

App Engine, chatbots and devops

Yi Jiayu



Jiayu Yi

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<https://www.jiayu.co>



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Introduction to the Telegram Bot API, Part 2

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Nov 3, 2017 · 8 min read

Introduction to the Telegram Bot API, Part 1

Make an inline Telegram bot in 100 lines of code

I had been thinking of writing about the Telegram Bot API for some time, especially after [my previous post about the Telegram API](#), so this is sort of a follow up to that post. That post was a little long, so the content this time will be split up into parts to be more palatable.

In this series, I'll describe how to create a Telegram bot which responds both to text messages sent directly to the bot as well as inline queries in less than 100 lines of JavaScript and run it on Google Cloud Functions.



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Oct 24, 2017 · 12 min read

Introduction to the Telegram API

Analyse your conversation history on Telegram programatically

Telegram is an instant messaging service just like WhatsApp, Facebook Messenger and WeChat. It has gained popularity in recent years for various reasons: its non-profit nature, cross-platform support, promises of security¹, and its open APIs.

In this post, we'll use Telethon, a Python client library for the Telegram API to count the number of messages in each of our Telegram chats.

Telegram APIs



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Jun 14, 2017 · 8 min read

Sentiment Analysis of Comments on LHL's Facebook Page

Learning how to use the [Facebook Graph API](#) and [Google Cloud Natural Language API](#)

Breaking news

This was an eventful morning in Singapore.

Lee Wei Ling, Lee Hsien Yang issue statement to say they have 'lost confidence' in PM Lee Hsien...

Prime Minister Lee Hsien Loong's siblings, Dr Lee Wei Ling and Lee Hsien Yang



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A practical Telegram bot for getting bus etas in Singapore.

[Go](#) ★ 4

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Send WhatsApp messages with spoiler tags!

[HTML](#) 🍴 1

hotslogs

Command line replay uploader for HOTS Logs

[Go](#)

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A bot for organising your GIFs on Telegram

[Go](#) ★ 2

synacor-challenge

A(n incomplete) solution to the Synacor Challenge written in Haskell (5/8 codes)

[Haskell](#)

chat-analytics

Data visualisation for WhatsApp conversations

[JavaScript](#) ★ 1

420 contributions in the last year



Past Fixtures

SAFRA Tampines

Thursday 2nd Nov, 7 pm - 9 pm

Results:

First Name	Last Name	Minutes played	Goals scored	Assists	Goals saved	Own goals	Total points
Edmond	To	0	0	0	0	0	0
Andrew	Tan	0	0	0	0	0	0
Tu Yong	Tan	0	0	0	0	0	0

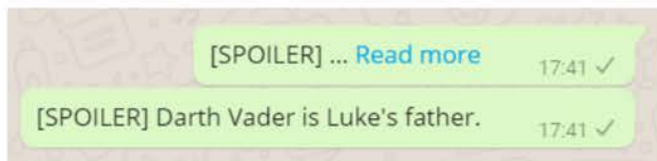
Bukit Timah Turf City

Thursday 9th Nov, 7 pm - 9 pm

Results:

First Name	Last Name	Minutes played	Goals scored	Assists	Goals saved	Own goals	Total points
Edmond	To	0	0	0	0	0	0

WhatsApp Spoilers



Warning:

[SPOILER]

Content:

Submit

Message (copy this):

Copy to clipboard

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A practical Telegram bot for getting bus etas in Singapore. <https://t.me/BusEtaBot>

[telegram-bot](#)[singapore](#)[go](#)[app-engine](#)[public-transport](#)[bus-etats](#)[inline-messages](#)[170 commits](#)[3 branches](#)[17 releases](#)[1 contributor](#)[MIT](#)Branch: [master](#)[New pull request](#)[Find file](#)[Clone or download](#)[yi-jiayu](#) Collect analytics on favourite toggling

Latest commit 7fb22ec 2 days ago

.idea	[skip ci] Add config for Gogland	7 months ago
screenshots	[skip ci] Use PNGs for screenshots	8 months ago
scripts	Increment offset dynamically	3 months ago
.editorconfig	[skip ci] Change line endings to LF	8 months ago
.gitignore	Remove failing tests	3 months ago
.travis.yml	Use script deployment on Travis CI (#9)	7 months ago
CHANGELOG.md	Collect analytics on favourite toggling	2 days ago
LICENSE	[skip ci] Create LICENSE	8 months ago
PRIVACY.md	[skip ci] Change line endings to LF	8 months ago
README.md	[skip ci] Remove Coveralls badge	3 months ago

Don't have **Telegram** yet? Try it now! >

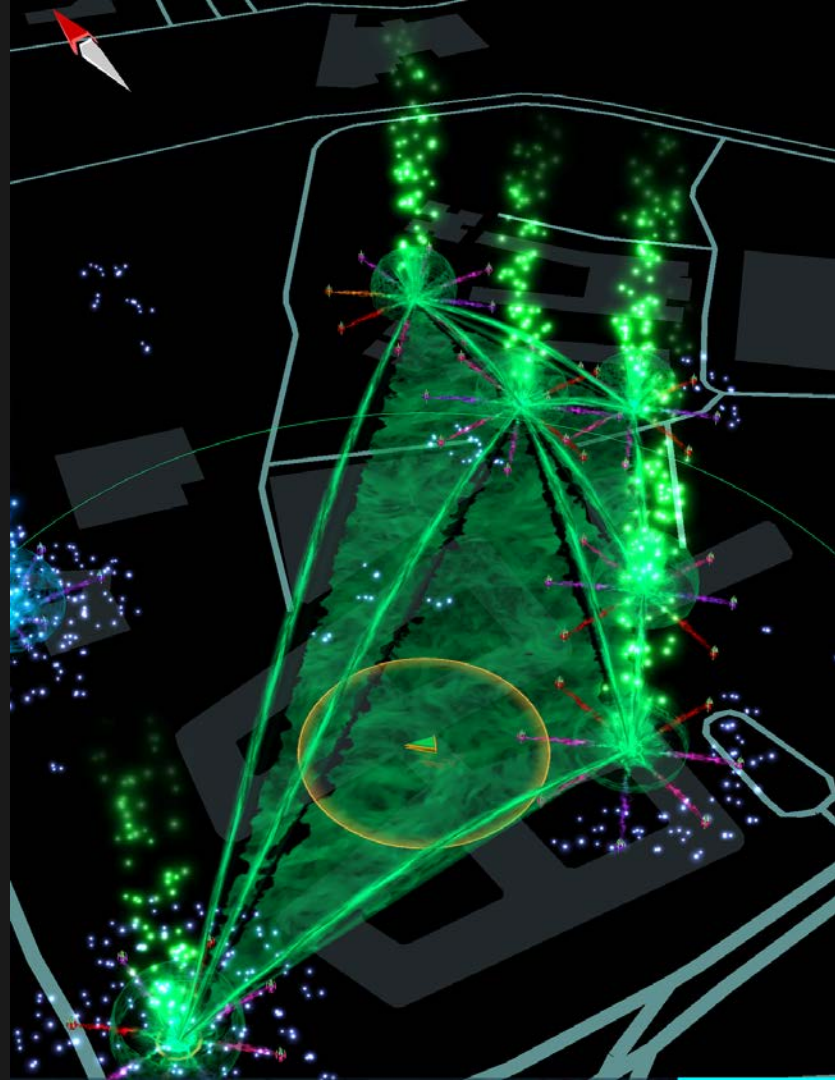


Bus Eta Bot

@BusEtaBot

Bus Eta Bot is a practical bot for checking
bus etas in Singapore.

SEND MESSAGE

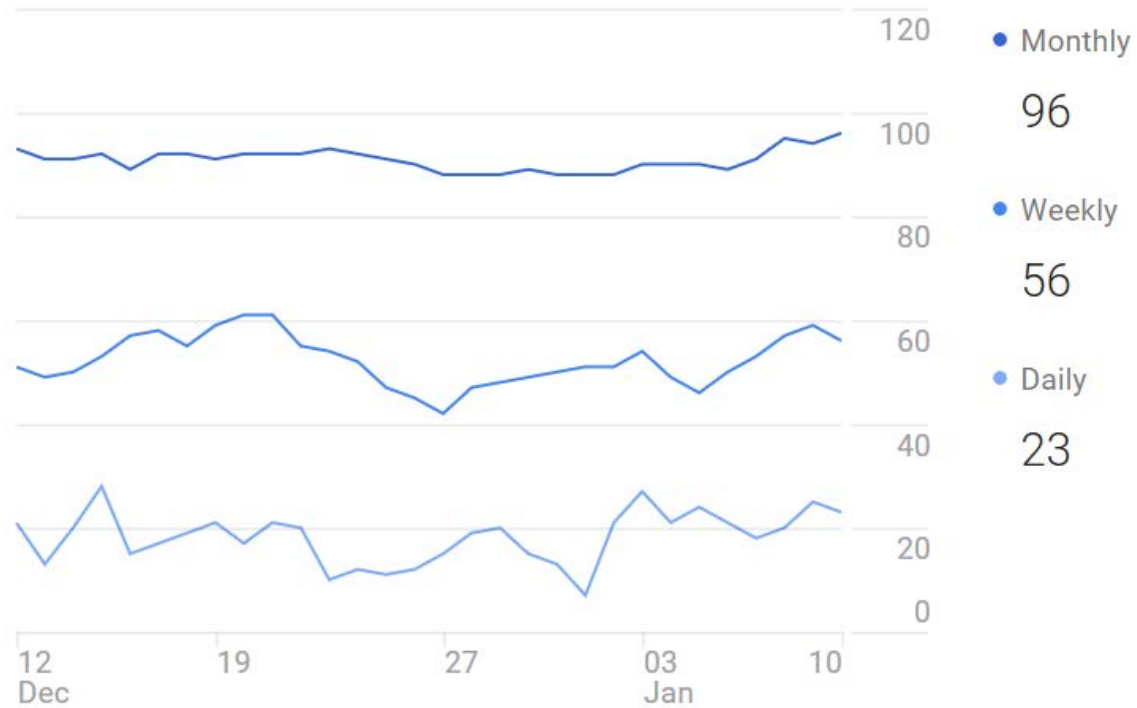


H.soav f;do

~~H.soav f;de~~ Dvorak user

Bus Eta Bot ❤️ App Engine

Active Users




Last 30 days ▼

[ACTIVE USERS REPORT](#) ➔

Billing status

Enabled (Daily spending limit: **Unlimited**) [Change](#)

Quotas reset every 24 hours. Next reset: 3 hrs 

Resource	Usage	Billable	Price	Cost
Frontend Instance Hours	7.38 Instance Hours	0.00	\$0.05 / Hour	\$0.00
Task Queue Stored Task Bytes	0.000001 GB	0.00	\$0.0009 / GB-day	\$0.00
Cloud Datastore Read Operations	0.000091 Million Ops	0.00	\$0.60 / Million Ops	\$0.00
Outgoing Bandwidth	0.00036 GB	0.00	\$0.12 / GB	\$0.00
Search API Simple Searches	0.0009 10K Ops	0.00	\$0.50 / 10K Ops	\$0.00
Cloud Storage Class A Operations	0	0	\$5.00 / Million Ops	\$0.00
Estimated cost for the last 21 hours				\$0.00*

Billing status

Enabled (Daily spending limit: **Unlimited**) [Change](#)

Quotas reset every 24 hours. Next reset: 3 hrs [?](#)

Resource	Usage	Billable	Price	Cost
Frontend Instance Hours	7.38 Instance Hours	0.00	\$0.05 / Hour	\$0.00
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Search API Simple Searches	0.0009 10K Ops	0.00	\$0.50 / 10K Ops	\$0.00
Cloud Storage Class A Operations	0	0	\$5.00 / Million Ops	\$0.00
Estimated cost for the last 21 hours				\$0.00*

▶	i	2018-01-16	23:43:25.271	HKT	POST	200	40 B	576 ms
▶	i	2018-01-16	23:48:29.668	HKT	POST	200	40 B	935 ms
▶	i	2018-01-17	07:10:42.104	HKT	POST	200	40 B	660 ms
▶	i	2018-01-17	07:14:18.834	HKT	POST	200	40 B	577 ms
▶	i	2018-01-17	07:14:23.800	HKT	POST	200	40 B	531 ms
▶	i	2018-01-17	07:14:50.737	HKT	POST	200	40 B	598 ms
▶	i	2018-01-17	07:21:27.295	HKT	POST	200	40 B	625 ms
▶	i	2018-01-17	07:21:28.283	HKT	POST	200	40 B	604 ms
▶	i	2018-01-17	07:25:29.561	HKT	POST	200	40 B	657 ms
▶	i	2018-01-17	07:31:11.374	HKT	POST	200	40 B	959 ms
▶	i	2018-01-17	07:31:13.377	HKT	POST	200	40 B	3 ms
▶	i	2018-01-17	07:31:13.548	HKT	POST	200	40 B	598 ms
▶	i	2018-01-17	07:31:14.161	HKT	POST	200	40 B	57 ms

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▶	i	2018-01-16	23:48:29.668	HKT	POST	200	40 B	935 ms
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▶	i	2018-01-17 07:31:14.161	HKT	POST	200	40 B	57 ms



Bus Eta Bot
bot



What can this bot do?

Send me a 5-digit bus stop code to view etas for that bus stop, or a location to view nearby bus stops. You can also make an inline query by typing @BusEtaBot followed by a road name or bus stop description.



Write a message...



10	Explore/Experiment
20	Learn/Apply
30	Goto 10

10

Explore/Experiment

Evolution



2015
Heroku



2016
Lambda



Early 2017
Cloud Functions



Mid 2017
App Engine

Build a chatbot for **games & toys** IoT interfaces

Use the world's leading chatbot platform.

[BUILD A CHATBOT](#)

[EXPLORE THE API](#)



225 K+

Developers

285 K+

Chatbots Created

3 B+

Interactions

Pandorabots is a web service for building and deploying chatbots.

- Jeff Chen, Co-founder & CEO @ Joyride

experience and support integration team in getting our bot to deliver important domain specific information to our users. Being based on an extensible language was another key feature for us in choosing Pandorabots."

- Ken Devellis, Founder @ AllieCare

“

We hired Pandorabots to help build a university FAQ chatbot, and our experience was very positive. The staff was wonderful and always dropped everything to help! We were new to chatbot technology, and Pandorabots did a great job of transitioning us into being able to use it effectively for our online FAQ virtual agent solution.”

- Trevor Rasmusson, American Sentinel University

“

Pandorabots is a very powerful tool that enabled me to create an electronic English tutor to help students learn English. Thanks to Pandorabots, **English Tutor** has become incredibly popular among English learners and won Loebner Prize finals twice in recent years.”

- Ron Lee, English Instructor

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Oakland, CA 94618
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e. info@pandorabots.com

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2,210,795,365 pandorobot responses served!

English

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Welcome to Pandorabots!

Pandorabots is a free open-source-based community webservice enabling you to develop and publish chatbots on the web ([Read more details here](#)).

Pandorabots is the largest chatbot community on the internet. 166,000 registered bot masters have chosen to create more than 206,000 pandorabots ("chatbots") in multiple languages. Through June 2012, over 1.5 billion conversational interactions have occurred between clients and pandorabots, and this number increases rapidly (it can be seen near the top of the center of the Pandorabots home page). Pandorabots are used all over the web - enter the string "talk?botid=" into a Google search box to get the latest number of links.

Pandorabots have been adapted to nearly every ecological niche on the internet. Pandorabots appear on web pages, in instant messaging, and respond to email and forum posts. They can be found in Second Life, in online games, and in social networks such as Facebook and Twitter. Increasingly pandorabots are turning up in mobile applications and texting. Pandorabots support marketing and advertising and are used in education.

Pandorabots is under constant development and has a very large active community. Pandorabots adheres to open standards for chatbot publishing. To the extent possible Pandorabots itself has been constructed from open-source software.

From any browser, you may create, design and publish your own software robots - and make them available to anyone via the Internet. [Sign-up for an Account](#) to begin creating your own virtual robots. If you already have an account, please sign-in to the left with your email address and password.

Pandorabots offers both Free and Premium Services. To see all the options, please look at our [Service Comparison Table](#).

What's New?

- IMPORTANT! We've updated our Policies, including our [Terms of Service](#), [Privacy Policy](#), and [DMCA Policy](#). Please read through these changes very carefully at your earliest convenience. Continued use of our services and/or failure to delete your account by October 10, 2015 constitutes acceptance of all new [Policies](#).
- [June 15, 2014] - Divabot Pre-Loebner Contest

DIVA BOT 2015
The Pandorabots Pre-Loebner Contest

Email:
Password:
☐ Remember my Password
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2,211,246,021 pandorobot responses served!

English ▾

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My Pandorabots

To configure a pandorobot, click on its name in the table below.

	Name	Created	Talk	Access /hour	Access /day	Access /week	Train	Logs	Explore
<input type="radio"/>	jyr	06/14/2010 06:02:17 AM GMT	Talk	0	0	0	Train	Logs	Explore
<input type="radio"/>	My Dumb Clone	10/08/2006 11:53:59 PM GMT	Talk	0	0	35	Train	Logs	Explore
<input type="radio"/>	BryBot 004*	10/08/2006 11:49:29 PM GMT		0	0	0	Train	Logs	Explore
<div>Publish ▾ OK</div>				<div>Refresh Counts</div>					

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[The A.L.I.C.E. AI Foundation.](#) - [AIML](#) - [Wikipedia](#) - [Official AIML 1.0.1 standard](#) - [AIML 2.0 Working Draft](#) -
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English

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Pandorabots

Configure a pandorabot, click on its name in the table below.

Name	Created	Talk	Access /hour	Access /day	Access /week	Train	Logs	Exp
r	06/14/2010 06:02:17 AM GMT	Talk	0	0	0	Train	Logs	Exp
y Dumb Clone	10/08/2006 11:53:59 PM GMT	Talk	0	0	35	Train	Logs	Exp
yBot 004*	10/08/2006 11:49:29 PM GMT		0	0	0	Train	Logs	Exp
h	OK	Refresh Counts						

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[The A.L.I.C.E. AI Foundation.](#) - [AIML](#) - [Wikipedia](#) - [Official AIML](#)
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Tell My Dumb Clone:

Say

Powered by [Pandorabots](#).

Human: i'm bryan

My Dumb Clone: $E = MC^2$.

Human: i'm kaiwen

My Dumb Clone: Aha, here you are. JY! JY!!! Kaiwen's here!

Human: i'm jiayu

My Dumb Clone: Oh, Hello, JY! Would you like me do anything? Something? Nothing?

Human: hello

My Dumb Clone: Hi there!



A.L.I.C.E.

ARTIFICIAL INTELLIGENCE FOUNDATION
PROMOTING THE DEVELOPMENT AND ADOPTION OF
ALICE AND AIML FREE SOFTWARE

A.L.I.C.E. Silver Edition

DAVE E.S.L. bot

C.L.A.U.D.I.O Personality Test

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Free Live Chat with the award winning A. I. chat robot **A. L. I. C. E.**

Get Started

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AIML: Artificial Intelligence Markup Language

AIML (Artificial Intelligence Markup Language) is an XML-compliant language that's easy to learn, and makes it possible for you to begin customizing an Alicebot or creating one from scratch within minutes.

The most important units of AIML are:

- `<aiml>`: the tag that begins and ends an AIML document
- `<category>`: the tag that marks a "unit of knowledge" in an Alicebot's knowledge base
- `<pattern>`: used to contain a simple pattern that matches what a user may say or type to an Alicebot
- `<template>`: contains the response to a user input

There are also 20 or so additional more tags often found in AIML files, and it's possible to create your own so-called "custom predicates". Right now, a beginner's guide to AIML can be found in the [AIML Primer](#).

The free **A.L.I.C.E. AIML** includes a knowledge base of approximately 41,000 categories. Here's an example of one of them:

```
<category>
  <pattern>WHAT ARE YOU</pattern>
  <template>
    <think><set name="topic">Me</set></think>
    I am the latest result in artificial intelligence,
    which can reproduce the capabilities of the human brain
    with greater speed and accuracy.
  </template>
</category>
```

(The opening and closing `<aiml>` tags are not shown here, because this is an excerpt from the middle of a document.)

Everything between `<category>` and `</category>` is -- you guessed it -- a category. A category can have one pattern and one template. (It can also contain a `<that>` tag, but we won't get into that here.)

The pattern shown will match *only* the exact phrase "what are you" (capitalization is ignored).

But it's possible that this category may be invoked by another category, using the `<srail>` tag (not shown) and the principle of **reductionism**.

In any case, if this category is called, it will produce the response "I am the latest result in artificial intelligence..." shown above. In addition, it will do something else interesting. Using the `<think>` tag, which causes Alicebot to perform whatever it contains but hide the result from the user, the Alicebot engine will set the "topic" in its memory to "Me". This allows any categories elsewhere with an explicit "topic" value of "ME" to match better than categories with the same patterns that are not given an explicit topic. This illustrates one mechanism whereby a botmaster can exercise precise control over a conversational flow.

Subscription Bots

[A.L.I.C.E. Silver Edition](#)
[DAVE E.S.L. Bot](#)
[CLAUDIO Personality Test](#)



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English



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[My Dumb Clone](#) >> Training

Type in questions below that you want your pandorabot to be able to answer. If you don't like the answer, type in the response.

Human:

Ask

Human: when will my bus arrive?

Matched: WHEN WILL * (*category defined in [W.aiml](#)*)

Don't Match

My Dumb Clone: Soon, I think.

My Dumb Clone: You can use Bus Eta Bot (<https://t.me/BusEtaBot>) on Telegram for that!

Say Instead

Ask Again

Advanced Alter Response



2,210,796,415 pandorabot responses

English ▾

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[My Dumb Clone](#) >> Training

Type in questions below that you want your pandorabot to be able to answer. If you don't like the answer, type in the response.

Human:

Ask

Human: when will my bus arrive

Matched: WHEN WILL MY BUS ARRIVE (*category defined in [update.aiml](#)*)

Don't Match

My Dumb Clone: You can use Bus Eta Bot (<https://t.me/BusEtaBot>) on Telegram for that!

My Dumb Clone:

Say Instead

Ask Again

Advanced Alter Response

my-first-agent

en

Intents

Entities

Training ^[beta]

Integrations

Analytics ^[new]

Fulfillment

Prebuilt Agents

Small Talk

Support

Account

Logout

Get etas for a specific bus stop

SAVE

Try it now

Contexts

User says

Search in user says

Add user expression

96049 etas

96049 buses

Etas for 96049

96049

Events

Action

get_bus_stop_etas

REQUIRED

PARAMETER NAME

ENTITY

VALUE

IS LIST

PROMPTS



bus_stop_id

@sys.number

\$bus_stop_id



Define prompts...



Enter name

Enter entity

Enter value



—

+ New parameter

Response

DEFAULT

TELEGRAM



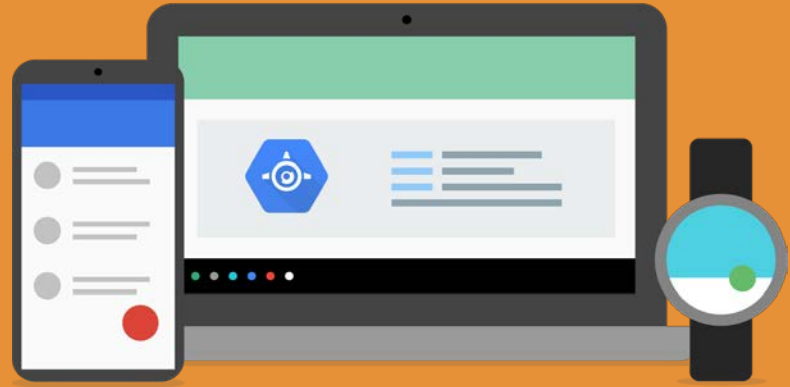
Please use test console above to try a sentence.

See how it works in Google Assistant.

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Learn/Apply

App Engine



App Engine

- Introduced 2008
- First serverless offering
- Platform-as-a-Service (PaaS)

Running your own web application

☐ Hardware

☐ OS updates

☐ Internet connection

☐ Software updates

☐ Operating system

☐ Scaling

☐ Software

☐ Your code

Infrastructure-as-a-Service

☒ Hardware

☒ Internet connection

☐ Operating system

☐ Software

☐ Your code

☐ OS updates

☐ Software updates

☐ Scaling

Platform-as-a-Service

☒ Hardware

☒ Internet connection

☒ Operating system

☒ Software

☐ Your code

☒ OS updates

☒ Software updates

☒ Scaling

App Engine

- ☒ Hardware
- ☒ Internet connection
- ☒ Operating system
- ☒ Software (runtimes, libraries)
- ☒ OS updates
- ☒ Software updates
- ☒ Scaling
- ☒ Load-balancing
- ☒ Storage and databases
- ☐ Your code
- ☒ Logging
- ☒ Application Versioning
- ☒ HTTPS
- ☒ Image manipulation
- ☒ Authentication
- ☒ Messaging
- ☒ Caching
- ☒ Search
- ☒ Image manipulation

App Engine

Standard environment

- Sandboxed
- Scale to 0
- Fast scale up

Flexible environment

- Docker containers
- Consistent traffic

Standard environment APIs

- Datastore
- Search
- Cron
- Task Queues
- Logging
- Trace

Datastore

- NoSQL document database
- Queries, filtering and ordering:

```
SELECT * FROM Per son WHERE age >= 18 AND  
age <= 35
```

```
SELECT * FROM Per son ORDER BY age DESC  
LI M T 3
```

- Automatic indexes



Entities

[+ CREATE ENTITY](#)[REFRESH](#)[DELETE](#)[Query by kind](#)[Query by GQL](#)

Namespace

Kind

[default]

BusStop

[Filter entities](#)

Number of columns to display

50

<input type="checkbox"/> Name/ID	BusStopID	Description	Location	Road
<input type="checkbox"/> name=01012	01012	Hotel Grand Pacific	{ "latitude": 1.29684825487647, "longitude": 103.85253591654006 }	Victoria St
<input type="checkbox"/> name=01013	01013	St. Joseph's Ch	{ "latitude": 1.29770970610083, "longitude": 103.8532247463225 }	Victoria St
<input type="checkbox"/> name=01019	01019	Bras Basah Cplx	{ "latitude": 1.29698951191332, "longitude": 103.85302201172507 }	Victoria St
<input type="checkbox"/> name=01029	01029	Cosmic Insurance Bldg	{ "latitude": 1.2966729849642, "longitude": 103.85441422464267 }	Nth Bridge Rd
<input type="checkbox"/> name=01039	01039	Nth Bridge Commercial Cplx	{ "latitude": 1.29820784139683, "longitude": 103.85549139837407 }	Nth Bridge Rd
<input type="checkbox"/> name=01059	01059	Bugis Stn	{ "latitude": 1.30075679526626, "longitude": 103.85611040457583 }	Victoria St
<input type="checkbox"/> name=01109	01109	Queen St Ter	{ "latitude": 1.30358577565355, "longitude": 103.85650372998224 }	Queen St
<input type="checkbox"/> name=01112	01112	Opp Bugis Junction	{ "latitude": 1.30015494414022, "longitude": 103.8552332285516 }	Victoria St
<input type="checkbox"/> name=01113	01113	Bugis Stn	{ "latitude": 1.30117297541547, "longitude": 103.8561140106393 }	Victoria St
<input type="checkbox"/> name=01119	01119	Bugis Junction	{ "latitude": 1.2996041093804, "longitude": 103.85512934079571 }	Victoria St
<input type="checkbox"/> name=01121	01121	Stamford Pr Sch	{ "latitude": 1.30393809691048, "longitude": 103.85867999243207 }	Victoria St
<input type="checkbox"/> name=01129	01129	Opp Stamford Pr Sch	{ "latitude": 1.30350269187301, "longitude": 103.85864530718491 }	Victoria St
<input type="checkbox"/> name=01139	01139	Parkview Sq	{ "latitude": 1.30033057855542, "longitude": 103.85716080665901 }	Nth Bridge Rd
<input type="checkbox"/> name=01211	01211	Opp Blk 461	{ "latitude": 1.30551803523268, "longitude": 103.8605449516032 }	Victoria St

Search

- Full-text search
- Geospatial queries:
`distance(Location, geopoint (1. 27426, 103. 79839)) < 500`



BusStops

Run query

ID	BusStopID	Description	Location	Road
TPE	TPE	Express		TPE
SLE	SLE	Express		SLE
TENN9	TENN9	Opp Kallang Tennis Ctr		Stadium Blvd
N4501	N4501	Opp Kranji Pr Sch (LP 87)	(1.394, 103.746)	Choa Chu Kang Dr
N4521	N4521	Aft Choa Chu Kang Nth 6 (LP 167)		Choa Chu Kang Way
N4539	N4539	Blk 552 (LP 150)		Choa Chu Kang Way
N4541	N4541	Blk 661	(1.401, 103.751)	Choa Chu Kang Cres
N4569	N4569	Blk 669	(1.403, 103.748)	Choa Chu Kang Cres
N4591	N4591	Blk 673A	(1.401, 103.747)	Choa Chu Kang Nth 7
N5801	N5801	Blk 353		Admiralty Dr
N6709	N6709	Blk 319A	(1.391, 103.89)	Anchorvale Link
PIE	PIE	Express		PIE
N4431	N4431	Blk 621 (LP 13)	(1.399, 103.747)	Choa Chu Kang St 62
N4511	N4511	Blk 678A (LP 37)		Choa Chu Kang Nth 7
N4519	N4519	Blk 613 (LP 38)		Choa Chu Kang Nth 7
N4529	N4529	Aft Blk 605 (LP 170)		Choa Chu Kang Way
N4531	N4531	Opp Blk 548 (LP 143)		Choa Chu Kang Way

Cron

- Scheduled tasks
- Retry failed jobs



Task queues

[REFRESH](#)[Push Queues](#)[Pull Queues](#)[Cron Jobs](#)

A cron job is a scheduled task that runs at a specific time or at regular intervals.

[Cron job ^](#)

Description

Frequency

Last run

Status

Log

[/initialise-db-async?environment=prod](#)

update bus stops in production environment

16 of month 00:00
(GMT)2017-12-16 (08:00:00)
On time

Success

[View](#)[Run now](#)[/initialise-db-async?environment=staging](#)

update bus stops in staging environment

15 of month 00:00
(GMT)2017-12-15 (08:00:02)
1 sec late

Success

[View](#)[Run now](#)

Task Queues

- Do work in the background
- Bypass 60-second request timer
- Up to 10 minutes

Logs

Filter by label or text search

GAE Application, Default Service

request_log

Any log level

Showing logs from the beginning of time to 11:12 AM (HKT)

▶	!!	2018-01-17 23:26:46.959 HKT	POST	200	40 B	866 ms	Unknown	/
▶	i	2018-01-17 23:28:02.730 HKT	POST	200	40 B	660 ms	Unknown	/
▶	i	2018-01-17 23:28:05.681 HKT	POST	200	40 B	569 ms	Unknown	/
▶	i	2018-01-17 23:28:06.033 HKT	POST	200	40 B	556 ms	Unknown	/
▶	i	2018-01-17 23:28:06.207 HKT	POST	200	40 B	643 ms	Unknown	/
▶	i	2018-01-17 23:28:06.437 HKT	POST	200	40 B	781 ms	Unknown	/
▶	i	2018-01-17 23:28:46.451 HKT	POST	200	40 B	938 ms	Unknown	/
▶	!!	2018-01-17 23:28:46.807 HKT	POST	200	40 B	1.2 s	Unknown	/
▶	i	2018-01-17 23:28:46.987 HKT	POST	200	40 B	779 ms	Unknown	/
▶	i	2018-01-17 23:28:47.608 HKT	POST	200	40 B	559 ms	Unknown	/
▶	i	2018-01-17 23:28:47.767 HKT	POST	200	40 B	769 ms	Unknown	/
▶	i	2018-01-18 00:14:57.093 HKT	POST	200	40 B	720 ms	Unknown	/

Logs

User-defined Metrics

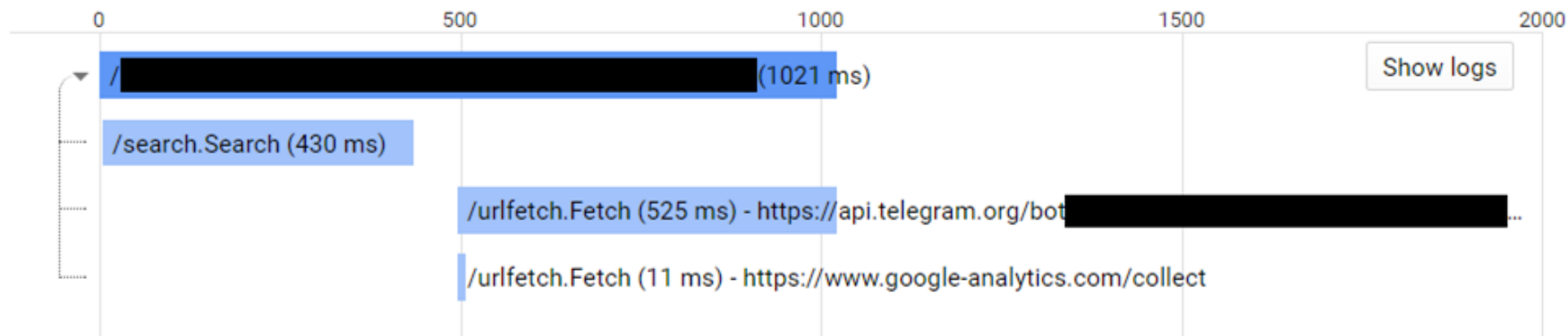
User defined logs-based metrics that count the number of log entries that match a given filter.

<input type="checkbox"/> Name ^	Type	Description	Filter	
<input type="checkbox"/> user/gae/urlfetch_deadline_exceeded	Counter		resource.type="gae_app" resource.labels.module_id="default" logName="projects/bus-eta-bot/logs/appengine.googleapis.com%2Frequest_log" "DEADLINE_EXCEEDED"	⋮
<input type="checkbox"/> user/Timeouts	Counter	Function executions finishing with status timeout	resource.type="cloud_function" resource.labels.function_name="bus-eta-bot-prod" severity>=DEBUG "timeout"	⋮

Trace

← Trace Details

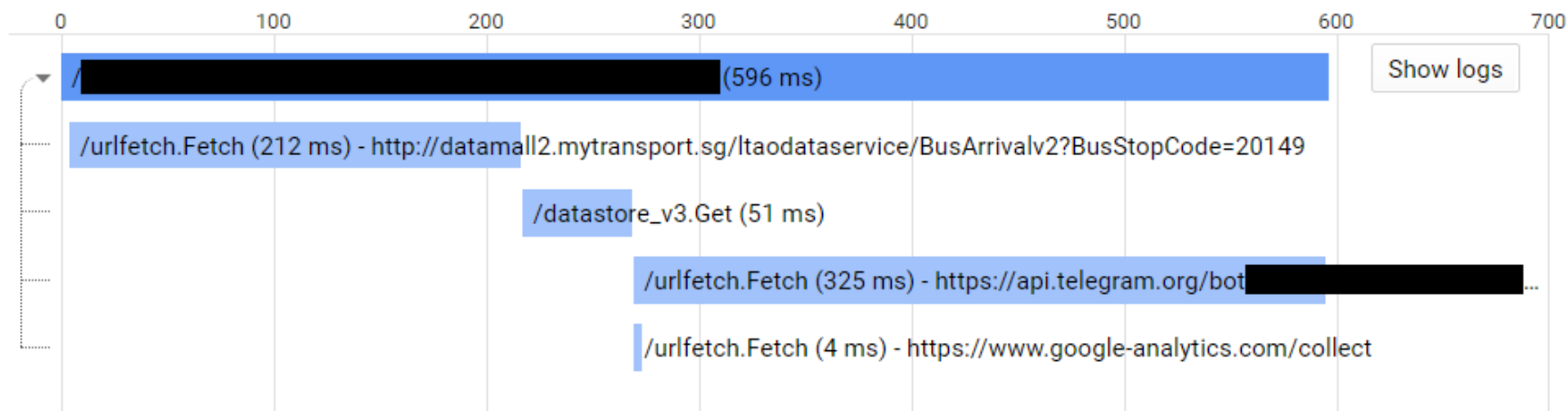
Timeline



Trace

← Trace Details

Timeline



30

Goto 10

10

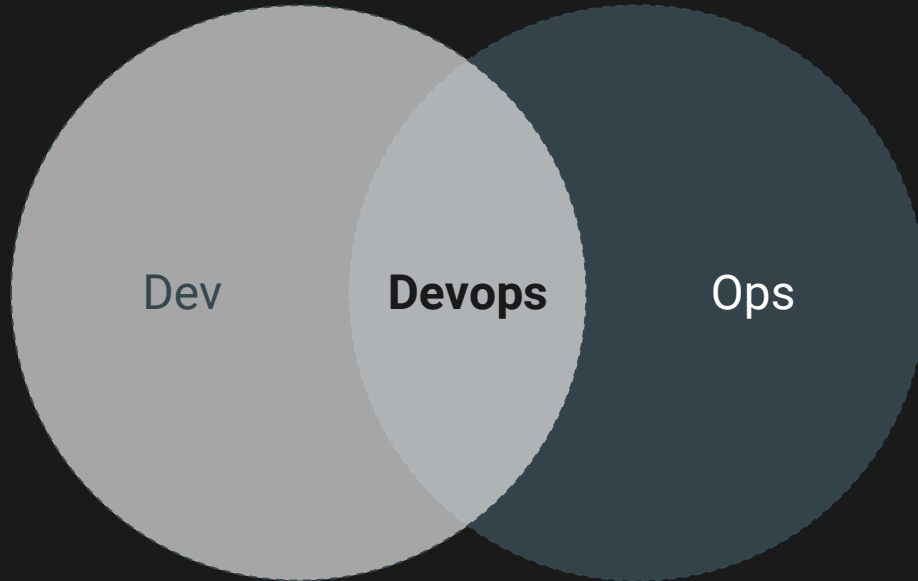
Explore/Experiment

Devops

agile tools cycle lean stages process automation continuous ops atlassian now lifecycle graphic workflow ecosystem



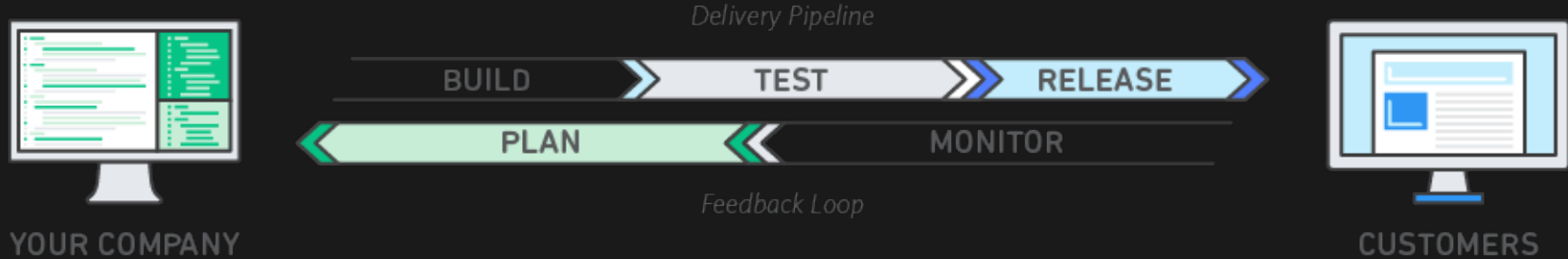
What is devops?



Software development and operation

- Building a pretty website
- Putting your website onto the internet
- Keeping your website on the internet
- Updating your website

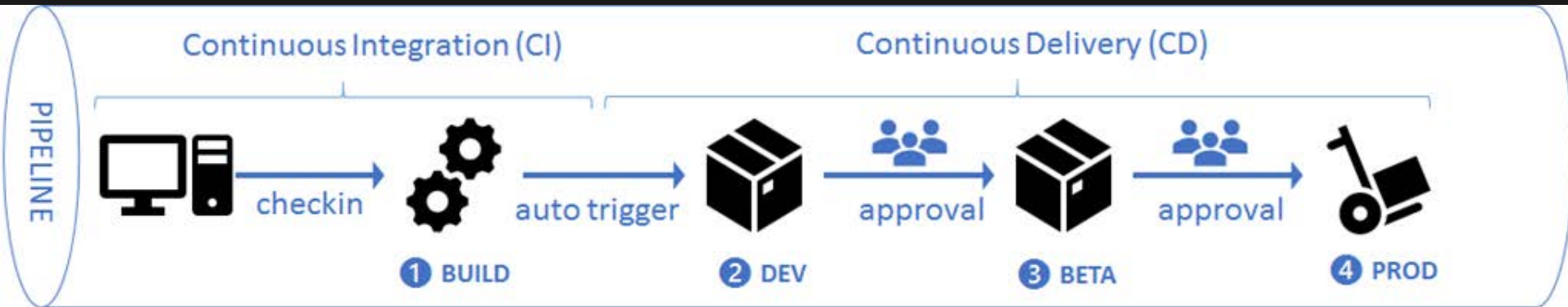
The devops pipeline



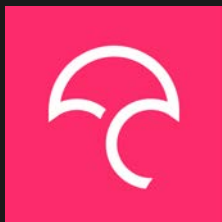
<https://aws.amazon.com/devops/what-is-devops/>

Continuous Integration, Delivery and Deployment

- Automated testing
- Automated deployment



CI/CD tools



Travis CI

COVERALLS

Automation

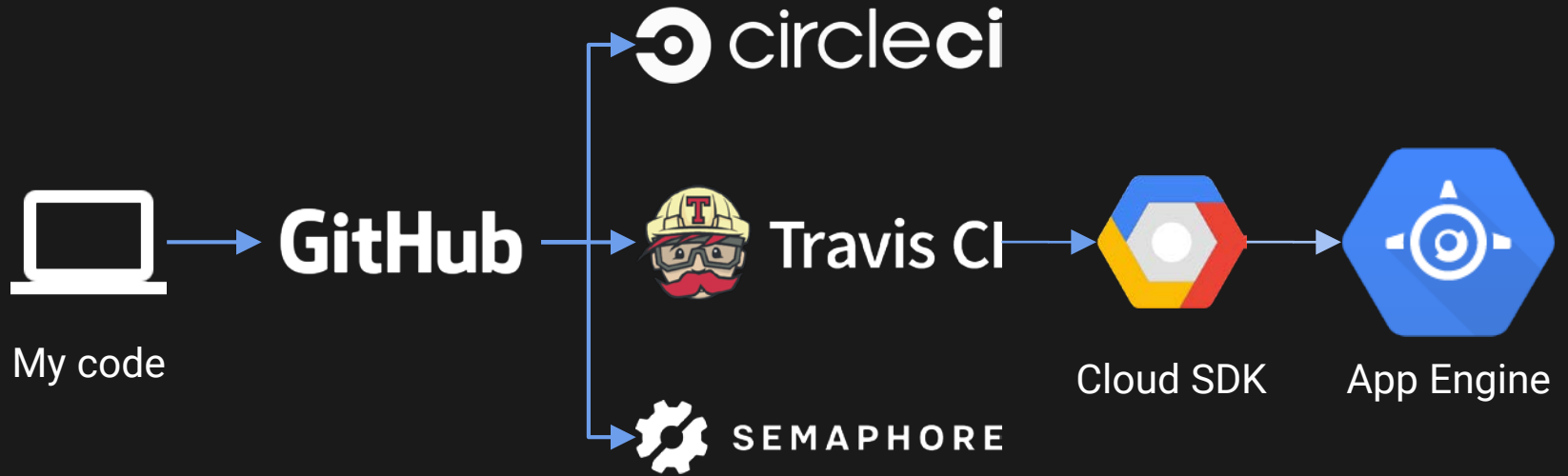
- The Evolution of Automation at Google in Site Reliability Engineering:
<https://landing.google.com/sre/book/chapters/automation-at-google.html>
- A Hierarchy of Automation Classes

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Learn/Apply

The Evolution of Automation for me

- No automation
- Scripts
- Continuous integration and deployment



Analytics

- Google Analytics Measurement Protocol
- Unique users
- Popular actions

Analytics

<input type="checkbox"/>	1. refresh_callback	584 (68.30%)
<input type="checkbox"/>	2. eta_text_message	154 (18.01%)
<input type="checkbox"/>	3. resend_callback	48 (5.61%)
<input type="checkbox"/>	4. new_inline_query	32 (3.74%)
<input type="checkbox"/>	5. chosen_nearby_inline_result	9 (1.05%)
<input type="checkbox"/>	6. chosen_inline_result	7 (0.82%)
<input type="checkbox"/>	7. start_command	5 (0.58%)
<input type="checkbox"/>	8. add_favourite_callback	3 (0.35%)
<input type="checkbox"/>	9. continued_text_message	3 (0.35%)

GitHub weekly users badge

- <https://medium.com/google-cloud/displaying-google-analytics-metrics-in-your-readme-2ce45fb7ea76>
- Analytics Reporting API
- Cloud Functions
- shields.io

GitHub weekly users badge

README.md

Bus Eta Bot

users

65/week

build

passing

build

passed

circleci

passing

codecov

52%

go report

A+

A practical Telegram bot for getting bus etas in Singapore supporting refreshing, bus s stops.

Getting started

10	Explore/Experiment
20	Learn/Apply
30	Goto 10

Thank you!

Contact me

- Website: jiayu.co
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- Telegram: [@jiayu](https://t.me/jia-yu)
- Medium: [@jiayu.](https://medium.com/@jiayu) (with the dot)