

MICHIGAN STATE
UNIVERSITY

Alpha Presentation

Self-Service Support Chatbot for Google Cloud

The Capstone Experience

Team Google

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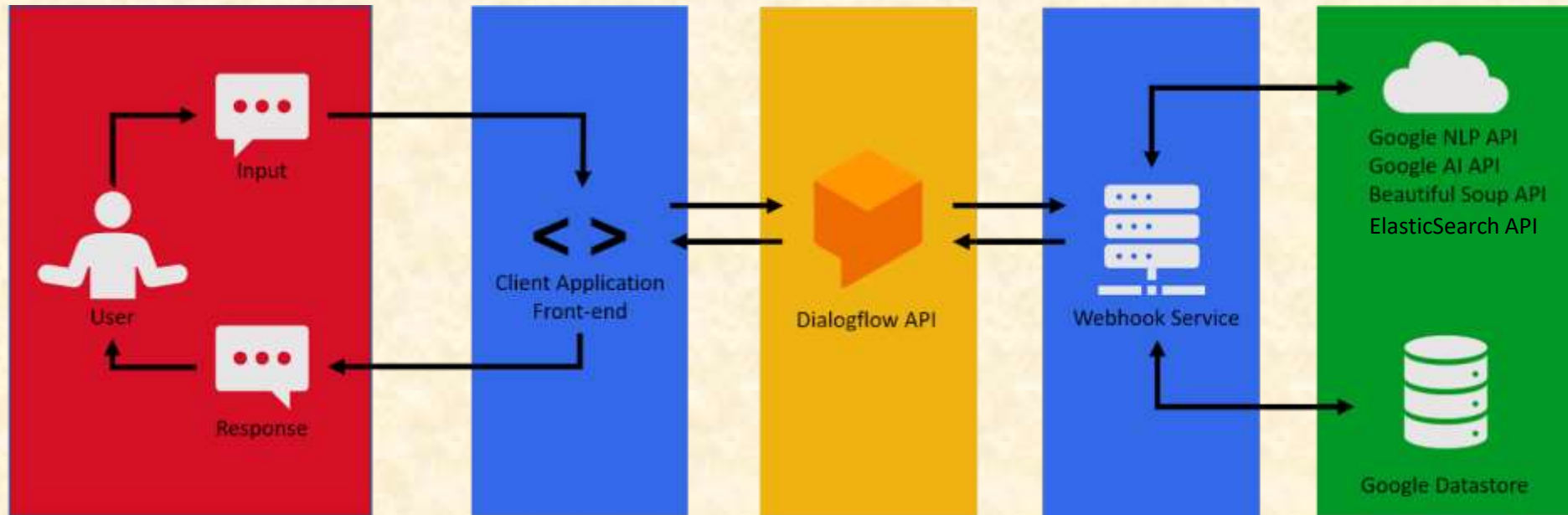
From Students...
...to Professionals

Department of Computer Science and Engineering
Michigan State University
Fall 2020

Project Overview

- 4 components:
 - Chatbot
 - Analytics Dashboard
 - Interrogator Script
 - AI Model
- Reduce time to issue resolution
- Provide insight on the usefulness of current documentation

System Architecture



Scraped Documents In Datastore

Entities						Cloud Firestore in Datastore mode ?
+ CREATE ENTITY						
IMPORT						
EXPORT						
DELETE						
QUERY BY KIND						QUERY BY GQL
Kind						
TroubleshootSuggestion						
FILTER ENTITIES						
<input type="checkbox"/>	Name/ID ↑	Date	Keyword	Section	URI	
<input type="checkbox"/>	id=4503643969552384	2020-10-18 (12:39:27.831) EDT	remove an instance from the instance group	gcloud	https://cloud.google.com/compute/docs/ins...	
<input type="checkbox"/>	id=4504162653962240	2020-10-18 (13:23:39.632) EDT	manage your services	Fedora CoreOS	https://cloud.google.com/compute/docs/im...	
<input type="checkbox"/>	id=4504387703537664	2020-10-18 (12:41:07.402) EDT	managed instance	API	https://cloud.google.com/compute/docs/ins...	
<input type="checkbox"/>	id=4504464576741376	2020-10-18 (12:45:39.200) EDT	build highly available deployments	Stateful managed instance groups	https://cloud.google.com/compute/docs/ins...	
<input type="checkbox"/>	id=4504529605230592	2020-10-18 (12:44:53.495) EDT	update all the vms	OS image upgrades for MIGs	https://cloud.google.com/compute/docs/ins...	
<input type="checkbox"/>	id=4504587721506816	2020-10-18 (12:21:13.422) EDT	solutions	Solutions	https://cloud.google.com/compute/docs/im...	
<input type="checkbox"/>	id=4504703383633920	2020-10-18 (12:53:03.312) EDT	permissions	Permissions	https://cloud.google.com/compute/docs/ins...	
<input type="checkbox"/>	id=4505134591639552	2020-10-18 (12:32:09.169) EDT	update ubuntu operating systems	Ubuntu	https://cloud.google.com/compute/docs/im...	
<input type="checkbox"/>	id=4505821249536000	2020-10-18 (13:14:34.124) EDT	tcp traffic	Sending email with Mailjet	https://cloud.google.com/compute/docs/tut...	
<input type="checkbox"/>	id=4506037205860352	2020-10-18 (12:03:32.818) EDT	transfer files	Transferring files using the gcloud	https://cloud.google.com/compute/docs/ins...	
<input type="checkbox"/>	id=4506220949929984	2020-10-18 (12:13:32.175) EDT	products and pricing	Products and pricing	https://cloud.google.com/compute/docs/dis...	
<input type="checkbox"/>	id=4506958543454208	2020-10-18 (12:53:57.765) EDT	view startup agent logs	Viewing startup agent logs	https://cloud.google.com/compute/docs/co...	
<input type="checkbox"/>	id=4507144636334080	2020-10-18 (12:57:54.415) EDT	turn on autoscaling	Scale-in controls with autoscaler mode	https://cloud.google.com/compute/docs/au...	
<input type="checkbox"/>	id=4507377000775680	2020-10-18 (12:33:57.732) EDT	api	API	https://cloud.google.com/compute/docs/ins...	
<input type="checkbox"/>	id=4508298573250560	2020-10-18 (12:41:38.943) EDT	scalable apps	Choosing regional managed instance groups	https://cloud.google.com/compute/docs/ins...	



Chatbot Conversation In DialogFlow

Hi! What did you break that brought you to me?

I'm having an issue with my instance

Is your issue with creating your instance, connecting to your instance, starting up your instance, network traffic to or from your instance being dropped, firewall rules, or is it due to something else?

Creating my instance

Did you receive an error?

Yes

What error did you receive?

notFound

See this document:
<https://cloud.google.com/compute/docs/troubleshooting/troubleshooting-instances#vm-not-created>

If you receive a notFound or does not exist in zone error when requesting new resources, it means that the zone does not offer the resource or machine type that you have requested. See Regions and zones to find out which features are available in each zone.

Would you like to submit a support ticket, exit, or ask another question?

I want to submit a support ticket

Do you want to open a support ticket or end our conversation?

support ticket

Okay I am sorry I could not help you. I will send you notes of our conversation that you can paste into a support ticket here:
<https://enterprise.google.com/supportcenter/managecases>



Interrogator Script Command and Results

```
hubrando@cloudshell:~/msu-spartan/interrogator-script (msu-spartan-289723)$ gcloud compute ssh hubrando@brandon-interrogator-script --zone=us-central1-a
Linux brando-interrogator-script 4.19.0-11-cloud-amd64 #1 SMP Debian 4.19.146-1 (2020-09-17) x86_64

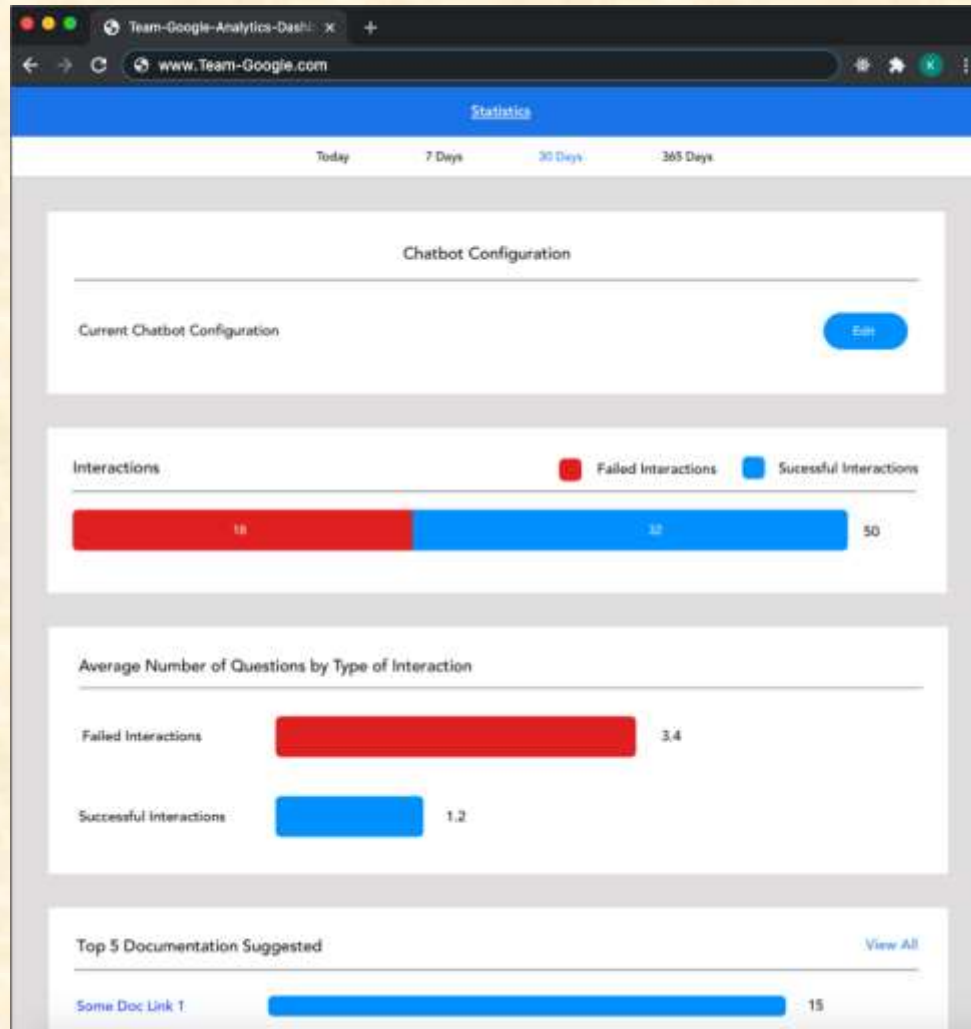
The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Sun Oct 18 22:47:57 2020 from 35.226.215.11
hubrando@brando-interrogator-script:~$ ls
gee_output.txt
hubrando@brando-interrogator-script:~$ cat gee_output.txt
no traceroute in /usr/sbin or /bin relying on PATH
:echo ##### GEE #####
##### GEE #####
:grep -qw network
:echo
:[ 1 = 1 ]
:echo ### Network
### Network
:/sbin/ifconfig
ens4: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1460
    inet 10.128.0.4 netmask 255.255.255.255 broadcast 10.128.0.4
    inet6 fe80::4001:aff:fe80:4 prefixlen 64 scopeid 0x20<link>
    ether 42:01:0a:80:00:04 txqueuelen 1000 (Ethernet)
    RX packets 718 bytes 164589 (160.7 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 642 bytes 88254 (86.1 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 33 bytes 6722 (6.5 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 33 bytes 6722 (6.5 KiB)
```



Chatbot Configuration Dashboard



What's left to do?

1. Implement elastic search to help us go beyond the web scrapped solutions in regards to GCE issues
2. Implement the AI API model to train the suggestions offered by the bot
3. Ask for feedback from the customer
4. Functionality of the interrogator script



Questions?

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