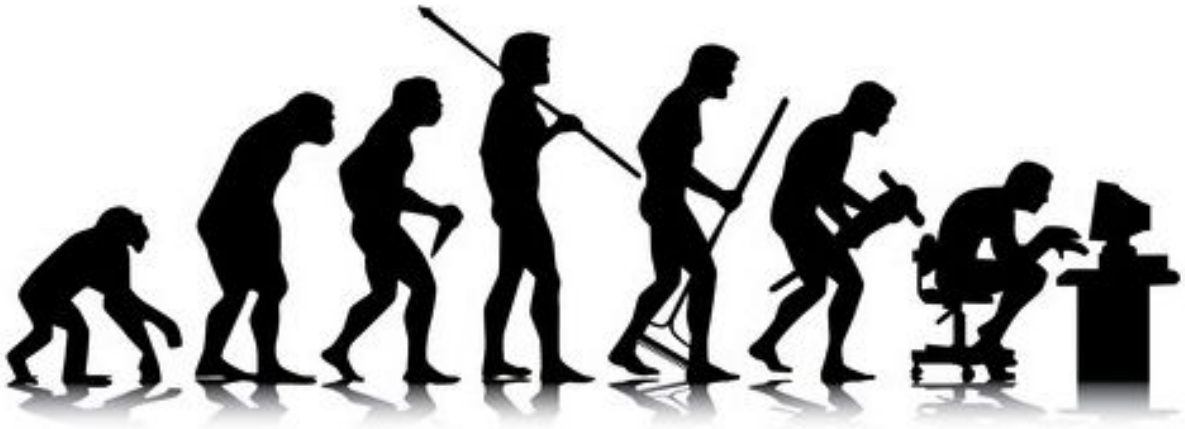
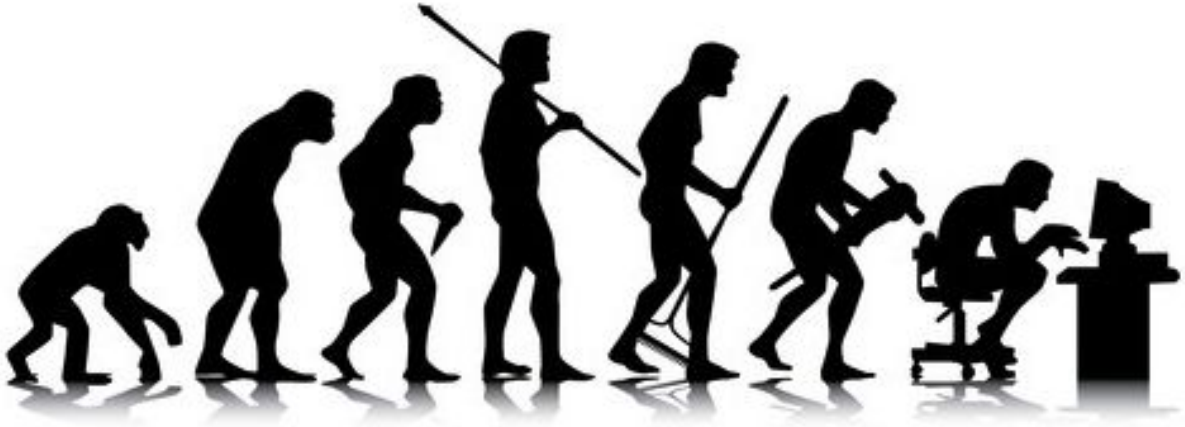
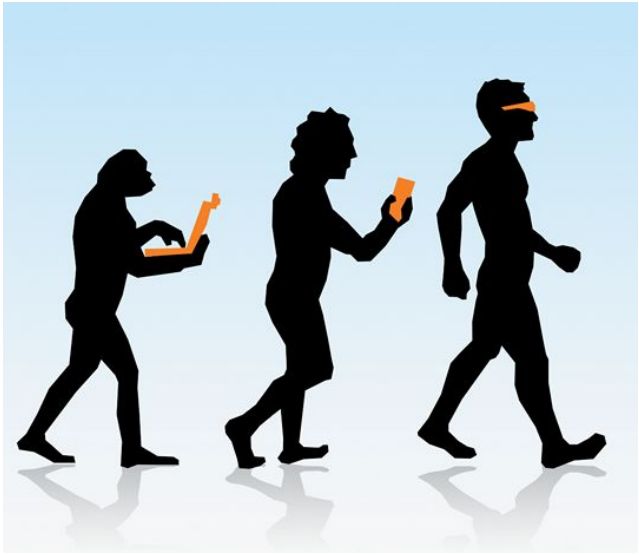
Building Conversational Experiences with Actions on Google

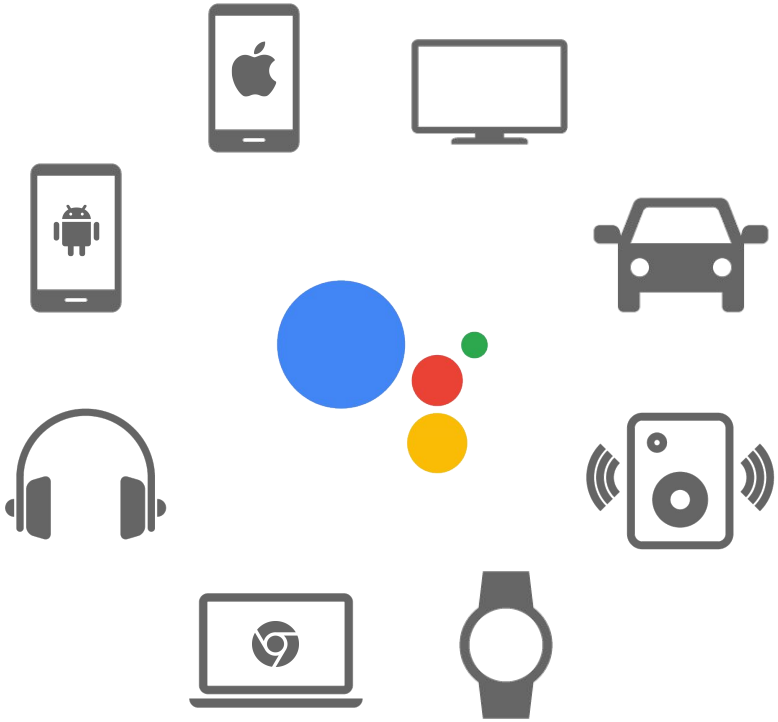
@AlexKorovyansky
CTO, Effective







Ready to help everywhere



The Google Assistant

A conversation between you and Google that helps you get things done in your world.

Devices with the Google Assistant built-in

These include voice activated speakers like Google Home, Android phones, iPhones etc.

A growing audience:
languages

US English

CA French

German

Swedish

Dutch

Japanese

LATAM Spanish

UK English

CA English

Spanish

Danish

Russian

Korean

BR Portuguese

AU English

FR French

Italian

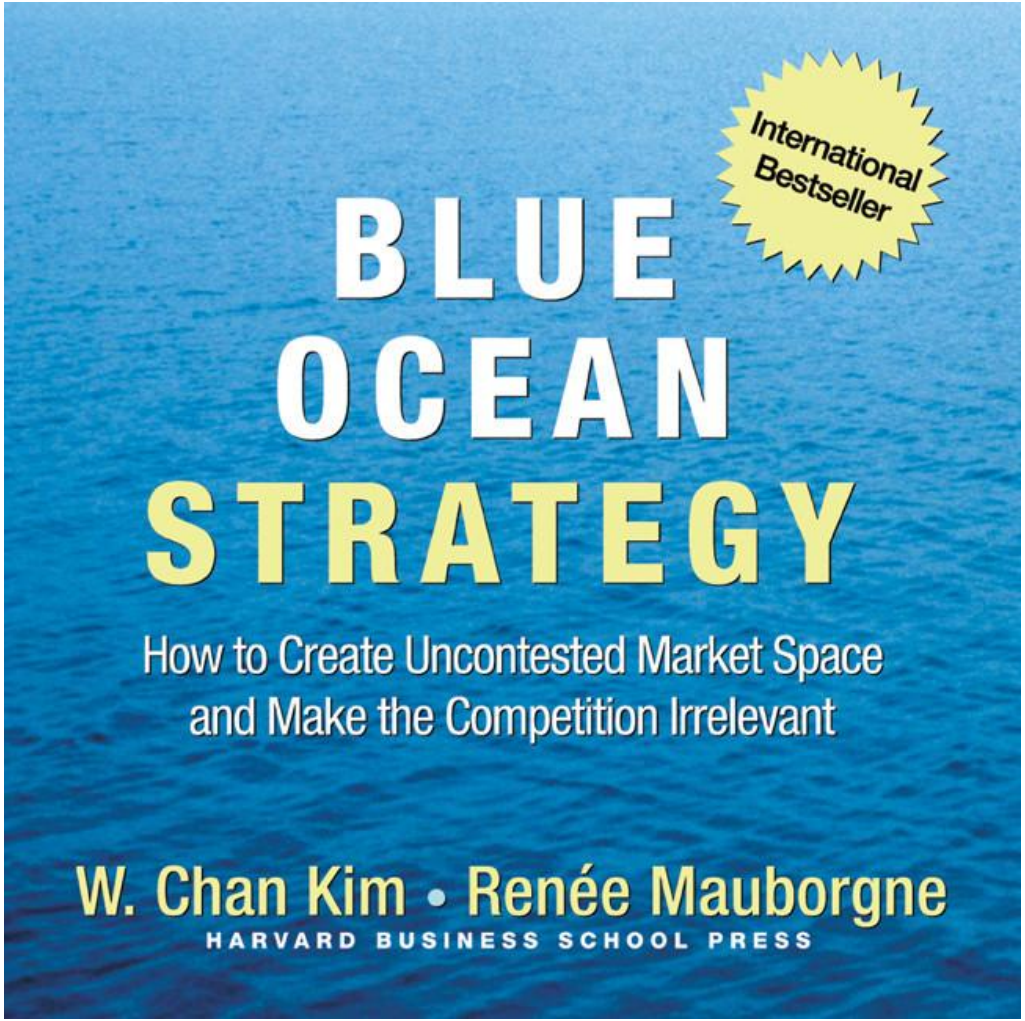
Norwegian

Thai

Indonesian

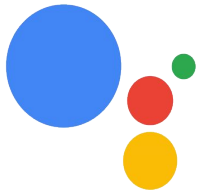
Hindi & IN English

A growing audience:
devices


International Bestseller
BLUE OCEAN STRATEGY
How to Create Uncontested Market Space and Make the Competition Irrelevant
W. Chan Kim • Renée Mauborgne
HARVARD BUSINESS SCHOOL PRESS

The Google Assistant

A conversation between you and Google that helps you get things done in your world.



Actions on Google

How developers can extend the assistant

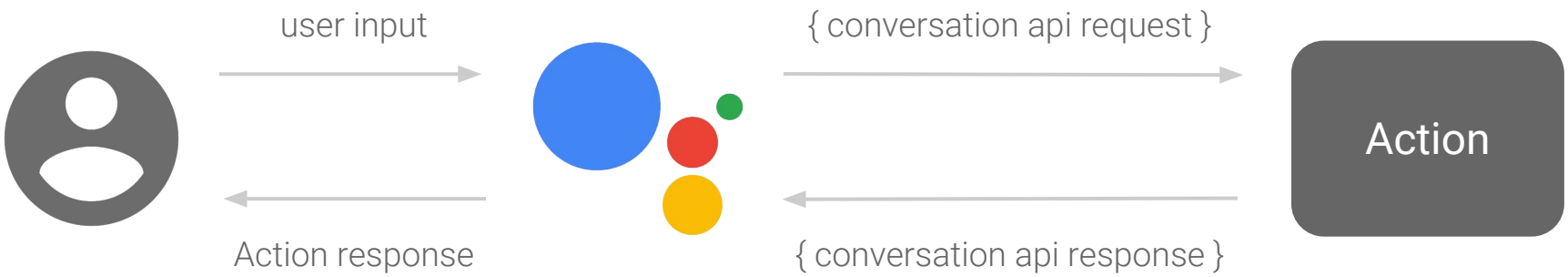
Devices with the Google Assistant built-in

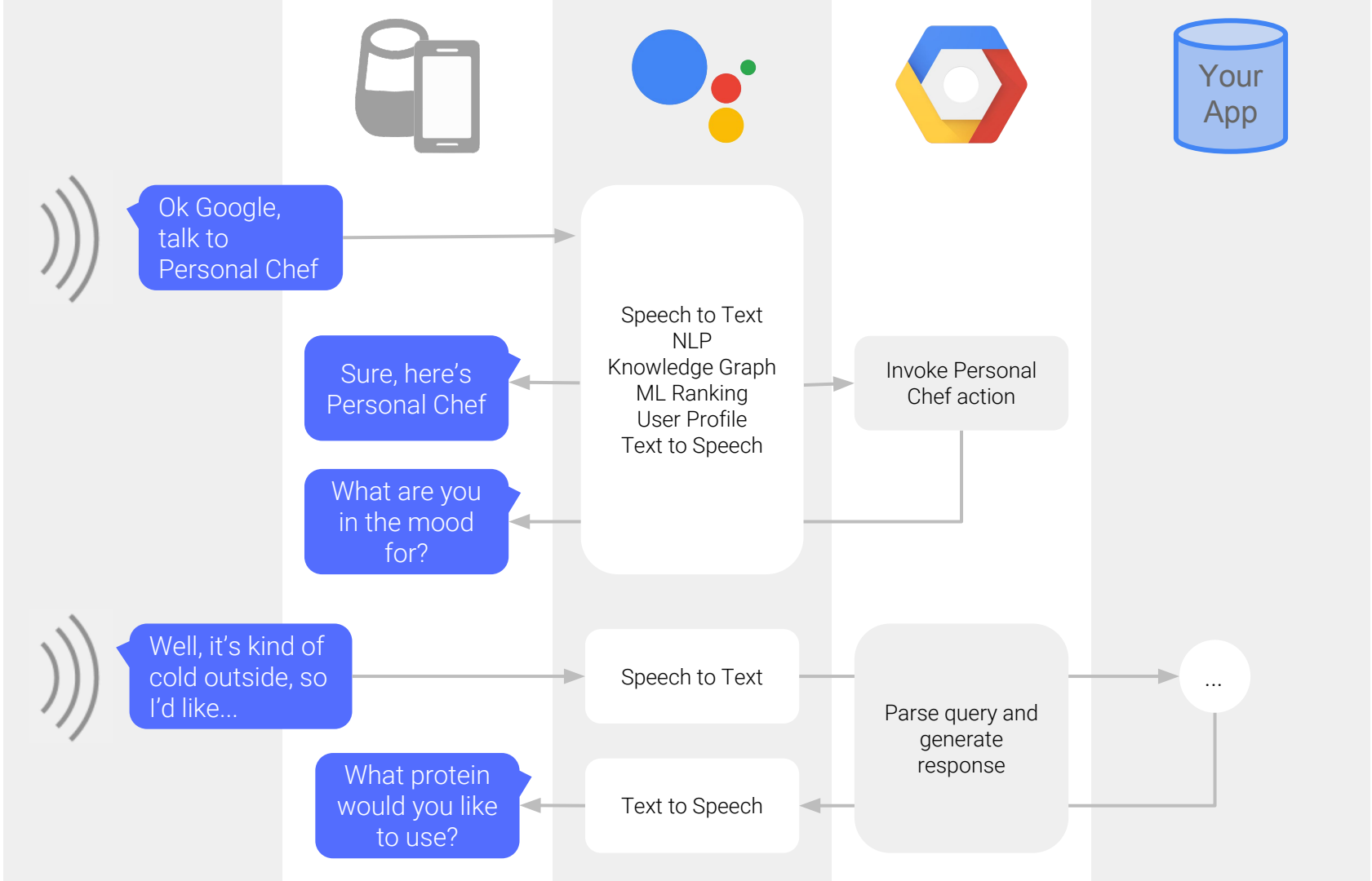
These include voice activated speakers like Google Home, Android phones, iPhones etc.

Platform for you apps

How does it work?

Actions on Google


user input
{ conversation api request }
Action
Action response
{ conversation api response }


Your App
Ok Google, talk to Personal Chef
Speech to Text
NLP
Knowledge Graph
ML Ranking
User Profile
Text to Speech
Invoke Personal Chef action
Sure, here's Personal Chef
What are you in the mood for?
Well, it's kind of cold outside, so I'd like...
Speech to Text
Parse query and generate response
...
What protein would you like to use?
Text to Speech

Well, it’s kind of cold outside, so I'd like something to warm me up, like a hot soup, and I want it fast.

I have some chicken, and also canned tomatoes.

Dialogflow

Intent Matching — Match and categorize user utterances to an intent.

Entity Extraction — Identify key words and phrases spoken by the user.

recipe-recommendation

SAVE

PersonalChef

- Intents
- Entities
- Domains
- Training [beta]
- Integrations
- Fulfillment
- Docs
- Forum

Contexts

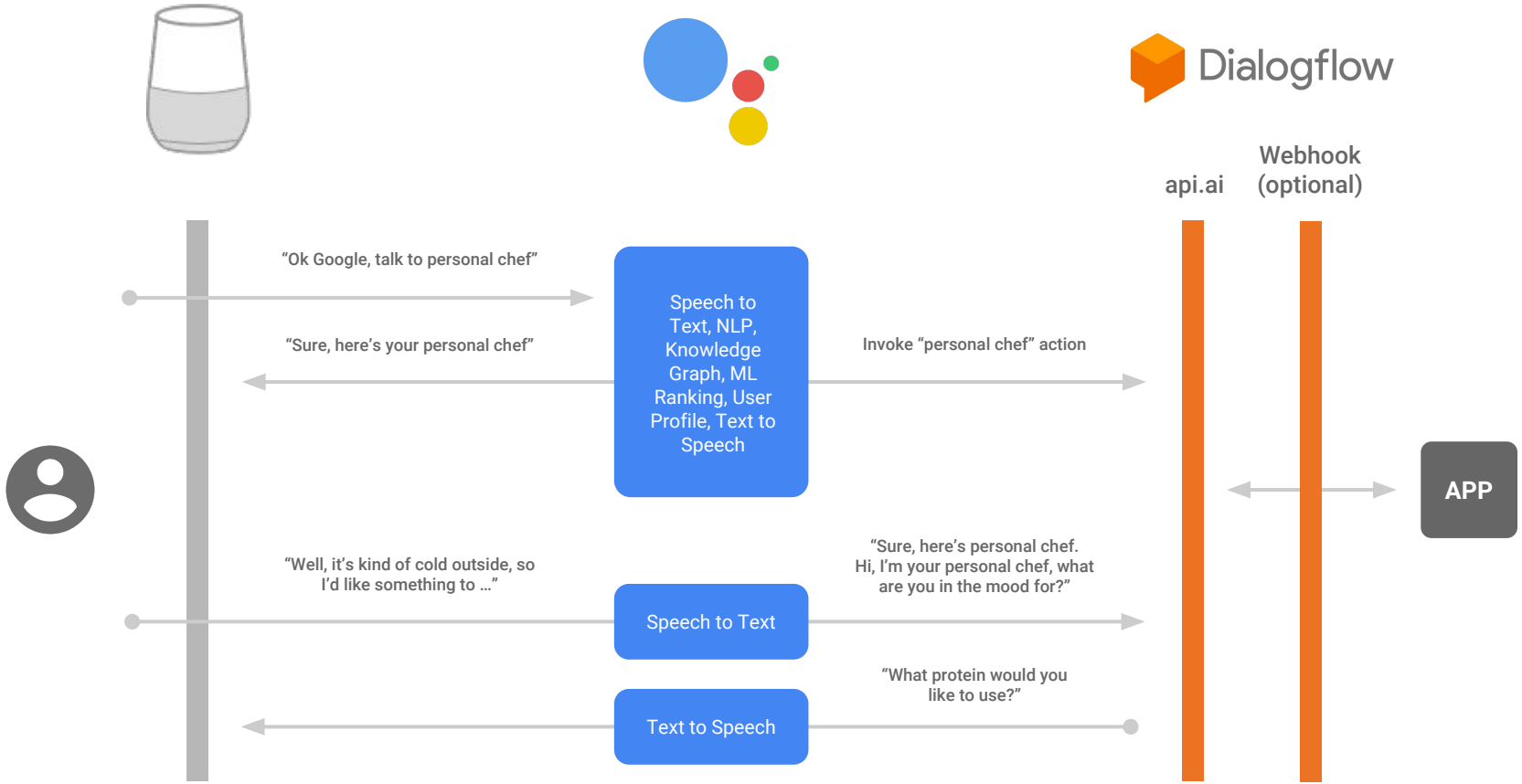
User says

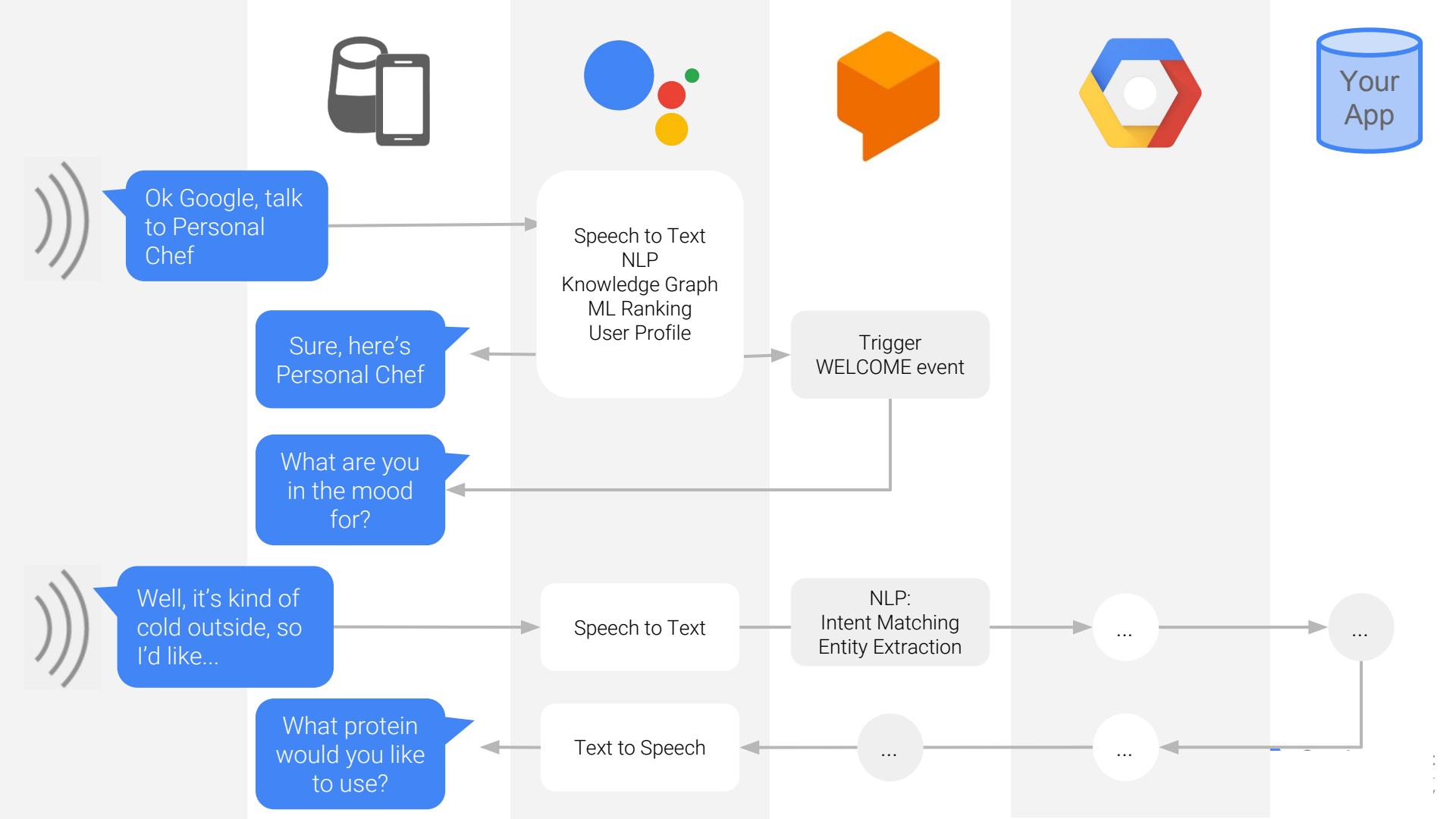
Search in user says...

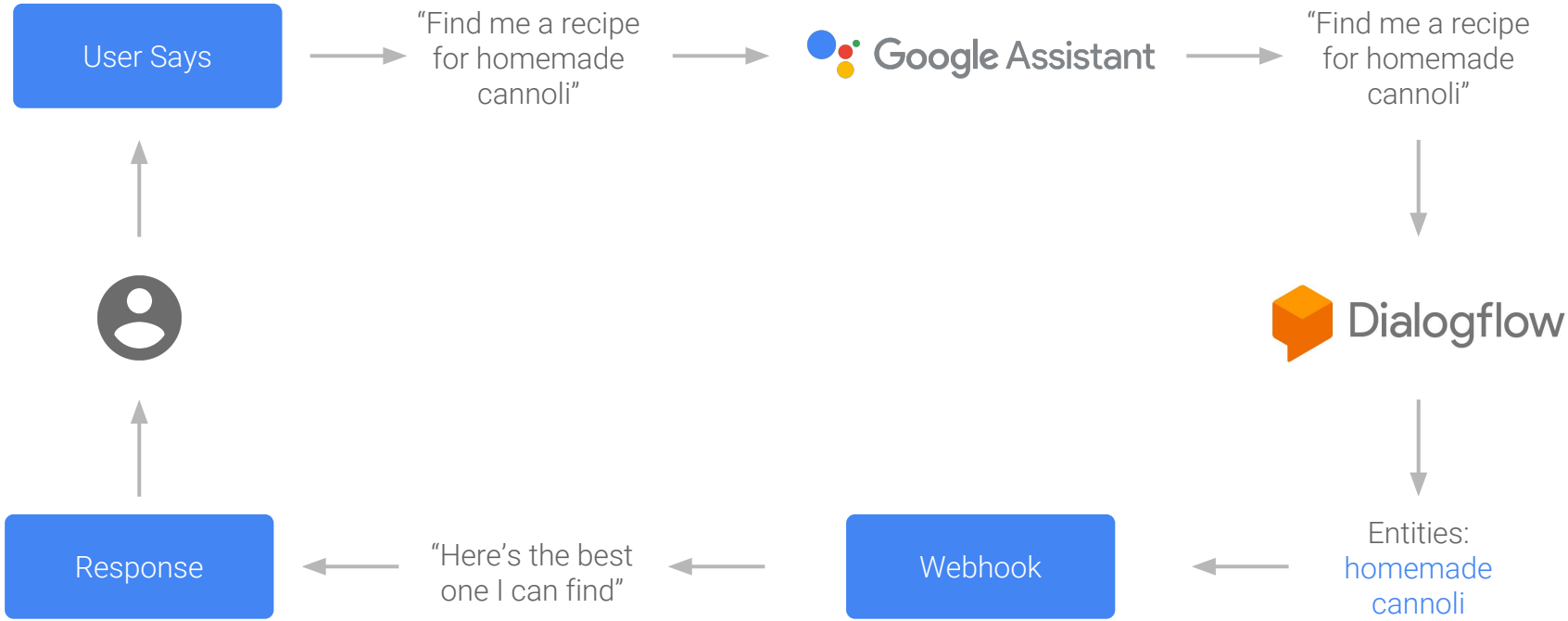
Add user expression

- Chicken sounds good to me.
- I'd like a cold dessert and I want it right now.
- Do you know a recipe for a very quick meal?
- Do you have a recipe for a quick hot soup?
- It's really cold outside. What do you suggest to help me warm up?
- What can I do with potatoes and lamb?

Events


Dialogflow
api.ai
Webhook
(optional)
"Ok Google, talk to personal chef"
"Sure, here's your personal chef"
Speech to Text, NLP, Knowledge Graph, ML Ranking, User Profile, Text to Speech
Invoke "personal chef" action
APP
"Well, it's kind of cold outside, so I'd like something to ..."
Speech to Text
"Sure, here's personal chef. Hi, I'm your personal chef, what are you in the mood for?"
Text to Speech
"What protein would you like to use?"


Your App
Ok Google, talk to Personal Chef
Speech to Text
NLP
Knowledge Graph
ML Ranking
User Profile
Sure, here's Personal Chef
Trigger WELCOME event
What are you in the mood for?
Well, it's kind of cold outside, so I'd like...
Speech to Text
NLP:
Intent Matching
Entity Extraction
...
...
What protein would you like to use?
Text to Speech
...
...

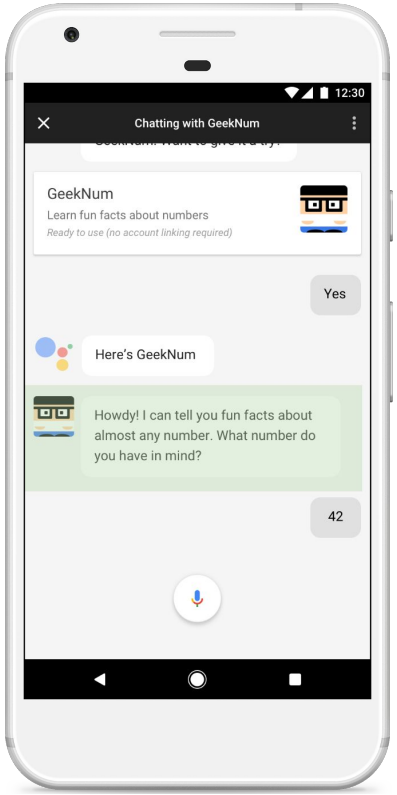

User Says
“Find me a recipe for homemade cannoli”
Google Assistant
“Find me a recipe for homemade cannoli”
Dialogflow
Entities:
homemade
cannoli
Webhook
“Here’s the best one I can find”
Response

Demo

Support speech and display text

https://developers.google.com/actions/assistant/responses

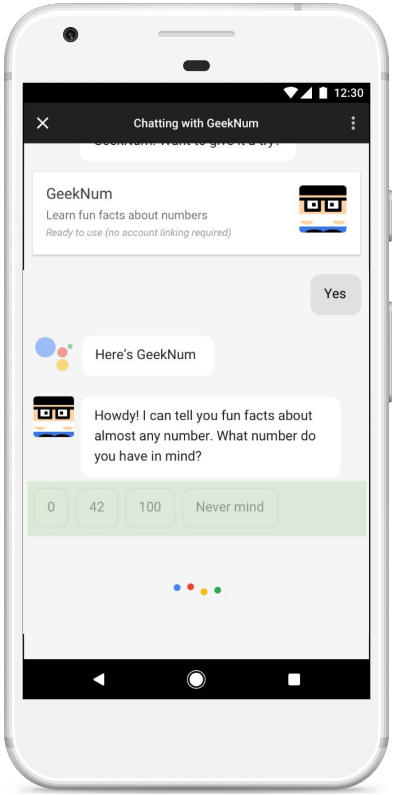
```
function simpleResponse (app) {
  app.ask({
    speech: 'Howdy! I can tell you fun facts about ' +
      'almost any number, like 42. What do you have in mind?',
    displayText: 'Howdy! I can tell you fun facts about ' +
      'almost any number. What do you have in mind?'
  });
}
```



Guide the user (suggestion chips)

https://developers.google.com/actions/assistant/responses

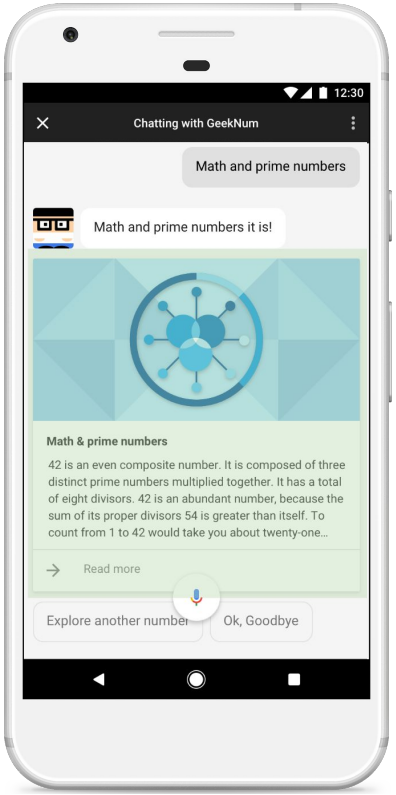
```
function suggestionChips (app) {
  app.ask(app.buildRichResponse()
    .addSimpleResponse({
      speech: 'Howdy! I can tell you fun facts about ' +
        'almost any number like 0, 42, or 100. What number do you have ' +
        'in mind?',
      displayText: 'Howdy! I can tell you fun facts about almost any ' +
        'number. What number do you have in mind?'
    })
    .addSuggestions(['0', '42', '100', 'Never mind'])
  );
}
```



Display basic cards

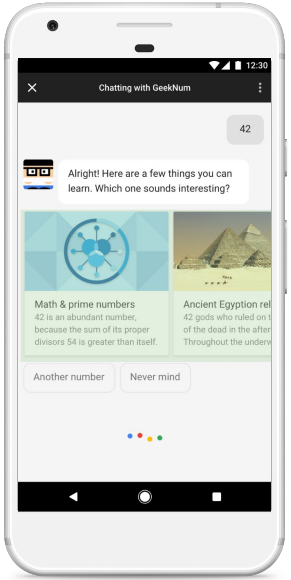
https://developers.google.com/actions/assistant/responses

```
function basicCard (app) {
  app.ask(app.buildRichResponse()
    .addSimpleResponse('Math and prime numbers it is!')
    .addBasicCard(
      app.buildBasicCard(`42 is an even composite number. It ` +
          `is composed of three distinct prime numbers multiplied together. It ` +
          `has a total of eight divisors. 42 is an abundant number, because the ` +
          `sum of its proper divisors 54 is greater than itself. To count from ` +
          `1 to 42 would take you about twenty-one…`)
        .setTitle('Math & prime numbers')
        .addButton('Read more')
        .setImage('https://example.google.com/42.png', 'Image alternate text')
    )
  );
}
```



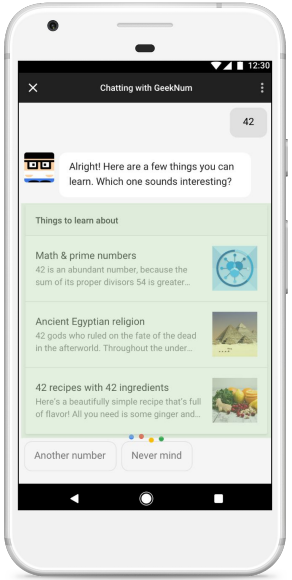
Lists and carousels for selection

https://developers.google.com/actions/assistant/responses



Used for
easy selection

<10 items



Used for
comparison

<30 items

Ask for information

https://developers.google.com/actions/assistant/helpers#user_information

```
let permission = app.SupportedPermissions.DEVICE_COARSE_LOCATION;
app.askForPermission('To find bookstores near you', permission);
```

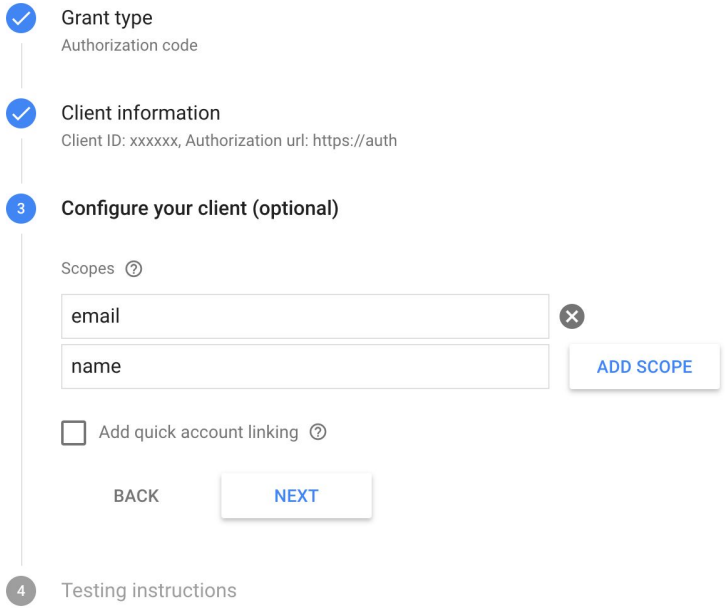
Q: "Recommend me a local bookstore"

A: "To find bookstores near you, ***I'll just need to get your zip code from Google. Is that okay?"***

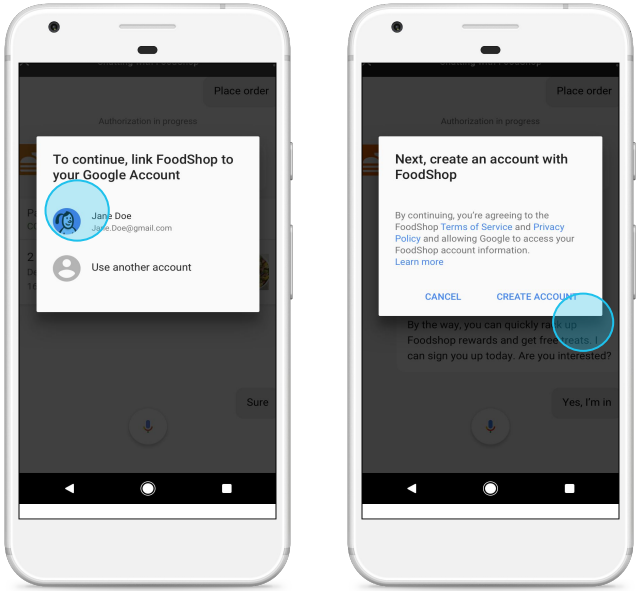
	Google Home	Mobile Device
NAME	Registered device user's full name	Registered device user's full name
DEVICE_COARSE_LOCATION	Zip code and city	N/A
DEVICE_PRECISE_LOCATION	Coordinates and street address	Coordinates

Link an account to your OAuth2 **server**

https://developers.google.com/actions/identity/



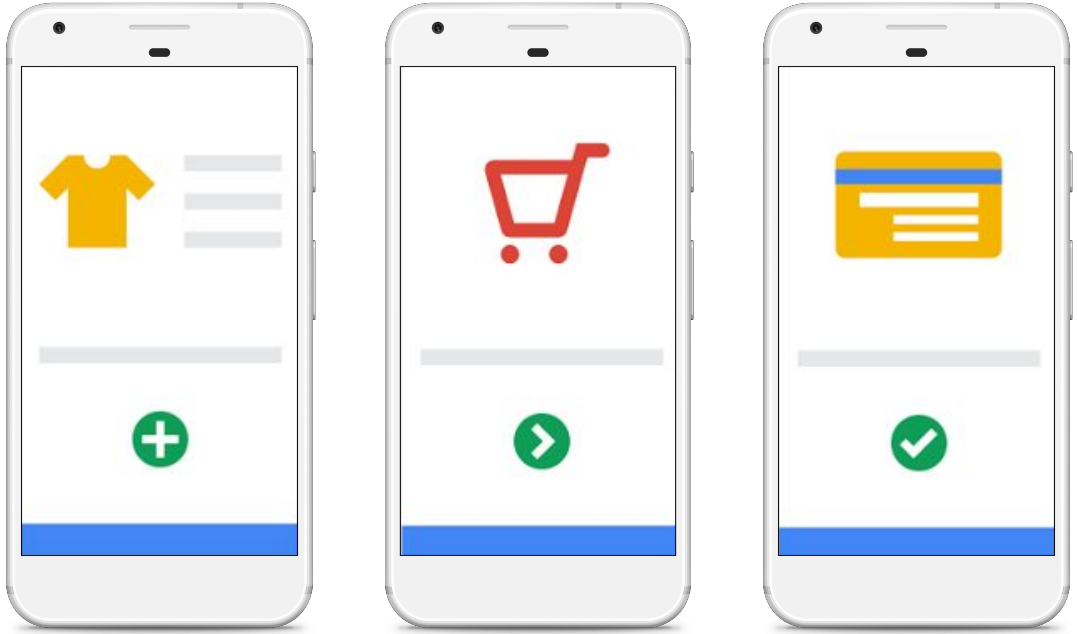
Seamless account linking with Google Sign-in



Transact with the user

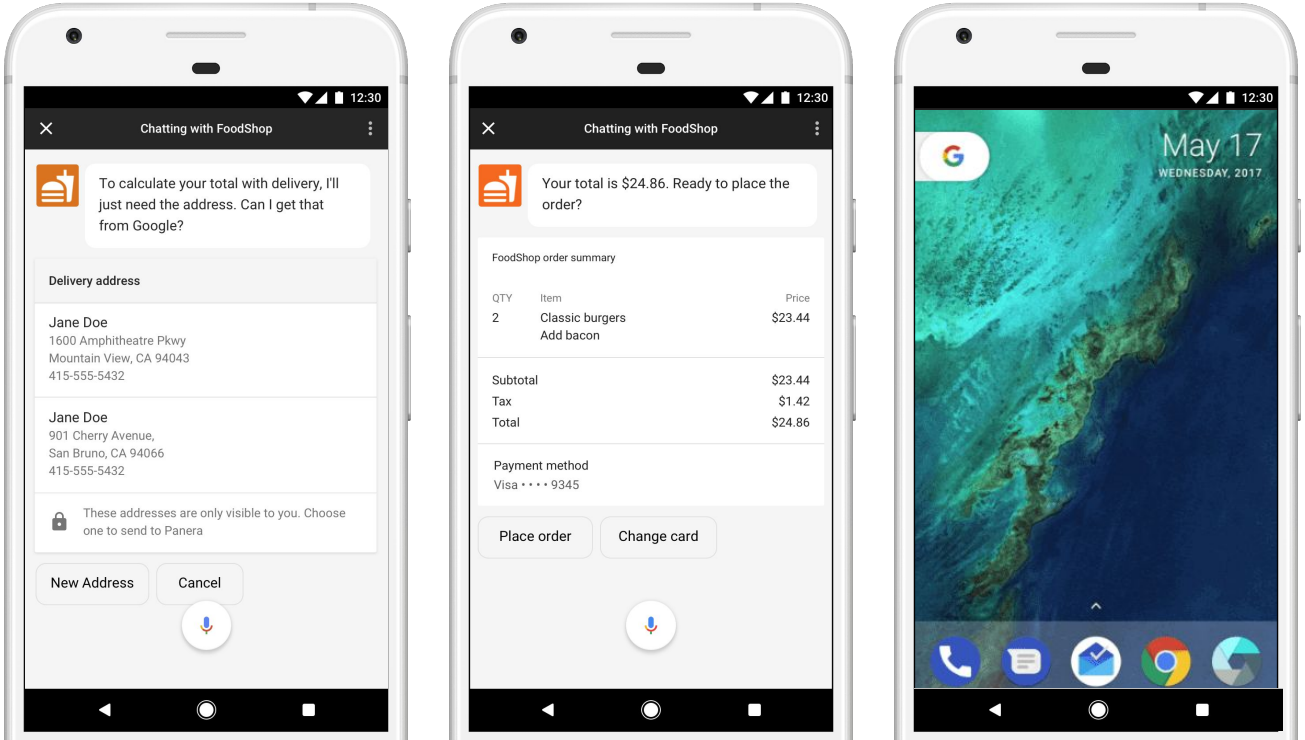
https://developers.google.com/actions/transactions (check policies and guidelines for availability)

- Build orders
- Use Google provided payment instrument
- Use your payment processor (Stripe, Braintree, Vantiv, more coming)
- Update order statu



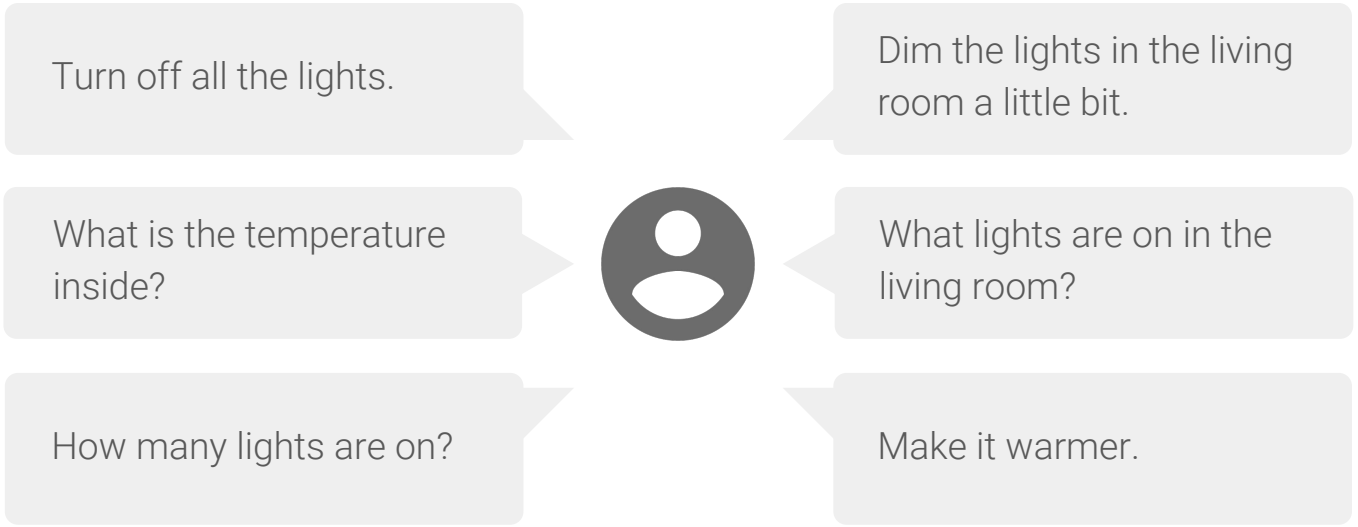
Transact with the user

https://developers.google.com/actions/identity



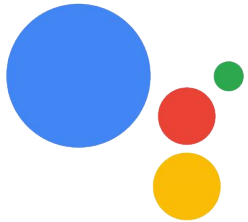
Smart Home Device Integration

developers.google.com/actions/smarthome/



Google Assistant SDK

developers.google.com/assistant/sdk



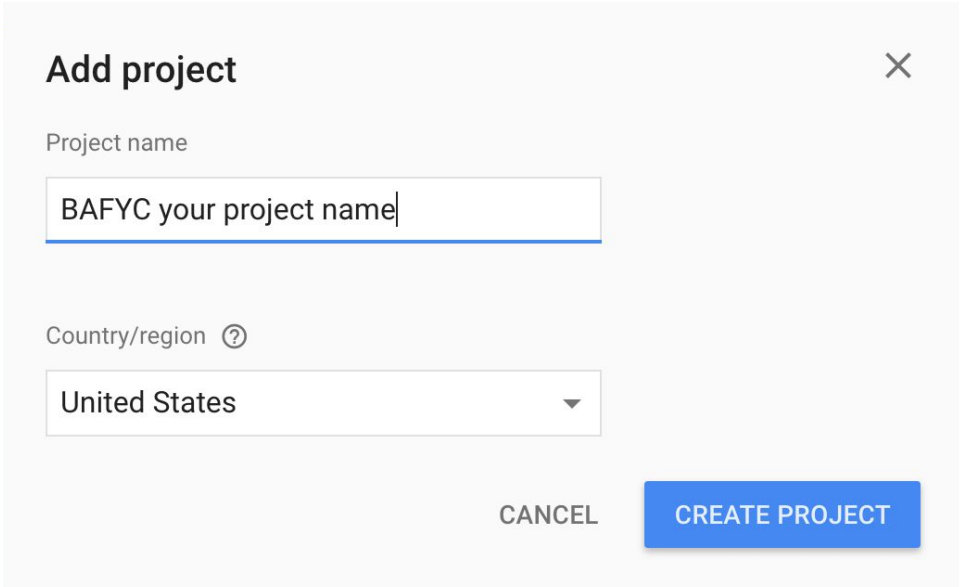
Build your team

source: pexels.com

Start creating your Action - get recognized

Follow these steps to have an Action you create between March 19 and July 15 recognized as part of the event series and be listed on the Google series website and possibly get a shout out in a session at the Google I/O Community Lounge:

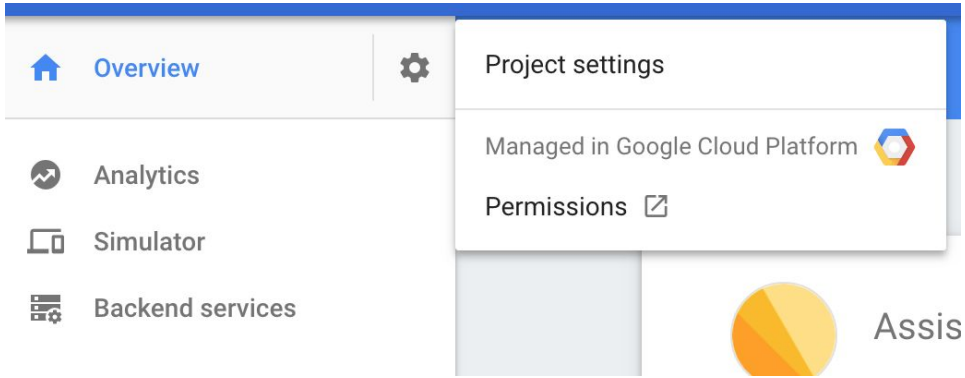
1. Go to the console: bit.ly/buildactions-console
2. Start a new project beginning with BAFYC followed by the planned Action name (should be already the Action name)

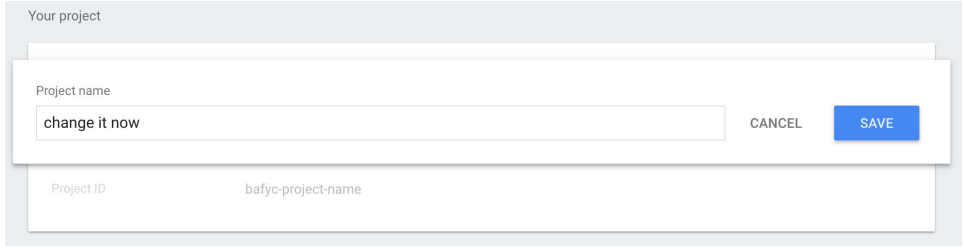


Start creating your Action - get recognized

No worries…
you can change the project name!

1. Click on the settings symbols in the console to change Project settings
2. Change the project name (Project ID stays with prefix)

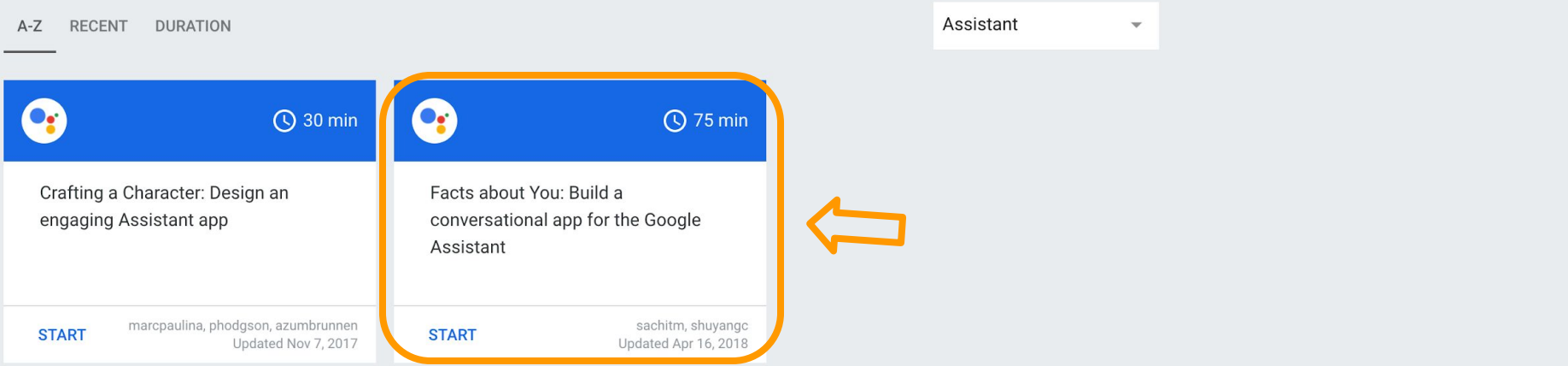




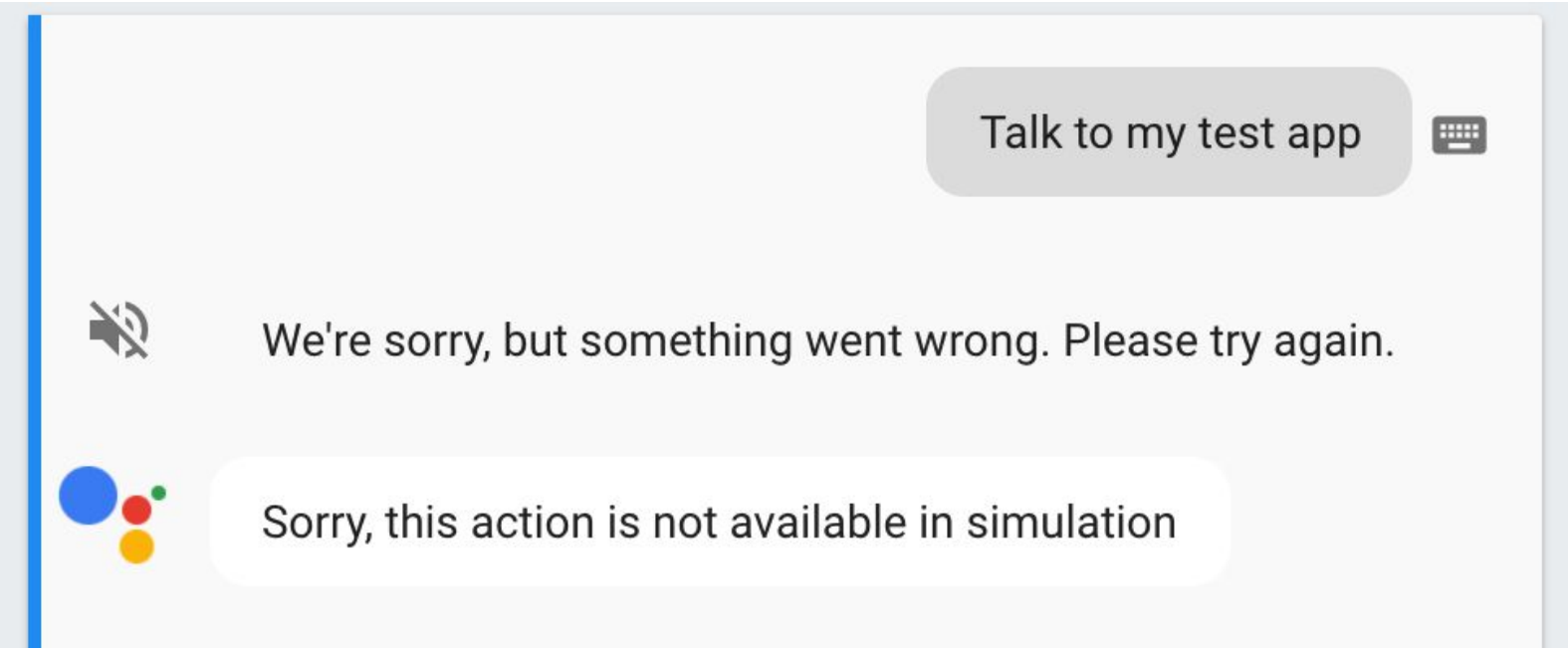
Welcome to Codelabs!

Google Developers Codelabs provide a guided, tutorial, hands-on coding experience. Most codelabs will step you through the process of building a small application, or adding a new feature to an existing application. They cover a wide range of topics such as Android Wear, Google Compute Engine, Project Tango, and Google APIs on iOS.

VIEW EVENTS



https://codelabs.developers.google.com/codelabs/assistant-dialogflow-nodejs



https://stackoverflow.com/a/46698908