Google Assistant: Qwik Start - Dialogflow

GSP263

Overview

[Google Assistant](#) is a personal voice assistant that offers a host of actions and integrations. From sending texts and setting reminders, to ordering coffee and playing your favorite songs, the 1 million+ actions available suit a wide range of voice command needs. Google Assistant is offered on Android and iOS, but it can even be integrated with other devices like smartwatches, Google Homes, and Android TVs.

As you will soon find out, [Actions](#) is the central platform for developing Google Assistant applications. Actions work with a number of human-computer interaction suites, which simplifies conversational app development. Out of all the platforms, the most popular is [Dialogflow](#), which uses an underlying machine learning (ML) and natural language understanding (NLU) schema to build rich Assistant applications.

In this lab you will get hands-on practice with Actions and Dialogflow by building an Assistant application that generates quotes when prompted by a user. You will gain practical knowledge of computer-human interaction suites and by the end of this lab, you will have successfully built a fully-fledged Google Assistant application.

What you will Learn

In this lab, you will learn how to:

- Differentiate between the basic components and services that make up an Assistant application.
- Create an Actions project.
- Integrate Dialogflow with an Actions project.
- Build a Dialogflow intent that handles quotation responses.
- Update your Google permission settings.
- Test your application with the Actions simulator.

Prerequisites

This is an **introductory level** lab. This assumes little to no prior experience developing Google Assistant applications. However, basic knowledge of the Cloud Console and the Qwiklabs platform is expected. If you are a new Google Cloud or Qwiklabs user, please take the following lab before attempting this one:

- [A Tour of Qwiklabs and the Google Cloud](#)
  Once you're ready, scroll down to get your Actions project set up.

Create an Actions project

Before we start building our quotation generator, let's review the following terms one more time.

Google Assistant is the virtual assistant that's found on smartphones, homes, and a host of other devices. It's the application that takes in voice commands and completes tasks based on user input.

Actions on Google is the *developer platform* that allows you to build applications for Google Assistant. This is going to be the central console for conversational application development.

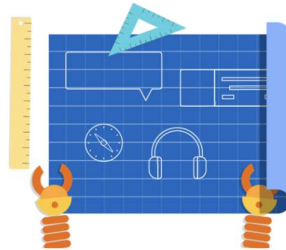Let's take our first step by building an Actions project.

Open a new tab in your browser and go to the [Actions on Google Developer Console](#). Then sign in with your temporary lab credentials. Once you are signed in, you should be looking at a clean Actions console, which should resemble the following:

Welcome to Actions on Google

Actions on Google is the platform for developers to extend the Google Assistant. Join this emerging ecosystem by developing actions to engage users on Google Home, Pixel, and many other surfaces where the Google Assistant will be available.

📄 Documentation   <> Sample code   ≡ API reference   💬 Support

Your projects

You don't have any projects yet. Click below to get started.

New Project

Terms · Privacy Policy

Click **New Project** and agree to the Actions on Google Terms of Service that appears. Next, click on the project field, select the Google Cloud project ID for Qwiklabs, and click **IMPORT PROJECT**:

New Project   ✕

Project Name

Enter name or choose a project

Choose the default language for your Actions English ▼

Choose your country or region United States ▼

CANCEL   CREATE PROJECT

Terms · Privacy Policy

Soon after you will be presented with a welcome page that resembles the following:

What kind of Action do you want to build?

Select the category that best fits the type of experience you want to build for the Google Assistant.

Smart Home

Let users control your smart home devices with the Google Assistant and the Google Home app

Food ordering

Integrate your food ordering flow with Google Search, Maps, and the Assistant

Game

Build anything from a trivia game to a fully immersive, multiplayer gaming experience

Custom

Don't see your category? Build a unique conversational experience for your users

Click on **Actions Console** in the top left corner. Then click on the project you just created (title has your Project ID as the name.)

Test your Understanding

Below are a multiple choice questions to reinforce your understanding of this lab's concepts. Answer them to the best of your abilities.
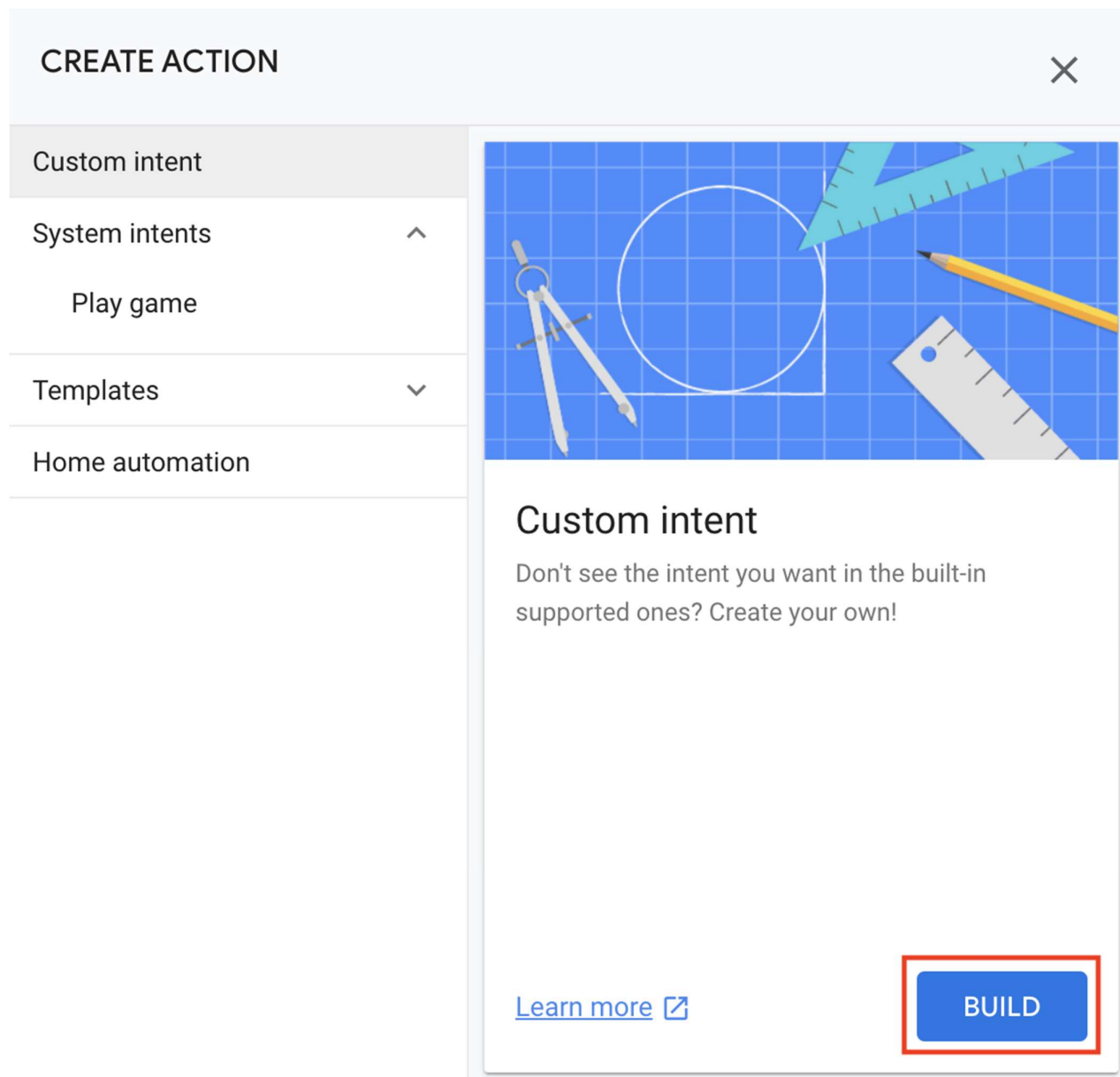
The virtual assistant that's found on smartphones, homes, and a host of other devices.
Google Assistant

The developer platform that allows you to build Assistant applications.
Actions

A platform that abstracts the complexities of NLU and ML to build conversational applications.
Dialogflow

Set up Dialogflow

Next, go to **Build your Action** > **Add Action(s)**. Click **Get started**. Then select **Custom Intent** > **BUILD**:

This will take you to the Dialogflow console.

Select your Qwiklabs account and click **Allow** when Dialogflow prompts you for permission to access your Google Account.

When you land on the Dialogflow page, check the box next to **Yes, I have read and accept the agreement** and click **Accept**:

Terms of Service *

☑ Yes, I have read and accept the agreement.

By proceeding and clicking the button below, you agree to adhere to the Terms of Service.

Additionally, you may have access to certain Firebase services. You agree that your use of Firebase services will adhere to the applicable Firebase Terms of Service. If you integrate any apps with Firebase on this project, by default, your Firebase Analytics data will enhance other Firebase features and Google products. You can control how your Firebase Analytics data is shared in your Firebase settings at anytime.

ACCEPT

You will then be brought to the Dialogflow agent page. Click **CREATE** in the top right corner.

In the last few steps you were introduced to some new terms. Let's take a moment to review them:

- **Action**: an interaction built for Google Assistant that performs specific tasks based on user input.
- **Intent**: the goal of the Action (e.g. generate quotes). An intent takes user input and channels it to trigger an event.
- **Agent (Dialogflow)**: a module that uses NLU and ML to transform user input into actionable data to be used by an Assistant application.
  Here is a handy cheat sheet that you can reference if you run into any unfamiliar terms.

Test Completed Task

Click **Check my progress** to verify your performed task.

Build a custom Dialogflow intent

From the left-hand menu select **Intents** and then click on **CREATE INTENT** in the top right corner.

This will bring you to a fresh Intent template that's ready to be filled in.

For the Intent name enter in **Quote generator**.

Then click on **ADD TRAINING PHRASES** and add the following user expressions:

- *Give me a quote.*
- *How about a quote?*
- *Give me some inspiration.*
- *Supply me with a quote.*

Training phrases ❓

> Add user expression

> Supply me with a quote.

> Give me some inspiration.

> How about a quote?

> Give me a quote.

At the bottom in the **Responses** section click **ADD RESPONSE**. Now add the following Shakespeare quotes as **Text responses** (or feel free to add your own!):

- *If music be the food of love, play on.*
- *This above all; to thine own self be true.*
- *Some are born great, some achieve greatness, and some have greatness thrust upon them.*
- *Love all, trust a few, do wrong to none.*
- *The course of true love never did run smooth.*
- *But if the while I think on thee, dear friend, all losses are restor'd and sorrows end.*

Responses ❓

Text response

1	If music be the food of love, play on.
2	This above all; to thine own self be true.
3	Some are born great, some achieve greatness, and some have greatness thrust upon them.
4	Love all, trust a few, do wrong to none.
5	The course of true love never did run smooth.
6	But if the while I think on thee, dear friend, all losses are restor'd and sorrows end.
7	Enter a text response variant

ADD RESPONSES

⬤ Set this intent as end of conversation ❓

Now click **SAVE** in the top right corner.

Test Completed Task

Click **Check my progress** to verify your performed task.

Check your Google Permission Settings

To test the quote generator, you will need to enable the necessary permissions.

Go to the [Activity Controls page](#) and sign in with your Qwiklabs credentials if prompted. Ensure that the following permissions are enabled by sliding the toggles and selecting **TURN ON** for the following cards:

- Web & App Activity
  Now close the Activity Controls page.

Test your understanding

Below are a multiple choice questions to reinforce your understanding of this lab's concepts. Answer them to the best of your abilities.

An interaction built for Google Assistant that performs specific tasks based on user input
Action

A module that uses NLU and ML to transform user input into actionable data to be used by an Assistant application
Agent

Takes user input and channels it to trigger an event.
Intent

Test the quote generator

Return to the Dialogflow Console. Then from the left-hand menu, click **Integrations** then select **Integration settings**.

Then click **TEST**:

Google Assistant

After the next draft submission, changes made in the Dialogflow will no longer impact existing Action versions right away. Instead, you can continue iterating and improving your Action in draft mode and only make it available to users when you're ready

LEARN MORE

Discovery

Explicit invocation *

Sign in required

Default Welcome Intent   ✕

Specify the intent that is triggered when users request the app by name (for example "Ok Google, talk to Personal Chef."). Learn more.

Implicit invocation

Sign in required

Add intent

Specify intents that trigger "deep-link" actions in your app, allowing users to invoke specific functionality, such as "OK Google, ask Personal Chef for a hot soup recipe". Providing good action phrases. Learn more.

Auto-preview changes

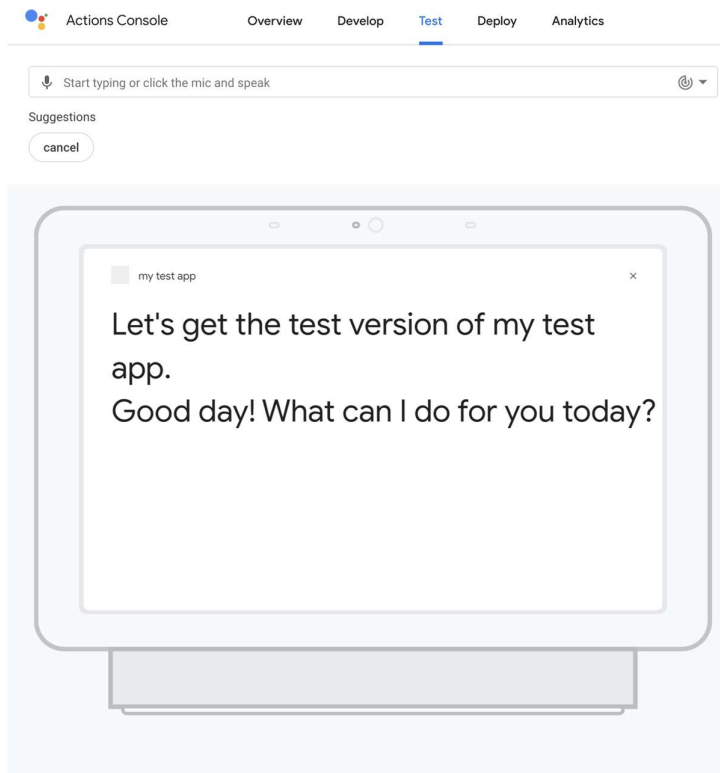Dialogflow will propagate changes to the Actions Console and Assistant Simulator automatically.

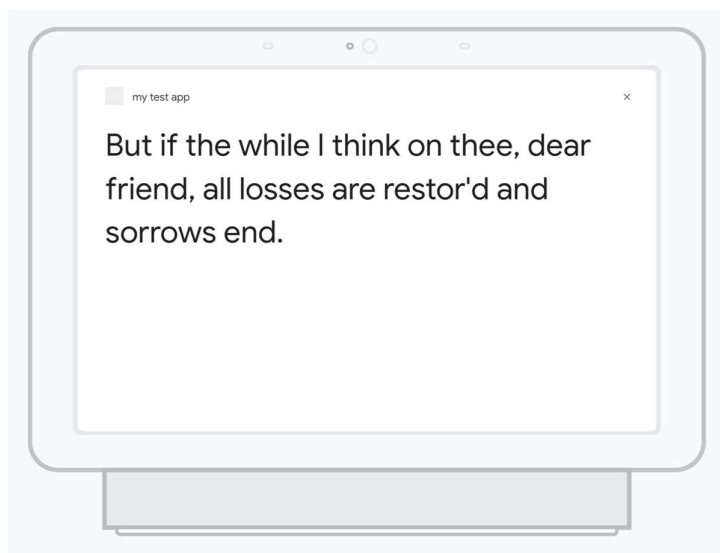CLOSE   TEST   MANAGE ASSISTANT APP

To invoke the Action, click on the **Talk to my test app** button from the left-hand menu. You should be presented with a similar output:

🎤 Start typing or click the mic and speak

Suggestions

cancel

my test app   ×

Let's get the test version of my test app.
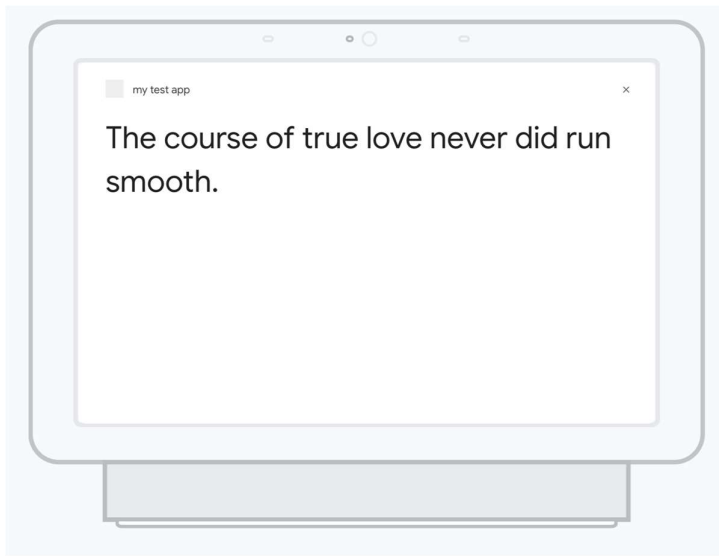Good day! What can I do for you today?

Note: turn your volume up or try using headphones to hear your Google Assistant speak to you!
Now go ahead and type in one of the training phrases (for example "Give me a quote") in the input box. You should receive one of the Shakespeare quotes that you added in the response section:

my test app   ×

But if the while I think on thee, dear friend, all losses are restor'd and sorrows end.

You can keep repeating this process—entering in one of the training phrases to get a random Shakespeare quote—as many times as you want!

When we create an Intent, Dialogflow uses it's ML and NLU processing to auto generate prompts that are similar to the training phrases you entered in. This is a nice feature to have because your user's prompts don't have to exactly match your training phrases. This also simplifies development because you don't have to add every possible prompt to your training phrases—Dialogflow intelligently handles all of this behind the scenes.

To see this in action, type in a prompt that isn't in our training phrases (but still gets the same message across.) For example, try typing in **new quote** or **more inspiration** into the input box. You will be returned with a Shakespeare quote:
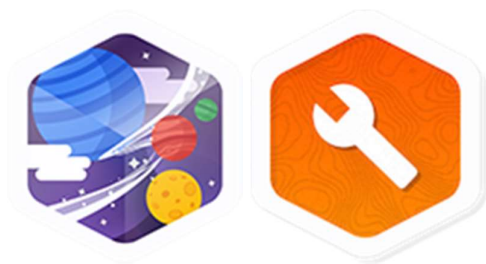

Once you've gotten enough inspiration, type **quit** to exit the simulation.

Congratulations!

Great job building your first Google Assistant application! You got a high level overview of the Actions console, Dialogflow, and the other components that go into creating a Google Assistant Application. In just 30 minutes you were able to build your own quotation generator, not bad for just starting out.

Finish Your Quest

Continue your Quest with [OK Google: Build Interactive Apps with Google Assistant](#) and [Baseline: Deploy & Develop](#). A Quest is a series of related labs that form a learning path. Completing this Quest earns you the badge above, to recognize your achievement. You can make your badge (or badges) public and link to them in your online resume or social media account. Enroll in this Quest and get immediate completion credit if you've taken this lab. [See other available Qwiklabs Quests](#).

Next Steps / Learn More

This lab is part of a series of labs called Qwik Starts. These labs are designed to give you a little taste of the many features available with Google Cloud. Search for "Qwik Starts" in the [lab catalog](#) to find the next lab you'd like to take!

Google Cloud Training & Certification

...helps you make the most of Google Cloud technologies. [Our classes](#) include technical skills and best practices to help you get up to speed quickly and continue your learning journey. We offer fundamental to advanced level training, with on-demand, live, and virtual options to suit your busy schedule. [Certifications](#) help you validate and prove your skill and expertise in Google Cloud technologies.
Manual Last Updated March 29, 2021
Lab Last Tested November 9, 2020