

Exercise instructions

On the following pages is a draft of a tutorial for software developers who want to use Google gShoe. (gShoe is a fictional product.) We ask that you spend about two hours editing the document. Your author is a developer who writes seldom and isn't used to being edited. Don't worry, you won't experience an article this bad in your career at Google. We have included many, many errors throughout. No one will catch all of them. Don't worry about that either. Feel free to query and suggest changes for the author; add comments to the author as you see fit.

We're looking for both developmental edits and copy edits. Please track your changes so we can see your work. (For example, in Google Docs, use Suggesting mode.) You're welcome to make comments to us separately about your editing, and to note what you might look up or do differently if you had more time.

Audience. Assume a developer who wants to learn how to work with gShoe data.

Style. Our style is to use second person, active voice, present tense, and the serial comma. If you want, you can cite [our style guide](#) in your edits, but please don't spend a lot of time trying to learn all of our style details.

Format. Return the exercise to us in either a Google Doc or a Microsoft Word file. Don't return it as a PDF.

Get started with gShoe data analysis, data display, and data retention of a gShoe product

This tutorial shows you how to ~~obtain~~~~get one's hands on~~ information from a user's gShoe shoes and ~~visualize and~~ see various types of data ~~that are~~ provided by gShoe datasets using a mid-level language. ~~This tutorial also~~ describes ways that gShoe data can be used by multiple applications. gShoe is a proprietary meta-analysis tool from Google.

The tutorial is intended for cloud developers who are familiar with the Linux command line and the Google Cloud CLI tool. ~~If you're just a running enthusiast, don't bother.~~

Informational Overview

Google's gShoe platform, ~~one of~~ the industry's best shoe-data platform~~s~~, is built into various shoes such as running ~~and shoes~~, walking shoes, and hiking boots. The first gShoe sensors were added to NFL Cornerback Richard Sherman's cleats in the 2014 Super Bowl (Super Bowl XLVIII). Sensors in those shoes, and in all other gShoes~~s~~, track information about a user's walking and running, including distance and pace. Some shoes include sensors for tracking heart rate. ~~The shoes store the gShoe data. The shoes can connect to devices through Bluetooth or other technologies so that event data can be downloaded, visualized, and analyzed. These features make gShoes better than competitive shoe-tracking platforms.~~

Note: Users of ~~gShoe-based~~~~Gshoe-based~~ footwear control whether ~~or not~~~~they wish~~ to make their personally identifiable information (PII) available for ~~analysis~~~~analysts~~. ~~Explicit user consent must be given. They must explicitly give consent~~ in the gShoe app to have ~~their~~ PII collected and stored. The scenario described in this tutorial assumes that users consented to have their data collected and uploaded to Google for their own personal use. Google will sell never PII or data. However, ~~Google~~~~we~~ may aggregate it anonymously for internal data analysis to improve ~~our~~ gShoe products. ~~In the previous sentence, We means Google.~~

Commented [1]: Consider combining these two sentences to minimize wordiness:

Suggestion for change: "gShoe data is collected and stored in the shoe, which can be downloaded via Bluetooth-connected devices for visualization and analysis."

Commented [2]: Consider rephrasing this sentence to avoid the competitive tone:

Suggestion for change: "These features make gShoes stand apart from other shoe-tracking platforms."

In this tutorial, you perform ~~a variety of various sorts of e~~ tasks that you would perform in a gShoe app that you build. For example, this ~~tutorial~~~~concept guide~~ shows you how to select data to work, with and how to create a visualization, to show users their gShoe information.

About the sample data

The gShoe platform of shoes begins recording user information when the shoes are moved (for example, when the user puts them on). The shoes sample user data every second while the shoe is active. Activity can include, walking, running, striding, climbing stairs (or ladders), and sports. When the shoe detects ~~a~~ lack of activity after 15 minutes, it ends the session. If the user starts moving again, a new session starts.

In this tutorial, you use sample data that includes information for a fictional user named `User1`. This dataset represents a scenario where the user `CharlieHustle` used the shoes for a week, and then downloaded the data.

Objectives

- ~~To obtain~~~~To get~~ sample data from a GitHub repository.
- ~~To S~~store the sample data in a Cloud Storage bucket.
- ~~To R~~review the Google Cloud Storage terms of service.
- ~~To visualize~~~~Visualizing~~ data from a user session.

Costs

This tutorial uses the following billable components of Google Cloud:

1. ~~Cloud Storage~~.
2. gShoe
3. Shoe purchase costs.

~~Total costs for this tutorial average \$20 at most times of year, or \$30 during the hHolidays.~~

Before you begin

Before you begin, you need to select or [create a Google Cloud project](#).

Note: If you don't plan to keep the resources that you create in this procedure, create a project instead of selecting an existing project. After you finish these steps, you can delete the project, ~~removing and~~ all resources associated with the project, as described later.

[Go to project selector](#)

You also need to make sure that billing is enabled for your Cloud project. [Click here](#) to learn how to check if billing is enabled on a project.

ObtainGet the Sample Data

The master sample data for this tutorial is in a csv file that's stored in a GitHub repository. A repository is the place to store and track your files.

- Clone the github repo ~~that~~which contains the CSV data:

```
git clone
https://github.com/GoogleCloudPlatformExample/gshoe-sample-
data
```

o Prep work

The reader of this document will perform most of the steps for this tutorial in [Cloud Shell](#).

1. [Activate Cloud Shell](#).
2. Store the Google Cloud project ID in an [environment variable](#).

```
export PROJECT=[PROJECT_ID]
```

Replace `PROJECT_ID` with the [ID](#) of the [Cloud](#)cloud project that you're using.

3. You need to enable the gShoe API:

```
gcloud services enable gshoe.googleapis.com
```

The gShoe API allows users to interface with the gShoe. ~~To~~[In order to](#) interface with the Google Wearables API, you must access the Wearables API. That action is outside the scope of this piece.

Store the sample data in a bucket

After you obtain the data, typically, after you get gShoe data, you simply store it in a Cloud Storage bucket so that you can analyze it with impunity.

1. First, export the name you want to use, then create the AWS bucket:

```
export GSHOE_BUCKET=gshoe_sample_data_$PROJECT
gsutil mb gs://$GSHOE_BUCKET
```

2. Run the following command:

```
gsutil cp gs://$GSHOE_BUCKET \
gs://test-gshoe/gshoe-user1-data.csv
```

Review and Visualizing-Visualize gShoe data

In this section, you create a chart that shows a user's gShoe usage for one day in 15-minute increments.

You create the chart by using a command that takes a SQL statement as input. The command also allows you to specify what type of chart to create. In this tutorial, it generates a chart as a PNG.

1. In Shell, create a SQL command that pulls data from one session, and then adds the SQL command to a variable:

```
{ export SQL_COMMAND = "SELECT intervals, heartRate, pace
FROM gShoeSampleData WHERE user = 'User1' AND SessionDate =
'08-02-2022'"
```

2. Create a chart that visualizes the change of the user's heart rate and pace over time. An increment lasts 15 minutes:

```
gcloud gShoe generate-graph \
--source="gs://test-gshoe/gshoe-user1-data.csv" \
--command=$SQL_COMMAND \
--graph-type="multiline" \
--interval="15" \
--haxis="intervals" \
--dependentAxis1="heartRate" \
```

Commented [3]: Question: This phrase is unclear. What are you trying to say? Suggestion for change:

"...so you can analyze the data for validity."

```
--dependentAxis2="pace" \
--title="Heart rate vs Pace"
--output-target="user1-2022-08-02-gshoe-viz.png"
```

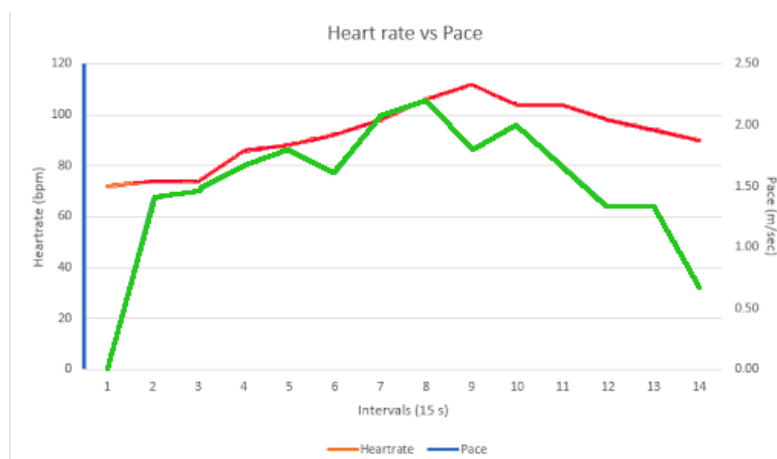
The command creates a line graph that has two dependent variables: ~~The~~the user's heart rate and their pace. This type of chart lets you see how those two metrics correspond. Advanced users can determine celerity from this data.

After generating the chart, it downloads it to the file specified above for the `--output-target` option (`user1-2022-08-02-gshoe-viz.png`).

3. Display the visualization in a browser window:

```
gcloud gshoe show-visualization \
--source="user1-2022-08-02-gshoe-viz.png"
```

4. The output for a ~~two-week~~two week period is the following:



Conclusion

Boom—you're done! You now have downloaded and tested gShoe data, downloaded test-Gshoe data and have used it to create a chart that shows heart rate versus pace.

What's next

- Work with gShoe data in the Google Cloud console.
- REST API to obtainget data and create a visualization

Commented [4]: Question: Can a simpler way to say this sentence be:

"Advanced users can determine the speed from this data." Please verify whether this suggestion is technically accurate.

Commented [5]: Dangling participle: What exactly is "it"? Does the command download the chart to the file specified? Clarify the sentence.

- Explore reference architectures, diagrams, tutorials and best practices about Google Cloud. (Take a look at our [Cloud Architecture Center](#))