



# Promotion Management

---

# Overview

- Context
- Functionalities

# Context



## Problem:

Promotions are usually created based on experience and trending events but not following any standard.

This made it more difficult to:

- decide what type of promotion and constraints to apply
- manage & evaluate effectiveness of each promotions

## Our solution:

Provide a way to *create & manage* promotions *systematically* on a beverage chain through a web *control panel*.

# Functionalities



## Main functions:

- Create & manage promotions & constraints systematically
- Create & manage orders
- Suggest applicable promotions for each order and apply them

## Additional functions:

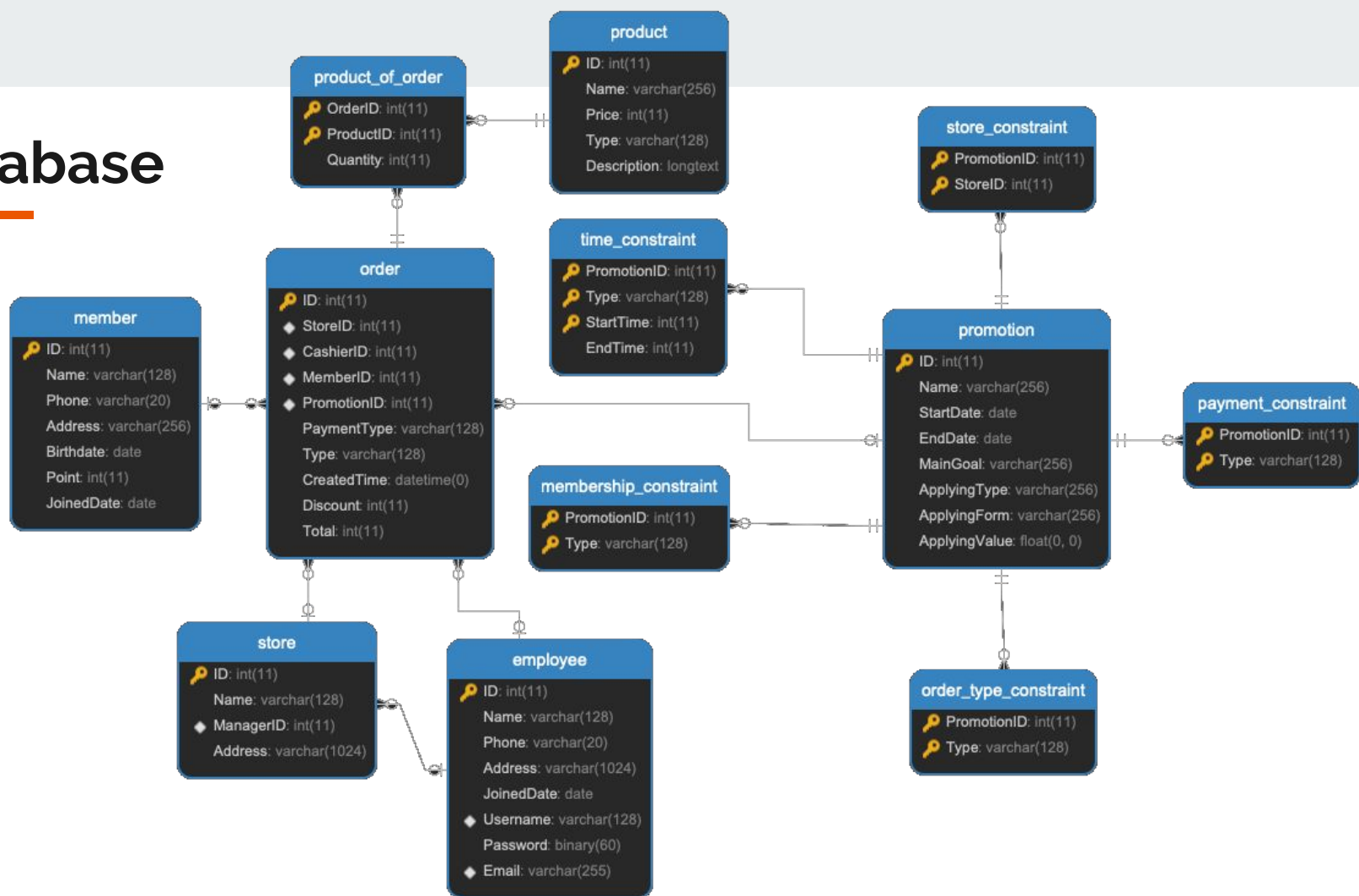
- Authentication
  - Using username & password
  - Using Google account
- Manage other elements: product, store, employee, member

---

# Components

- Database
- API
- User Interface

# Database



# API: RESTful

## promotion



**GET** /promotion Returns a list of all promotions

**POST** /promotion Add a new promotion

**GET** /promotion/{promotion\_id} Returns details of a promotion

**PUT** /promotion/{promotion\_id} Edit an existing promotion

**DELETE** /promotion/{promotion\_id} Delete a promotion

**GET** /promotion/applicable Returns a list promotions that are applicable to an order

## order



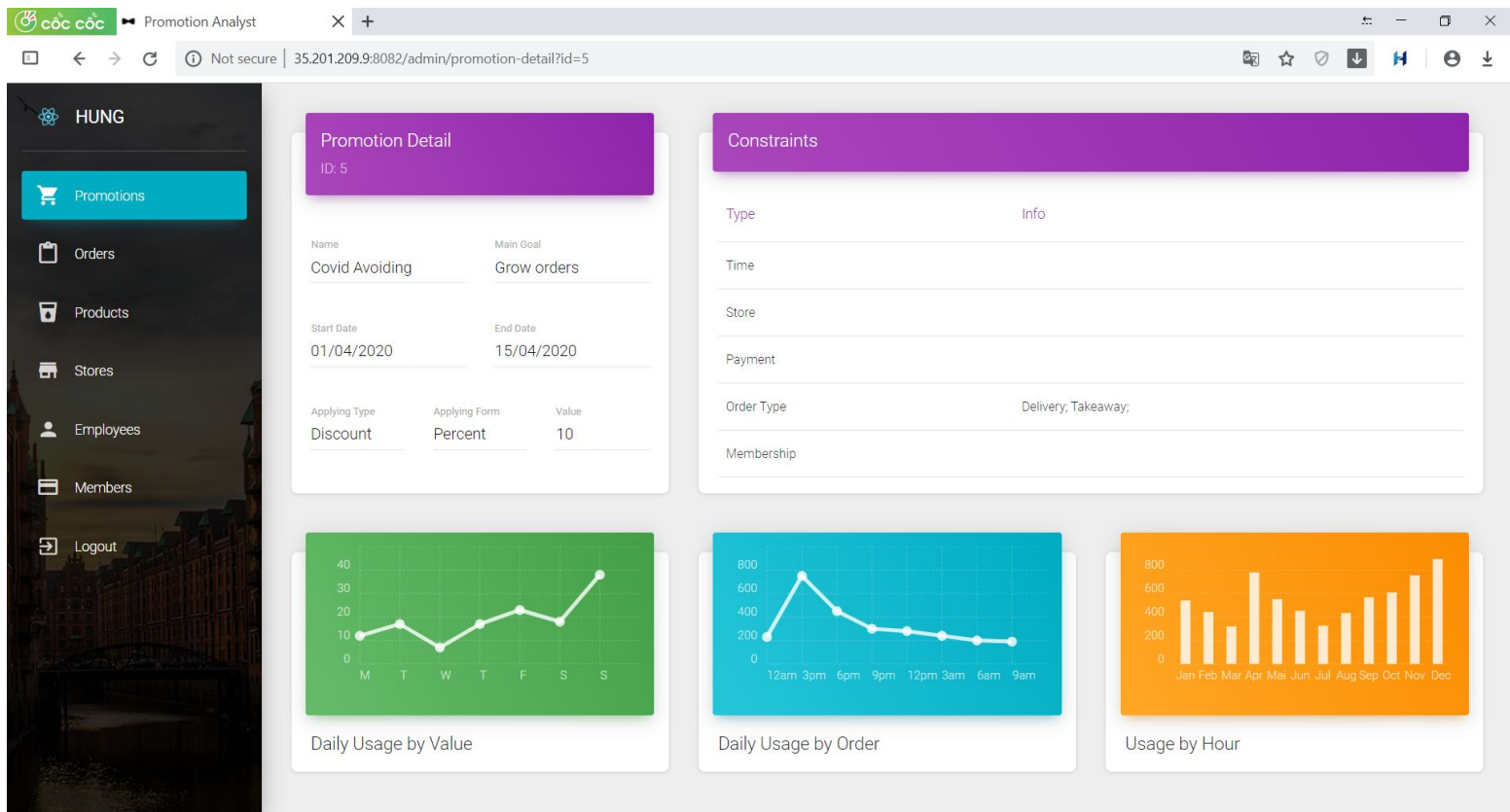
**GET** /order Returns a list of all orders

**POST** /order Add a new order

**GET** /order/{order\_id} Returns details of an order

**DELETE** /order/{order\_id} Delete an order

# User Interface: Admin Control Panel





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# Tools & Technologies

## Language - Framework

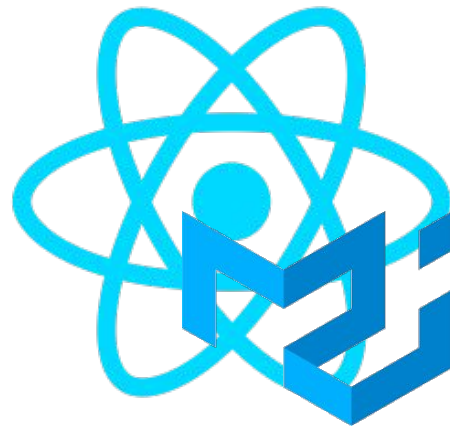
---



Golang




ECMA Script 6






ReactJS  
Material UI



# Github



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Back-end API build on top of Golang [Edit](#)

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 <a href="#">huynhducduy</a> update insomnia	Latest commit 3e38549 2 hours ago
<a href="#">.idea</a>	update docker, jenkins, binary 12 hours ago
<a href="#">cmd/app</a>	update firebase authentication 3 hours ago
<a href="#">internal</a>	update firebase authentication 3 hours ago
<a href="#">pkg/utils</a>	list promotion 4 days ago
<a href="#">vendor</a>	update firebase authentication 3 hours ago
<a href="#">.env.example</a>	update firebase authentication 3 hours ago
<a href="#">.gitignore</a>	update firebase authentication 3 hours ago
<a href="#">Dockerfile</a>	fix 2 hours ago
<a href="#">Insomnia.json</a>	update insomnia 2 hours ago
<a href="#">Jenkinsfile</a>	update ci/cd 3 hours ago
<a href="#">README.md</a>	update yesterday
<a href="#">dev.Dockerfile</a>	update docker, jenkins, binary 12 hours ago

 <a href="#">huynhducduy</a> committed 12 hours ago	<a href="#">9d3949c</a>	<a href="#">Code</a>
<a href="#">update get applicable</a>		
 <a href="#">huynhducduy</a> committed 12 hours ago	<a href="#">954931d</a>	<a href="#">Code</a>
<a href="#">change type</a>		
 <a href="#">huynhducduy</a> committed 14 hours ago	<a href="#">d021f99</a>	<a href="#">Code</a>
<a href="#">update insomnia</a>		
 <a href="#">huynhducduy</a> committed 23 hours ago	<a href="#">dba244a</a>	<a href="#">Code</a>

Commits on Apr 13, 2020

<a href="#">update delete order</a>		
 <a href="#">huynhducduy</a> committed yesterday	<a href="#">6f52de3</a>	<a href="#">Code</a>
<a href="#">update get applicable</a>		
 <a href="#">huynhducduy</a> committed yesterday	<a href="#">2ca7451</a>	<a href="#">Code</a>
<a href="#">update</a>		
 <a href="#">huynhducduy</a> committed yesterday	<a href="#">e5a4ffa</a>	<a href="#">Code</a>
<a href="#">update</a>		
 <a href="#">huynhducduy</a> committed yesterday	<a href="#">f1e7233</a>	<a href="#">Code</a>
<a href="#">update login route</a>		
 <a href="#">huynhducduy</a> committed 2 days ago	<a href="#">1645132</a>	<a href="#">Code</a>
<a href="#">update create order</a>		
 <a href="#">huynhducduy</a> committed 2 days ago	<a href="#">432f9bd</a>	<a href="#">Code</a>
<a href="#">update rest</a>		
 <a href="#">huynhducduy</a> committed 2 days ago	<a href="#">68a0585</a>	<a href="#">Code</a>
<a href="#">update binary</a>		
 <a href="#">huynhducduy</a> committed 2 days ago	<a href="#">baa4ab3</a>	<a href="#">Code</a>
<a href="#">update</a>		
 <a href="#">huynhducduy</a> committed 2 days ago	<a href="#">552d1b7</a>	<a href="#">Code</a>
<a href="#">update create order, list order</a>		
 <a href="#">huynhducduy</a> committed 2 days ago	<a href="#">a1b6adc</a>	<a href="#">Code</a>

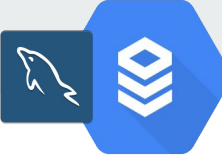


# Server: Google Compute Engine - Ubuntu

```
CPU[| 0.7%] Tasks: 52, 152 thr; 1 running
Mem[|||||||||||||||||||||||||||||||||||||||||1.15G/3.61G] Load average: 0.00 0.00 0.00
Swp[| 0K/0K] Uptime: 12:57:32
```

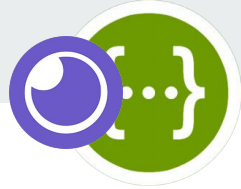
PID	USER	PRI	NI	VIRT	RES	SHR	S	CPU%	MEM%	TIME+	Command
941	duuuuuuuuu	20	0	24944	3956	3144	R	1.3	0.1	0:00.10	htop
1524	root	20	0	67092	21308	7828	S	0.0	0.6	0:01.50	/usr/bin/python3 /usr/bin/google_clock_skew_daemon
30215	jenkins	20	0	3053M	586M	28232	S	0.0	15.9	3:54.24	/usr/bin/java -Djava.awt.headless=true -jar /usr/share/jenkins/jenkins.war --webroot=/var/cache/jenkins/
1313	root	20	0	268M	6024	5324	S	0.0	0.2	0:00.84	/usr/lib/accountsservice/accounts-daemon
1022	duuuuuuuuu	20	0	21444	5240	3252	S	0.0	0.1	0:00.04	-bash
5206	root	20	0	566M	47440	25300	S	0.0	1.3	0:38.33	/usr/bin/containerd
959	root	20	0	92804	6860	5924	S	0.0	0.2	0:00.01	sshd: duuuuuuuuy [priv]
1521	root	20	0	67112	21756	8064	S	0.0	0.6	0:02.41	/usr/bin/python3 /usr/bin/google_network_daemon
1526	root	20	0	67368	21768	7968	S	0.0	0.6	0:03.78	/usr/bin/python3 /usr/bin/google_accounts_daemon
30224	jenkins	20	0	3053M	586M	28232	S	0.0	15.9	0:29.28	/usr/bin/java -Djava.awt.headless=true -jar /usr/share/jenkins/jenkins.war --webroot=/var/cache/jenkins/
1	root	20	0	37828	5852	4036	S	0.0	0.2	0:04.83	/sbin/init
339	root	20	0	203M	3860	2464	S	0.0	0.1	0:00.00	/usr/bin/docker-proxy -proto tcp -host-ip 0.0.0.0 -host-port 8081 -container-ip 172.17.0.2 -container-po
340	root	20	0	203M	3860	2464	S	0.0	0.1	0:00.00	/usr/bin/docker-proxy -proto tcp -host-ip 0.0.0.0 -host-port 8081 -container-ip 172.17.0.2 -container-po
341	root	20	0	203M	3860	2464	S	0.0	0.1	0:00.00	/usr/bin/docker-proxy -proto tcp -host-ip 0.0.0.0 -host-port 8081 -container-ip 172.17.0.2 -container-po
342	root	20	0	203M	3860	2464	S	0.0	0.1	0:00.00	/usr/bin/docker-proxy -proto tcp -host-ip 0.0.0.0 -host-port 8081 -container-ip 172.17.0.2 -container-po
336	root	20	0	203M	3860	2464	S	0.0	0.1	0:00.00	/usr/bin/docker-proxy -proto tcp -host-ip 0.0.0.0 -host-port 8081 -container-ip 172.17.0.2 -container-po
352	root	20	0	106M	4920	4288	S	0.0	0.1	0:00.00	containerd-shim -namespace moby -workdir /var/lib/containerd/io.containerd.runtime.v1.linux/moby/b8c9274
353	root	20	0	106M	4920	4288	S	0.0	0.1	0:00.00	containerd-shim -namespace moby -workdir /var/lib/containerd/io.containerd.runtime.v1.linux/moby/b8c9274
354	root	20	0	106M	4920	4288	S	0.0	0.1	0:00.00	containerd-shim -namespace moby -workdir /var/lib/containerd/io.containerd.runtime.v1.linux/moby/b8c9274
355	root	20	0	106M	4920	4288	S	0.0	0.1	0:00.00	containerd-shim -namespace moby -workdir /var/lib/containerd/io.containerd.runtime.v1.linux/moby/b8c9274
358	root	20	0	106M	4920	4288	S	0.0	0.1	0:00.00	containerd-shim -namespace moby -workdir /var/lib/containerd/io.containerd.runtime.v1.linux/moby/b8c9274
359	root	20	0	106M	4920	4288	S	0.0	0.1	0:00.00	containerd-shim -namespace moby -workdir /var/lib/containerd/io.containerd.runtime.v1.linux/moby/b8c9274

F1Help F2Setup F3Search F4Filter F5Tree F6SortBy F7Nice F8Nice F9Kill F10Quit



# Database: MySQL on Google Cloud SQL

<div>swd391</div> <ul style="list-style-type: none"><li>information_schema</li><li>mysql</li><li>performance_schema</li><li>promo_management<ul style="list-style-type: none"><li>Tables<ul style="list-style-type: none"><li>employee</li><li>member</li><li>membership_constraint</li><li>order</li><li>order_type_constraint</li><li>payment_constraint</li><li>product</li><li>product_of_order</li><li>promotion</li><li>store</li><li>store_constraint</li><li>time_constraint</li></ul></li><li>Views</li><li>Functions</li><li>Events</li><li>Queries</li><li>Backups</li><li>sys</li></ul></li></ul>	Objects						
	Name	Rows	Data Length	Engine	Created Date	Modified Date	Collation
	employee	5	16.00 KB	InnoDB	2020-04-14 12:40:13	2020-04-14 12:52:36	utf8mb4_general_ci
	member	2	16.00 KB	InnoDB	2020-04-12 15:28:50	2020-04-14 13:54:54	utf8mb4_general_ci
	membership_constraint	8	16.00 KB	InnoDB	2020-04-12 07:16:38	2020-04-14 11:21:36	utf8mb4_general_ci
	order	11	16.00 KB	InnoDB	2020-04-12 08:23:44	2020-04-14 13:54:53	utf8mb4_general_ci
	order_type_constraint	9	16.00 KB	InnoDB	2020-04-12 08:25:56	2020-04-14 11:21:36	utf8mb4_general_ci
	payment_constraint	8	16.00 KB	InnoDB	2020-04-12 08:25:18	2020-04-14 11:21:36	utf8mb4_general_ci
	product	10	16.00 KB	InnoDB	2020-04-12 07:16:43	2020-04-12 07:16:43	utf8mb4_general_ci
	product_of_order	13	16.00 KB	InnoDB	2020-04-12 07:16:44	2020-04-14 13:54:53	utf8mb4_general_ci
	promotion	8	16.00 KB	InnoDB	2020-04-12 07:16:45	2020-04-14 10:02:52	utf8mb4_general_ci
	store	2	16.00 KB	InnoDB	2020-04-12 07:16:46	2020-04-12 07:16:47	utf8mb4_general_ci
	store_constraint	8	16.00 KB	InnoDB	2020-04-13 17:10:51	2020-04-14 11:21:36	utf8mb4_general_ci
	time_constraint	9	16.00 KB	InnoDB	2020-04-13 15:28:27	2020-04-14 11:21:36	utf8mb4_general_ci



# Swagger - Insomnia

GET

/promotion/{promotionId} Returns details of a promotion

order

GET

/order Returns a list of all orders

POST

/order Add a new order

GET

/order/{orderId} Returns details of an order

Parameters

Try it out

Name	Description
orderId <span>required</span>	orderId
integer	
(path)	

Responses

Response content type

application/json

Code	Description
200	successful operation
Example Value	Model
	(

SWD391

PUT base/promotion/9

Send

200 OK 1.98 s 435 B

2 Days Ago

Filter

Production

Promotion

GET Get applicable promotions

GET List

POST Create

GET Read

PUT Update

DEL Delete

Order

GET List

POST Create

GET Read

PUT Update

DEL Delete

Product

GET List

Store

GET List

Employee

GET Me

POST Login

GET List

Member

GET List

```
1- {
2  "name": "Happy Wednesday",
3  "start_date": "2020-04-01",
4  "end_date": "2020-04-01",
5  "main_goal": "Grow orders",
6  "applying_type": "Discount",
7  "applying_form": "Percent",
8  "applying_value": 20,
9  "time_constraint": [
10   {
11     "type": "Hour",
12     "start_time": "12:00"
13   },
14   ],
15   "store_constraint": [
16     {
17       "id": 2
18     },
19     ],
20     "payment_constraint": [
21       "Cash"
22     ],
23     "order_type_constraint": [
24       "Delivery"
25     ],
26     "membership_constraint": [
27       "Birthday"
28     ],
29     ],
30     ],
31     ],
32     ],
33     ],
34   }
```

Preview

Header

Cookie

Timeline

```
1- {
2  "id": 9,
3  "name": "Happy Wednesday",
4  "start_date": "2020-04-01",
5  "end_date": "2020-04-01",
6  "main_goal": "Grow orders",
7  "applying_type": "Discount",
8  "applying_form": "Percent",
9  "applying_value": 20,
10   "store_constraint": [
11     {
12       "id": 2,
13       "name": null,
14       "manager_id": null,
15       "address": null
16     },
17     ],
18     "payment_constraint": [
19       "Cash"
20     ],
21     "membership_constraint": [
22       "Birthday"
23     ],
24     "order_type_constraint": [
25       "Delivery"
26     ],
27     "time_constraint": [
28     {
29       "type": "Hour",
30       "start_time": "12:00",
31       "end_time": null
32     },
33     ],
34   }
```

Beautify JSON

Store, beautify, author

6



# Jenkins



## Console Output

```
Started by GitHub push by huynhducduy
Obtained Jenkinsfile from git https://github.com/huynhducduy/promotion-management-api/
Running in Durability level: MAX_SURVIVABILITY
[Pipeline] Start of Pipeline
[Pipeline] node
Running on Jenkins in /var/lib/jenkins/workspace/promotion-management-api
[Pipeline] {
[Pipeline] stage
[Pipeline] { (Declarative: Checkout SCM)
[Pipeline] checkout
No credentials specified
> /usr/bin/git rev-parse --is-inside-work-tree # timeout=10
Fetching changes from the remote Git repository
> /usr/bin/git config remote.origin.url https://github.com/huynhducduy/promotion-management-api/ # timeout=10
Fetching upstream changes from https://github.com/huynhducduy/promotion-management-api/
> /usr/bin/git --version # timeout=10
> /usr/bin/git fetch --tags --progress https://github.com/huynhducduy/promotion-management-api/ +refs/heads/*:refs/remotes/origin/* # timeout=10
> /usr/bin/git rev-parse refs/remotes/origin/master^{commit} # timeout=10
> /usr/bin/git rev-parse refs/remotes/origin/origin/master^{commit} # timeout=10
Checking out Revision 29617eb378ad7df7a4e8786fcc96089725bf97d2 (refs/remotes/origin/master)
> /usr/bin/git config core.sparsecheckout # timeout=10
> /usr/bin/git checkout -f 29617eb378ad7df7a4e8786fcc96089725bf97d2 # timeout=10
Commit message: "update firebase authentication"
> /usr/bin/git rev-list --no-walk 7324bd4b5del5fb6c053cc159e6a3ca58c4ad870 # timeout=10
[Pipeline] }
[Pipeline] // stage
[Pipeline] withEnv
[Pipeline] {
[Pipeline] stage
[Pipeline] { (prepare)
[Pipeline] checkout
No credentials specified
> /usr/bin/git rev-parse --is-inside-work-tree # timeout=10
Fetching changes from the remote Git repository
> /usr/bin/git config remote.origin.url https://github.com/huynhducduy/promotion-management-api/ # timeout=10
Fetching upstream changes from https://github.com/huynhducduy/promotion-management-api/
> /usr/bin/git --version # timeout=10
> /usr/bin/git fetch --tags --progress https://github.com/huynhducduy/promotion-management-api/ +refs/heads/*:refs/remotes/origin/* # timeout=10
> /usr/bin/git rev-parse refs/remotes/origin/master^{commit} # timeout=10
```





# Cloudflare



24 Hours 7 Days 30 Days

Unique Visitors

81

Total Requests

5,854

Percent Cached

50.53%

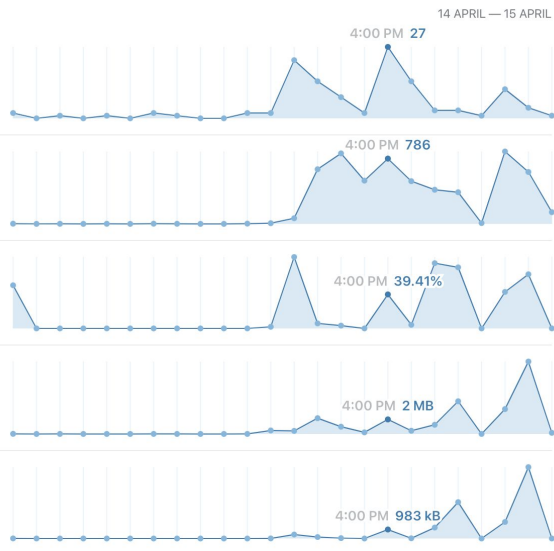
Total Data Served

33 MB

Data Cached

16 MB

[View more analytics](#)



## Notifications

### Billing update

We are upgrading our billing system. Review answers to [common questions](#).

[Dismiss](#)

## Quick Actions

[Purge Cache](#)

[DNS Settings](#)

### Under Attack Mode

Show visitors a JavaScript challenge when visiting your site.



### Development Mode

Temporarily bypass our cache. See changes to your origin server in realtime.



## Domain Registration

Registrar: Unknown

[Manage domain](#)





# Docker: Containerize

```
FROM golang:alpine as builder
RUN apk add ca-certificates git

RUN mkdir -p /root
WORKDIR /root

COPY . .
RUN CGO_ENABLED=0 GOOS=linux GOARCH=amd64 go build

FROM alpine

#RUN apk add ca-certificates rsync openssh

WORKDIR /root

COPY --from=builder /root/promotion-management-api /root/promotion-management-api
COPY .env .env
COPY firebase.json firebase.json

EXPOSE 80

ENTRYPOINT ["/promotion-management-api"]
```

```
FROM golang:alpine
RUN apk add ca-certificates git

RUN mkdir -p /root/src/go
WORKDIR /root/src/go
COPY . .
RUN go mod download

EXPOSE 80

ENTRYPOINT ["go", "run", "main.go"]
```



# Nginx: Reverse Proxy, Loadbalancer


```
duuuuuuuuy@swd391:~$ sudo service nginx status
```


```
● nginx.service - A high performance web server and a reverse proxy server
   Loaded: loaded (/lib/systemd/system/nginx.service; enabled; vendor preset: enabled)
   Active: active (running) since Tue 2020-04-14 12:21:53 UTC; 5h 12min ago
     Process: 14703 ExecStop=/sbin/start-stop-daemon --quiet --stop --retry QUIT/5 --pidfile /run/nginx.pid (code=exited, status=2)
     Process: 14720 ExecStart=/usr/sbin/nginx -g daemon on; master_process on; (code=exited, status=0/SUCCESS)
     Process: 14707 ExecStartPre=/usr/sbin/nginx -t -q -g daemon on; master_process on; (code=exited, status=0/SUCCESS)
    Main PID: 14727 (nginx)
      Tasks: 2
     Memory: 3.1M
        CPU: 278ms
    CGroup: /system.slice/nginx.service
            └─14727 nginx: master process /usr/sbin/nginx -g daemon on; master_process on
              └─14728 nginx: worker process
```


```
Apr 14 12:21:53 swd391 systemd[1]: Stopped A high performance web server and a reverse proxy server.
Apr 14 12:21:53 swd391 systemd[1]: nginx.service: Unit entered failed state.
Apr 14 12:21:53 swd391 systemd[1]: nginx.service: Failed with result 'timeout'.
Apr 14 12:21:53 swd391 systemd[1]: Starting A high performance web server and a reverse proxy server...
Apr 14 12:21:53 swd391 systemd[1]: nginx.service: Failed to parse PID from file /run/nginx.pid: Invalid argument
Apr 14 12:21:53 swd391 systemd[1]: Started A high performance web server and a reverse proxy server.
```




# Authentication: JWT - Firebase


 **Firestore**


 Project Overview





**Develop**


 Authentication

 Database

 Storage

 Hosting

 Functions

 ML Kit

**Quality**

Crashlytics, Performance, Test Lab, ...



**Analytics**

Dashboard, Events, Conversions, Au...

**Grow**



Predictions, A/B Testing, Cloud Mes...





SWD391 ▾



Go to docs  

## Authentication

[Users](#) [Sign-in method](#) [Templates](#) [Usage](#)

Add user  

Identifier	Providers	Created	Signed In	User UID 
hungng300899@gmail.com		Apr 14, 2020	Apr 14, 2020	Dt9kAJu83yf3H0QAjhuyuwveVet2
hungnpse130675@fpt.edu.vn		Apr 14, 2020	Apr 14, 2020	btPwxhLZi6V4XPPA1kSt3R7lqjx1
duyhdse130491@fpt.edu.vn		Apr 14, 2020	Apr 14, 2020	tBdkWwduJUdFFCKULd1zyLheqaf1

Rows per page: 50 ▾ 1-3 of 3  



# Sentry

HN Hung Nguyễn  
Hung Nguyễn

Projects

Issues

Discover new

Releases

User Feedback

Activity

Stats

Settings

4 Setup Sentry  
4 Remaining tasks

Try Business

Help

What's new

promotion\_analyst

All Environments

Last 14 days

Issues (6)

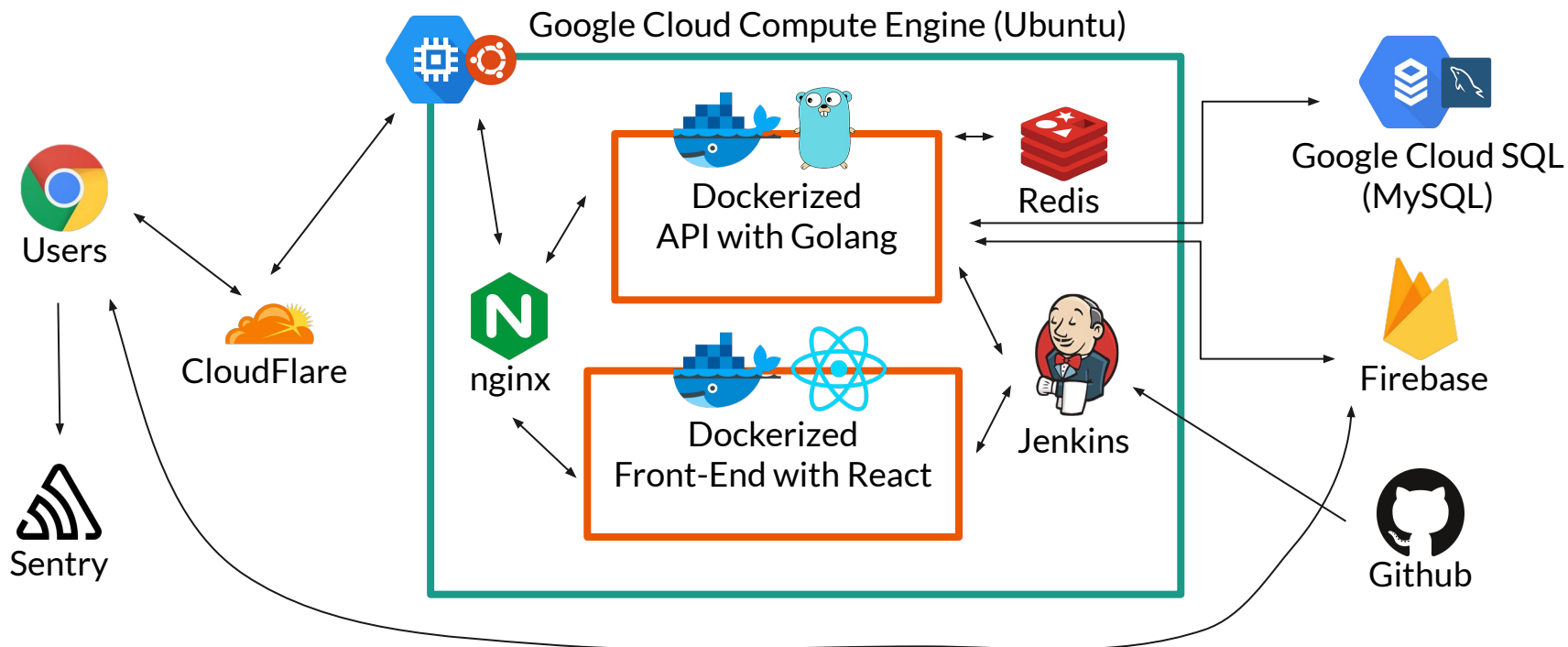
Sort by: Last Seen

Unresolved Issues

is:unresolved

		GRAPH:	24h 14d	EVENTS	USERS	ASSIGNEE
	<b>Error</b> http://35.201.209.9:8082/admin/login This domain (35.201.209.9) is not authorized to run this operation. Add it to the OAuth redirect domain. PROMOTION_ANALYST-5 2 hours ago — 2 hours old			11	2	
	<b>Error</b> http://swd391.huynhducduy.me/admin/login This operation has been cancelled due to another conflicting popup being opened. PROMOTION_ANALYST-6 2 hours ago — 2 hours old			1	1	
	<b>Error</b> http://localhost:3000/admin/login The popup has been closed by the user before finalizing the operation. PROMOTION_ANALYST-2 4 hours ago — 5 hours old			2	1	
	<b>TypeError</b> ?(material-dashboard-react/static/js/main.chunk) data.forEach is not a function PROMOTION_ANALYST-1 4 hours ago — 6 hours old			4	1	
	<b>&lt;unknown&gt;</b> Test Sentry PROMOTION_ANALYST-4 4 hours ago — 4 hours old			2	1	
	<b>TypeError</b> http://localhost:3000/admin/login Failed to fetch PROMOTION_ANALYST-3 4 hours ago — 4 hours old			1	1	

# Tech-Tools Summary



# Teams



**Huynh Duc Duy**

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Former Software Engineer at WeVenture



**Nguyen Phu Hung**

Former Data Scientist Intern at Knorex

# Demo

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