



Social Media Apps Programming

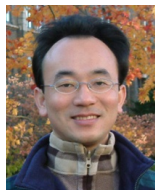
Google App Engine and Google Maps API

1021SMAP10

TLMXM1A (8687) (M2143) (Fall 2013)

(MIS MBA) (2 Credits, Elective) [Full English Course]

Thu 9,10 (16:10-18:00) V201



Min-Yuh Day, Ph.D.

Assistant Professor

Department of Information Management

Tamkang University

<http://mail.tku.edu.tw/myday>



Course Schedule (1/3)

- | Week | Date | Subject/Topics |
|------|------------|---|
| • 1 | 2013/09/19 | Mid-Autumn Festival (Day off) |
| • 2 | 2013/09/26 | Course Orientation and Introduction to Social Media and Mobile Apps Programming |
| • 3 | 2013/10/03 | Introduction to Android / iOS Apps Programming |
| • 4 | 2013/10/10 | Double Tenth Day (Day off) |
| • 5 | 2013/10/17 | Developing Android Native Apps with Java (Eclipse) (MIT App Inventor) |
| • 6 | 2013/10/24 | Developing iPhone / iPad Native Apps with Objective-C (Xcode) |

Course Schedule (2/3)

Week Date Subject/Topics

- 7 2013/10/31 Mobile Apps using HTML5/CSS3/JavaScript
- 8 2013/11/07 jQuery Mobile
- 9 2013/11/14 Create Hybrid Apps with PhoneGap
- 10 2013/11/21 Midterm Exam Week (Midterm Project Report)
- 11 2013/11/28 jQuery Mobile/Phonegap
- 12 2013/12/05 Invited Talk:
Social, Mobile and Business Model in PIXNET
[Invited Speaker: Dr. Rick Cheng-Yu Lu]

Course Schedule (3/3)

Week	Date	Subject/Topics
• 13	2013/12/12	Case Study on Social Media Apps Programming and Marketing in Google Play and App Store
• 14	2013/12/19	Google App Engine and Google Map API
• 15	2013/12/26	Facebook API (Facebook JavaScript SDK) (Integrate Facebook with iOS/Android Apps)
• 16	2014/01/02	Twitter API
• 17	2014/01/09	Final Project Presentation
• 18	2014/01/16	Final Exam Week (Final Project Report)

Outline


- **Google App Engine**
 - Google Cloud Platform
 - Google Cloud Datastore
- **Google Maps API**

Google Cloud Platform

The image shows a browser window displaying the Google Cloud Platform homepage. The browser's address bar shows the URL <https://cloud.google.com>. The page features the Google Cloud Platform logo, navigation links for 'Why Google', 'Products', 'Solutions', 'Customers', 'Developers', 'Support', and 'Partners', and buttons for 'Contact sales' and 'Try it now'. A search bar is also present. The main content area has a background image of server racks and the heading 'Tools for modern applications'. Below this, there is a 'Get Started' button and a section titled 'Google Compute Engine now generally available' with a 'Learn More' link. To the right of this section is a graphic of blue hexagons containing various icons like a server rack, a grid, a chip, 'SQL', and a magnifying glass.

Home — Google Cloud Plat x

← → ↻ <https://cloud.google.com> ☆ ☰

 Google Cloud Platform

[Go to my console](#) | [Sign out](#)


[Why Google](#) [Products](#) [Solutions](#) [Customers](#) [Developers](#) [Support](#) [Partners](#) [Contact sales](#) or

Tools for modern applications

Google Cloud Platform enables developers to build, test and deploy applications on Google's highly-scalable and reliable infrastructure. Choose from computing, storage and application services for your web, mobile and backend solutions.

Google Compute Engine now generally available

Google Compute Engine is now generally available with a 99.95% monthly SLA and 24x7 support. We've eliminated maintenance windows with live migration, cut prices by 10%, added support for Red Hat, SUSE, FreeBSD, or any Linux variant you want, and introduced new 16-core instances.

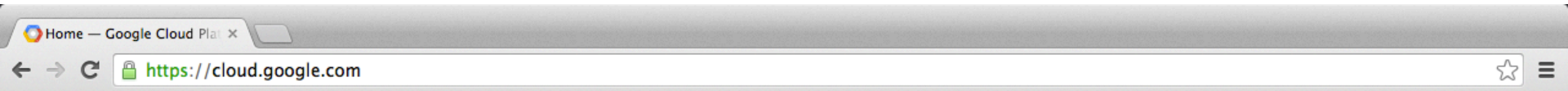
[Learn More](#)

<https://cloud.google.com/>

Google Cloud Platform

- App Engine
- Compute Engine
- Cloud Storage
- Cloud SQL
- Cloud Datastore
- BigQuery
- Prediction API
- Translate API
- Cloud Endpoints

Google Cloud Platform



Some of our customers

Google cloud platform is set of modular cloud-based services that allow you to create anything from simple websites to complex applications.



Snapchat

"App Engine enabled us to focus on developing the application. We wouldn't have gotten here without the ease of development that App Engine gave us."

- Bobby Murphy, CTO and co-Founder

[Read Snapchat's story](#)



Webfilings

"Google App Engine has the breadth and the depth to grow with you. Every 6 months, it gets better. The Google App Engine team knows what you need to make a competitive application."

- Brett Harper, Director of Product Development

[Read Webfilings' story](#)



Khan Academy

"If we didn't have Google App Engine, we'd be spending a lot more time figuring out server setup and working on routers. Our ability to focus on the actual product is the benefit of Google App Engine."

- Ben Kamens, Lead Developer

[Read Khan Academy's story](#)



Rovio

"Google App Engine allows us to launch games very quickly with teams of one or two developers per game. Because Google manages all the servers, there is little required of us in terms of maintenance."

- Stefan Hauk, lead server developer for web games

[Read Rovio's story](#)



MAG Interactive

"Our rapid growth to 5M Ruzzle players in less than six months required a highly scalable server solution."



Interactions Marketing

"We are always looking for ways to maximize return and minimize investment. BigQuery is the perfect

<https://cloud.google.com/>

Google Cloud Platform

The screenshot shows the Google Cloud Platform homepage in a browser. The browser's address bar displays "https://cloud.google.com". The page features a navigation menu with links to various services: App Engine, Compute Engine, Cloud SQL, BigQuery, Cloud Storage, Cloud Datastore, Prediction API, Translate API, and Cloud Endpoints. A search bar is visible with the text "joe@gmail.com" and a "Submit" button. A Google+ badge shows "169k" followers. The footer contains a grid of links organized into seven columns: Why Google, Products, Solutions, Customers, Developers, Support, and Partners.

Home — Google Cloud Plat x

← → ↻ <https://cloud.google.com> ☆ ☰

special offers and event information. You never know when it will come up at a dinner party. You can thank us later.

[App Engine](#) [Compute Engine](#) [Cloud SQL](#) [BigQuery](#)
[Cloud Storage](#) [Cloud Datastore](#) [Prediction API](#)
[Translate API](#) [Cloud Endpoints](#)

g+1 169k


Why Google	Products	Solutions	Customers	Developers	Support	Partners
Infrastructure	App Engine	Mobile		Documentation	Support Help Center	Find a Technology Partner
Product	Compute Engine	Gaming		Resources	Billing Help Center	Find a Service Partner
Services	Cloud Storage	Hadoop			Google Enterprise Support Center	
Scalability	Cloud SQL					
Performance	Cloud Datastore					
Support	BigQuery					
	Prediction API					
	Translate API					
	Cloud Endpoints					
	Pricing Calculator					

<https://cloud.google.com/>

Google Cloud Products

Products — Google Cloud | x

← → ↻ <https://cloud.google.com/products/> ☆ ☰

 Google Cloud Platform


[Go to my console](#) | [Sign out](#)

Why Google **Products** Solutions Customers Developers Support Partners [Contact sales](#) or

Products


Run your application using the same technology and tools used at Google. Cloud Platform provides the building blocks so you can develop quickly, using the services that you need.

Compute

 **Compute Engine**

Compute Engine is Google's Infrastructure-as-a-Service (IaaS). Run large-scale workloads on virtual machines hosted on Google's infrastructure. Choose a VM that fits your needs and gain the performance and consistency of Google's worldwide fiber network. With per-minute billing, you pay only for what you use.

[Features](#) [Case Studies](#)
[Pricing](#) [Documentation](#)

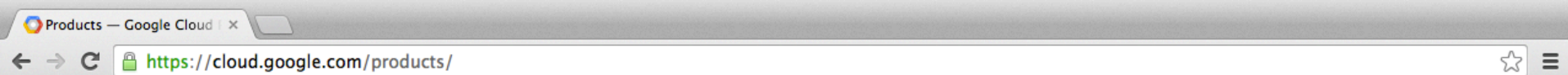
 **App Engine**

App Engine is Google's Platform-as-a-Service (PaaS). Develop your application easily using built-in services that make you more productive. Deploy to a fully-managed platform and let Google carry the pager. Just download the SDK and start building immediately for free with no credit card required.

[Features](#) [Case Studies](#)
[Pricing](#) [Documentation](#)

<https://cloud.google.com/products/>

Google Cloud Products



Compute



Compute Engine

Compute Engine is Google's Infrastructure-as-a-Service (IaaS). Run large-scale workloads on virtual machines hosted on Google's infrastructure. Choose a VM that fits your needs and gain the performance and consistency of Google's worldwide fiber network. With per-minute billing, you pay only for what you use.

[Features](#)

[Case Studies](#)

[Pricing](#)

[Documentation](#)



App Engine

App Engine is Google's Platform-as-a-Service (PaaS). Develop your application easily using built-in services that make you more productive. Deploy to a fully-managed platform and let Google carry the pager. Just download the SDK and start building immediately for free with no credit card required.

[Features](#)

[Case Studies](#)

[Pricing](#)

[Documentation](#)

Storage



Cloud SQL

Store and manage data using a fully-managed, relational MySQL database. Google handles replication, patch management and database management to ensure availability and performance.

[Features](#)

[Case Studies](#)

[Pricing](#)

[Documentation](#)



Cloud Storage

Use a durable and highly available object storage service. With global edge-caching, your users have fast access to your app's data from any location. Google manages versioning, guarantees a strong SLA and provides a simple API that allows you to manage your data programmatically.

[Features](#)

[Case Studies](#)

[Pricing](#)

[Documentation](#)



Cloud Datastore

Cloud Datastore provides a managed, NoSQL, schemaless database for storing non-relational data. Cloud Datastore automatically scales as you need it and supports transactions as well as robust, SQL-like queries.

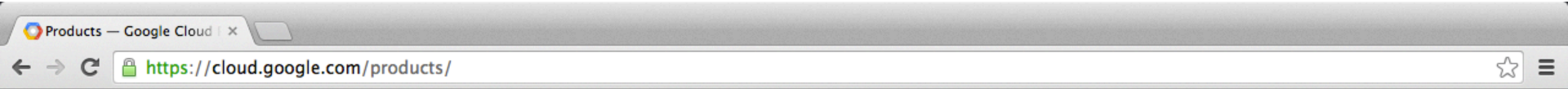
[Features](#)

[Pricing](#)

[Documentation](#)

<https://cloud.google.com/products/>

Google Cloud Products



Big Data



BigQuery

Analyze Big Data in the cloud with BigQuery. Run fast, SQL-like queries against multi-terabyte datasets in seconds. Scalable and easy to use, BigQuery gives you real-time insights about your data.

[Features](#)

[Case Studies](#)

[Pricing](#)

[Documentation](#)

Services



Cloud Endpoints

Create RESTful services from your code and make them accessible to iOS, Android and Javascript clients. Automatically generate client libraries to make wiring up the frontend easy. Built-in critical infrastructure includes denial-of-service protection, OAuth 2.0 support and client key management.

[Features](#)

[Case Studies](#)

[Pricing](#)

[Documentation](#)



Translate API

Create multilingual apps and translate text into other languages programmatically. Thousands of language pairs are available.

[Features](#)

[Pricing](#)

[Documentation](#)



Prediction API

Use Google's machine learning algorithms to analyze data and predict future outcomes using a familiar RESTful interface.

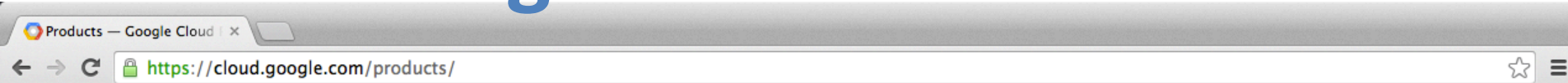
[Features](#)

[Pricing](#)

[Documentation](#)

<https://cloud.google.com/products/>

Google Cloud Products



Cloud Endpoints

Create RESTful services from your code and make them accessible to iOS, Android and Javascript clients. Automatically generate client libraries to make wiring up the frontend easy. Built-in critical infrastructure includes denial-of-service protection, OAuth 2.0 support and client key management.

[Features](#)

[Pricing](#)

[Case Studies](#)

[Documentation](#)



Translate API

Create multilingual apps and translate text into other languages programmatically. Thousands of language pairs are available.

[Features](#)

[Documentation](#)

[Pricing](#)



Prediction API

Use Google's machine learning algorithms to analyze data and predict future outcomes using a familiar RESTful interface.

[Features](#)

[Documentation](#)

[Pricing](#)

Developer Tools

Google Plugin for Eclipse

Provides tooling, API support and easy deployment for App Engine Java developers.

[Learn More](#) [↗](#)

Cloud Playground

Run Cloud Platform services like App Engine, Cloud Storage and Cloud SQL right from your browser so you can quickly try them out.

[Visit the Cloud Playground](#) [↗](#)

Push-to-Deploy

Use Git to automatically deploy your application to App Engine. You can launch a new version with a repository push and get access to all of Git's features, including a history of commits.

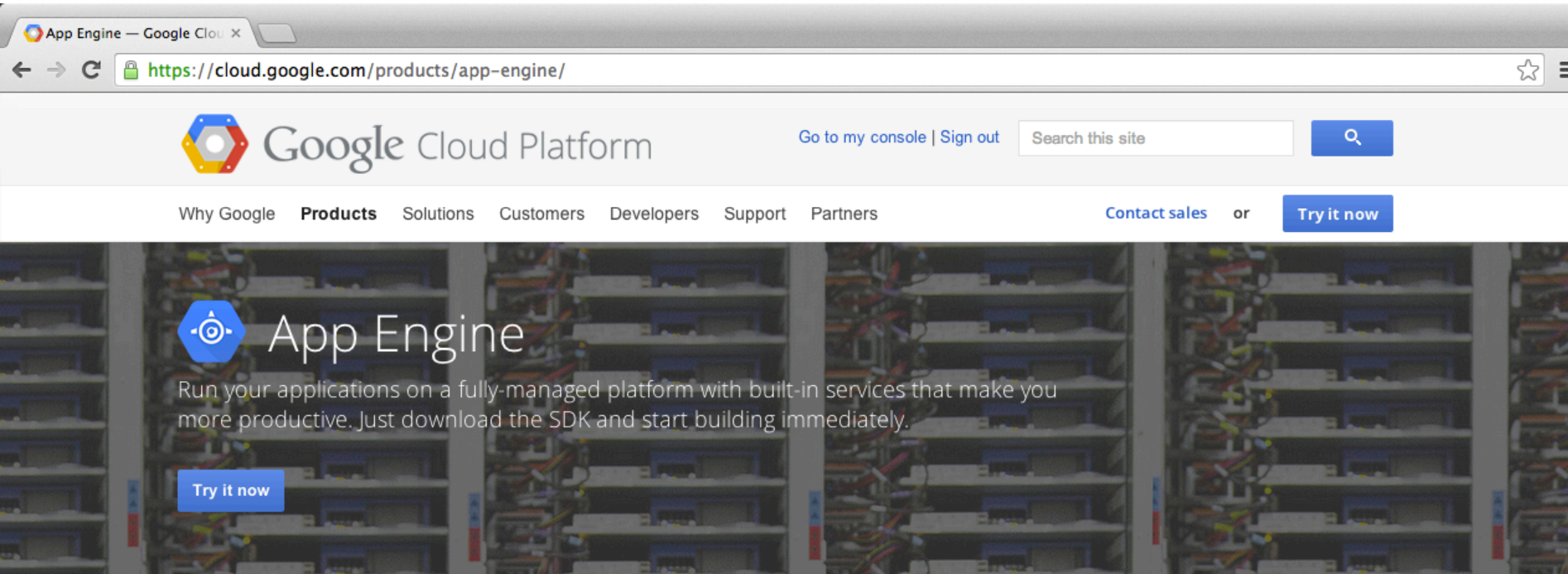
[Read about Push to deploy](#) [↗](#)

Android Studio

Add Cloud Platform as a backend to your application right from the Android Studio IDE. Google Cloud Endpoints provides an API to your web backend and updates it automatically across all of your frontend platforms.

[Download Android Studio](#) [↗](#)

Google App Engine



The screenshot shows the Google App Engine product page. At the top, the browser address bar displays the URL <https://cloud.google.com/products/app-engine/>. The page header features the Google Cloud Platform logo, navigation links for 'Go to my console | Sign out', a search bar, and a 'Try it now' button. Below the header, a navigation menu includes 'Why Google', 'Products', 'Solutions', 'Customers', 'Developers', 'Support', and 'Partners'. The main content area has a background image of server racks. On the left, the App Engine logo is displayed next to the text 'App Engine'. Below this, a paragraph reads: 'Run your applications on a fully-managed platform with built-in services that make you more productive. Just download the SDK and start building immediately.' A 'Try it now' button is positioned below the text.

Features

Popular languages and frameworks

Write applications in some of the most popular programming languages: Python, Java, PHP and Go. Use existing frameworks such as Django, Flask, Spring and webapp2. Develop locally with language-specific SDKs. Pair your applications with Compute Engine to integrate other familiar technologies such as Node.js, C++, Scala, Hadoop, MongoDB, Redis

Focus on your code

Let Google worry about database administration, server configuration, sharding and load balancing. With Traffic Splitting, you can A/B test different live versions of your app. Multitenancy support lets you compartmentalize your application data.

Multiple storage options


Choose the storage option you need: a traditional MySQL database using Cloud SQL, a schemaless NoSQL datastore, or object storage using Cloud Storage.

<https://cloud.google.com/products/app-engine/>

Google Cloud Datastore

Cloud Datastore — Google

← → ↻ <https://cloud.google.com/products/cloud-datastore/> ☆ ☰

 Google Cloud Platform

[Go to my console](#) | [Sign out](#)

[Why Google](#) **Products** [Solutions](#) [Customers](#) [Developers](#) [Support](#) [Partners](#) [Contact sales](#) or

Cloud Datastore

Use a managed, NoSQL, schemaless database for storing non-relational data. Cloud Datastore automatically scales as you need it and supports transactions as well as robust, SQL-like queries.

Features

Schemaless access, with SQL-like querying

No need to worry about data models and migration. Cloud Datastore is a schemaless storage service that allows you to be agile by removing the need to think about the underlying structure of the data. Cloud Datastore provides a [robust query engine](#) that allows you to search for data across multiple properties and sort as needed.

Managed database

Cloud Datastore is fully managed. Google automatically handles sharding and replication in order to provide you with a highly available and consistent database.

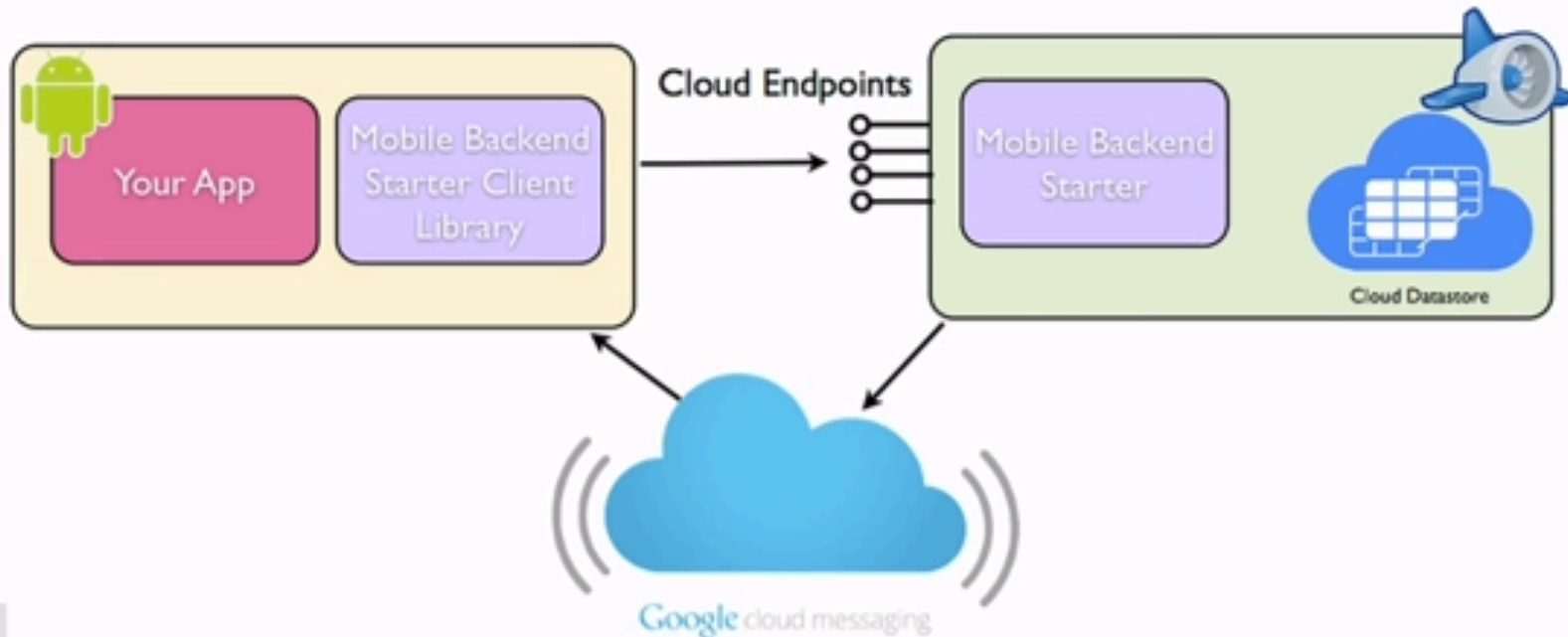
Autoscale with your users

Cloud Datastore automatically scales depending on your needs. This allows you to focus on building your application and not on worrying about provisioning and load anticipation.

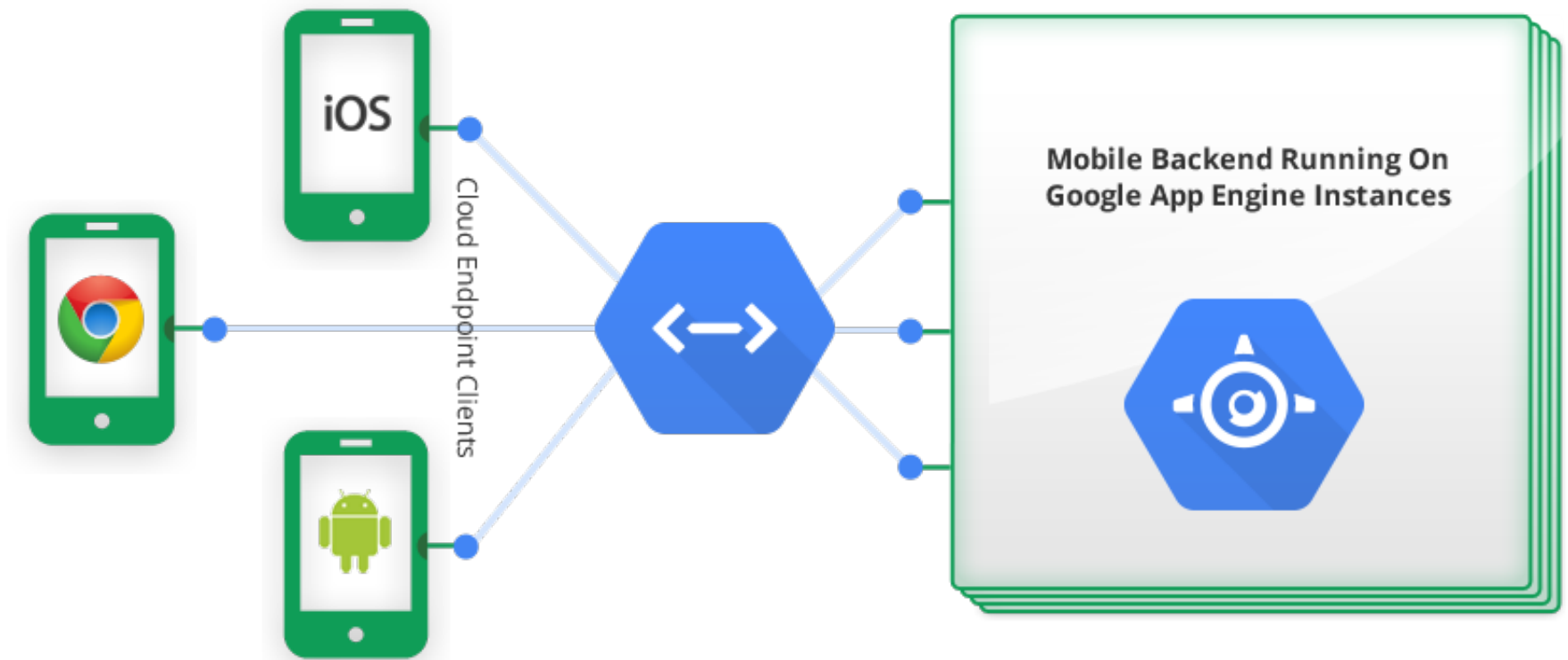
<https://cloud.google.com/products/cloud-datastore/>

Mobile App, Google App Engine, Cloud Datasotre

Mobile Backend Starter



Google Cloud Endpoints



Mobile, Web and Cloud

Google Cloud by Ivan Hawkes



Mobile, Web, and Cloud

The Triple Crown of Modern Applications


Ido Green - Developer Advocate, Google

Danny Hermes - Developer Programs Engineer, Google

Google I/O 2013 - Mobile, Web and Cloud - The Triple Crown of M...

http://www.youtube.com/watch?v=6_o09Gwf_do

Build your mobile app with Google Cloud Platform



The diagram illustrates the Cloud Endpoints architecture. On the left, two mobile devices are shown: an iPhone labeled 'iOS' and an Android phone. Lines from these devices converge on a central cloud icon labeled 'Cloud Endpoints'. From this central cloud, lines extend to a box on the right labeled 'Mobile backend running on App Engine instances', which contains an icon of a blue jet flying over a globe.

0:22 / 5:11

Build your mobile app with Google Cloud Platform

GoogleDevelopers · 2,566 videos

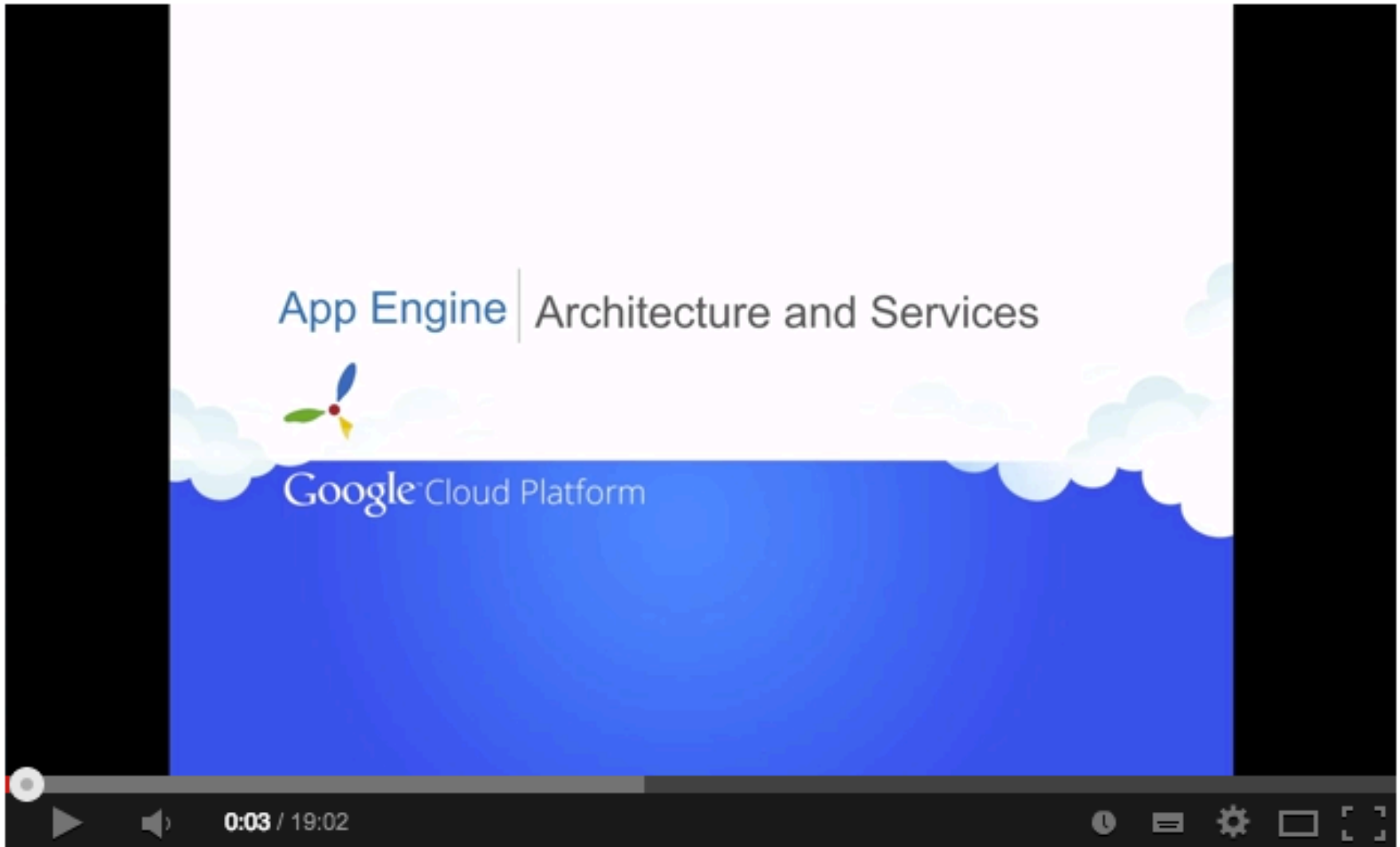
10,744

Subscribe 432,318

163 15

<http://www.youtube.com/watch?v=ZZNb1NOPTp8>

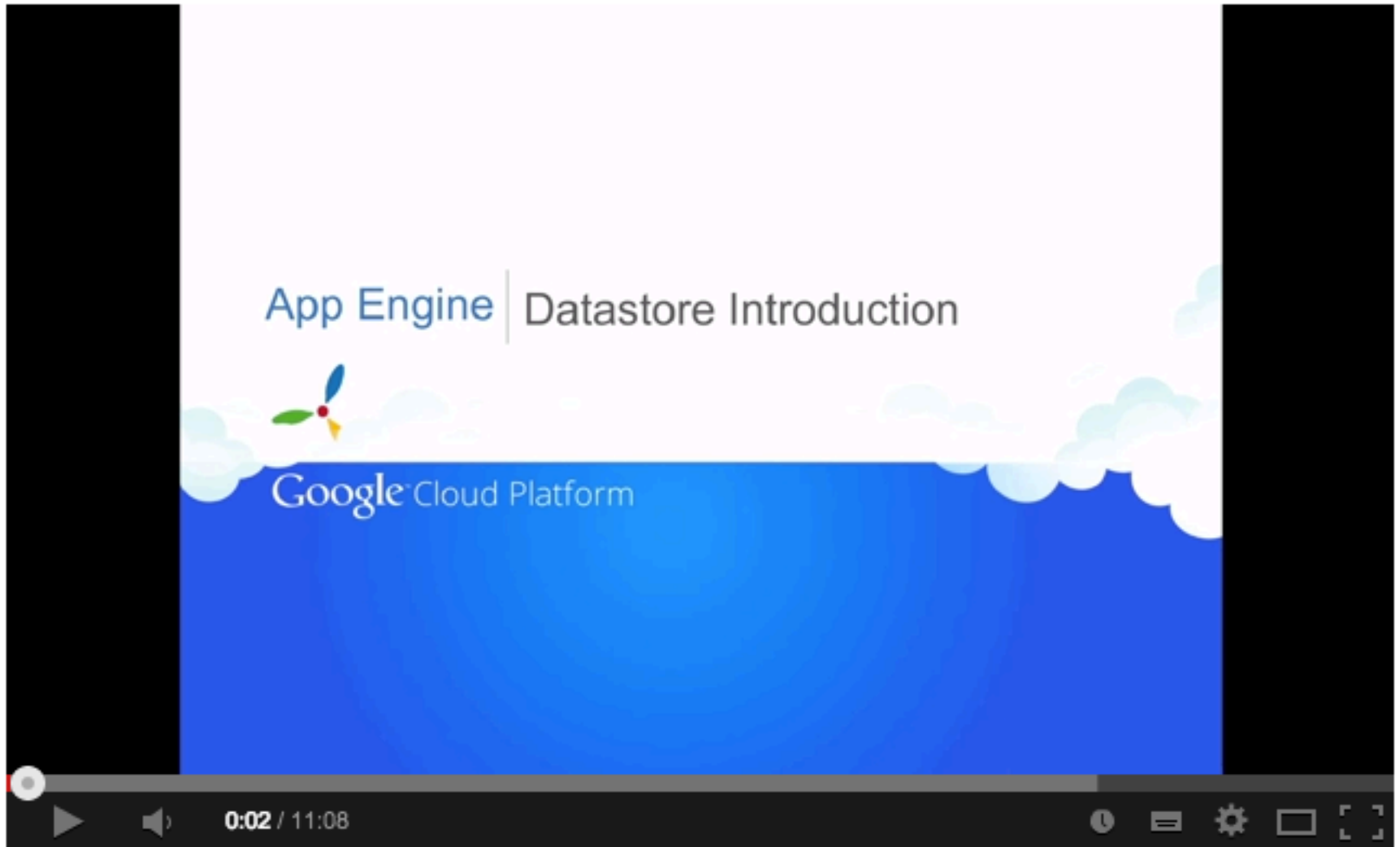
App Engine Architecture and Services



App Engine Architecture and Services

<http://www.youtube.com/watch?v=QJp6hmASstQ>

Datastore Introduction

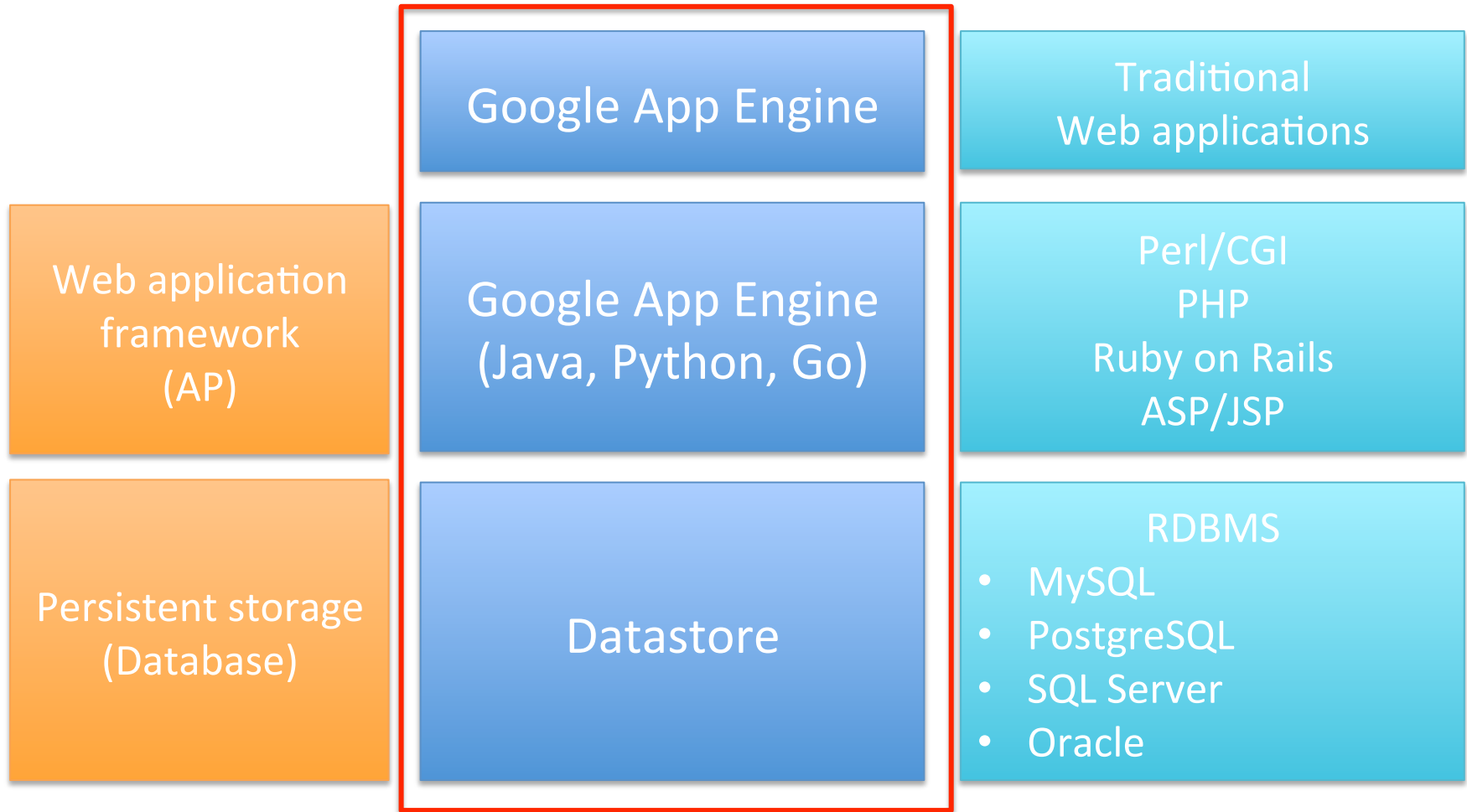


Datastore Introduction

Source: Datastore Introduction,
<http://www.youtube.com/watch?v=fQazhzcC-rg>

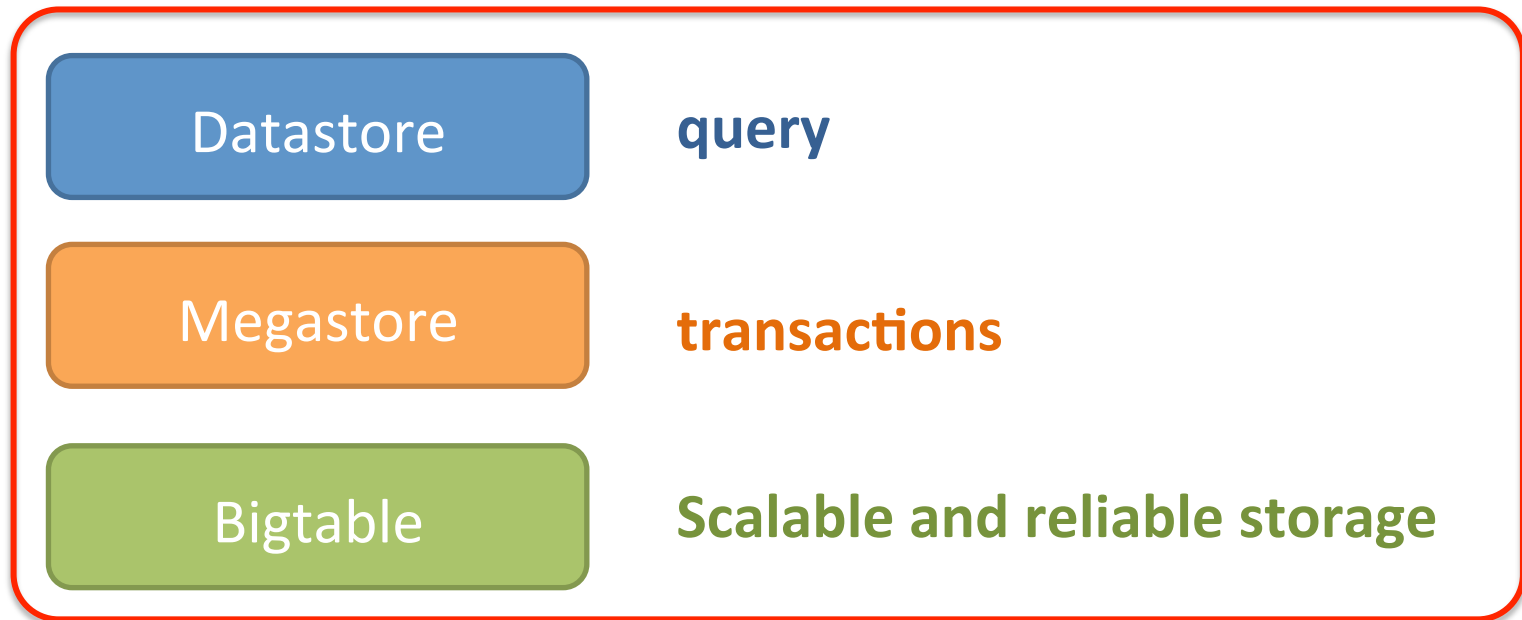
Google Cloud Datastore

Datastore is a database (persistent storage) for **App Engine**



Datastore Internals

- Based on Bigtable
 - high scalability
 - High availability
 - synchronous writes on multiple datacenters



What is Bigtable?

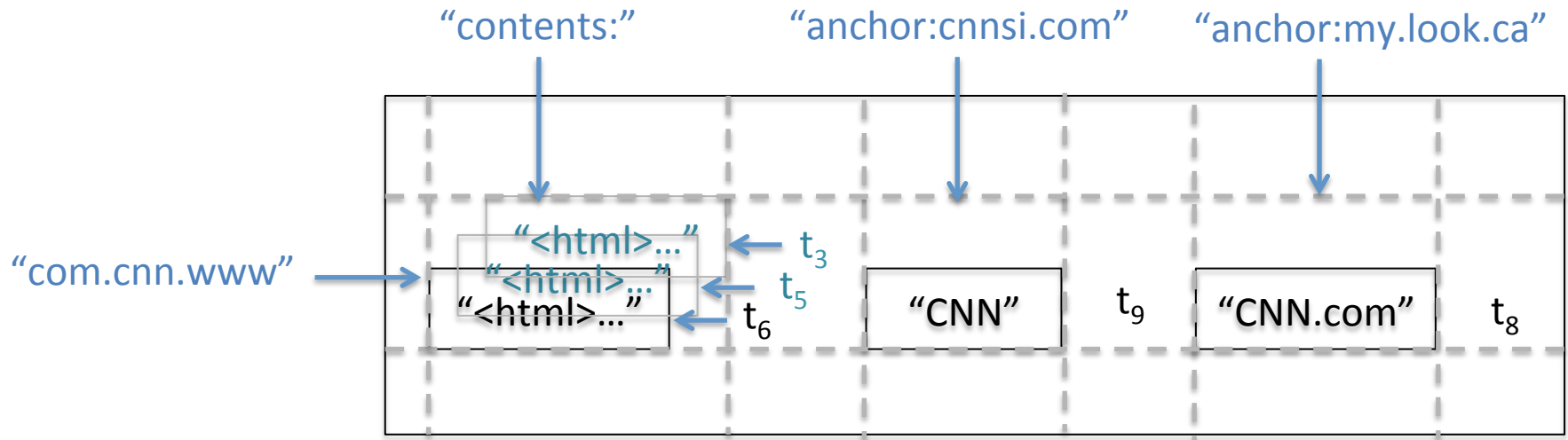
- Scalable, distributed, highly-available and structured storage
 - Bigtable is not database by itself (it doesn't support query)
- Google usage
 - In production since April 2005
 - Web Search, YouTube, Earth, Analytics

Bigtable

Scalable and reliable storage

Bigtable Data Model

- A row has a Key and Columns
- Sorted by Key
 - In lexical order
 - Enables range query by application

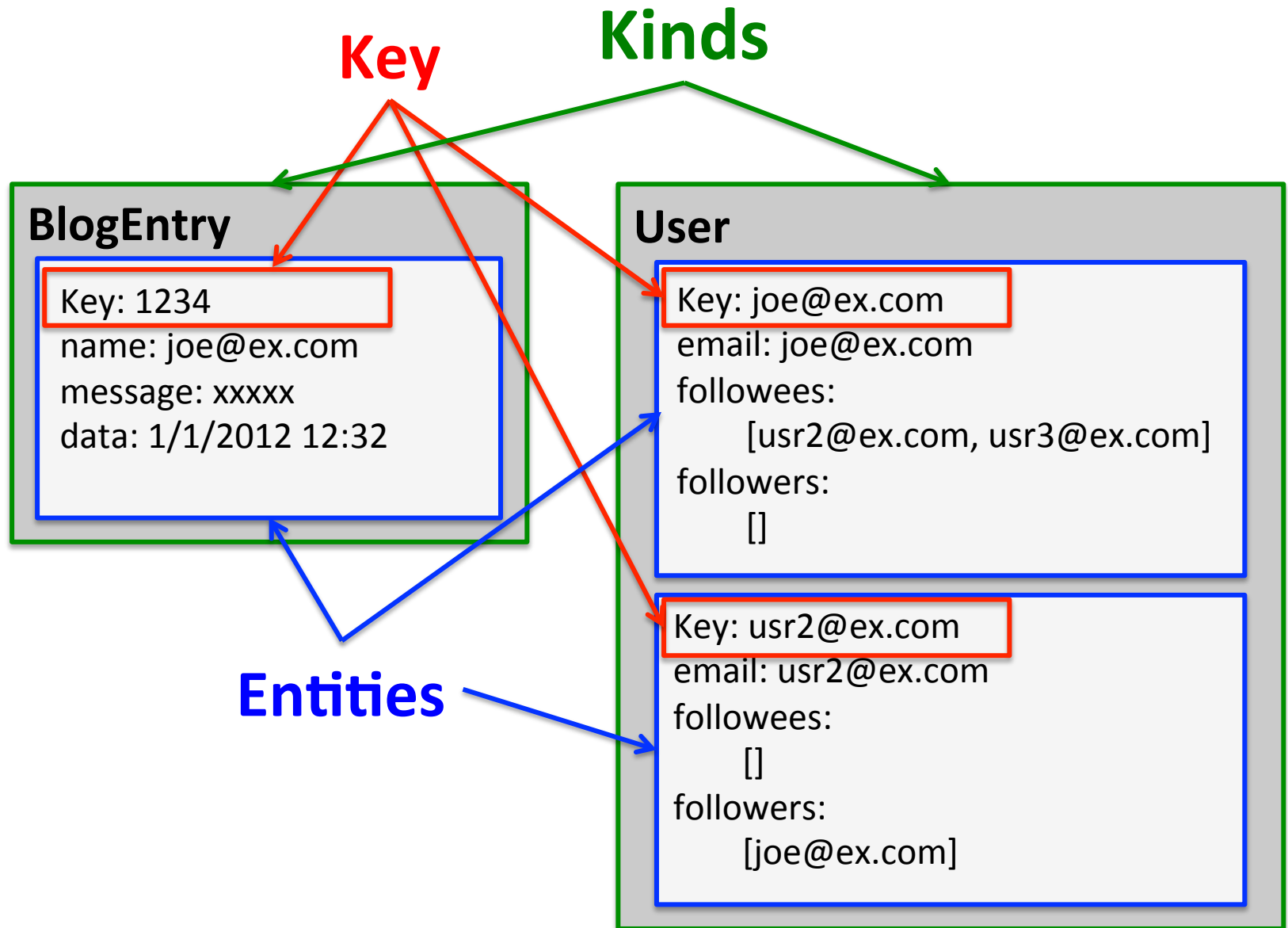


Google Datastore Basic Operation

Different terms for corresponding concepts

	Google Datastore	Relational Database Management System (RDBMS)
Category of object	Kind	Table
One entry/object	Entity	Row
Unique identifier of data entry	Key	Primary Key (PK)
Individual data	Property	Field

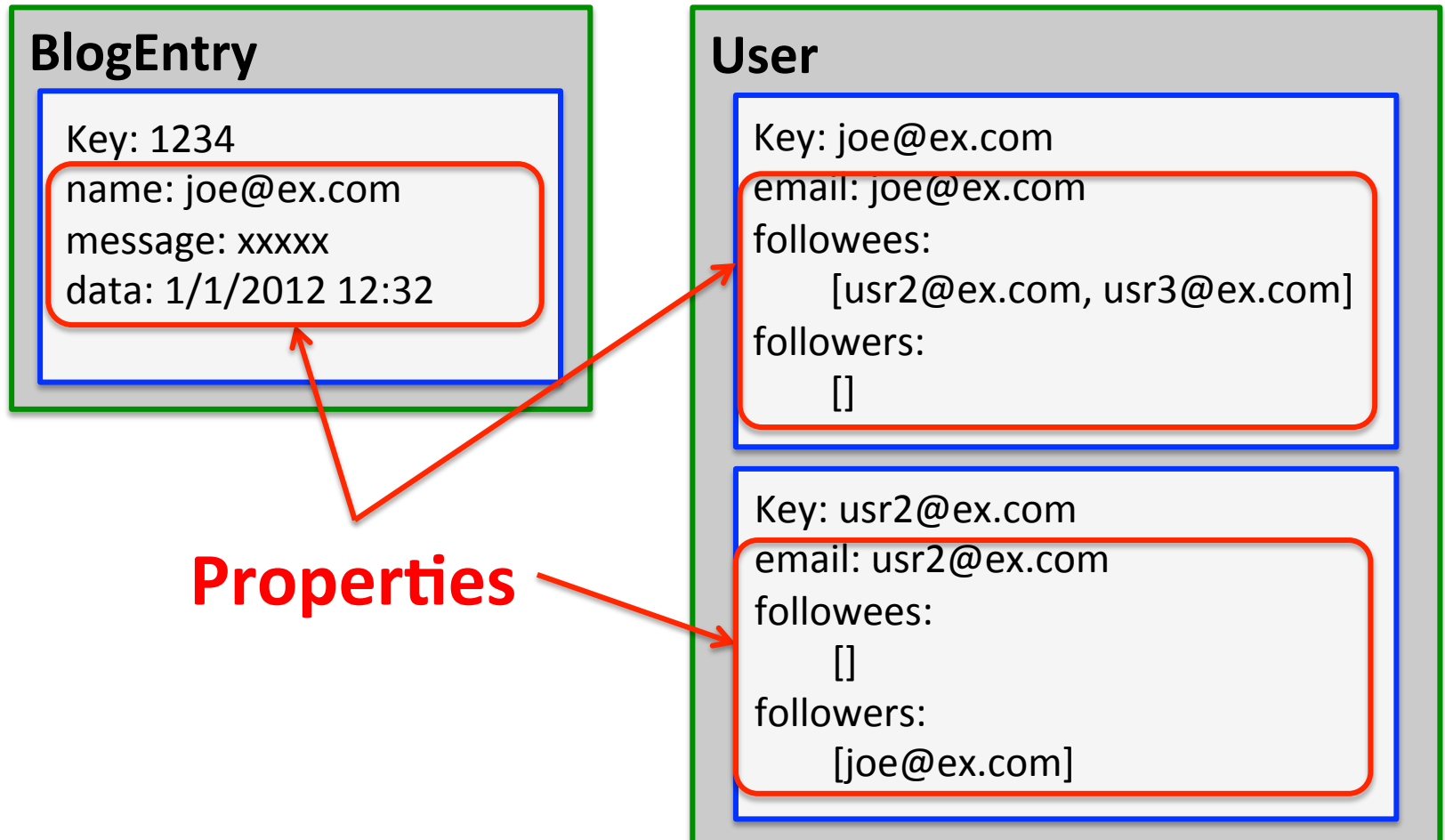
Kind, Entity and Key



Properties and Data Types

Each entity has one or more **named properties**

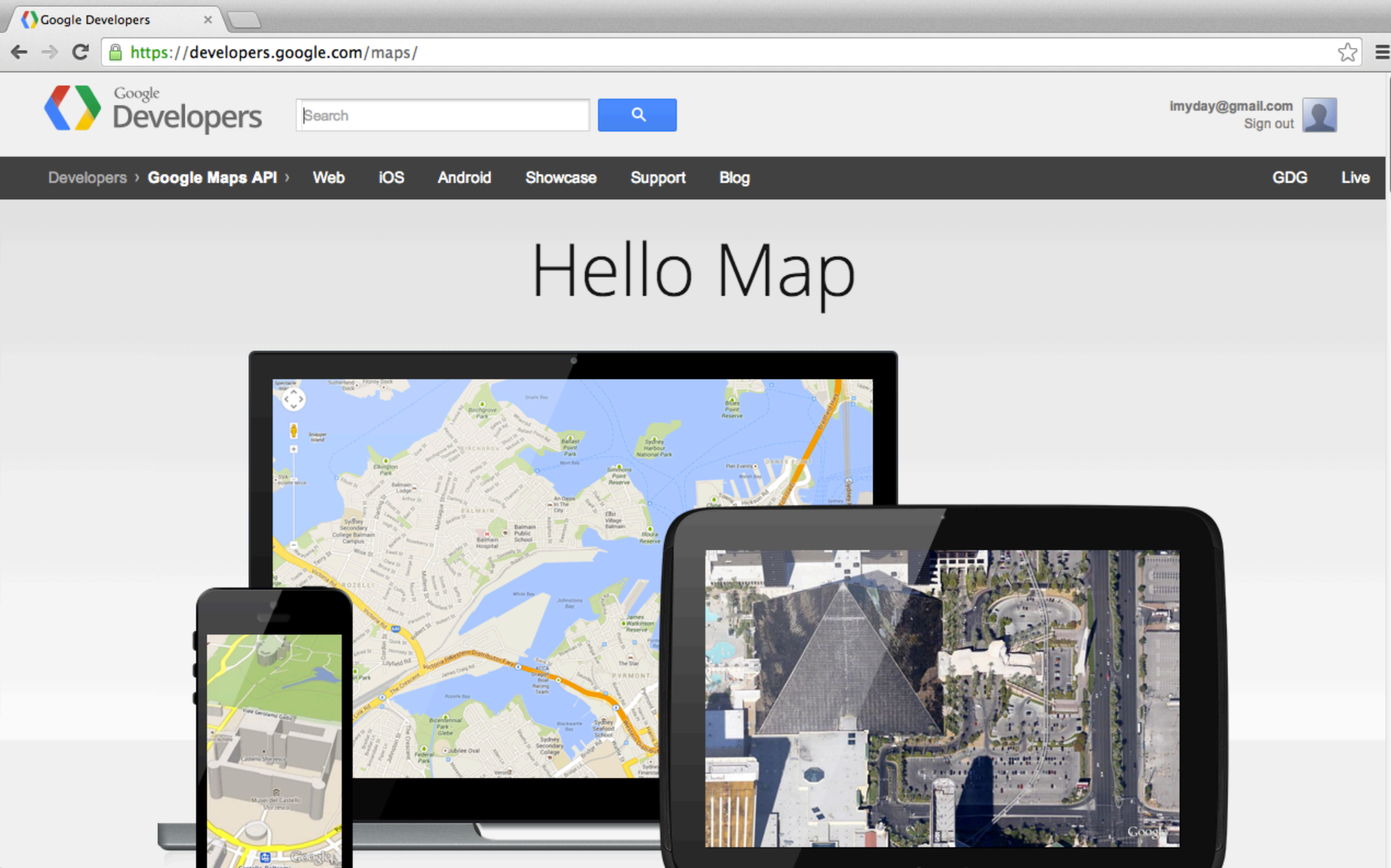
- Variety of datatypes (int, float, boolean, String, Date,...)
- Can be multi-valued



Creating an Entity with Java Low-level API

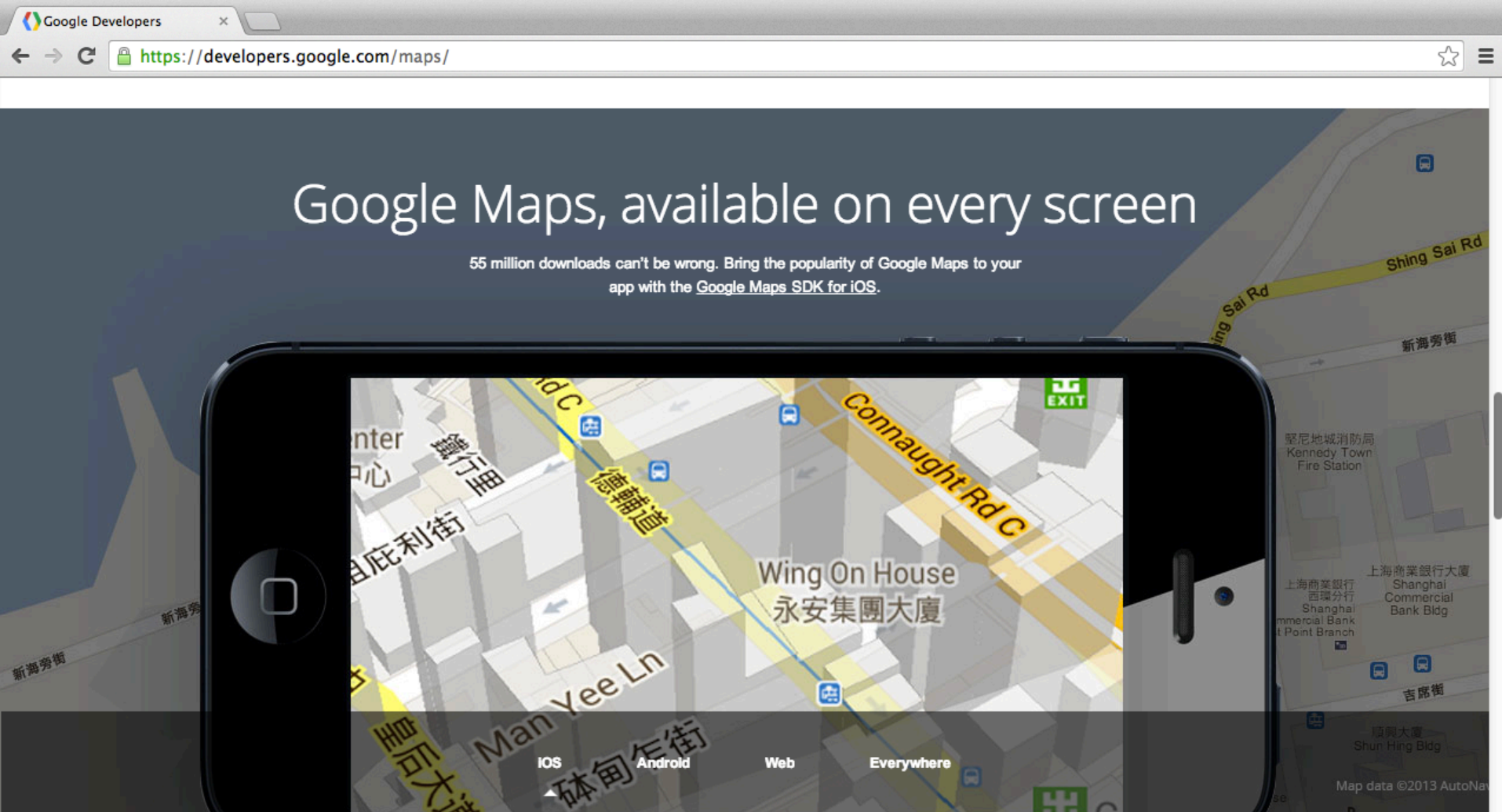
```
DatastoreService datastore =  
DatastoreServiceFactory.getDatastoreService();  
  
Entity employee = new Entity("Employee");  
employee.setProperty("name", "Antonio Saliery");  
employee.setProperty("hireDate", new Date());  
employee.setProperty("attendedHrTraining", true);  
datastore.put(employee);
```

Google Maps API



<https://developers.google.com/maps/>

Google Maps API



The image shows a browser window with the URL <https://developers.google.com/maps/>. The main heading reads "Google Maps, available on every screen". Below this, a sub-heading states: "55 million downloads can't be wrong. Bring the popularity of Google Maps to your app with the [Google Maps SDK for iOS](#)." The central focus is a smartphone displaying a 3D Google Maps view of a city street. The map shows "Wing On House" (永安集團大廈) and "Connaught Rd C". Other visible streets include "Man Yee Ln" and "Shing Sai Rd". The map interface includes a compass, a location pin, and a search bar. At the bottom of the phone screen, there are icons for "iOS", "Android", "Web", and "Everywhere". The background of the slide is a larger, faded version of the same map.

<https://developers.google.com/maps/>

Google Maps JavaScript API

The screenshot shows the Google Developers website for the Google Maps JavaScript API v3 documentation. The browser address bar shows the URL <https://developers.google.com/maps/documentation/javascript/tutorial>. The page header includes the Google Developers logo, a search bar with the text "Google Maps JavaScript API v3 X", and a user profile for "imyday@gmail.com" with a "Sign out" link. The navigation menu includes "Developers", "Google Maps API", "Web", "Get Started", "Documentation", "Reference", "Showcase", "Support", "Blog", "GDG", and "Live". The main content area is titled "Google Maps JavaScript API v3" and includes a "g+1" button with a count of 257 and a "Feedback on this document" link. The left sidebar lists the "Developer's Guide" with categories like "Getting Started", "Usage Limits and Billing", "Concepts", "Events", "Controls", "Styles", "Drawing on the Map", "Layers", "Map Types", "Services", "Libraries", "API Reference", "Code Samples", "More Resources", "Blog", "Support", and "FAQ". The main content area is titled "Getting Started" and lists several sub-topics: "Audience", "Obtaining an API Key", "Hello, World", "Declaring Your Application as HTML5", "Loading the Google Maps API", "Map DOM Elements", "Map Options", "The Map Object", "Loading the Map", and "Troubleshooting". Below the "Getting Started" section, the "Audience" section is visible, followed by "Obtaining an API Key".

Getting Started - Google Maps API v3 X

Google Developers

Google Maps JavaScript API v3 X Search

imyday@gmail.com Sign out

Developers > Google Maps API > Web > Get Started Documentation Reference Showcase Support Blog GDG Live

Google Maps JavaScript API v3 g+1 257 Feedback on this document

Developer's Guide

- Getting Started
- Usage Limits and Billing
- Concepts
- Events
- Controls
- Styles
- ▶ Drawing on the Map
- Layers
- Map Types
- ▶ Services
- ▶ Libraries
- ▶ API Reference
- ▶ Code Samples
- ▶ More Resources
- Blog
- Support
- FAQ

Getting Started

- [Audience](#)
- [Obtaining an API Key](#)
- [Hello, World](#)
- [Declaring Your Application as HTML5](#)
- [Loading the Google Maps API](#)
- [Map DOM Elements](#)
- [Map Options](#)
- [The Map Object](#)
- [Loading the Map](#)
- [Troubleshooting](#)

Audience

This documentation is designed for people familiar with [JavaScript](#) programming and object-oriented programming concepts. You should also be familiar with [Google Maps](#) from a user's point of view. There are many [JavaScript tutorials](#) available on the Web.

This conceptual documentation is designed to let you quickly start exploring and developing applications with the Google Maps API. We also publish the [Google Maps API Reference](#).

Obtaining an API Key

All Maps API applications* should load the Maps API using an API key. Using an API key enables you to monitor your application's Maps API usage, and ensures that Google can contact you about your application if necessary. If your application's Maps API usage exceeds the [Usage Limits](#), you must load the Maps API using an API key.

Obtaining an Google Maps API Key

Getting Started - Google M x

← → ↻ <https://developers.google.com/maps/documentation/javascript/tutorial> ☆ ☰

Blog

Support

FAQ

Google Maps API for Business

▶ Maps API Web Services

Google Places API

Static Maps API

Street View Image API

Earth API

▶ Deprecated APIs

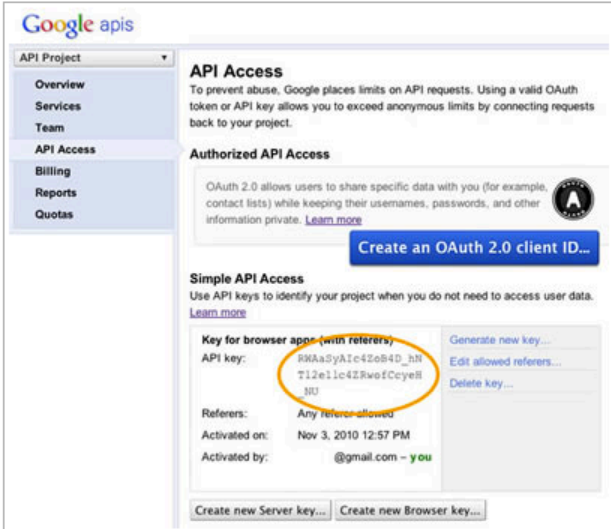
Obtaining an API Key

All Maps API applications* should load the Maps API using an API key. Using an API key enables you to monitor your application's Maps API usage, and ensures that Google can contact you about your application if necessary. If your application's Maps API usage exceeds the [Usage Limits](#), you must load the Maps API using an API key in order to purchase additional quota.

* **Google Maps API for Business** developers must *not* include a key in their requests. Please refer to [Loading the Google Maps JavaScript API](#) for Business-specific instructions.

To create your API key:

1. Visit the APIs Console at <https://code.google.com/apis/console> and log in with your Google Account.
2. Click the **Services** link from the left-hand menu.
3. Activate the **Google Maps API v3** service.
4. Click the **API Access** link from the left-hand menu. Your API key is available from the **API Access** page, in the **Simple API Access** section. Maps API applications use the **Key for browser apps**.



Google apis

API Project

Overview

Services

Team

API Access

Billing

Reports

Quotas

API Access

To prevent abuse, Google places limits on API requests. Using a valid OAuth token or API key allows you to exceed anonymous limits by connecting requests back to your project.

Authorized API Access

OAuth 2.0 allows users to share specific data with you (for example, contact lists) while keeping their usernames, passwords, and other information private. [Learn more](#)

Create an OAuth 2.0 client ID...

Simple API Access

Use API keys to identify your project when you do not need to access user data. [Learn more](#)

Key for browser apps (with referers)

API key: RRAaSYA1c4Zo84D_hhT12e11c4Z8wofCcyeRl3U

Referers: Any Referer allowed

Activated on: Nov 3, 2010 12:57 PM

Activated by: @gmail.com - you

Generate new key...

Edit allowed referers...

Delete key...

Create new Server key... Create new Browser key...

**Demo:
Integrate
Google Maps JavaScript API
with
jQuery Mobile**

Start using the Google APIs console

Google APIs Console


https://code.google.com/apis/console/?noredirect&pli=1

Search Images Maps Play YouTube News Gmail Drive More ▼

imyday@gmail.com ▼ | Settings ▼ | Help | Sign out

Google apis

Start using the Google APIs console
to manage your API usage



Creating an **APIs project** will let you:

- Use Google APIs **beyond anonymous limits**.
- **Monitor** API usage and **control** API access.
- **Share** API management with a team.

Create project...

[Code Home](#) - [Privacy Policy](#)

<https://code.google.com/apis/console>

<https://code.google.com/apis/console/?noredirect&pli=1>

Send Feedback

Google APIs Console

Google APIs Console

https://code.google.com/apis/console/?noredirect&pli=1#project:841318404499:services

Search Images Maps Play YouTube News Gmail Drive More

imyday@gmail.com | Settings | Help | Sign out

Google apis

We are improving the experience. Try the new [Cloud Console](#).

API Project

All (71) Active (0) Inactive (71) Google Cloud Platform

All services
Select services for the project.





































Service	Status	Notes
Ad Exchange Buyer API	<input type="checkbox"/> OFF	Courtesy limit: 1,000 requests/day
Ad Exchange Seller API	<input type="checkbox"/> OFF	Courtesy limit: 10,000 requests/day
Admin SDK	<input type="checkbox"/> OFF	
AdSense Host API	Request access...	Courtesy limit: 100,000 requests/day
AdSense Management API	<input type="checkbox"/> OFF	Courtesy limit: 10,000 requests/day
Analytics API	<input type="checkbox"/> OFF	Courtesy limit: 50,000 requests/day
Audit API	<input type="checkbox"/> OFF	Courtesy limit: 10,000 requests/day
BigQuery API	<input type="checkbox"/> OFF	Courtesy limit: 10,000 requests/day • Pricing
Blogger API v3	Request access...	Courtesy limit: 10,000 requests/day
Books API	<input type="checkbox"/> OFF	Courtesy limit: 1,000 requests/day
CalDAV API	<input type="checkbox"/> OFF	Courtesy limit: 1,000,000 requests/day
Calendar API	<input type="checkbox"/> OFF	Courtesy limit: 100,000 requests/day
Chrome Web Store API	<input type="checkbox"/> OFF	

Send Feedback

Google APIs Console

Google APIs Console

https://code.google.com/apis/console/?noredirect&pli=1#project:841318404499:services

 Google Apps Reseller API		<input type="checkbox"/> OFF	Courtesy limit: 10,000 requests/day
 Google Civic Information API		<input type="checkbox"/> OFF	Courtesy limit: 25,000 requests/day
 Google Cloud Datastore API		<input type="checkbox"/> OFF	Courtesy limit: 10,000,000 requests/day
 Google Cloud Messaging for Android		<input type="checkbox"/> OFF	
 Google Cloud Messaging for Chrome		<input type="checkbox"/> OFF	Courtesy limit: 10,000 requests/day
 Google Cloud SQL		<input type="checkbox"/> OFF	Pricing
 Google Cloud SQL API		<input type="checkbox"/> OFF	
 Google Cloud Storage		<input type="checkbox"/> OFF	Pricing
 Google Cloud Storage JSON API		<input type="checkbox"/> OFF	
 Google Compute Engine		<input type="checkbox"/> OFF	Pricing
 Google Contacts CardDAV API		<input type="checkbox"/> OFF	Courtesy limit: 10,000 requests/day
 Google Maps Android API v2		<input type="checkbox"/> OFF	
 Google Maps API v3		<input type="checkbox"/> OFF	Courtesy limit: 25,000 requests/day • Pricing
 Google Maps Coordinate API		<input type="checkbox"/> OFF	Courtesy limit: 1,000 requests/day
 Google Maps Engine API		<input type="checkbox"/> OFF	Courtesy limit: 10,000 requests/day
 Google Maps Geolocation API		<input type="checkbox"/> OFF	Courtesy limit: 0 requests/day • Pricing
 Google Maps SDK for iOS		<input type="checkbox"/> OFF	
 Google Maps Tracks API		<input type="checkbox"/> OFF	

Send Feedback

Google APIs Console

Google APIs Console

https://code.google.com/apis/console/?noredirect&pli=1#project:841318404499:services

Search Images Maps Play YouTube News Gmail Drive More

imyday@gmail.com | Settings | Help | Sign out

Google apis

We are improving the experience. Try the new [Cloud Console](#).

Review terms of service

Print

Google Maps/Google Earth APIs Terms of Service

Last Updated: May 10, 2013

1. Your relationship with Google.

1.1 Use of the Service is Subject to these Terms. Your use of any of the Google Maps/Google Earth APIs (referred to in this document as the "**Maps API(s)**" or the "**Service**") is subject to the terms of a legal agreement between you and Google (the "**Terms**"). "Google" means either (a) Google Ireland Limited, with offices at Gordon House, Barrow Street, Dublin 4, Ireland, if Customer's billing address is in any country within Europe, the Middle East, or Africa ("**EMEA**"); (b) Google Asia Pacific Pte. Ltd., with offices at 8 Marina View Asia Square 1 #30-01 Singapore 018960, if Customer's billing address is in any country within the Asia Pacific region ("**APAC**"); or (c) Google Inc., with offices at 1600 Amphitheatre Parkway, Mountain View, California 94043, USA, if Customer's billing address is in any country in the world other than those in EMEA and APAC.

1.2 The Terms include Google's Legal Notices and Privacy Policy.

(a) Unless otherwise agreed in writing with Google, the Terms will include the following:

- (i) the terms and conditions set forth in this document (the "**Maps APIs Terms**");
- (ii) the [Legal Notices](#); and
- (iii) the [Privacy Policy](#).

I agree to these terms.

Accept Decline

0 of 1 terms of service accepted.
Google Maps/Earth APIs

[Code Home](#) - [Privacy Policy](#)

Send Feedback

Google APIs Console

Google APIs Console

https://code.google.com/apis/console/?noredirect&pli=1#project:841318404499:services

Search Images Maps Play YouTube News Gmail Drive More

imyday@gmail.com | Settings | Help | Sign out

Google apis

We are improving the experience. Try the new [Cloud Console](#).

API Project

All (71) Active (1) Inactive (70) Google Cloud Platform

Overview
Services
Team
API Access
Billing
Reports
Quotas

Active services

Select services for the project.

Service	Status	Notes
Google Maps API v3 ?	<input checked="" type="checkbox"/>	Courtesy limit: 25,000 requests/day • Pricing

[Code Home](#) - [Privacy Policy](#)

Send Feedback

Google Developers Console

Google Cloud Platform

The screenshot shows the Google Developers Console interface. A modal dialog box is centered on the screen, titled "Welcome to Google Cloud Platform". The dialog contains the following text and elements:

- Header: "Welcome to Google Cloud Platform"
- Text: "Use the same infrastructure that powers Google's own applications."
- Two checked checkboxes:
 - I have read and agree to all [Terms of Service](#) for the Google Cloud Platform products.
 - I'd like to receive email about Google Cloud Platform updates, special offers, and events.
- A blue "Continue" button, which is highlighted with a red rectangular box.
- A "Learn more" link next to the "Continue" button.

The background of the console shows a list of APIs with their status. The "API Project" sidebar is visible on the left, and the user's email "imyday@gmail.com" and "Sign out" link are in the top right corner.

NAME	STATUS
Google M	ON
Ad Excha	OFF
Ad Excha	OFF
Admin SD	OFF
AdSense	OFF
AdSense	OFF
Analytics API	OFF
Audit API	OFF
BigQuery API	OFF
Blogger API v3	OFF
Books API	OFF
CalDAV API	OFF
Calendar API	OFF
Chrome Web Store API	OFF

Google Maps API v3

The screenshot shows the Google Developers Console interface. At the top, there are two browser tabs: "Google APIs Console" and "Google Developers Console". The address bar shows the URL: https://cloud.google.com/console?redirected=true#/project/841318404499/apiui/api/maps_backend. The page header includes the "Google Developers Console" logo and the user email "imyday@gmail.com | Sign out".

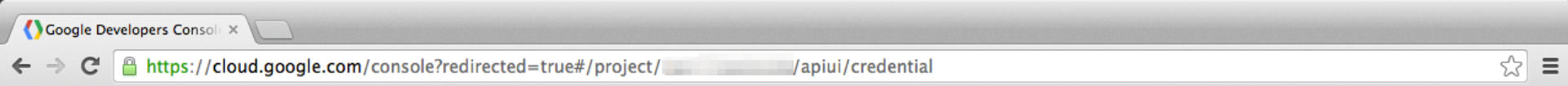
The main content area is titled "API Project" and features a sidebar with navigation options: Overview, APIs & auth (with "APIs" selected), Credentials, Consent screen, Notification endpoints, Permissions, Settings, Support, Compute Engine, Cloud Storage, Cloud SQL, BigQuery, and Cloud Development.

The main content area displays "Google Maps API v3" with a green "ON" toggle switch, and links for "Quota" and "Reports". Below this, a description states: "The Google Maps API lets you embed Google Maps in your own web pages with Javascript. [Learn more](#)".

At the bottom right, there are links for "Return to original console", "Send feedback", "Follow us", and "Privacy & Terms".

Credentials: Public API access

Get Google Maps API Key



< API Project

Overview

APIs & auth

APIs

Credentials

Consent screen

Notification endpoints

Permissions

Settings

Support

Compute Engine

Cloud Storage

Cloud SQL

BigQuery

Cloud Development

OAuth

OAuth 2.0 allows users to share specific data with you (for example, contact lists) while keeping their usernames, passwords, and other information private.

[Learn more](#)

CREATE NEW CLIENT ID

API key

Public API access

Use of this key does not require any user action or consent, does not grant access to any account information, and is not used for authorization.

[Learn more](#)

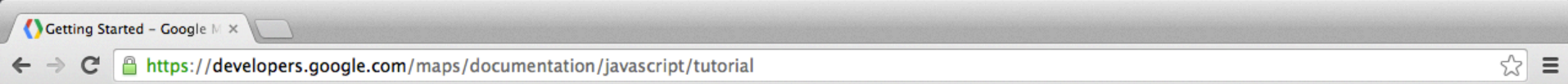
CREATE NEW KEY

Key for browser applications

API key	AIzaSyBk9zQmepC	
Referers	Any referer allowed	
Activation date		
Activated by	@gmail.com (you)	
Edit allowed referers	Regenerate key	Delete

Google Map JavaScript API

Hello, World



Hello, World

The easiest way to start learning about the Google Maps API is to see a simple example. The following web page displays a map centered on Sydney, New South Wales, Australia:

```
<!DOCTYPE html>
<html>
  <head>
    <meta name="viewport" content="initial-scale=1.0, user-scalable=no" />
    <style type="text/css">
      html { height: 100% }
      body { height: 100%; margin: 0; padding: 0 }
      #map-canvas { height: 100% }
    </style>
    <script type="text/javascript"
      src="https://maps.googleapis.com/maps/api/js?key={API_KEY}&sensor=SET_TO_TRUE_OR_FALSE">
    </script>
    <script type="text/javascript">
      function initialize() {
        var mapOptions = {
          center: new google.maps.LatLng(-34.397, 150.644),
          zoom: 8
        };
        var map = new google.maps.Map(document.getElementById("map-canvas"),
          mapOptions);
      }
      google.maps.event.addDomListener(window, 'load', initialize);
    </script>
  </head>
  <body>
    <div id="map-canvas"/>
  </body>
</html>
```

[View example \(map-simple.html\)](#)

Even in this simple example, there are a few things to note:
<https://developers.google.com/maps/documentation/javascript/tutorial>

Google Map JavaScript API

Hello, World

API key

```
<!DOCTYPE html>
<html>
  <head>
    <meta name="viewport" content="initial-scale=1.0, user-scalable=no" />
    <style type="text/css">
      html { height: 100% }
      body { height: 100%; margin: 0; padding: 0 }
      #map-canvas { height: 100% }
    </style>
    <script type="text/javascript"
      src="https://maps.googleapis.com/maps/api/js?key=API_KEY&sensor=SET_TO_TRUE_OR_FALSE">
    </script>
    <script type="text/javascript">
      function initialize() {
        var mapOptions = {
          center: new google.maps.LatLng(-34.397, 150.644),
          zoom: 8
        };
        var map = new google.maps.Map(document.getElementById("map-canvas"),
          mapOptions);
      }
      google.maps.event.addDomListener(window, 'load', initialize);
    </script>
  </head>
  <body>
    <div id="map-canvas"/>
  </body>
</html>
```

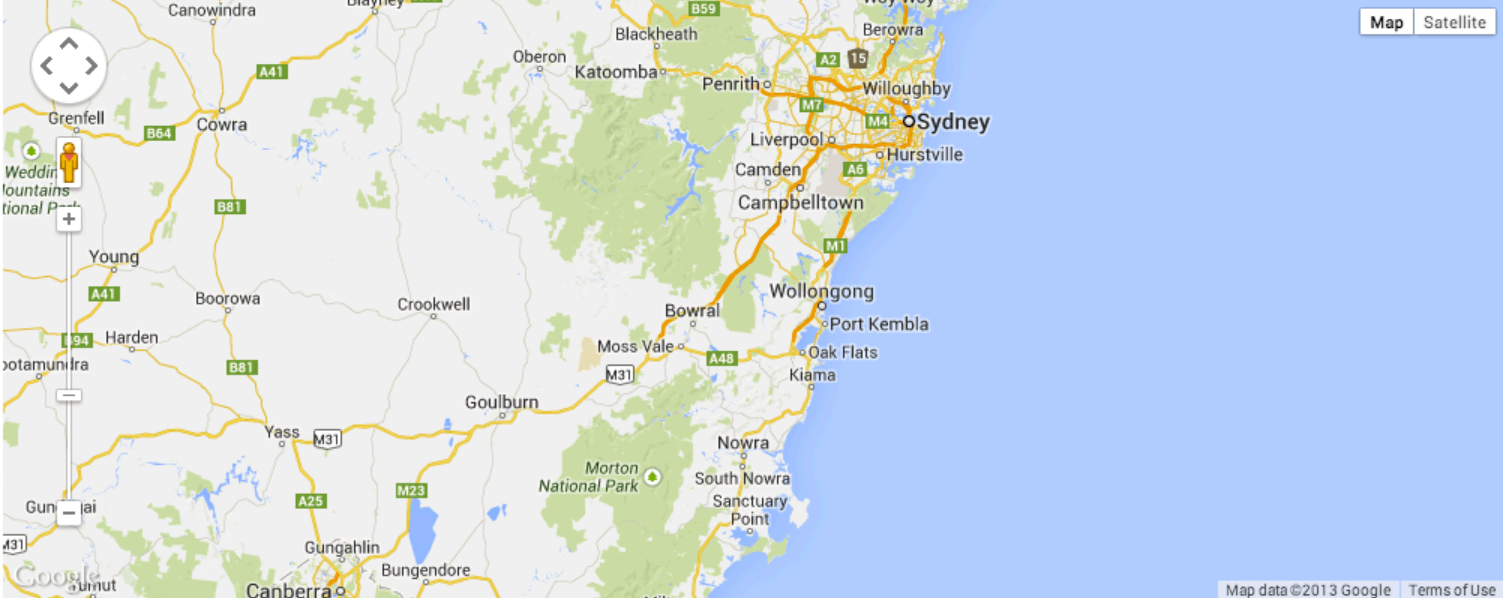
Google Maps JavaScript API: Simple Map

Simple Map - Google Maps

← → ↻ <https://developers.google.com/maps/documentation/javascript/examples/map-simple> ☆ ☰

- Developer's Guide
- API Reference
- Code Samples
 - Basics
 - Simple map**
 - Visual Refresh
 - Showing pixel and tile coordinates
 - Geolocation
 - Localizing the map
 - Right-to-left languages
 - Asynchronous loading
 - Custom map projections
 - Events
 - Controls
 - Styles
 - Drawing on the Map
 - Layers
 - MapTypes
 - Services
 - Libraries
 - Demo Gallery
 - More Resources

Simple Map



View this example [full screen](#).

JavaScript JavaScript + HTML

```
<!DOCTYPE html>
<html>
  <head>
    <title>Simple Map</title>
    <meta name="viewport" content="initial-scale=1.0, user-scalable=no">
    <meta charset="utf-8">
    <style>
      html, body, #map-canvas {
        height: 100%;
```

Google Maps JavaScript API Example JavaScript + HTML

```
<!DOCTYPE html>
<html>
<head>
  <title>Simple Map</title>
  <meta name="viewport" content="initial-scale=1.0, user-scalable=no">
  <meta charset="utf-8">
  <style>
    html, body, #map-canvas {
      height: 100%;
      margin: 0px;
      padding: 0px
    }
  </style>
  <script src="https://maps.googleapis.com/maps/api/js?v=3.exp&sensor=false"></script>
  <script>
var map;
function initialize() {
  var mapOptions = {
    zoom: 8,
    center: new google.maps.LatLng(-34.397, 150.644)
  };
  map = new google.maps.Map(document.getElementById('map-canvas'),
    mapOptions);
}

google.maps.event.addDomListener(window, 'load', initialize);

  </script>
</head>
<body>
  <div id="map-canvas"></div>
</body>
</html>
```

```
<div style="position:absolute; height:100%; width:100%;">
  <div id="map-canvas"></div>
</div>
```



<http://mail.tku.edu.tw/myday/app/map.html>

Google Maps JavaScript API

```
<style>
  #map-canvas {
    height: 100%;
    margin: 0px;
    padding: 0px
  }
</style>
```

```
<script>
  function initialize() {
    var mapOptions = {
      zoom: 15,
      center: new google.maps.LatLng(25.174738, 121.450381)
    };

    var map = new google.maps.Map(document.getElementById('map-canvas'),
      mapOptions);
  }

  function loadScript() {
    var script = document.createElement('script');
    script.type = 'text/javascript';
    script.src = 'https://maps.googleapis.com/maps/api/js?v=3.exp&sensor=true&callback=initialize';
    document.body.appendChild(script);
  }

  window.onload = loadScript;
</script>
```



```

<!DOCTYPE html>
<html>
<head>
<title>Google Maps</title>
<meta charset=utf-8 />
<meta name="viewport" content="width=device-width, initial-scale=1" />

<script src="js/jquery.js"></script>
<link type="text/css" href="css/jquery.mobile-1.3.2.min.css" rel="stylesheet" />
<script type="text/javascript" src="js/jquery.mobile-1.3.2.min.js"></script>

<!--PhoneGap-->
<link rel="stylesheet" type="text/css" href="css/index.css" />
<!--
<script type="text/javascript" src="phonegap.js"></script>
-->
<script type="text/javascript" src="js/index.js"></script>
<!--/PhoneGap-->
<script type="text/javascript">
    app.initialize();
</script>

<style>
#map-canvas {
    height: 100%;
    margin: 0px;
    padding: 0px;
}
</style>

<script>
function initialize() {
    var mapOptions = {
        zoom: 15,
        center: new google.maps.LatLng(25.174738, 121.450381)
    };

    var map = new google.maps.Map(document.getElementById('map-canvas'),
        mapOptions);
}

function loadScript() {
    var script = document.createElement('script');
    script.type = 'text/javascript';
    script.src = 'https://maps.googleapis.com/maps/api/js?v=3.exp&sensor=true&callback=initialize';
    document.body.appendChild(script);
}

window.onload = loadScript;
</script>

</head>

```

```

<body>

<div data-role="page" id="googlemaps" data-theme="b">
<div data-role="header" data-position="inline" data-theme="b">
    <a data-icon="back" data-rel="back" back-btn="true">Back</a>
    <h1>Google Maps</h1>
    <a href="index.html#MyHome" rel="external" data-icon="home">Home</a>
</div><!-- /header -->

<div style="position:absolute; height:100%; width:100%;">
<div id="map-canvas"></div>
</div>

<div data-role="footer" data-position="fixed" data-theme="b">
<div data-role="navbar">
    <ul>
        <li><a href="index.html#MyHome" rel="external" class="ui-btn-active ui-state-persist"
data-transition="fade" data-icon="home">Home</a></li>
        <li><a href="index.html#Research" rel="external" class="ui-btn-active ui-state-persist"
data-transition="fade" data-icon="star">Research</a></li>
        <li><a href="index.html#Teaching" rel="external" class="ui-btn-active ui-state-persist"
data-transition="fade" data-icon="check">Teaching</a></li>
        <li><a href="index.html#More" rel="external" class="ui-btn-active ui-state-persist"
data-transition="fade" data-icon="bars">More</a></li>
        <li><a href="index.html#About" rel="external" class="ui-btn-active ui-state-persist"
data-transition="fade" data-icon="grid">About</a></li>
    </ul>
</div>
</div><!-- /footer -->
</div><!-- /page Google Map -->
</body>
</html>

```

map.html

Google Maps JavaScript API + jQuery Mobile



<http://mail.tku.edu.tw/myday/app/map.html>

Summary

- **Google App Engine**
 - Google Cloud Platform
 - Google Cloud Datastore
- **Google Maps API**

References

- Beginning PhoneGap: Mobile Web Framework for JavaScript and HTML5, Rohit Ghatol & Yogesh Patel, Apress, 2012
- Learn HTML5 and JavaScript for iOS: Web Standards-based Apps for iPhone, iPad, and iPod touch, Scott Preston, Apress, 2012
- Google App Engine,
<https://cloud.google.com/products/app-engine/>
- Google Map API,
<https://developers.google.com/maps/>