



MICHAEL STONIS - EIGHT-BOT, INC

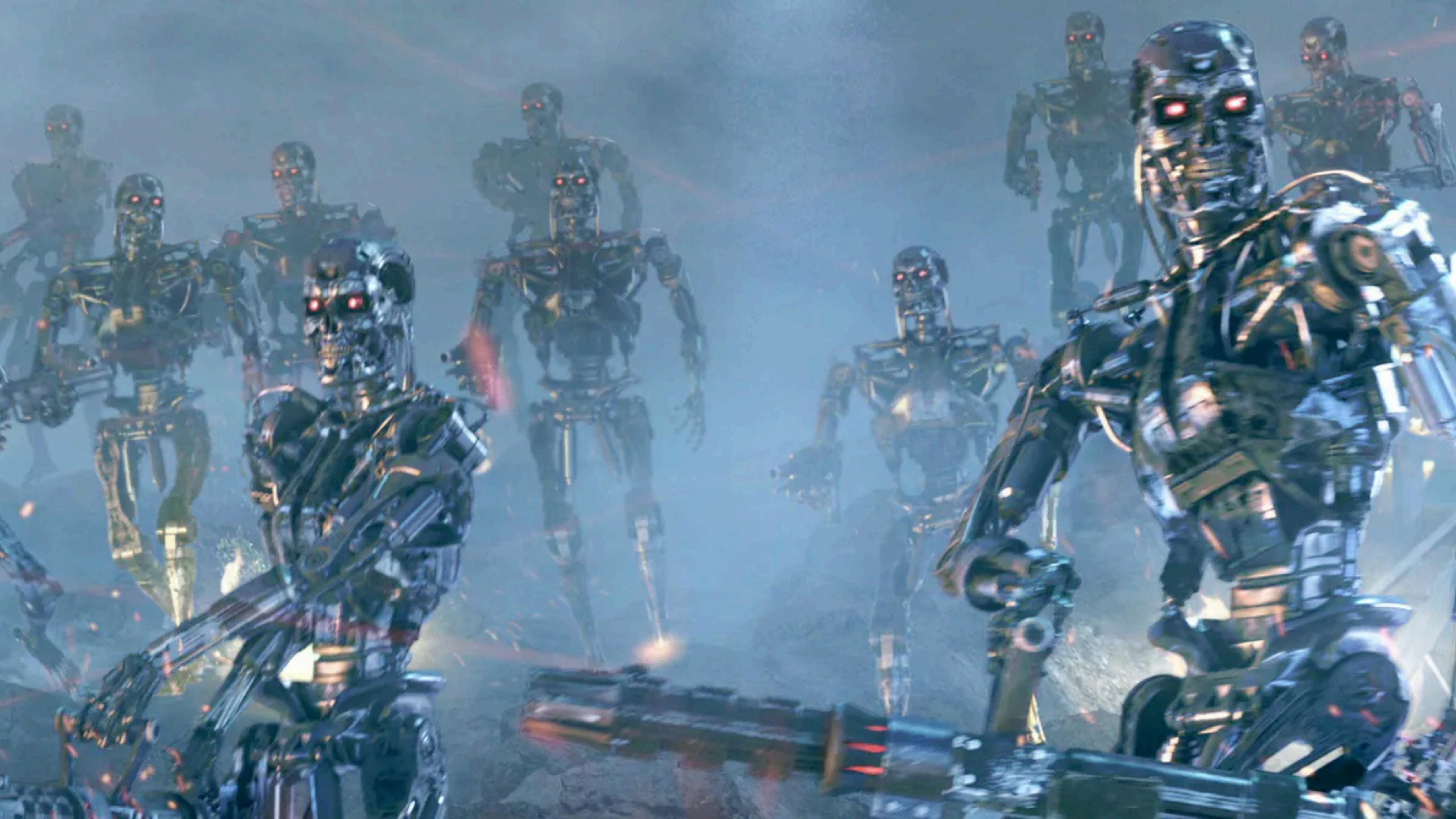
HEY ALEXA, ASK GOOGLE HOW TO MAKE
A CHAT BOT



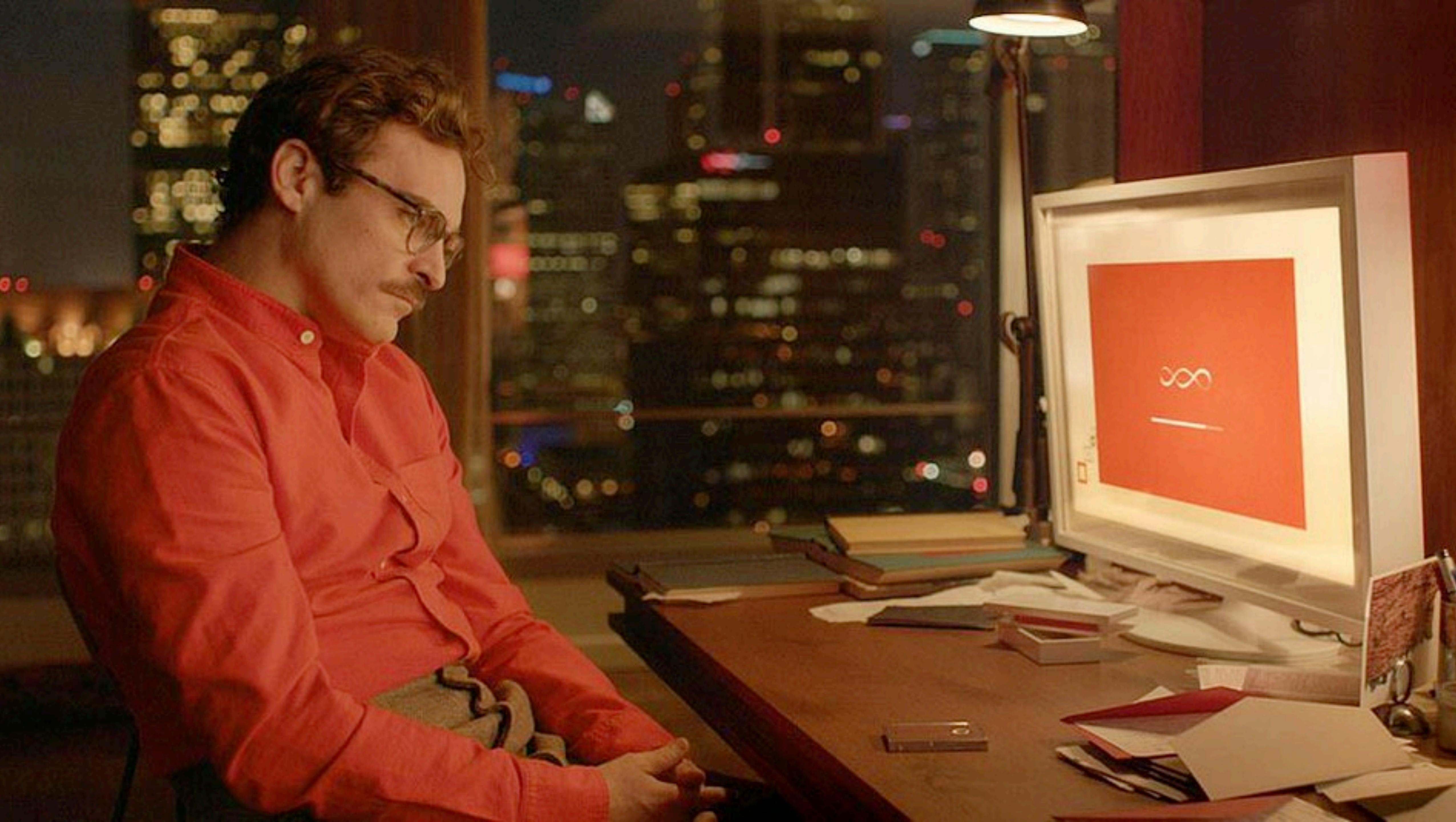
Michael Stonis
Eight-Bot
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**BOTS ARE SWEEPING
THE NATION**



NO, BOTS WE CAN TALK TO



**CLOSER, BUT NOT QUITE
YET....UNFORTUNATELY**



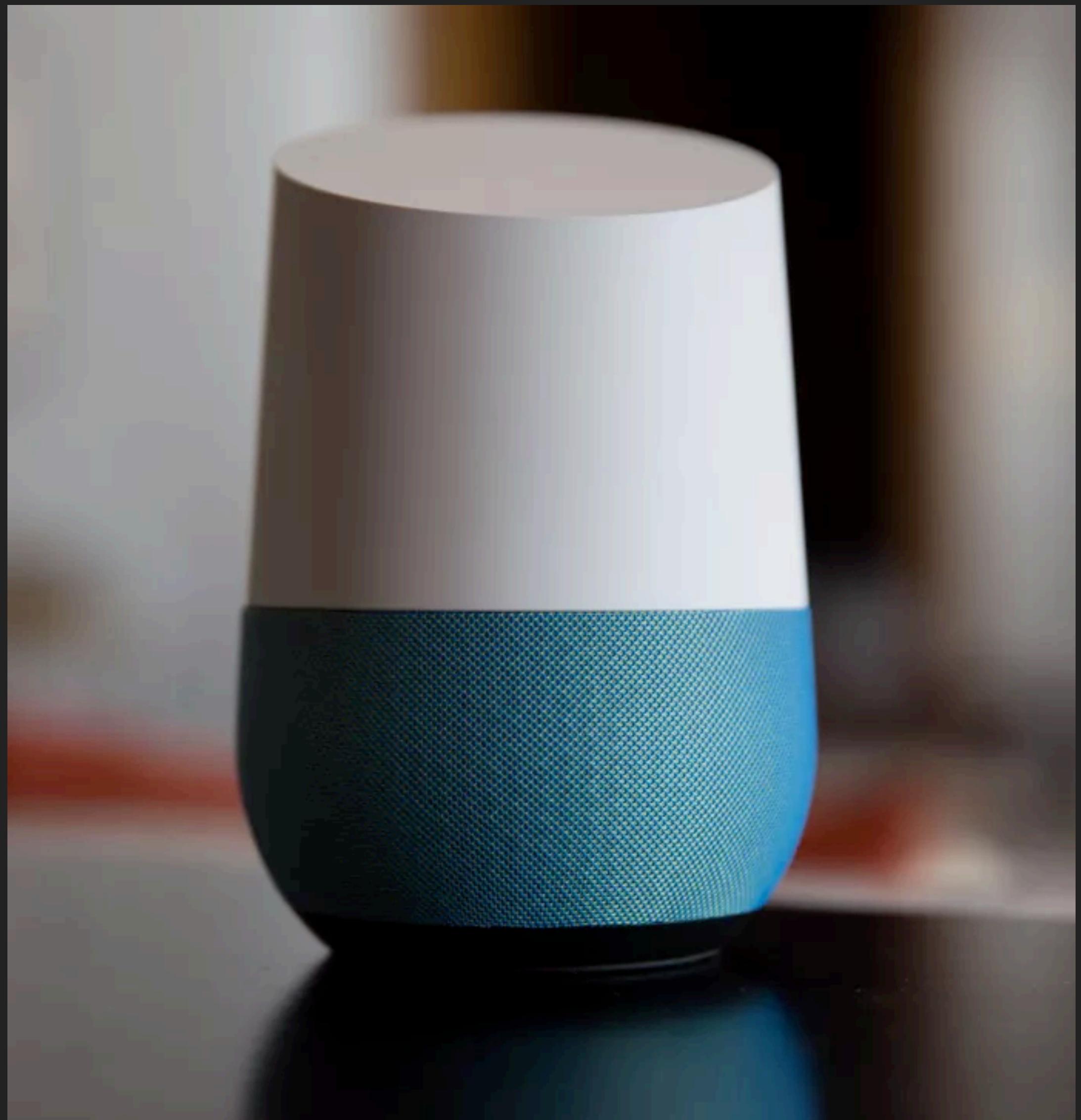
AMAZON ALEXA

- ▶ Always-on microphone that can respond to your voice commands
- ▶ Built-in speaker array
- ▶ Can provide information on the weather, general information, play music, etc.
- ▶ Comes in multiple versions that offer different audio and interaction possibilities
- ▶ Better integration with Amazon Offerings



GOOGLE HOME

- ▶ Always-on microphone that can respond to your voice commands
- ▶ Built-in speaker array
- ▶ Can provide information on the weather, general information, play music, etc.
- ▶ Comes in multiple versions that offer different audio and interaction possibilities
- ▶ Better integration with google offerings



WHAT IS SO COOL ABOUT THEM?

- ▶ They allow for a pretty natural way to interact with computers
- ▶ Removes the friction and some of the barrier that people have against using computers and even smart phones
- ▶ These devices are backed by natural language processing engines, so their response processing is far more flexible and organic feeling
- ▶ They have been *EXTREMELY* popular in the markets that they have been released in

**WHAT MAYBE ISN'T SO
COOL?**

PEOPLE IN THE SIXTIES: THE
GOVERNMENT WILL WIRETAP YOUR
HOME



PEOPLE NOW: HEY WIRE TAP, CAN
CATS EAT PANCAKES?

**TOO LATE FOR THAT ANYWAY.
HOW DO I GET STARTED?**

ALEXA SKILLS KIT GOOGLE ACTIONS & DIALOGFLOW

ALEXA SKILLS KIT & GOOGLE ACTIONS

- ▶ Online tooling for managing query processing
- ▶ APIs that allow for consuming user queries and provide feedback on how to process those queries

CORE CONCEPTS

INTENTS

- ▶ Intents describe how we interact with our chat bots
- ▶ They are generally simple sentences or phrases that provide a context of the information that we are interested in
- ▶ Sometimes can be used without instruction to invoke other workflows

SAMPLE INTENTS

When is my next appointment?

Turn on the lights

Is LaCroix actually good or am I just getting old?

ENTITIES / SLOTS

- ▶ Entities will provide key information for our intents
- ▶ This can come in many forms, but some of the more common forms include numbers, lists, confirmation/denial, etc.
- ▶ Sample Entities would include
 - ▶ Yes, No
 - ▶ Red, Green, Blue, Yellow

SAMPLE ENTITIES/SLOTS

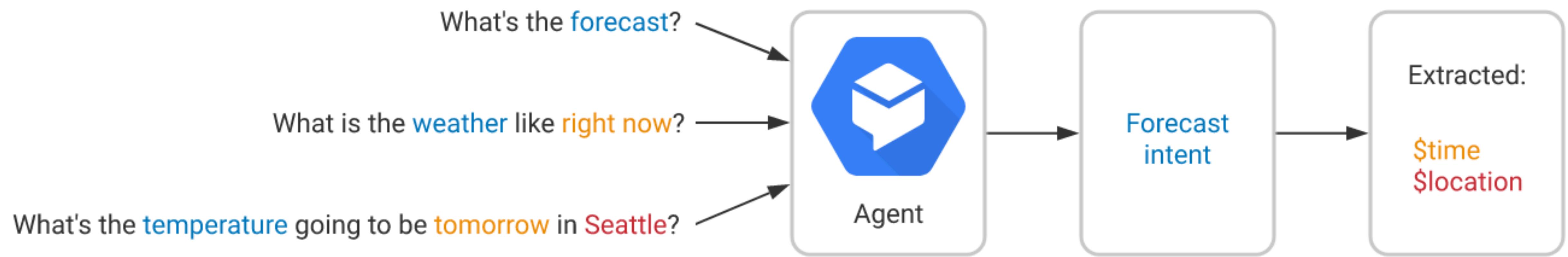
Colors: red, green, blue

Confirmation: Yes, Yep, Ya, Okay, Sure, Why Not

Is {Country-Name} currently experiencing {something-bad}?

NATURAL LANGUAGE PROCESSING (NLP)

- ▶ Provides the ability to interpret what a user is saying and derive meaning
- ▶ Ability to process multiple similar inputs and provide a consistent set of feedback
- ▶ Learned Inference
- ▶ Can work with phrases, synonyms, like words
- ▶ Converts the input into structured data that is easy to parse



FULLFILLMENT

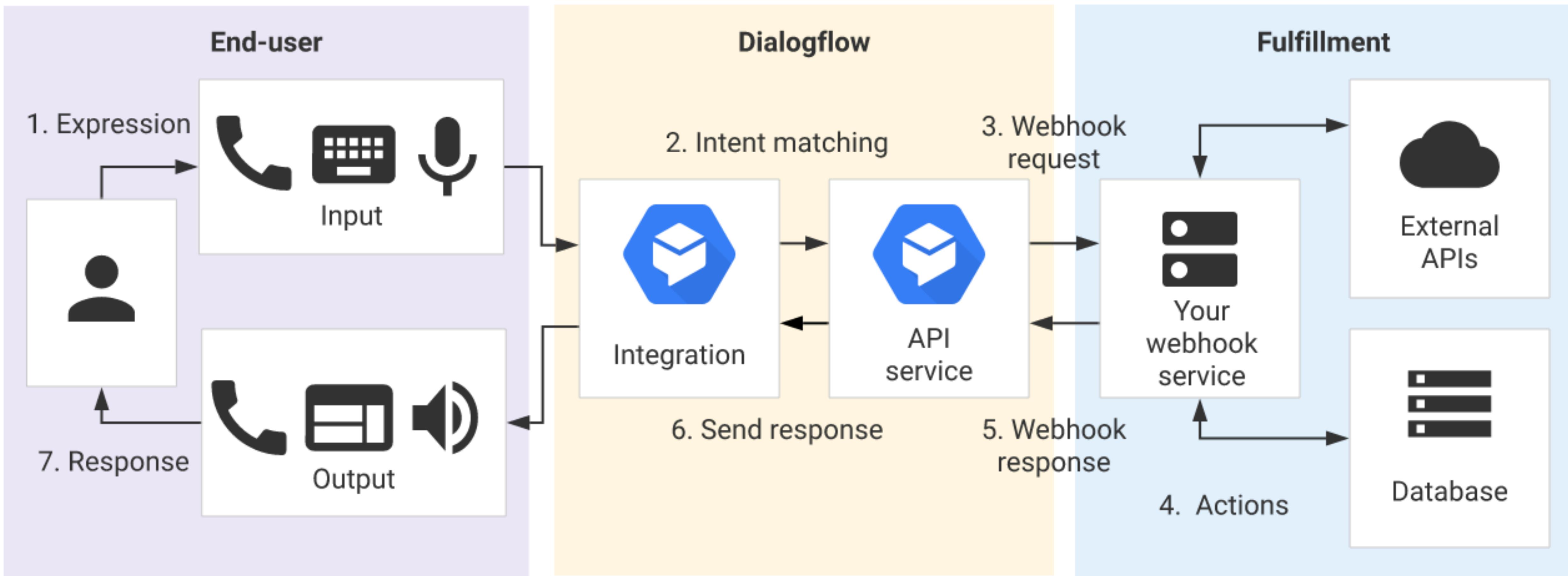
- ▶ Response to send to the original user
- ▶ Can be provided multiple ways
 - ▶ Static responses / Pre-Canned Responses
 - ▶ Dynamically via a web service

RESPONSE TYPES

- ▶ Simple text
- ▶ SSML or Speech Synthesis Markup Language
 - ▶ Markup for providing how text should be spoken
- ▶ Audio
- ▶ Video
- ▶ Platform Specific

ACCOUNT LINKING

- ▶ Needed to get user information
- ▶ Link to existing accounts such as google or amazon
- ▶ OAuth workflows (or potentially a default provider)



**LET'S SEE HOW BOTS
ARE MADE**



AMAZON ALEXA

THE GOOD

- ▶ Easy to develop for
- ▶ Super simple user interface for configuring Intents and Slots
- ▶ Great documentation

THE BAD

- ▶ Testing can be a bit tedious, but this is getting a lot better
- ▶ If using authentication, you cannot use the simulator for testing

GOOGLE ACTIONS & DIALOGFLOW

THE GOOD

- ▶ Great user interface for configuring
- ▶ Nice testing tools
- ▶ Integration with 3rd party services like facebook, twilio, etc.

THE BAD

- ▶ For .Net, getting the libraries setup is a little difficult
- ▶ The documentation is not the most helpful
- ▶ Online support is so-so at best
- ▶ For real, the documentation is all over the place

MICROSOFT BOT FRAMEWORK

THE GOOD

- ▶ Great support for .Net developers
- ▶ Great option for custom language processing in your apps
- ▶ Tons of build-in entities
- ▶ Integration with 3rd party services

THE BAD

- ▶ Feels a bit disjointed
- ▶ There is Cortana, and don't get me wrong I love Halo, but there is really no device adoption

**HOW DO I PROVIDE
CUSTOM DATA?**

AZURE FUNCTIONS

- ▶ Serverless computing
- ▶ Easy setup
- ▶ Familiar to Web API Developers
- ▶ Single serve APIs
- ▶ Minimal configuration
- ▶ Instant scaling



DEMO

[https://github.com/
michaelstonis/pinballbot](https://github.com/michaelstonis/pinballbot)

LESSONS LEARNED

- ▶ When looking at data, look for what you don't know
- ▶ Try to make workflows as easy as possible
- ▶ Keep phrases simple
- ▶ Prepare for the unexpected, people are going to say weird things

QUESTIONS?



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