Google Cloud

Next '24

# Build full stack applications using Firebase and Google Cloud

Proprietary

# Sumit Chandel

Developer Relations Engineer,
Google Cloud

# Dmitry Lyalin

Group Product Manager,
Google Cloud

# Agenda

01 What’s Firebase?

02 Firebase & Cloud

03 Scale – Firestore

04 Expand – Extensions and Gen AI

05 Secure – App Check

# How does Firebase help Developers?

Firebase is Google's app development platform

## Accelerate inclusion of AI into apps

Use AI to go from concept to production with fully managed backend Infrastructure

## Increase user engagement

Analytics insights and launch experiments

## Improve app quality

Release and monitor app stability

# Who uses Firebase?

Firebase has significant adoption among many enterprises

algolia
Alibaba.com
Ctrip
UBISOFT
wayfair
The Economist
GAMELOFT
GAME NEXA
HALFBRICK
The New York Times
InsightTimer
JAM CITY
rowy
LE FIGARO
workday.
peoplefun
AHOY games
NEXON
lyft
magazineluiza
Pomelo Games
Squadle
Tapps Games
tapple
hotstar

# Firebase products

## Build your backend

- Authentication
- Firestore
- Realtime Database
- Cloud Storage
- Hosting
- App Check
- Cloud Functions
- Extensions
- Machine Learning

## Improve app quality

- Crashlytics
- Performance Monitoring
- Test Lab
- App Distribution

## Engage users effectively

- Remote Config
- A/B Testing
- Personalization
- Cloud Messaging
- In-App Messaging
- Analytics

# Firebase helps developers build and improve applications while growing & engaging more users

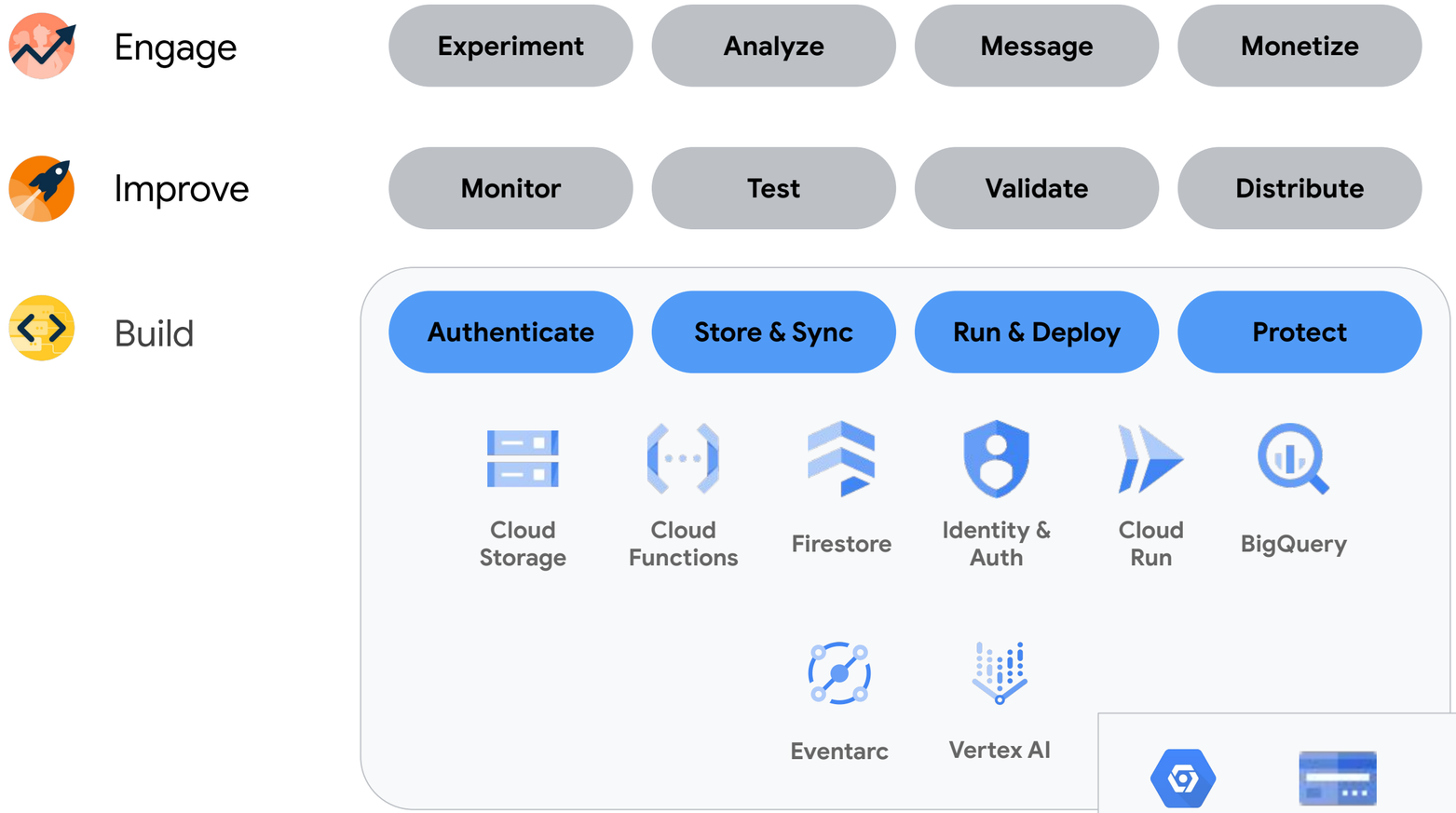
Web, Android, iOS, Games

Full stack development

Java, Python, Go, C++, Unity, React, Flutter, Angular

| | | | | |
|---|---|---|---|---|
| Engage | Experiment | Analyze | Message | Monetize |
| Improve | Monitor | Test | Validate | Distribute |
| Build | Authenticate | Store & Sync | Run & Deploy | Protect |

# Build with Firebase and scale with GCP primitives






Proprietary

# Google Cloud “ToS”

## Build your backend

- Authentication
- Firestore
- Realtime Database
- Cloud Storage
- Hosting
- App Check
- Cloud Functions
- Extensions*
- Machine Learning

## Improve app quality

- Crashlytics
- Performance Monitoring
- Test Lab
- App Distribution

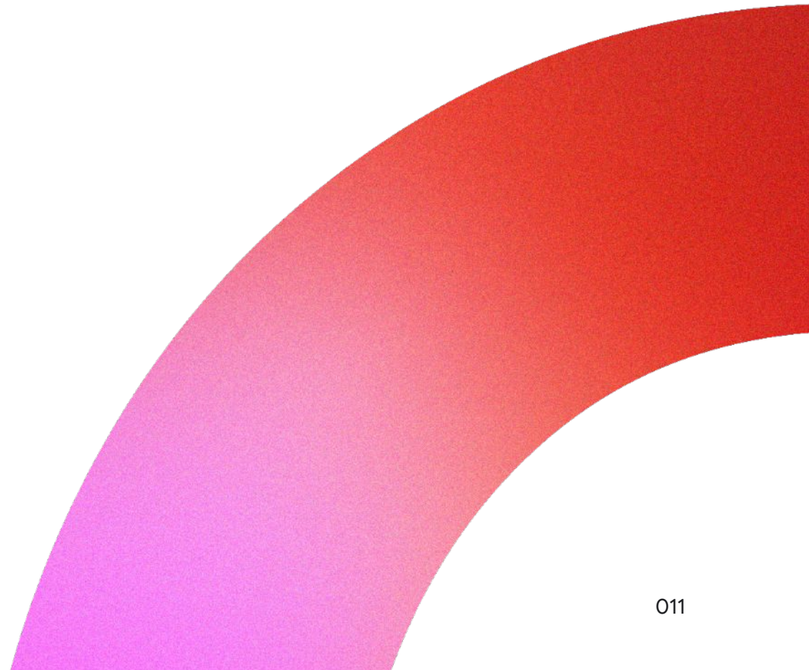
## Engage users effectively

- Remote Config
- A/B Testing
- Personalization
- Cloud Messaging
- In-App Messaging
- Analytics

https://firebase.google.com/terms

# Summary

- Firebase is a platform with over 19 products
- Firebase Projects are Google Cloud Project
- Firebase billing is Google Cloud Billing
- Firebase “build” products are (mostly) powered by Google Cloud primitives



# Demo

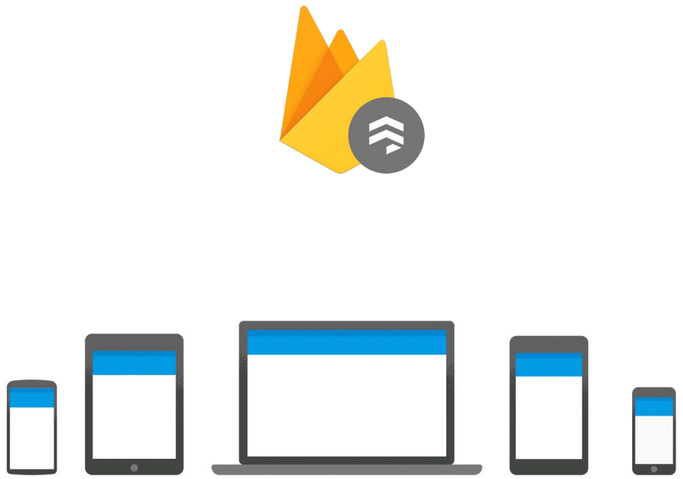
# Scale

Cloud Firestore

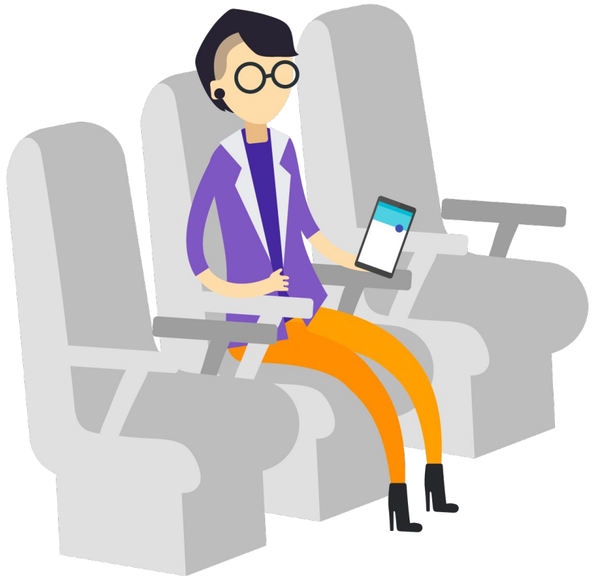


Proprietary

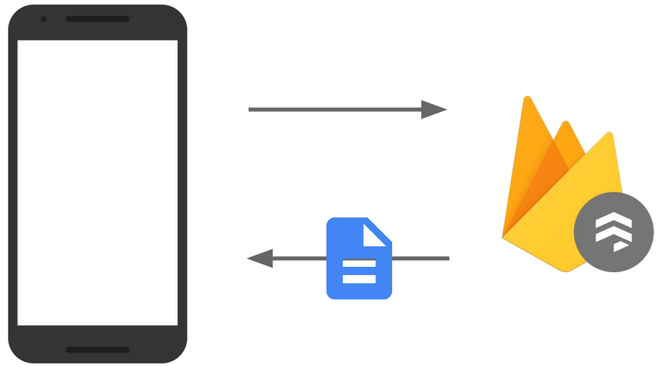
# Cloud Firestore



Effortless Syncing



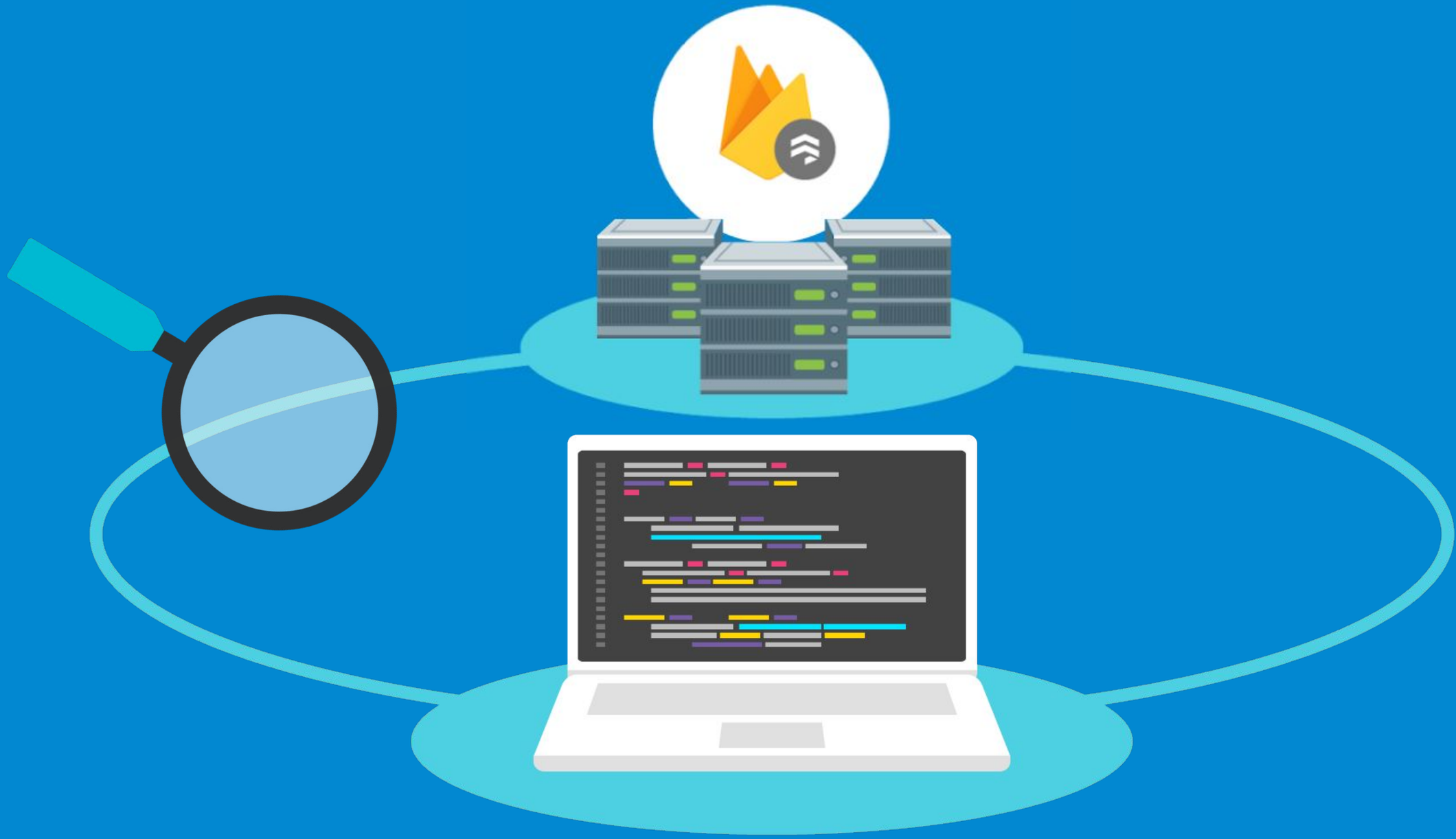
Offline Mode

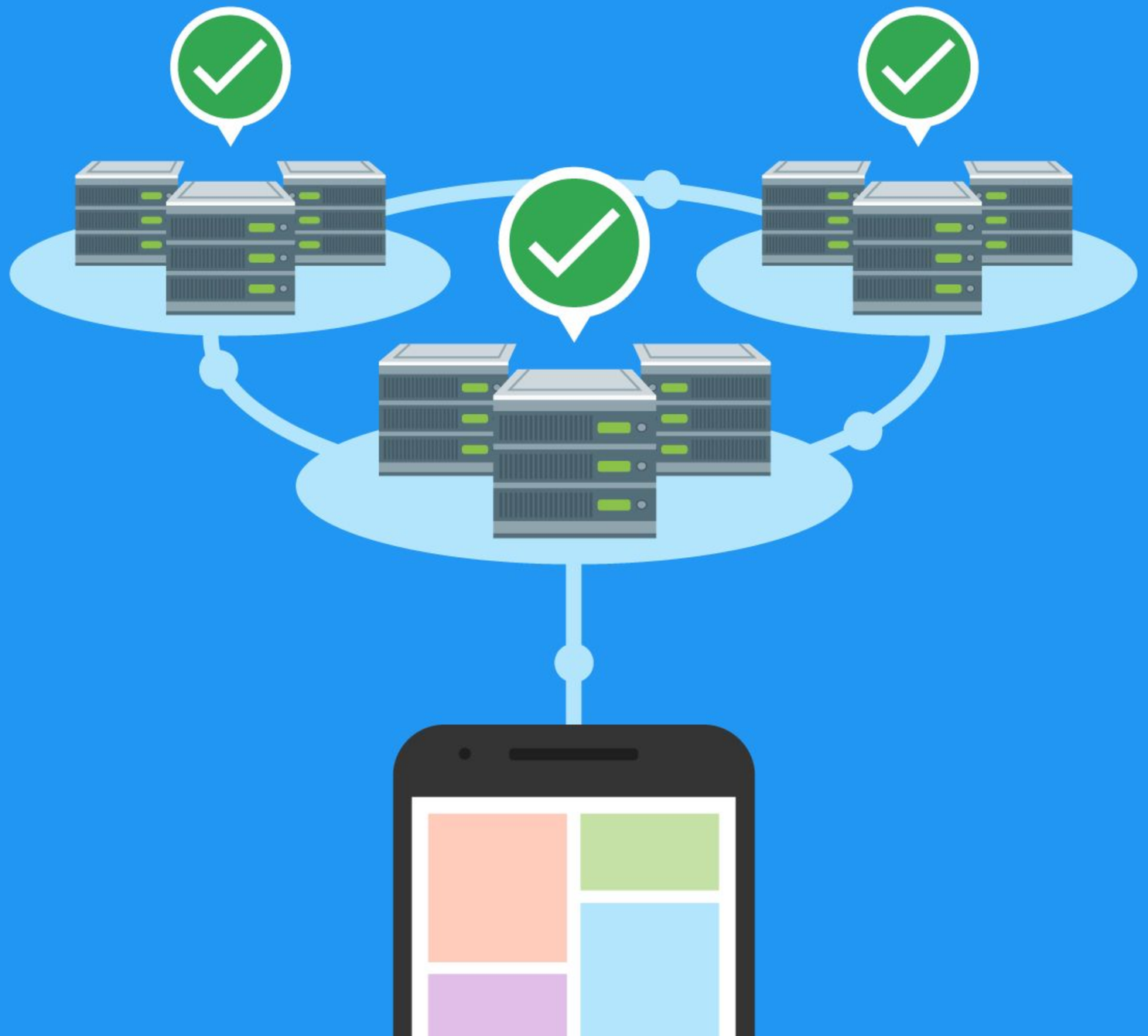


One-Time Fetches



Proprietary





Apple Android Web C++ Flutter Unity

Kara's Coffee
Not so real coffee and swag

Search...

Concierge

Shop My Account Chat

Please note that Kara's Coffee is a demo application, and some functionality is restricted to limit processing of personal data.

# Become your own Barista.

Subscribe today to gain exclusive access to blogs, videos & recipes so you can become your own professional barista.

Subscribe Now

## Coffee Shop

View all products

**Chipinga** $2

Zimbabwe Caltimor 5

Chipinga coffee is a medium-bodied with a medium density and lively berry-like or citrusy acidity.

**Kahawa** $4

Kenya Arabica 9

Kenyan coffee beans have distinctly bright taste with complex tones of fruit and berry.

**Lizarb** $5

Brazil Novo 7

Lizarb Brazilian coffee has a relatively low acidity, and exhibits a nutty sweet flavor, with a chocolaty roast taste.

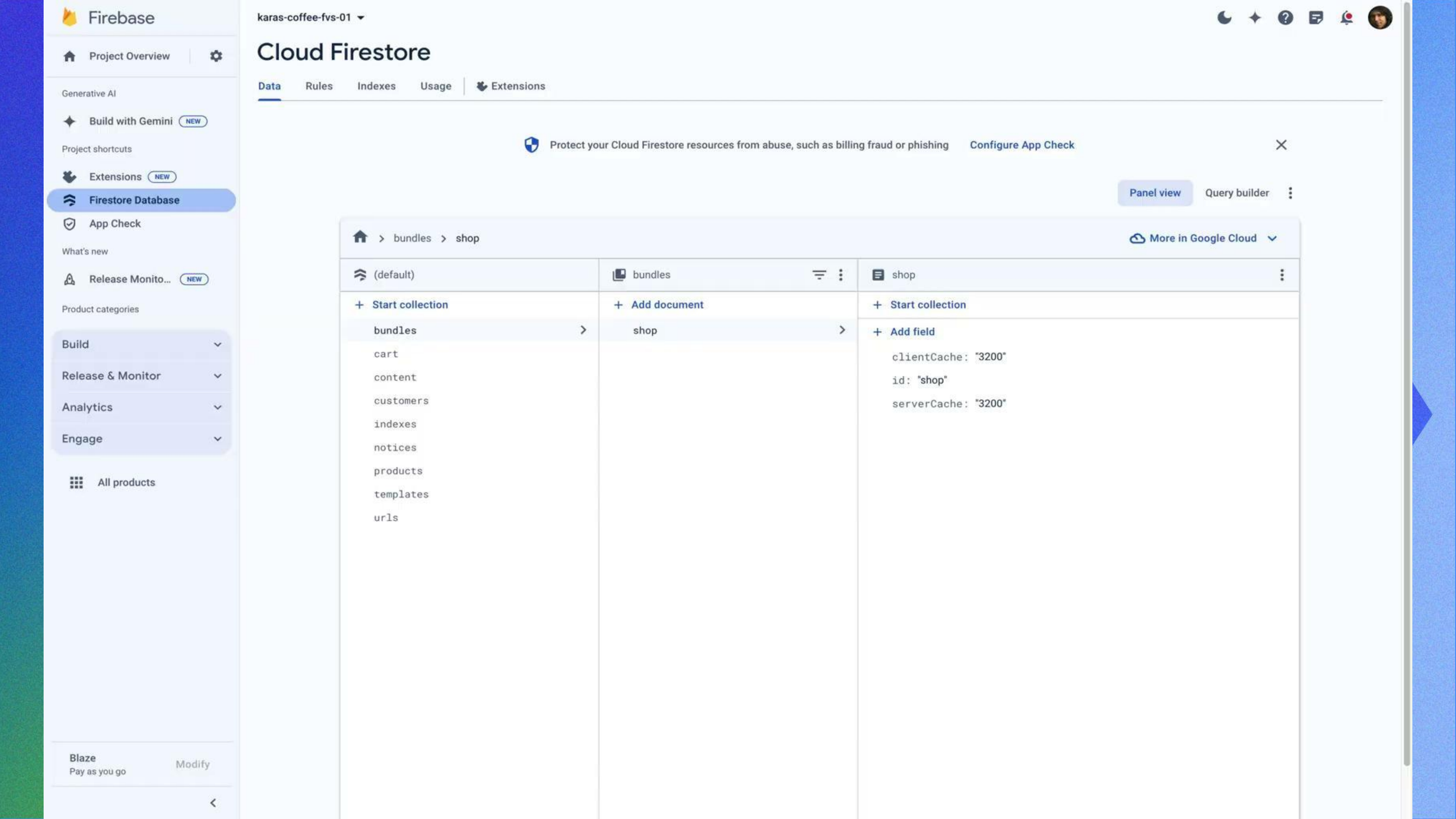
**Loja** $3

Ecuador Caturra 3

A fairly acidic coffee with a medium body and a predictable flavor typical of South American coffees.

## Swag Shop

View all products


Firebase
karas-coffee-fvs-01
Project Overview
Generative AI
Build with Gemini NEW
Project shortcuts
Extensions NEW
Firestore Database
App Check
What's new
Release Monito... NEW
Product categories
Build
Release & Monitor
Analytics
Engage
All products
Blaze
Pay as you go
Modify
Cloud Firestore
Data
Rules
Indexes
Usage
Extensions
Protect your Cloud Firestore resources from abuse, such as billing fraud or phishing
Configure App Check
Panel view
Query builder
bundles
shop
More in Google Cloud
(default)
bundles
shop
Start collection
Add document
Start collection
Add field
bundles
cart
content
customers
indexes
notices
products
templates
urls
shop
clientCache: "3200"
id: "shop"
serverCache: "3200"

NEW

# Firestore Vector Search
## (Public preview)

You can now store and query embeddings of data in you Firestore database

Cloud Firestore

# Expand

# Firebase Extensions



Proprietary

Build a Chatbot with Gemini API

Translate Text

Delete User Data

Trigger Email

Export Collections to BigQuery

Shorten URLs

Distributed Counter

Run Subscription Payments with Stripe

Search with Algolia

Analyze Toxicity with Perspective API

Manage Marketing with Mailchimp

Send Messages with MessageBird

Search with Elastic App Search

Authenticate with Stream Feeds

Track Shipping Labels with ShipEngine

Send Messages with Twilio

Make Payments with Google Pay

Snapchat Sticker Generator

Search Firestore with Typesense

Enable In-App Purchases with RevenueCat

NEW

# Firestore Vector Search

Automatic Embeddings generation
When a document is written to Firestore

Embedding search in a callable function directly from your mobile or web apps

Firebase Extensions

Kara's Coffee
Not so real coffee and swag

Search...

Concierge

Shop My Account

# Barista.

Subscribe today to gain exclusive access to blogs, videos & recipes so you can become your own professional barista.

Subscribe Now

## Coffee Shop

View all products

**Chipinga** $2

Zimbabwe Caltimor 5

Chipinga coffee is a medium-bodied with a medium density and lively berry-like or citrusy acidity.

**Kahawa** $4

Kenya Arabica 9

Kenyan coffee beans have distinctly bright taste with complex tones of fruit and berry.

**Lizarb** $5

Brazil Novo 7

Lizarb Brazilian coffee has a relatively low acidity, and exhibits a nutty sweet flavor, with a chocolaty roast taste.

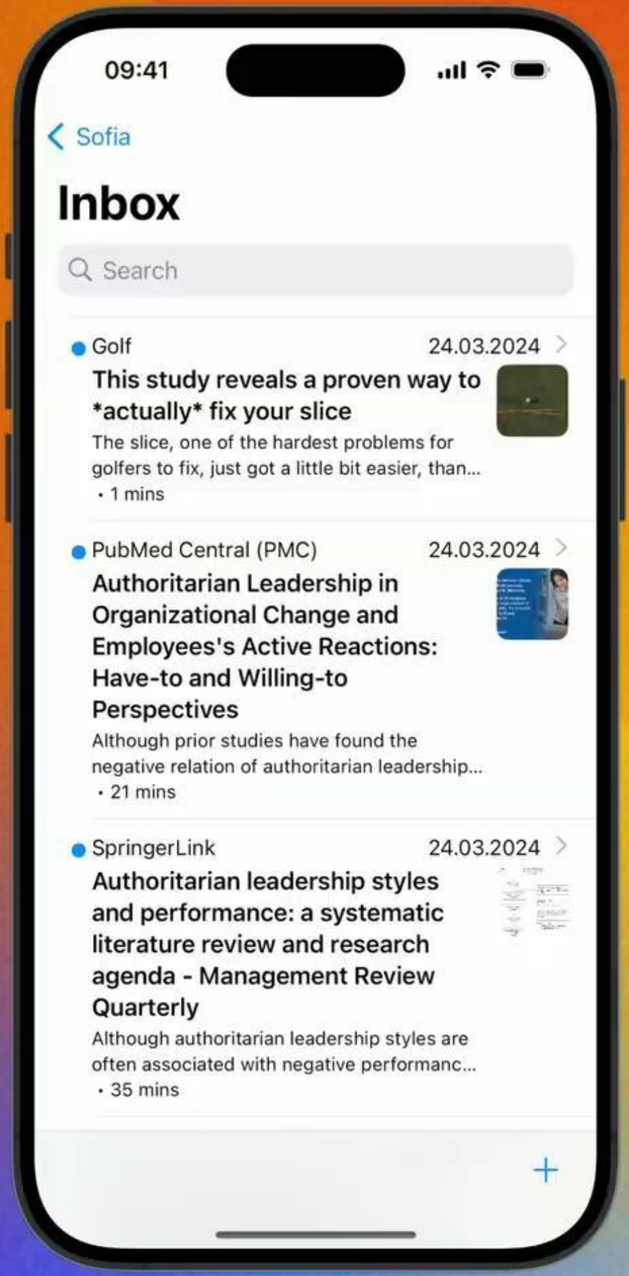
**Loja** $3

Ecuador Caturra 3

A fairly acidic coffee with a medium body and a predictable flavor typical of South American coffees.

## Swag Shop

View all products


09:41
Sofia
Inbox
Search
Golf
24.03.2024
This study reveals a proven way to *actually* fix your slice
The slice, one of the hardest problems for golfers to fix, just got a little bit easier, than...
• 1 mins
PubMed Central (PMC)
24.03.2024
Authoritarian Leadership in Organizational Change and Employees's Active Reactions: Have-to and Willing-to Perspectives
Although prior studies have found the negative relation of authoritarian leadership...
• 21 mins
SpringerLink
24.03.2024
Authoritarian leadership styles and performance: a systematic literature review and research agenda - Management Review Quarterly
Although authoritarian leadership styles are often associated with negative performanc...
• 35 mins

# Secure

Decompiled and read key

API Key:
SecretKey

Your Backend

Kara's Coffee
Not so real coffee and swag

Search...

Concierge

Shop My Account Chat

Please note that Kara's Coffee is a demo application, and some functionality is restricted to limit processing of personal data.

# Become your own Barista.

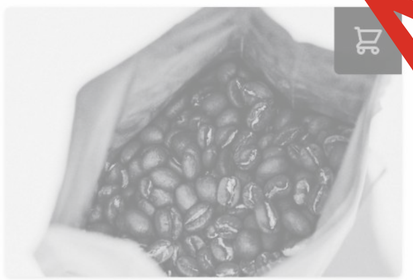
Subscribe today to gain exclusive access to blogs, videos & recipes so you can become your own professional barista.

Subscribe Now

No Inventory

## Coffee Shop

View all products



**Chipinga** $2

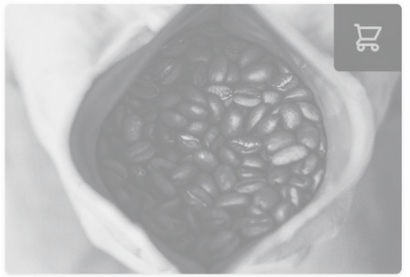
Zimbabwe Caltimor 5

is a medium-bodied with a

**Kahawa** $4

Kenya Arabica 9

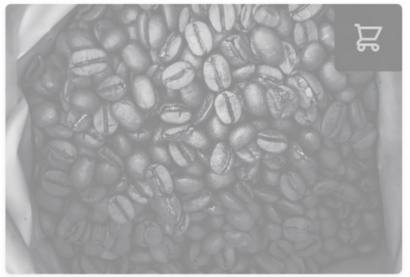
Kenyan coffee beans have distinctly bright



**Lizarb** $5

Brazil Novo 7

Lizarb Brazilian coffee has a relatively low



**Loja** $3

Ecuador Caturra 3

A fairly acidic coffee with a medium body

# Firebase App Check



Proprietary

Your app

1. Attestation Request

2. Attestation Assessment

3. Exchange assessment for a token

Attestation Provider

Play Integrity

reCAPTCHA Enterprise

Device Check App Attest

Custom Attestation

Firebase App Check

# Try it out

firebase.google.com/codelabs/appcheck-web

# Ready to build what's next?

Tap into **special offers** designed to help you **implement what you learned** at Google Cloud Next.

**Scan the code** to receive personalized guidance from one of our experts.

Or visit **g.co/next/24offers**

Proprietary

# Thank you

Proprietary