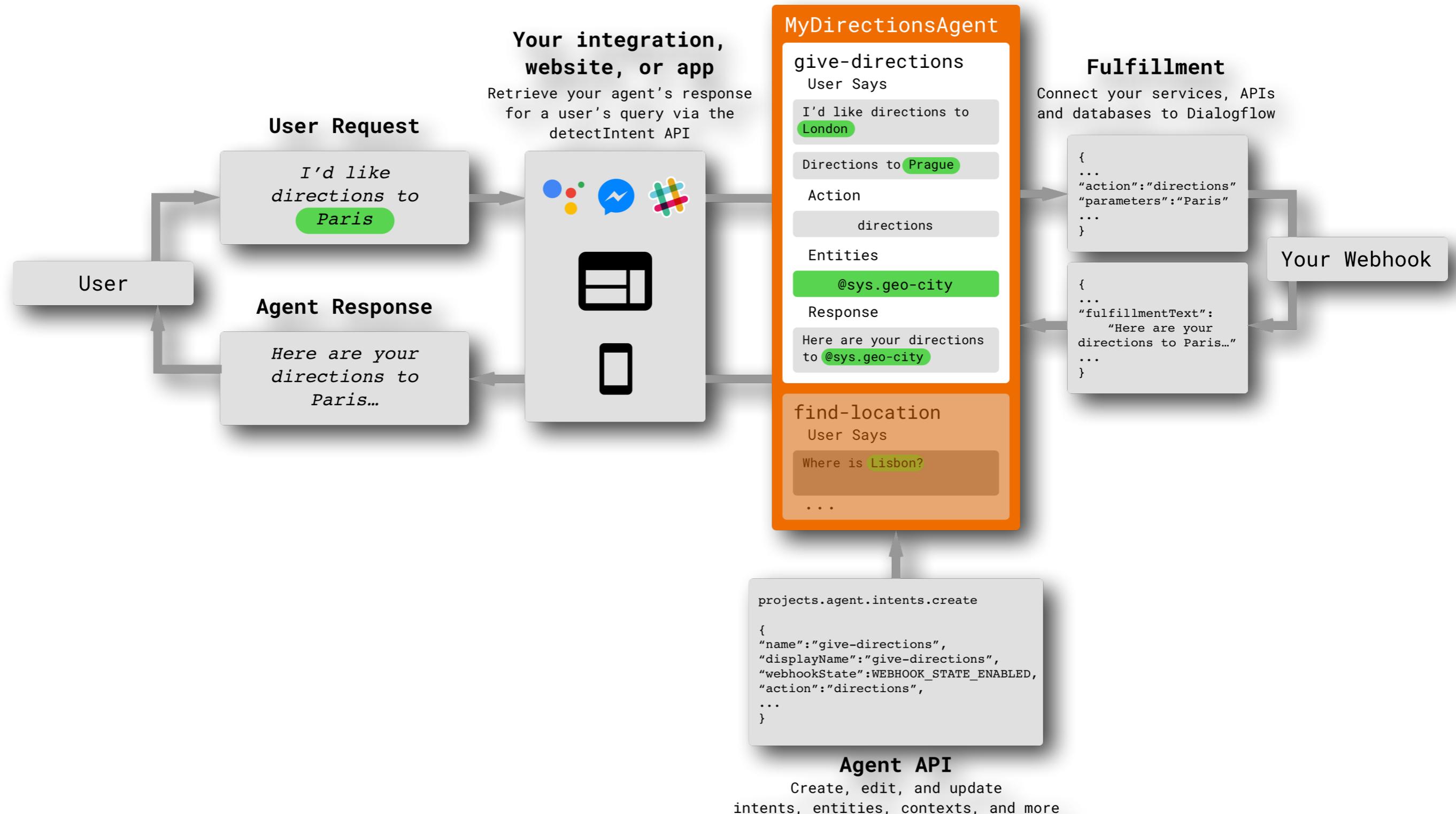
1. A user sends a text/voice message to a device or an App
2. The App/Device transfers the message to Dialogflow
3. The message is categorized and matched to a corresponding intent (Intents are defined manually by developers in Dialogflow)
4. We define following actions for each intent in the fulfillment (Webhook).
5. When a certain intent is found by Dialogflow, the webhook will use external APIs to find a response in external data bases.
6. The external data bases send back required information to the webhook.
7. Webhook sends formatted response to the intent.
8. Intent generates actionable data according to different channels.
9. The actionable data go to output Apps/Devices.
10. The user gets a text/image/voice response.



# DIALOGFLOW SDKS

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- Dialogflow's SDKs and underlying APIs allow you to take action on your own systems based on conversational input, embed your conversational interface into your app or website, and dynamically change your agent's behavior. Dialogflow APIs center around **three primary use cases**:
  - **Fulfillment:** take action on your own systems based on conversational input. Fulfillment connects your Dialogflow agent to your services, APIs and/or databases
  - **Detect Intent API:** Embed your conversational interface built with Dialogflow into your app or website
  - **Agent API:** Dynamically change your agent's behavior by editing your agent's intents, entities and contexts For information on Dialogflow's REST APIs please see the Reference Documentation.



# FULFILLMENT

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- Fulfillment is a powerful way to connect Dialogflow's natural language capabilities with your own backend, APIs, and databases to create contextual, personalized and actionable conversational experiences for your users.
- You can use fulfillment to enable your Dialogflow agent to order items, retrieve user-specific information such as emails, and control devices like a photobooth. You can use fulfillment on any platform that supports receiving and responding to HTTP requests.



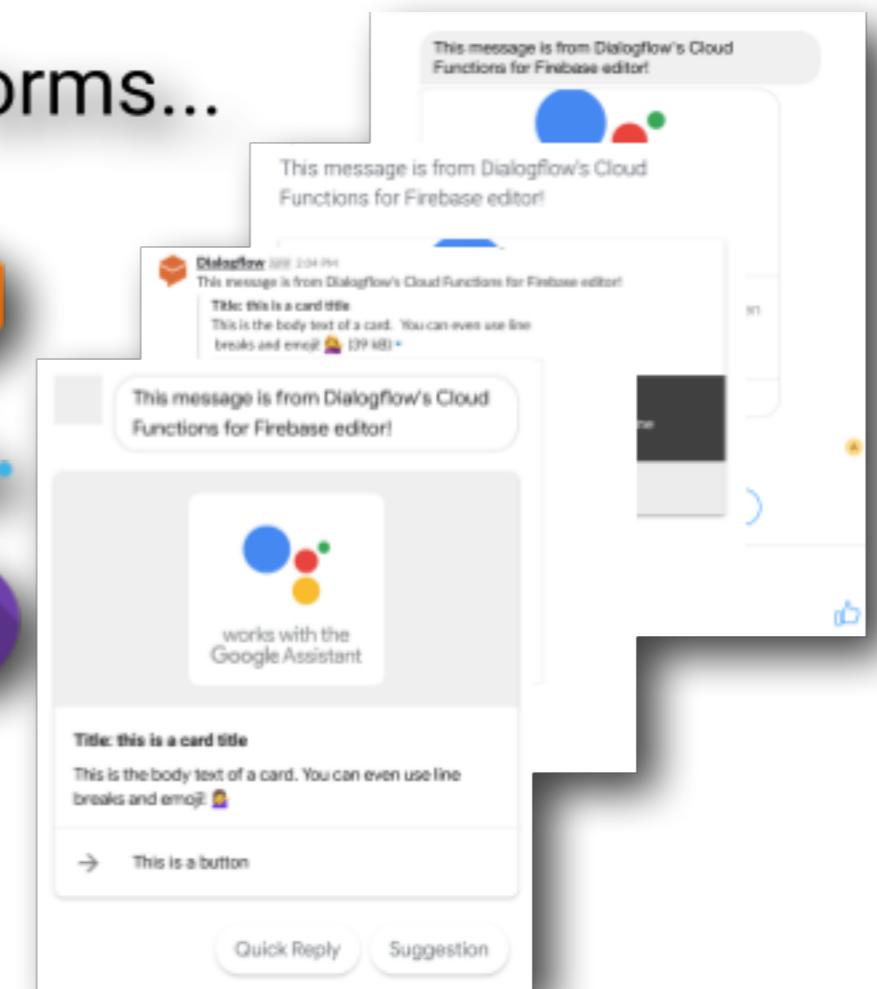
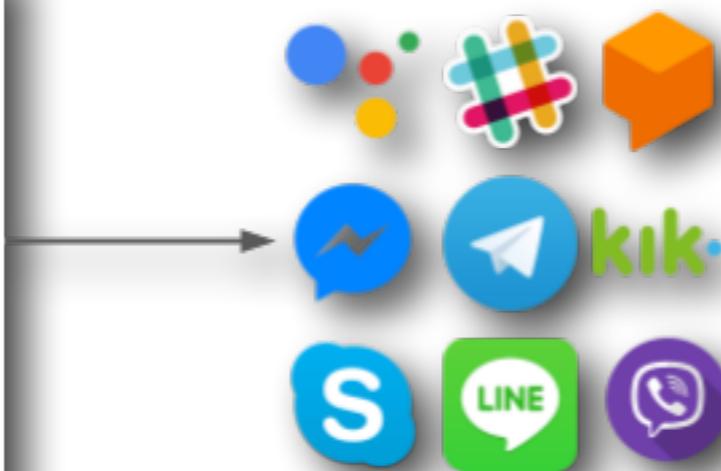
# DIALOGFLOW FULFILLMENT LIBRARY

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- The Dialogflow fulfillment library provides a way for developers to create fulfillment across the various integrations that Dialogflow supports. If you are only interested in building Dialogflow fulfillment for the Google Assistant and don't plan on using other integrations, you should use the Actions on Google fulfillment library which supports all Actions on Google features.

# Write once, deploy to 8 platforms...

```
agent.add(`This message is from Dialogflow's\  
Cloud Functions for Firebase editor!`);  
agent.add(new Card({  
  title: `Title: this is a card title`,  
  imageUrl: 'https://dialogflow.com/google.png',  
  text: `This is the body text of a card.\n    You can even use line\n      breaks and emoji! 🎉`,  
  buttonText: 'This is a button',  
  buttonUrl: 'https://dialogflow.com/'  
})  
);  
agent.add(new Suggestion('Quick Reply'));  
agent.add(new Suggestion('Suggestion'));
```



# DETECT INTENT AND AGENT APIs

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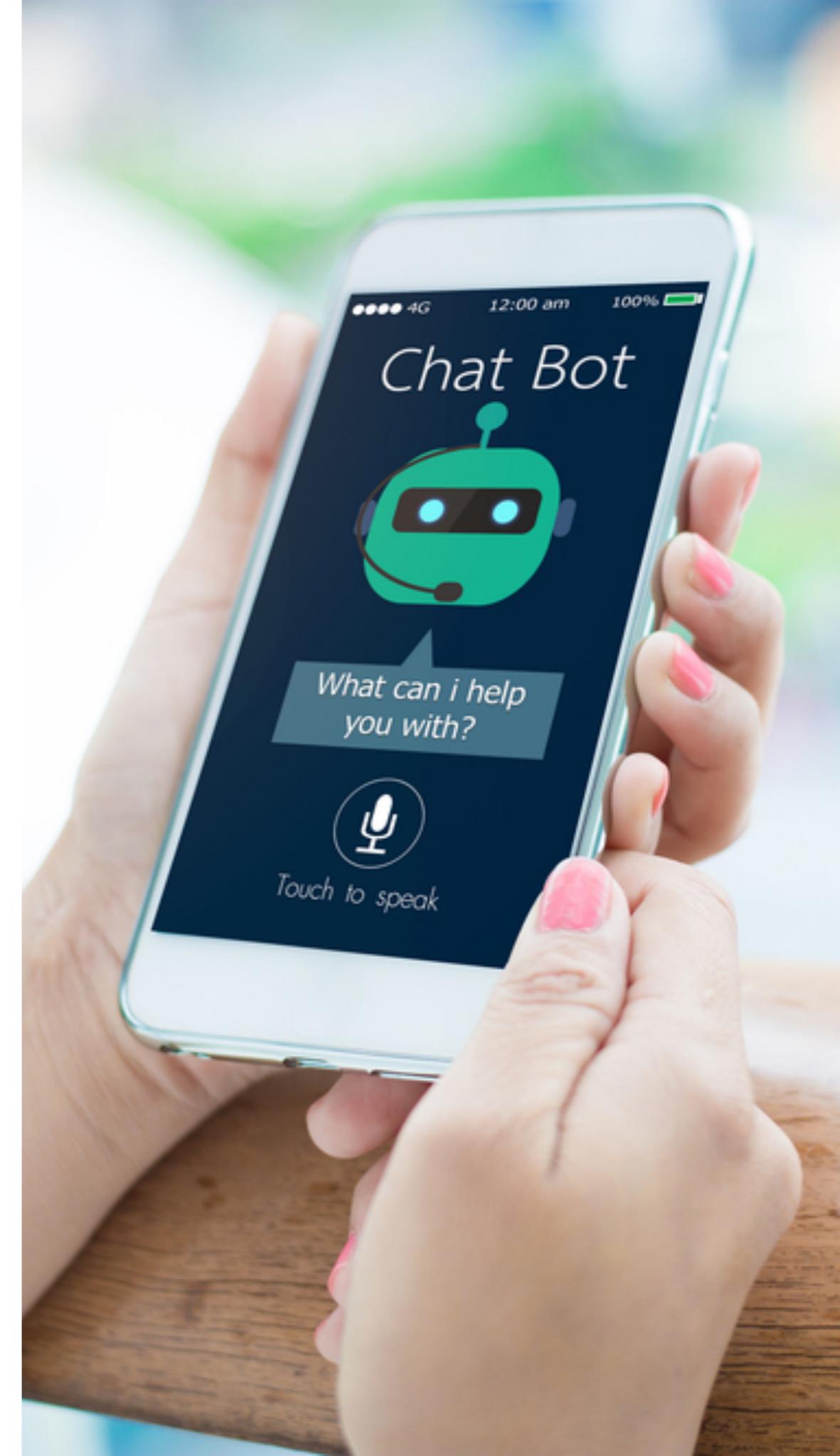
- Dialogflow's detect intent API is a great way to integrate your Dialogflow agent **into your website or app**. The detect intent API enables you to query your agent with a user's request (audio or text) and receive your agent's response to the user's request.
- The agent API allows you to dynamically change the behavior of your Dialogflow agent by allowing you to create, read, update and delete intents, entities and contexts. Both the detect intent and agent APIs can be accessed through Dialogflow's REST API or the client libraries available for Node.js, Python, Java, Go, Ruby, C#, and PHP listed below:

## V2 Client Libraries

| Platform | Package Manager | Installation   | Include/Import   |
|----------|-----------------|--|--|
| Node.js  | NPM             | <code>npm install dialogflow</code>                      | <code>const dialogflow = require('dialogflow');</code>     |
| Python   | PyPI            | <code>pip install dialogflow</code>                      | <code>import dialogflow</code>                             |
| Java     | Maven           | <a href="#">See Quickstart</a>                           | <code>import com.google.cloud.dialogflow.V2.*;</code>      |
| Go       | go get          | <code>go get cloud.google.com/go/dialogflow/apiv2</code> | <code>import "cloud.google.com/go/dialogflow/apiv2"</code> |
| Ruby     | Gem             | <code>gem install api-ai-ruby</code>                     | <code>ApiAiRuby::Client.new(...)</code>                    |
| C#       | Nuget           | <code>nuget install Google.Cloud.Dialogflow.V2</code>    | <code>using Google.Cloud.Dialogflow.V2;</code>             |
| PHP      | Packagist       | <code>composer require google/cloud-dialogflow</code>    | <code>use Google\Cloud\Dialogflow\V2\AgentsClient;</code>  |

# HOW TO BUILD YOUR FIRST CHATBOT?

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# CREATE AN AGENT

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- If you don't already have a **Dialogflow** account, sign up. If you have an account, login.
- Click on **Create Agent** in the left navigation and fill in the fields.
- Give a name and set a language to your agent. Then, click the **Save** button.

my\_weather

SAVE ⋮

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DESCRIPTION

Describe your agent

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ADD SAMPLE DATA

Select sample data to be loaded into new agent or leave unselected for empty agent ▾

Deutsch

English

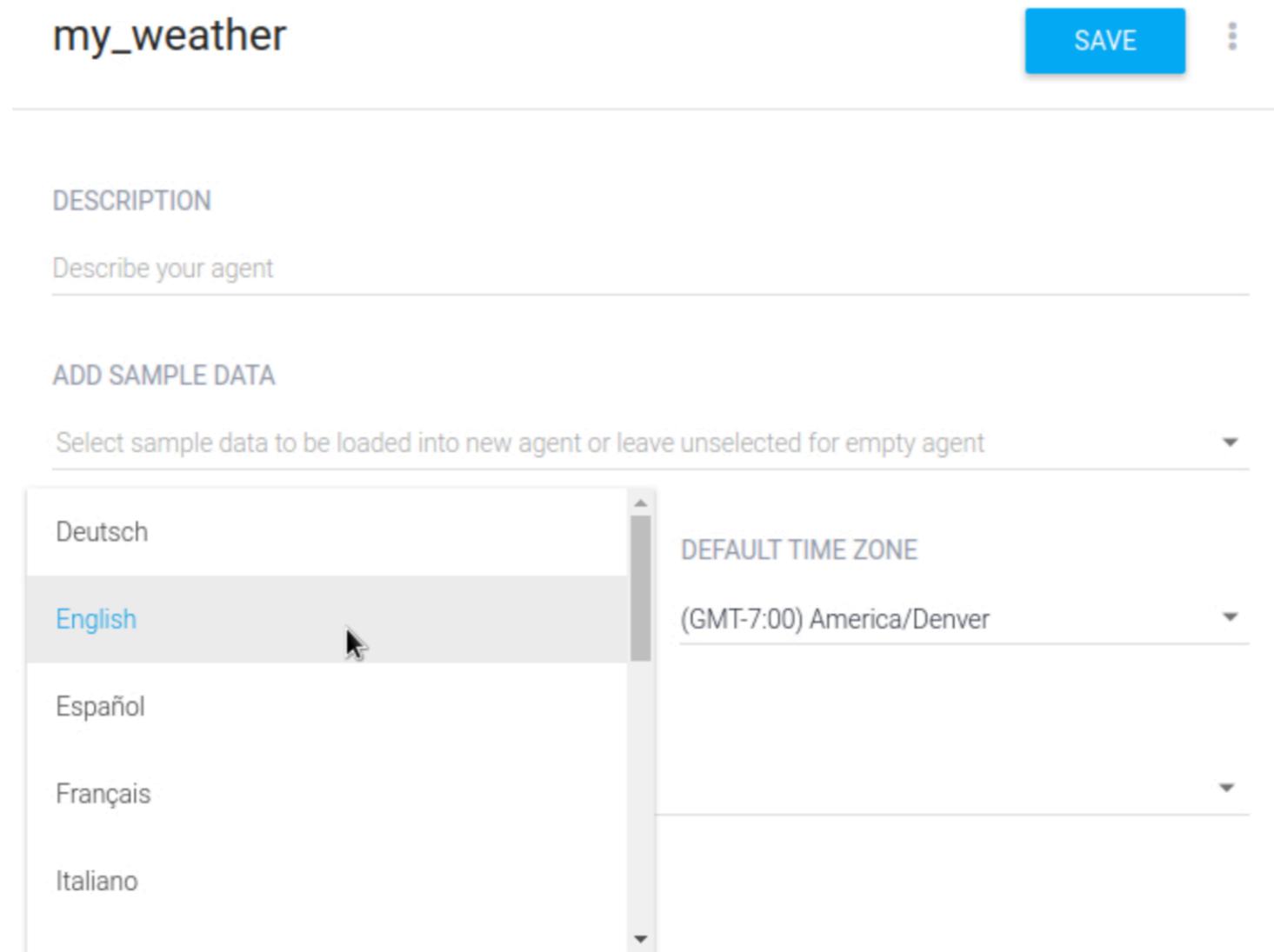
Español

Français

Italiano

DEFAULT TIME ZONE

(GMT-7:00) America/Denver ▾



# CREATE AN INTENT

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- An intent maps what a user says with what your agent does. This first intent will cover when the user asks for the weather.
- To create an intent:
  1. Click on the plus icon add next to Intents. You will notice some default intents are already in your agent. Just leave them be for now.
  2. Enter a name for your intent. This can be whatever you'd like, but it should be intuitive for what the intent is going to accomplish.

- After creating the agent, there will be two standard assignments here:
  - **Default Welcome Intent** — launched to greet the user (send a return greeting)
  - **Default Fallback Intent** — launched if none of the other appointments are appropriate. Send a message that the bot did not understand (“This last phrase is not clear to me” “Try, please express your thoughts differently” etc.)

► In the Training Phrases section, enter examples of what you might expect a user to ask for. Since you're creating a **weather agent**, you want to include questions about locations and different times. The more examples you provide, the more ways a user can ask a question and the agent will understand. Enter these examples:

- What is the weather like
- What is the weather supposed to be
- Weather forecast
- What is the weather today
- Weather for tomorrow
- Weather forecast in San Francisco tomorrow



- In the last three examples you'll notice the words **today** and **tomorrow** are highlighted with one color, and **San Francisco** is highlighted with another. This means they were **annotated as parameters** that are assigned to existing date and city system entities. These date and city parameters allow **Dialogflow** to understand other dates and cities the user may say, and not just "today", "tomorrow", and "San Francisco".

- Click **Save**.



● **weather**

SAVE ⋮

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Contexts

▼

User says


Search in user says. 🔍

"» Add user expression

| PARAMETER NAME                                | ENTITY        | RESOLVED VALUE                                    |
|---|---------------|---|
| geo-city                                      | @sys.geo-city | San Francisco <span style="color: #ccc;">✖</span> |
| date  | @sys.date     | tomorrow <span style="color: #ccc;">✖</span>      |
| "» Weather forecast in San Francisco tomorrow |               |   |
| "» Weather for tomorrow                       |               |   |
| "» what is the weather today                  |               |   |
| "» weather forecast                           |               |   |

# ADD RESPONSE

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- Now you'll add basic responses to the intent so the agent doesn't just sit there in awkward silence. As mentioned before, responses added to an intent don't use external information. So this will only address the information the agent gathered from the user's request.
- If you've navigated away from the “weather” intent, return to it by clicking on **Intents** and then the **“weather”** intent.
- In the same way you entered the **Training Phrases**, add the lines of text below in the **Response section**:
  - Sorry I don't know the weather
  - I'm not sure about the weather on \$date
  - I don't know the weather for \$date in \$geo-city but I hope it's nice!

- You can see the last two responses reference entities by their value placeholders. `$date` will insert the date from the request, and `$geo-city` will insert the city.
- When the agent responds, it takes into account the parameter values gathered and will use a reply that includes those values it picked up. For example, if the request only includes a date, the agent will use the second response from the list.
- Click Save

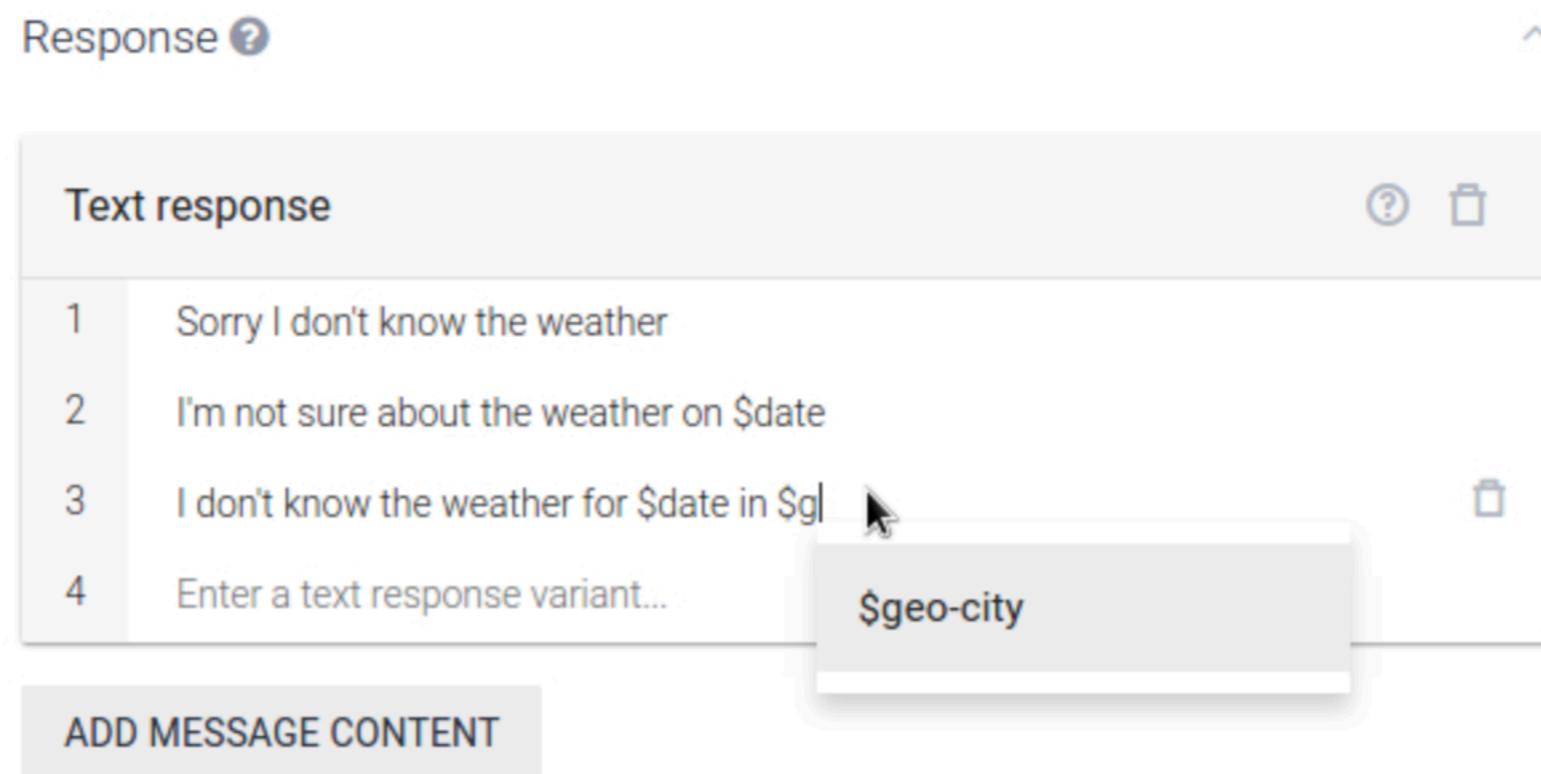
Response ?

Text response

| 1 | Sorry I don't know the weather              |
|---|---|
| 2 | I'm not sure about the weather on \$date    |
| 3 | I don't know the weather for \$date in \$gl |
| 4 | Enter a text response variant...            |

\$geo-city

ADD MESSAGE CONTENT



## TRY IT OUT

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- In the console on the right, type in a request. The request should be a little different than the examples you provided in the Training Phrases section. This can be something like “How’s the weather in Denver tomorrow”. After you type the request, hit “Enter/Return”.
  - **Response** — shows an appropriate response from the ones provided
    - ➔ The response chosen is based off of the values you provide in the query (e.g. By providing only the date, the agent should respond with the option that only includes the date)
  - **Intent** — weather again a successful trigger of the intent
  - **Parameter** — the values you provided in your query, should be reflected in the appropriate response

Try it now...



## Agent

USER SAYS

How's the weather **in** Denver tomorrow

COPY CURL

RESPONSE

*Not available*

INTENT

**weather**

ACTION

*Not available*

PARAMETER

VALUE

date

2017-03-17

geo-city

Denver

SHOW JSON

## BASIC FULFILLMENT (WEBHOOK)

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- Depending on your need, you can define custom Webhook to use external APIs and **get extra data from external databases**. A webhook can be written in Python and Node.js. It can be held in cloud servers like Heroku, AWS and Google Cloud Platform, and local servers. Please choose your favorite programing language and server: <https://dialogflow.com/docs/getting-started/basic-fulfillment-conversation>

## INTEGRATION TO YOUR CHANNELS

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- Dialogflos provides **one-click integrations** to most popular messaging Apps and voice assistants. Integrations can be done within a few seconds. You can choose your favorite channels and follow the official integration tutorial on the Dialogflow website. Please see:<https://dialogflow.com/docs/integrations/>

# SEE WHO'S USING DIALOGFLOW

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See [case studies](#) of how companies around the world are using Dialogflow to help them serve their users and reach their business goals.



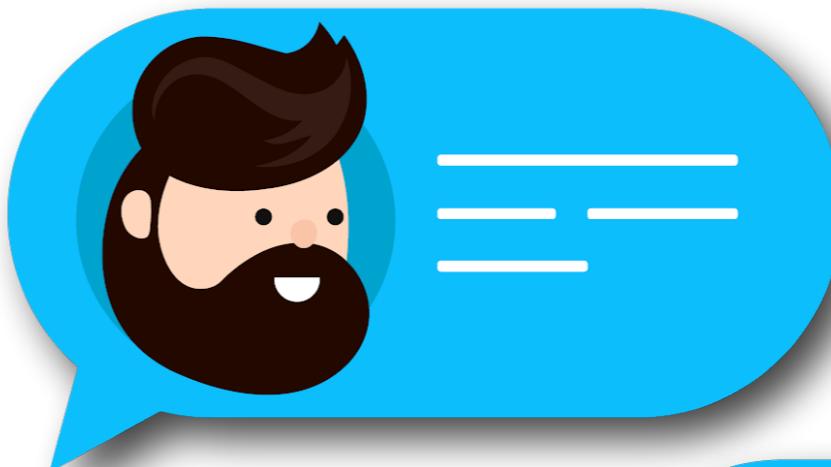
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**THANK YOU FOR  
YOUR ATTENTION!**

