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BUILDING BOTS WITH JAVASCRIPT

HELLO

WHO AM I - NEXMO + QUESTION

WHAT DO I WANT TO TALK ABOUT

A BIT OF HISTORY



LET'S WALK DOWN MEMORY LANE FOR A BIT
EVOLUTION of computing devices
one major FORM FACTOR every decade
WE'RE DO YOU THINK 2020 IS HINTING AT?

SOME MORE HISTORY



LET'S Look at some more history, mainly how input has evolved



BOTS! BOTS! BOTS!

"Bots are like new applications that you can converse with."

Satya Nadella,
Microsoft



A few people saw the rise of bots

AI FIRST

"We will evolve in computing from a mobile first to an AI first world."

Sundar Pichai, Google



And AI would be at the core of bots

WHY IS THIS HAPPENING TO ME



Being a web developer used to be easy... why is this happening to me?

WHY IS THIS HAPPENING TO ME

1. New era of computing
2. Boom of Artificial Intelligence
3. Advances in machine learning
4. Advances in language technologies
(Text-to-speech, natural language processing, etc.)

New era of computing

Boom of Artificial Intelligence

Advances in machine learning

Advances in language technologies (Text-to-speech, natural language processing, etc.)

CONTEXTUAL COMMUNICATION

“*contextual communication* is the bidirectional transfer of information between two parties where both parties are aware of the relational, environmental, and cultural context of the exchange”

OLD WEB APP FLOW

Special Meals

Vegetarian lacto-ovo

Hindu vegetarian

Vegan

Gluten-free

Kosher

Muslim

Old Web app flow





CONVERSATIONAL INTERFACES



Conversational interfaces in various form factors

CONVERSATIONAL INTERFACES



-  Tell Jokes
-  Answer Questions
-  Play Games
-  Make Stories

CogniToys Dino - <https://cognitoys.com>

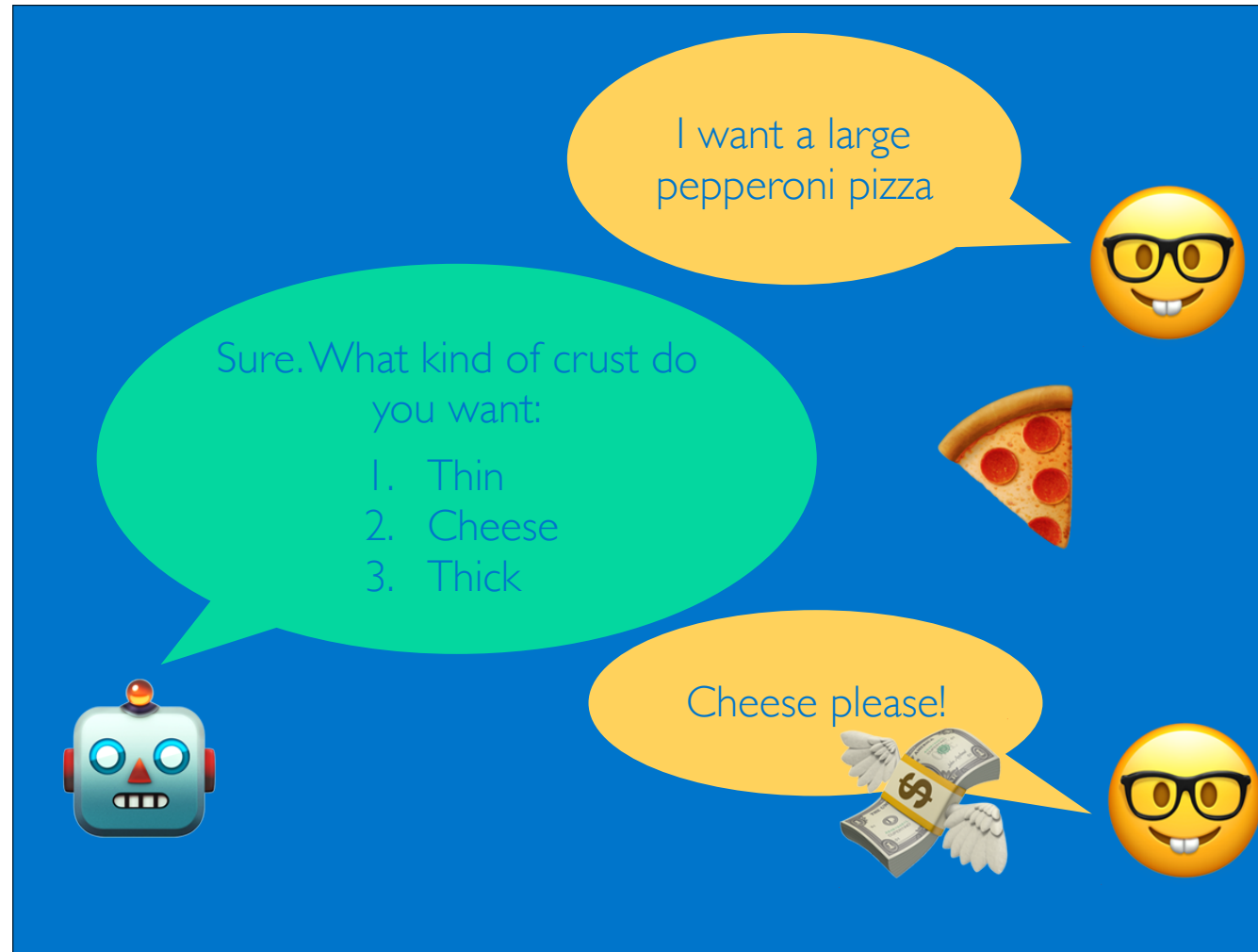
Conversational interfaces for kids

CONVERSATIONAL INTERFACES



Google assistant - Conversational interfaces text + voice

There has been an increase in switching from graphical interfaces to conversational interfaces



Conversational Interface achieves:
Natural user interactions with a minimal visual interface.
No UI Clutter. Less Time Spent.



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Natural user interactions with a minimal visual interface.
No UI Clutter. Less Time Spent.

CONVERSATIONAL INTERFACE

- Intuitive
- Accessible
- Productive

Conversational interface is:

- Intuitive
- Accessible
- Productive

MESSAGING PLATFORMS

- Slack
- Facebook Messenger
- Telegram
- WeChat
- Nexmo Stitch 😊 (shameless plug)

Messaging platforms

BOTS AT nexmo®

The Vonage®
API Platform



geekbot APP 9:36 AM

What do you plan to ship this week?



Alex Lakatos 🍌 9:37 AM

- give the CityJS talk
- Stitch with Angular blog post
- host 2 meetups in the office



geekbot APP 9:37 AM

Go ship it!



Zapier APP 1:20 PM

New item Buffered: #VTCoders meetup attendees tonight are in for a treat : @Rabea_Othmani & @julielerman are going to talk about bots, azure functions, LUIS, APIs and a lot more goodness

<https://www.meetup.com/VTCoders/events/248025786/>

Scheduled to tweet: Today at 3:38 pm



Trellobot APP 7:33 PM

Task:

talk to mark about push

was moved to: ✓

Task: ~~talk to mark about push~~ was moved to: ✓

Task: ~~talk to mark about push~~ is now ✓

bots at nexmo



Productbot APP 7:13 PM

Task: `talk to mark about push` is now



Nexmo Releases APP 12:10 AM

New `conversation-js-sdk` release published: **v0.1.20**

Changelog

All notable changes to this project will be documented in this file.

[0.1.20]

Added

- Get notified when a new member is in ringing state in a Call
- Support for webpack and other bundle tools
- Changelog file

(Changelog file) <https://github.com/nexmo-inc/conversation-js-sdk/blob/master/CHANGELOG.md>

Fixed

- Receiving Seen, delivered and delete events from iOS and Android

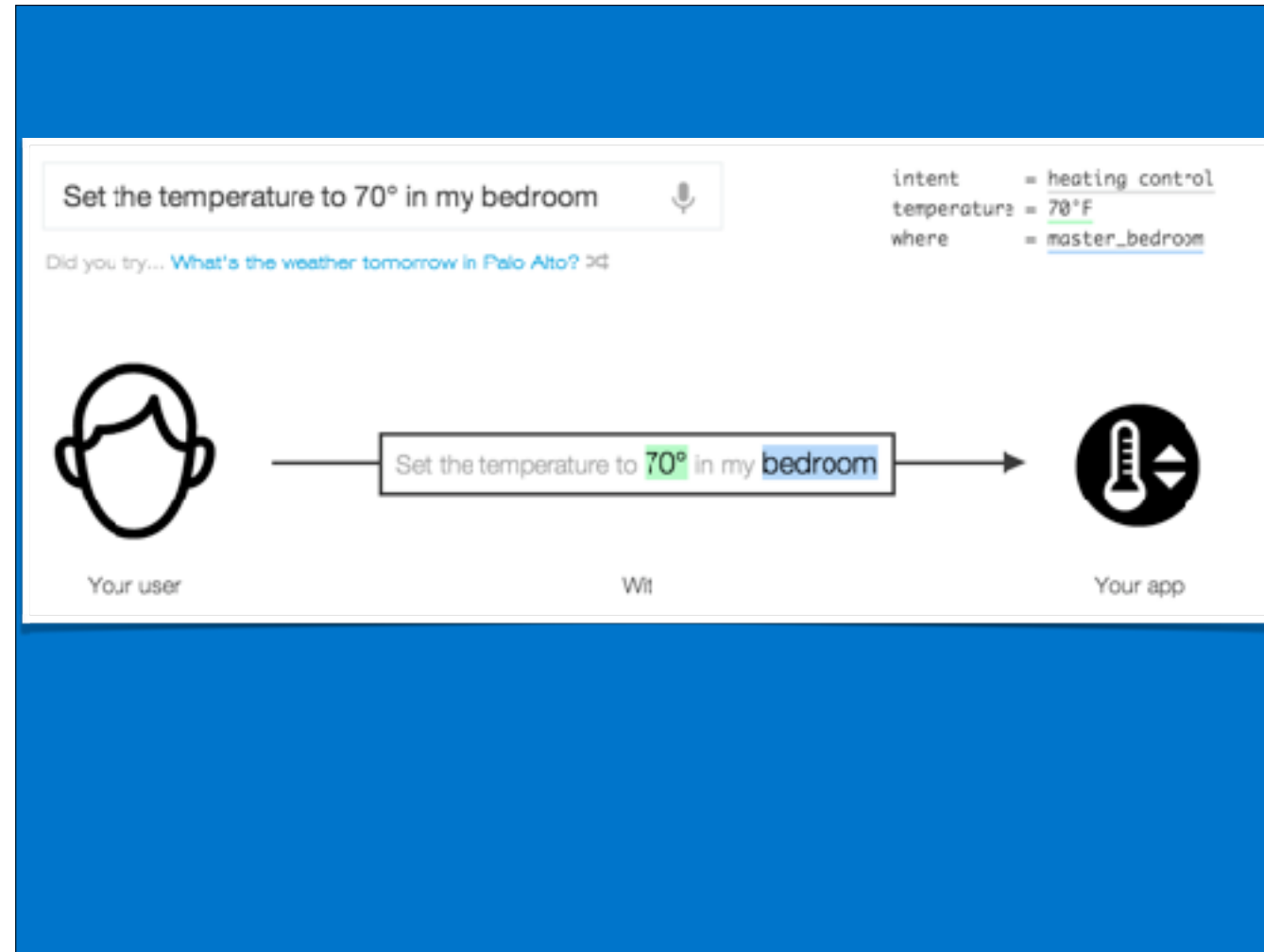
[Show more](#)

NATURAL CONVERSATION AI

- DialogFlow (API.ai/Google)
- Wit.ai (Facebook)
- Microsoft BotFramework
- Motion.ai
- chatbots.io
- Converse AI
- landbot.io
- Recast.ai
- ManyChat
- Fluent.ai (Voice UI)

Conversational interface is:

- Intuitive
- Accessible
- Productive




the way it works

it figures out the intent: heating control

looks for parameters like temperature and location

AIAAS

 Dialogflow

Small-Talk

Intents

Entities

Training beta

Integrations

Analytics beta

Fulfillment


Prebuilt Agents

Small-Talk

Docs

Forum









Artificial Intelligence as a Service - via @girlie_mac



Google Assistant

Build Actions for the Google Assistant to reach users through Google Home, Android phones, and more devices.

INTEGRATION SETTINGS

 <div>Web Demo</div> <div><input type="checkbox"/></div>	 <div>Facebook Messenger</div> <div><input type="checkbox"/></div>	 <div>Slack</div> <div><input type="checkbox"/></div>	 <div>Viber</div> <div><input type="checkbox"/></div>
 <div>Twitter</div> <div><input type="checkbox"/></div>	 <div>Skype</div> <div><input type="checkbox"/></div>	 <div>Tropo (Text messaging)</div> <div><input type="checkbox"/></div>	 <div>Telegram</div> <div><input type="checkbox"/></div>

bots at nexmo



KLM BOOKING BOT



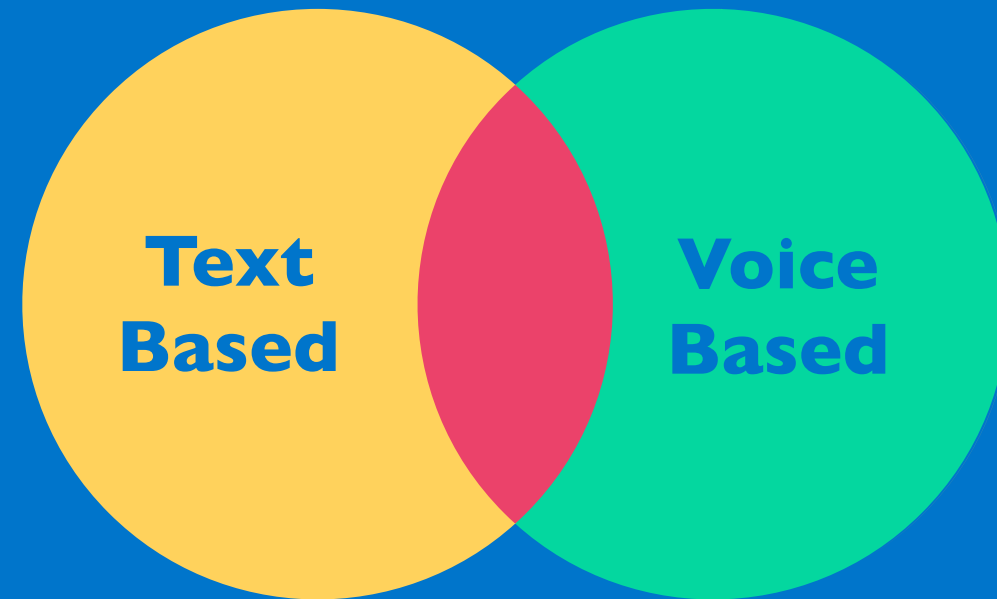
NATURAL LANGUAGE PROCESSORS

Natural Language Processing &
Cognitive platforms:

- IBM Watson
- Google Cloud Natural Language API
- Microsoft LUIS
- Amazon Lex
- Baidu UNIT

more powerful apis

CONVERSATIONAL INTERFACES



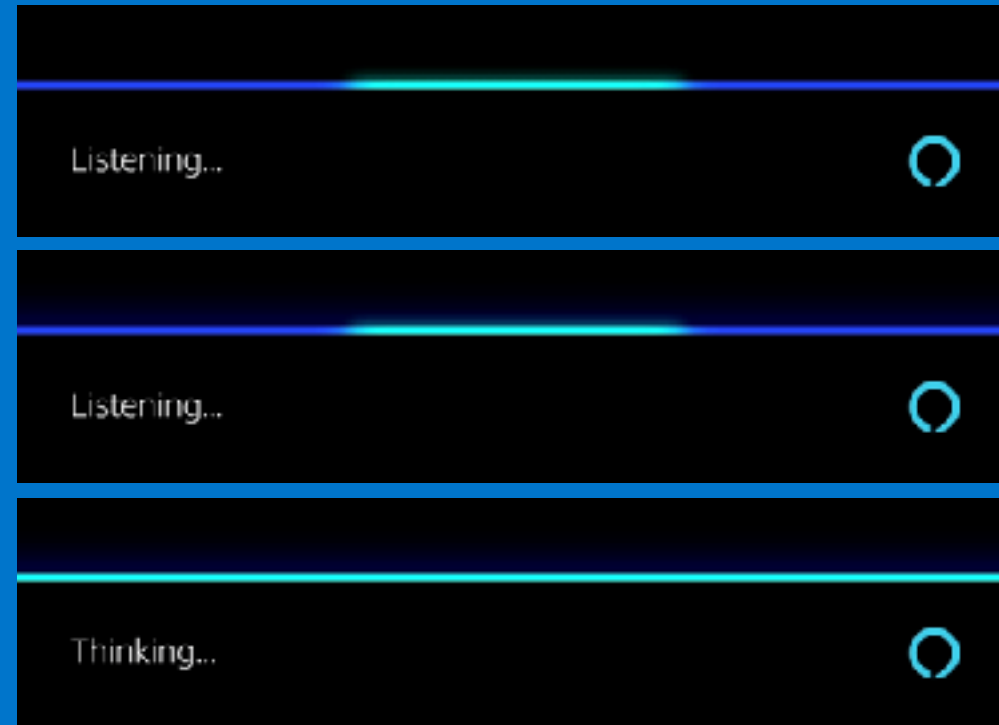
VOICE EXPERIENCE

1. Make it smart.
2. Use a language that users understand and can relate to.
3. The capabilities of your tech
4. The structure of the information

We saw what happens with text. How about voice?

Things to consider when building the voice experience

VOICE UX



Alexa does a good job with UX

active listening

thinking

speaking



CONVERSATIONAL INTERFACES IN JAVASCRIPT

#

Speech Recognition API - UNCH

Usage: Global 62.55% 62.55%

Unprefixed: 0%

Method to provide speech input in a web browser.

Current aligned

Usage relative

Data relative

Show all

IE	Edge	Firefox	Chrome	Safari	iOS Safari	Opera Mini	Chrome for Android	UC Browser for Android	Samsung Internet
			49						
			63		10.2				
		58	64		10.3				4
11	16	59	65	11	11.2	all	54	11.8	6.2
	17	60	66	11.1	11.3				
		61	67	TP					
			68						

Notes

Known issues (3)

Resources (8)

Feedback

MS Edge status: Under Consideration
 Firefox status: under-consideration
 1. Partial support refers to some attributes missing.
 2. Firefox currently has a `media.webspeech.recognition.enable` flag in about:config for this, but actual support is waiting for permissions to be sorted out.

WEB SPEECH API

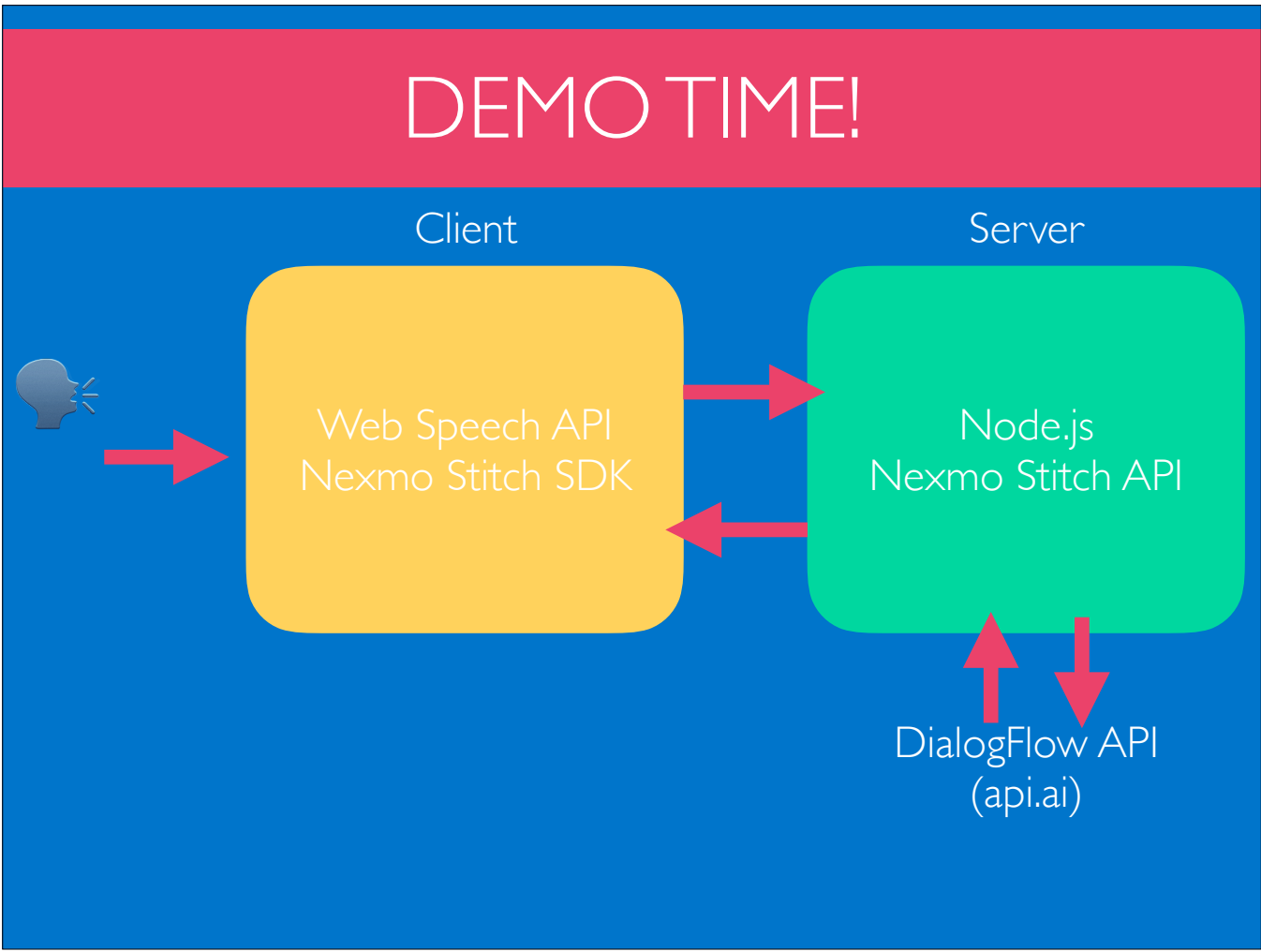
```
toggleVoice() {  
  var SpeechRecognition = SpeechRecognition || webkitSpeechRecognition;  
  this.recognition = new SpeechRecognition();  
  
  this.recognition.lang = "en-US";  
  this.recognition.interimResults = false;  
  this.recognition.start();  
  
  this.recognition.addEventListener('result', (e) => {  
    let last = e.results.length - 1  
    let text = e.results[last][0].transcript  
    this.sendText(text, true)  
    this.recognition.stop()  
    this.recognition = null  
  });  
}
```

WEB SPEECH API



WEB SPEECH API

```
let utterance = new SpeechSynthesisUtterance();  
  
utterance.text = response.result.fulfillment.speech  
utterance.rate = 5.5;  
utterance.pitch = 2;  
utterance.lang = "en-GB";  
  
speechSynthesis.speak(utterance)
```

Let's look at a live demo

THINGS I USED - MDN



The screenshot shows the MDN Web Speech API page. At the top, there's a pink header with the text "THINGS I USED - MDN". Below it, the MDN logo and navigation links are visible. The main title "Web Speech API" is prominently displayed. A navigation bar includes links to "Web Speech Concepts and Usage", "Web Speech API Interfaces", "Examples", "Specifications", and "Browser compatibility". A sidebar on the left lists "Related Topics" under the "Interfaces" section, including "SpeechGrammar", "SpeechGrammarList", "SpeechRecognition", "SpeechRecognitionAlternative", "SpeechRecognitionError", and "SpeechRecognitionEvent". A yellow warning box states: "This is an experimental technology. Check the Browser compatibility table carefully before using this in production." The main content area begins with the text: "The Web Speech API enables you to incorporate voice data into web apps. The Web Speech API has two parts: SpeechSynthesis (Text-to-Speech), and SpeechRecognition (Asynchronous Speech Recognition)." Below this, the section "Web Speech Concepts and Usage" is introduced. At the bottom of the screenshot, the URL https://developer.mozilla.org/en-US/docs/Web/API/Web_Speech_API is displayed.

Web technology for developers >
Web APIs > Web Speech API

Related Topics

- Interfaces
 - SpeechGrammar
 - SpeechGrammarList
 - SpeechRecognition
 - SpeechRecognitionAlternative
 - SpeechRecognitionError
 - SpeechRecognitionEvent

This is an experimental technology
Check the [Browser compatibility table](#) carefully before using this in production.

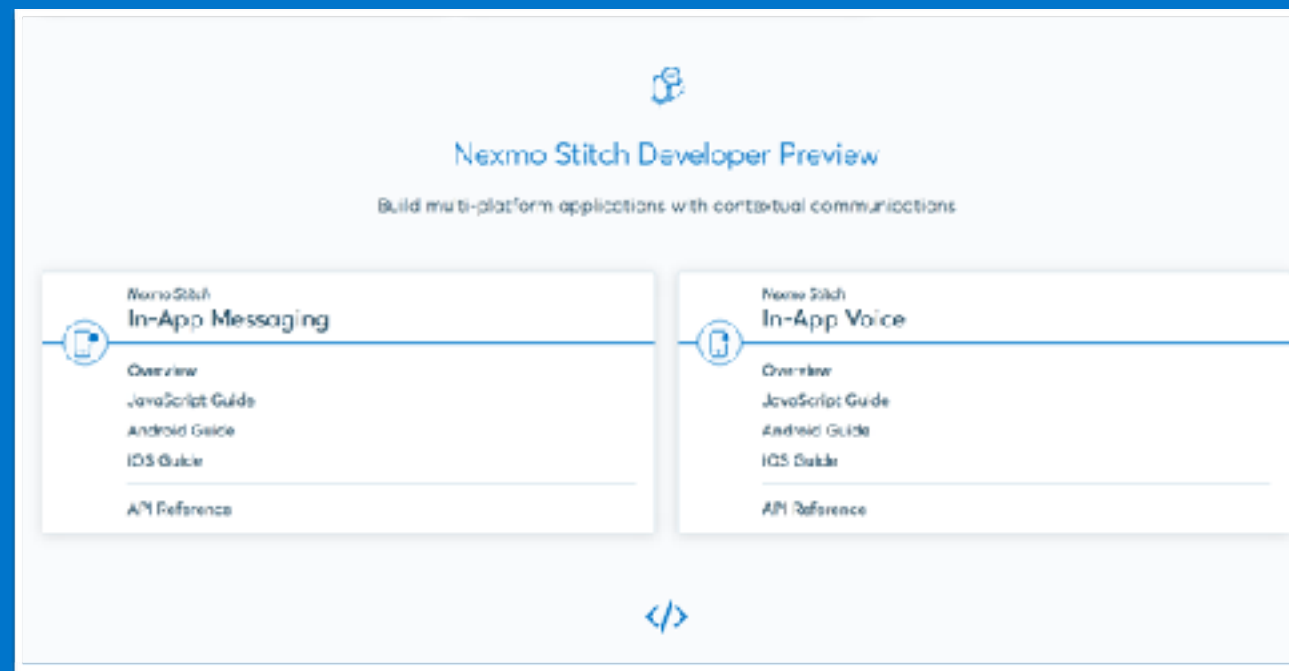
The Web Speech API enables you to incorporate voice data into web apps. The Web Speech API has two parts: SpeechSynthesis (Text-to-Speech), and SpeechRecognition (Asynchronous Speech Recognition.)

Web Speech Concepts and Usage

https://developer.mozilla.org/en-US/docs/Web/API/Web_Speech_API

Things I used

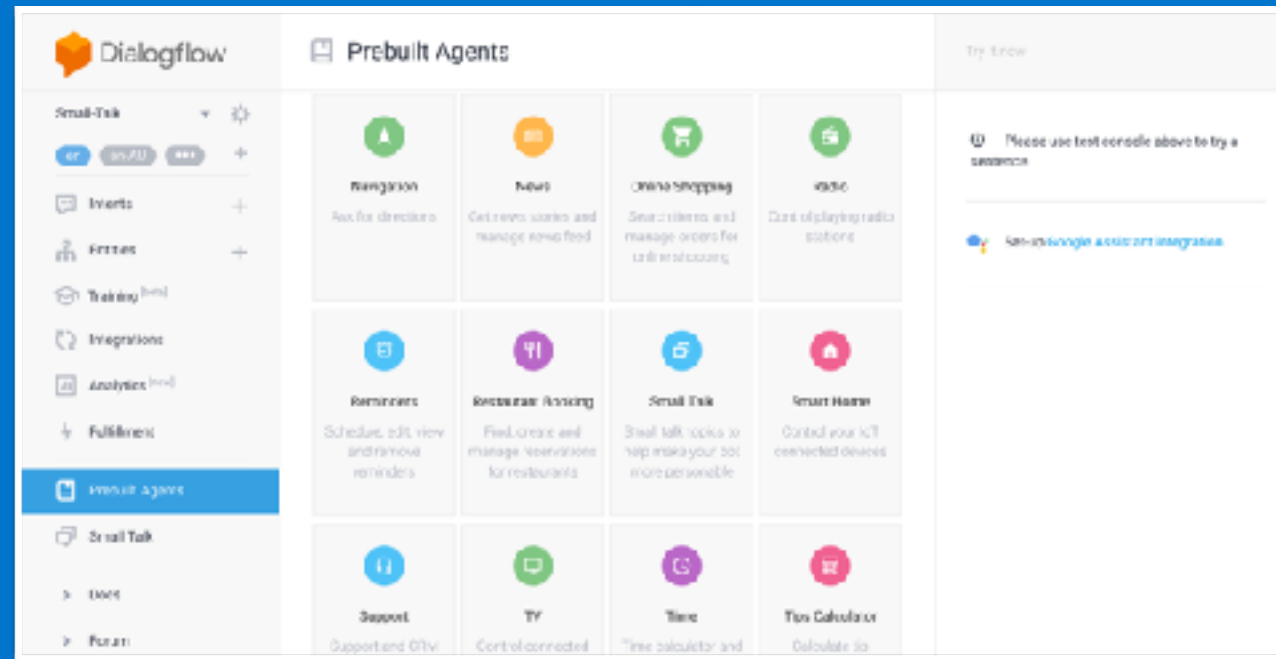
NEXMO STITCH



<https://developer.nexmo.com/stitch/overview>

Things I used

DIALOGFLOW (API.AI)



<https://dialogflow.com/>

Things I used



CONVERSATIONAL INTERFACES
ARE FOR HUMANS



A BOT INTERFACE SHOULD BE
A HUMAN INTERFACE

REMEMBER ME?

It looks like you're
writing a letter.

Would you like help?

- ☒ Get help with
writing the letter
- ☒ Just type the
letter without
help
- ☐ Don't show me
this tip again



Clippy (1997 - 2007)
R.I.P.

TACK!

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Thank you