Google
Developers

Ad Hoc Analysis with Apps Script and YouTube Analytics API

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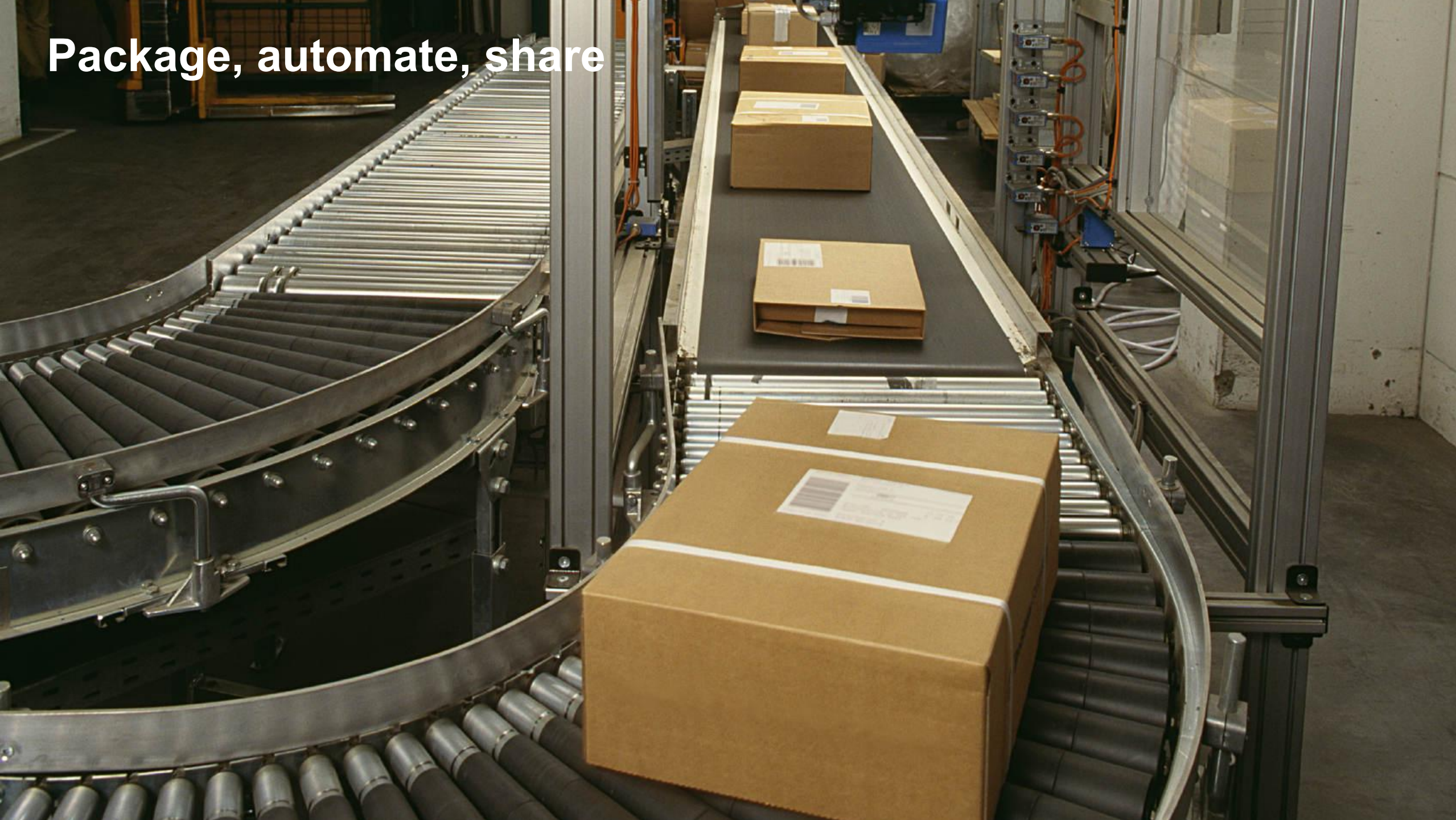
Google I/O 13

1 billion viewers!

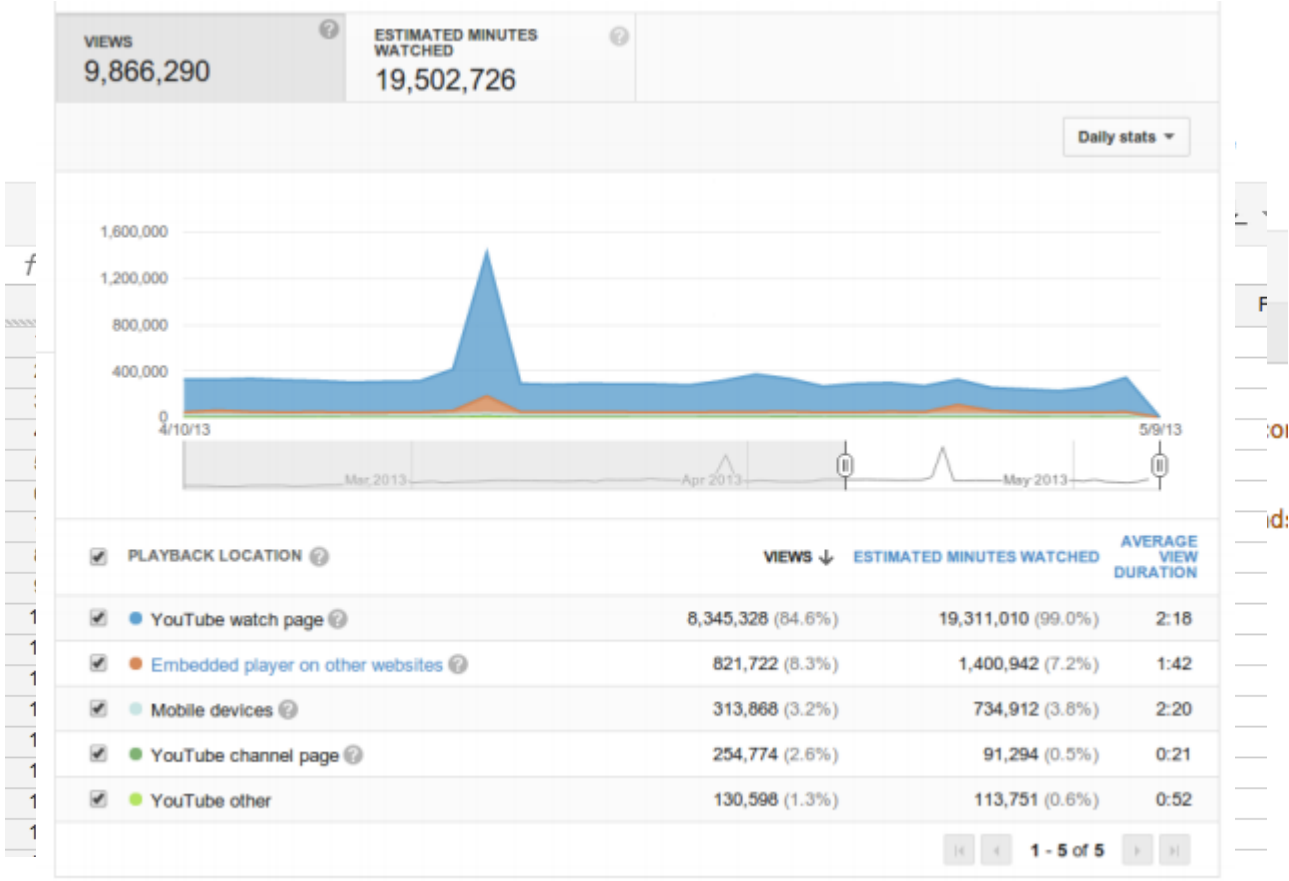
Petabytes of analytics...

Package, automate, share



Agenda

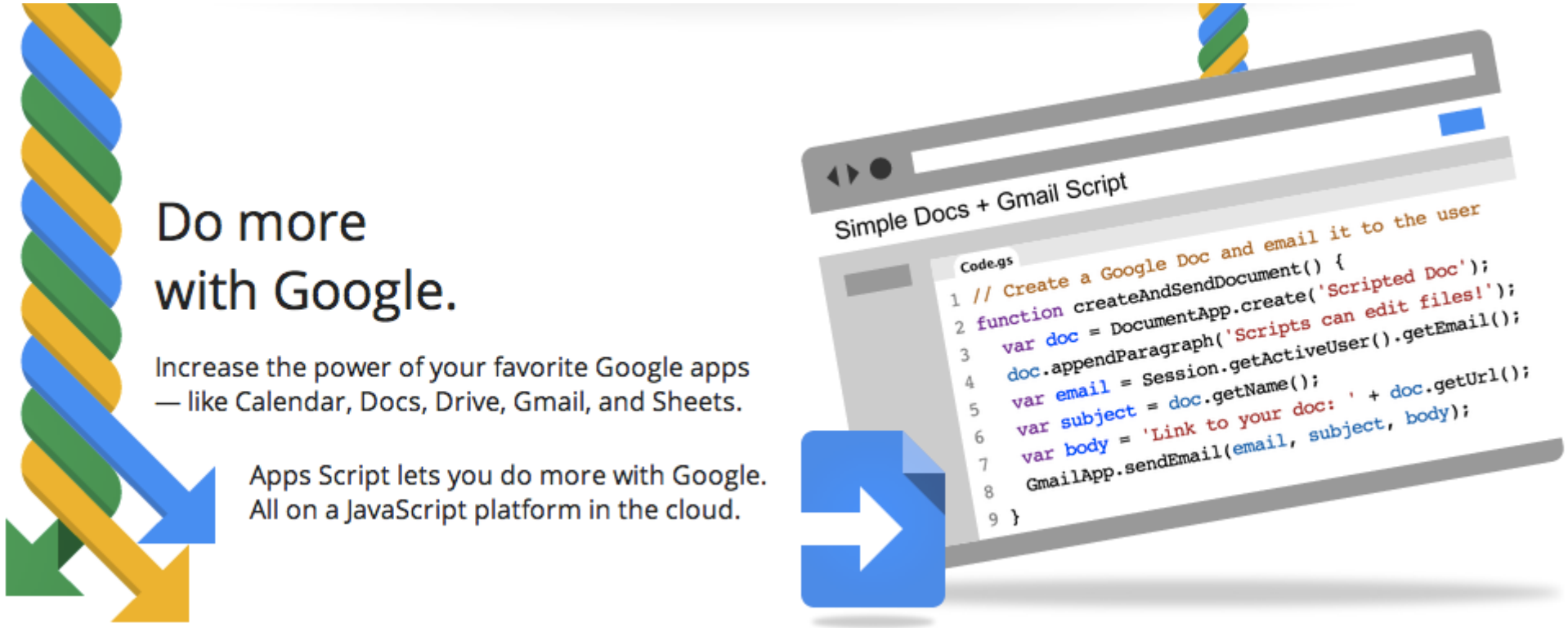
- Google Apps Script
- YouTube Analytics
- YouTube Analytics API
- YouTube Analytics API + Google Apps Script
  Do more with YouTube Analytics



What is Google Apps Script?

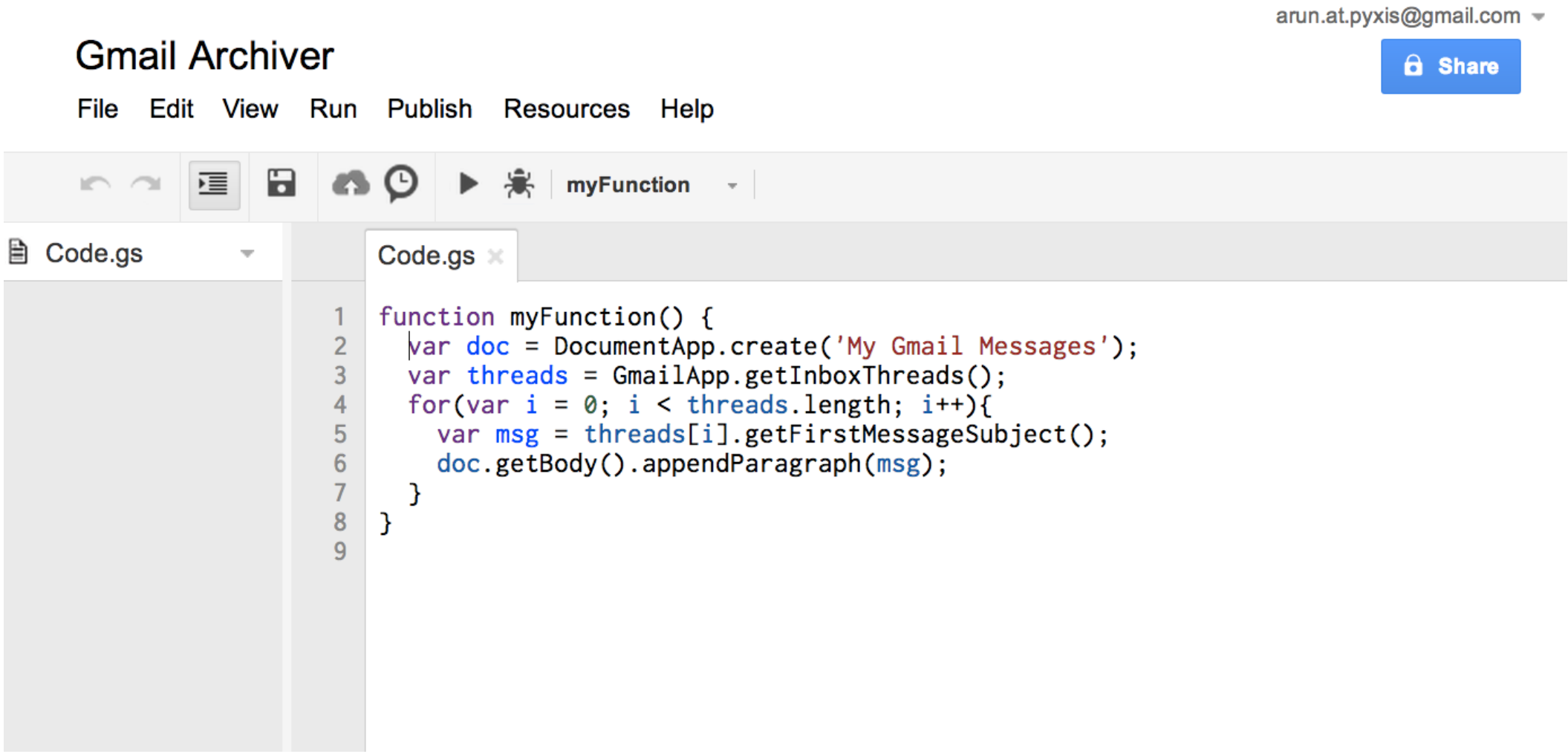
script.google.com

What is Google Apps Script



Apps Script Example

Export Gmail messages to Google Docs



Google Apps Script

- Write code in browser
- Run code on Google servers
- Integrate with other systems

Google Products

Calendar
Charts
Contacts
Drive
Documents
Domain
Finance
Gmail
Groups
Language
Maps
Sites
Spreadsheets

Communication and UI

Content
Html
Jdbc
Mail
Soap
Ui
UrlFetch
Xml

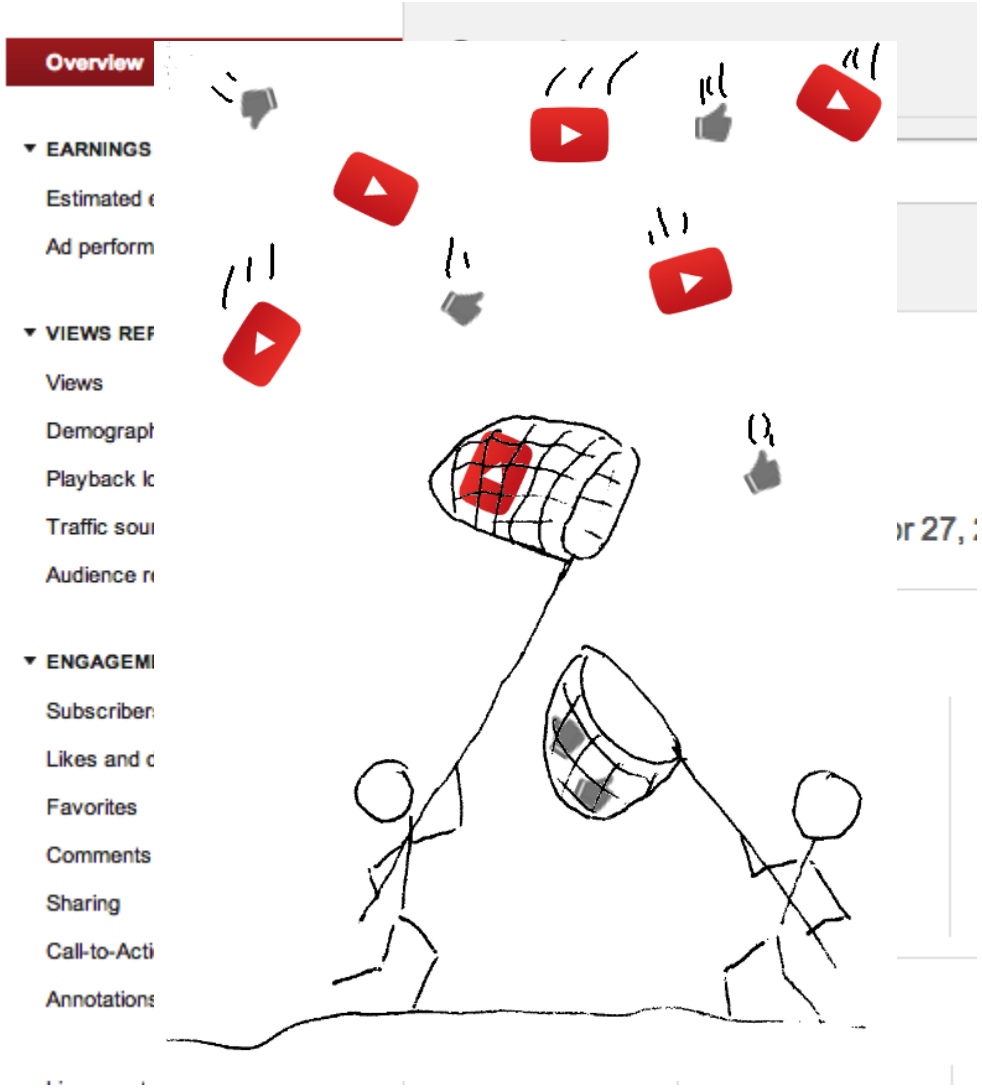
Utilities

Base
Cache
Lock
Properties
Script
ScriptDb
Utilities

What is YouTube Analytics?

youtube.com/analytics

Helping YouTube Creators in Making Decisions



- Collect user events of all YouTube videos
- Aggregate them up to the level of channels, partners, and shows
- Provide UI for owners www.youtube.com/analytics

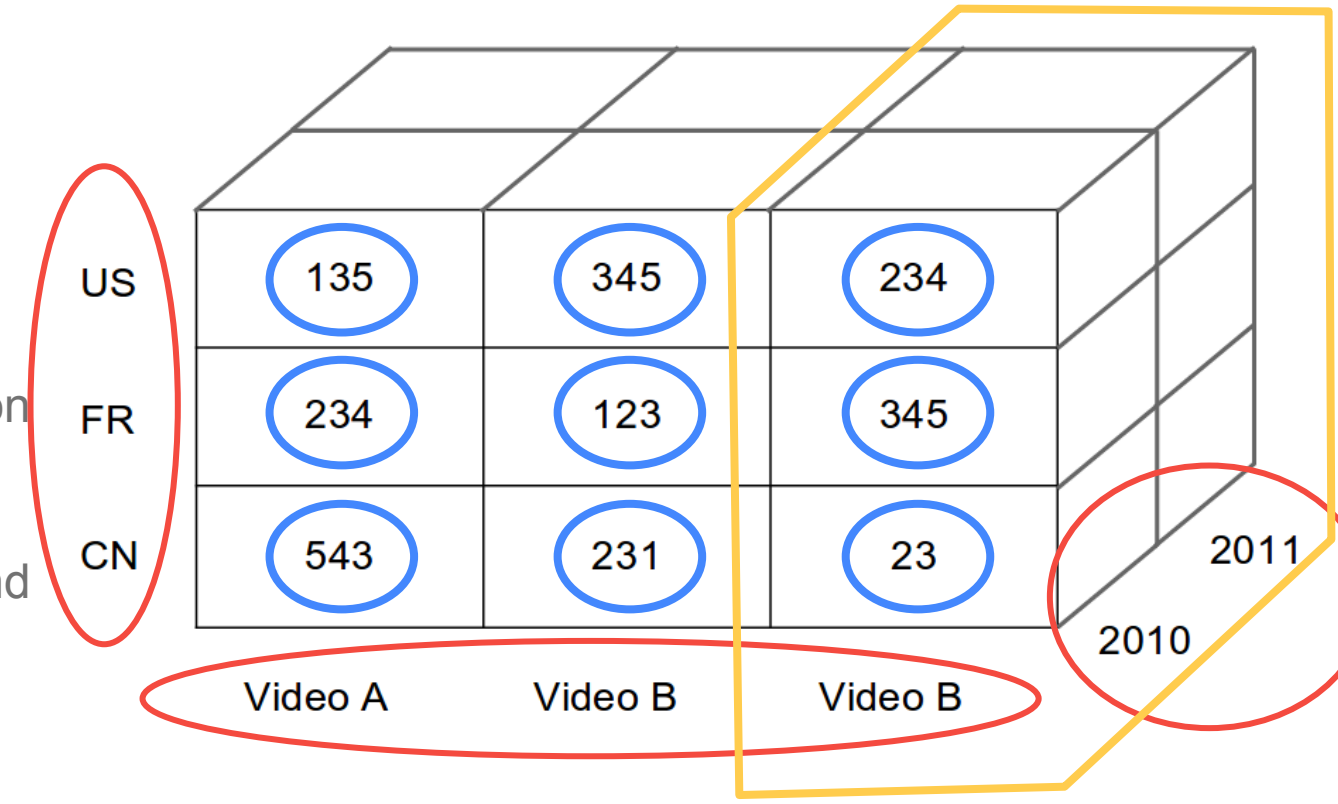
What is the YouTube Analytics API?

- Enable developers to provide services for YouTube channels and partners
- Allow partners to customize and integrate their video reporting

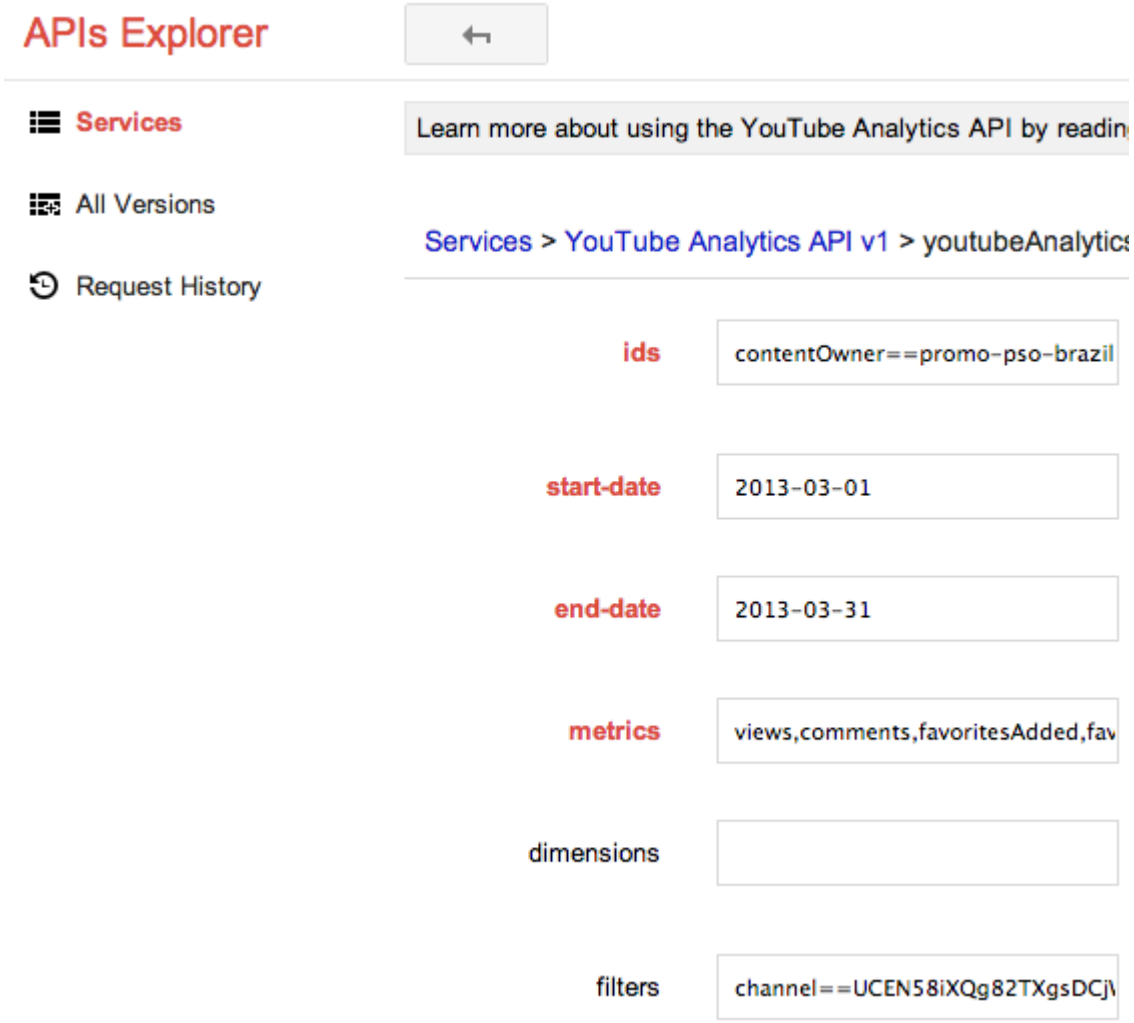
- Public API based on same pre-aggregated data as UI
- Requires precise queries: Give me views and likes of video XYZ over the last 30 days
- Requests must be authorized by the owner using OAuth2
- Account Types: YouTube Channels and Partners

How to Drill into the Data?

- Dimensions, Metrics, Filters, and Report
- **Dimensions**: Criteria to group the data
  - Day the event occurred
  - Country the event originated from
- **Metrics**: Measurement of user activity
  - User viewing a video
  - User subscribing to your channel
- **Filters**: Limit the data included in the computation
  - Only events from Italy
  - Only playbacks from embedded player
- **Report**: Combination of Dimensions, Metrics, and Filters
  - Metrics: views, likes
    Dimension: day
    Filter: channel==XYZ



Need a Sample?

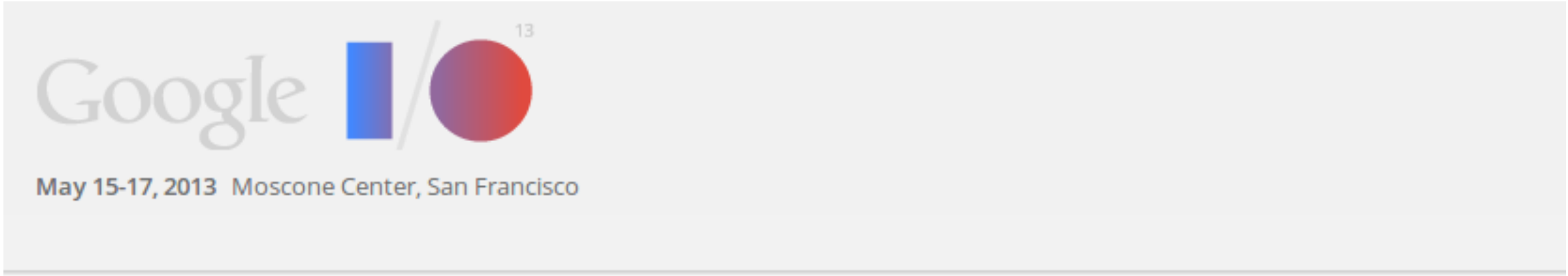


Check Documentation developers.google.com/youtube/analytics

API Explorer

- Channel level: Basic metrics

More Details on the YouTube Analytics API?



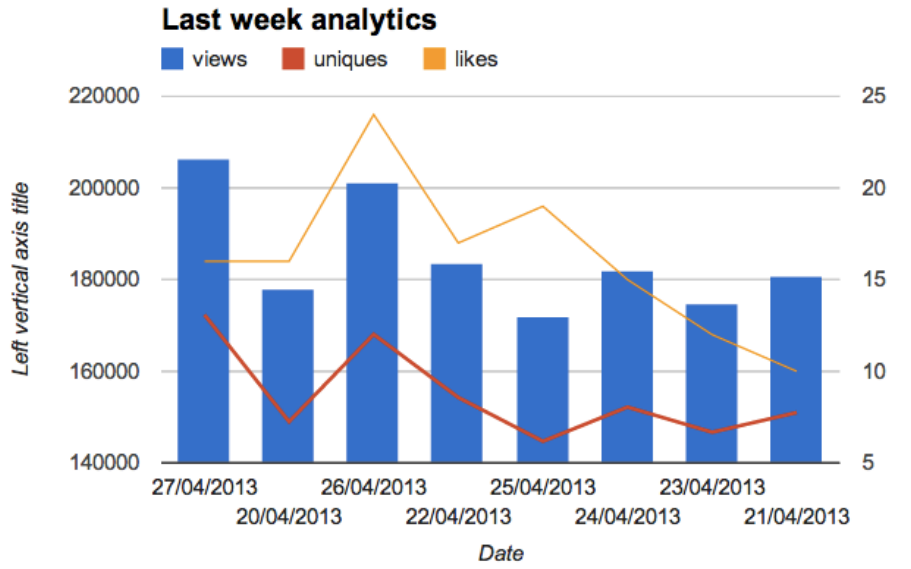
YouTube Analytics + Apps Script

Turn data into applications and UI

JSON

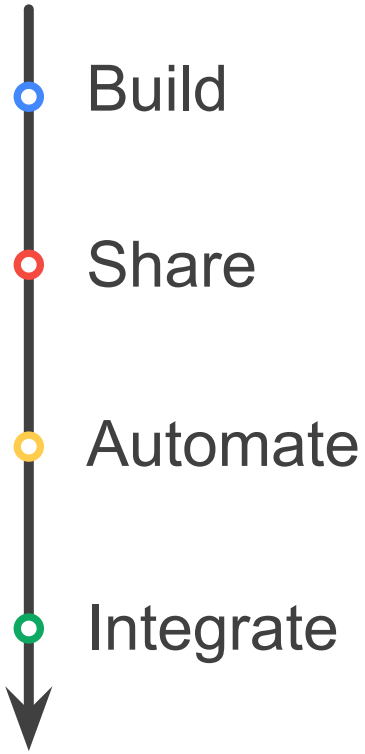

```
{
 "kind": "youtubeAnalytics#resultTable",
 "columnHeaders": [
  {
   "name": "day",
   "columnType": "DIMENSION",
   "dataType": "STRING"
  },
  ...
],
 "rows": [
  [ "2013-03-30", 876036, 7 ],
  [ "2013-03-29", 173666, 2 ],
  [ "2013-03-28", 273552, 4 ],
  ...
  ]
}
```


	A	B	C	D
	ids	contentOwner==promo pso-brazil		
	start-date	2013-04-20		
	end-date	2013-04-29		
	metrics	views,uniques,likes		
	dimensions	day		
	filters	channel==UCEN58iX		
	day	**views**	**uniques**	**likes**
	27/04/2013	206481	172344	16
	20/04/2013	177813	149031	16
	26/04/2013	201160	168075	24
	22/04/2013	183624	154299	17
	25/04/2013	172174	144748	19
	24/04/2013	181934	152210	15
	23/04/2013	174877	146722	12
	21/04/2013	180602	151018	10



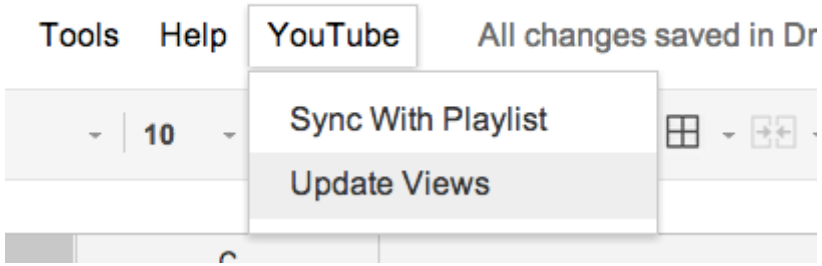
Do more with YouTube Analytics

Using Google Apps Script



Build - Load data into spreadsheet

- Invoke Apps Script function via Menu or "button"
- Create new tabs or append to current spreadsheet
- Formatting capability
- Pre-defined reports or dynamic inputs



	A	B	C	D
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	start-date	2013-04-20		
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	metrics	views,uniques,likes		
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	filters	channel==UCEN58iX(		
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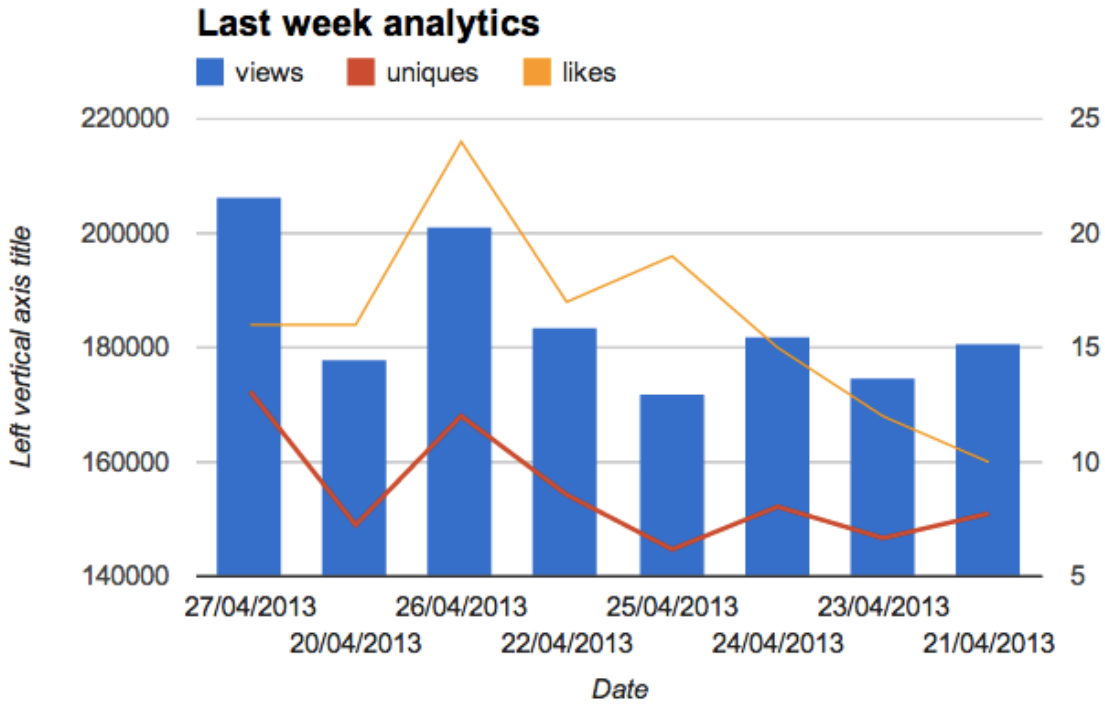
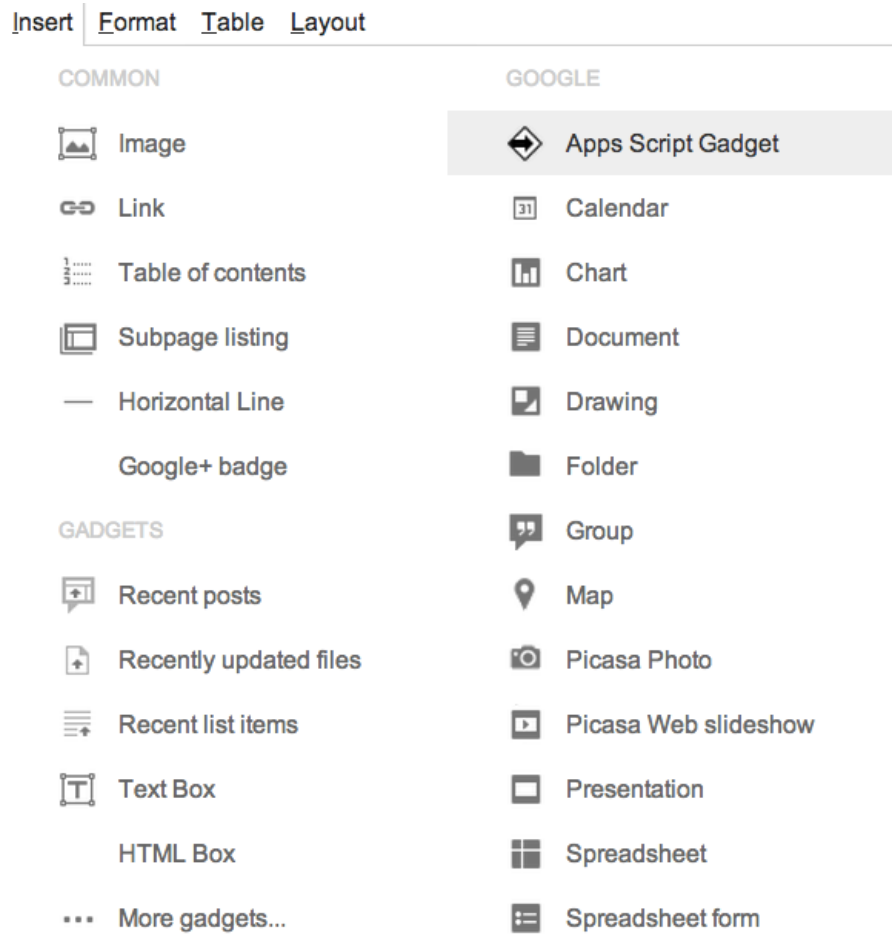
Share - Custom analytics

- Turn tabular data into charts with 2 clicks
- Build charts dynamically using ChartBuilder API
- Allows business users to view data without full access
- Publish as gadget in Google Sites
- Simple layer on to restrict access to full data





Automate - Get alerts on interesting events

- Apps Script functions can be scheduled
- Store previous run settings
- Compare arbitrary data points against thresholds
- Send email or create calendar events for alerts

Current project's triggers

Run	Events			
alertOnViewsIncrease	Time-driven	Hour timer	Every 12 hours	notifications

Add a new trigger

Save Cancel

Integrate - YouTube Analytics + Other sources

- Co-relate YouTube data with other systems
- Twitter - simple example to check trending info
- Weather
- Stock Market
- Holiday calendar
- Other internal events?

2013-04-29T16:44:09Z
#TeníaQueTwittearlo
#ImABigFanOf
Jason Collins
#District3Secrets
#VenezuelaEsChavista
#FelizDiaDelAnimal
Biz Avrupanın Kralıyız CincondaSoytarımız
Ringo Starr
Google Now
Tim Tebow

```
function twitter(){
  var oauthCfg = UrlFetchApp.addOAuthService('twitter');
  oauthCfg.setAccessTokenUrl('https://api.twitter.com/oauth/access_token');
  oauthCfg.setRequestTokenUrl('https://api.twitter.com/oauth/request_token');
  oauthCfg.setAuthorizationUrl('https://api.twitter.com/oauth/authorize');
  oauthCfg.setConsumerKey('[redacted]');
  oauthCfg.setConsumerSecret('[redacted]');
  var options = {oAuthServiceName:'twitter',oAuthUseToken:'always'};

  var url = 'https://api.twitter.com/1.1/trends/place.json?id=1'; //all = 1, london = 44418
  var response = UrlFetchApp.fetch(url, options).getContentText();
  Logger.log(response);
}
```

Do more with YouTube Analytics

Using Google Apps Script

- Build - reports by enabling data into Google Sheets
- Share - via Google Sites or push email messages
- Automate - schedule scripts to check and notify of insights
- Integrate - with other analytics and data sources

Technical details

- UrlFetch
  - Access 3rd party APIs via standard HTTP
  - Learn more at - https://developers.google.com/apps-script/reference/url-fetch/
- OAuth 2
  - Apps Script allows for scripts to be deployed as Web Apps - required for OAuth 2 callback
  - Learn more at - http://youtu.be/VVhsK5jH6u8
- Triggers
  - Allow for Apps Script functions to be run at specified interval
  - Have full access to Apps Script API (Gmail, Sheets, Drive, etc.)
  - Learn more at - https://developers.google.com/apps-script/execution_time_triggers
- Quota Management
  - All Google accounts have access to Apps Script services
  - Google Apps for Business accounts have increased quota
  - Learn more at - https://script.google.com/dashboard

Get started!

- script.google.com
- github.com/entaq/GoogleAppsScript

- developers.google.com/youtube/analytics
- developers.google.com/apps-script

- stackoverflow.com/questions/tagged/youtube-api
- stackoverflow.com/questions/tagged/google-apps-script

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