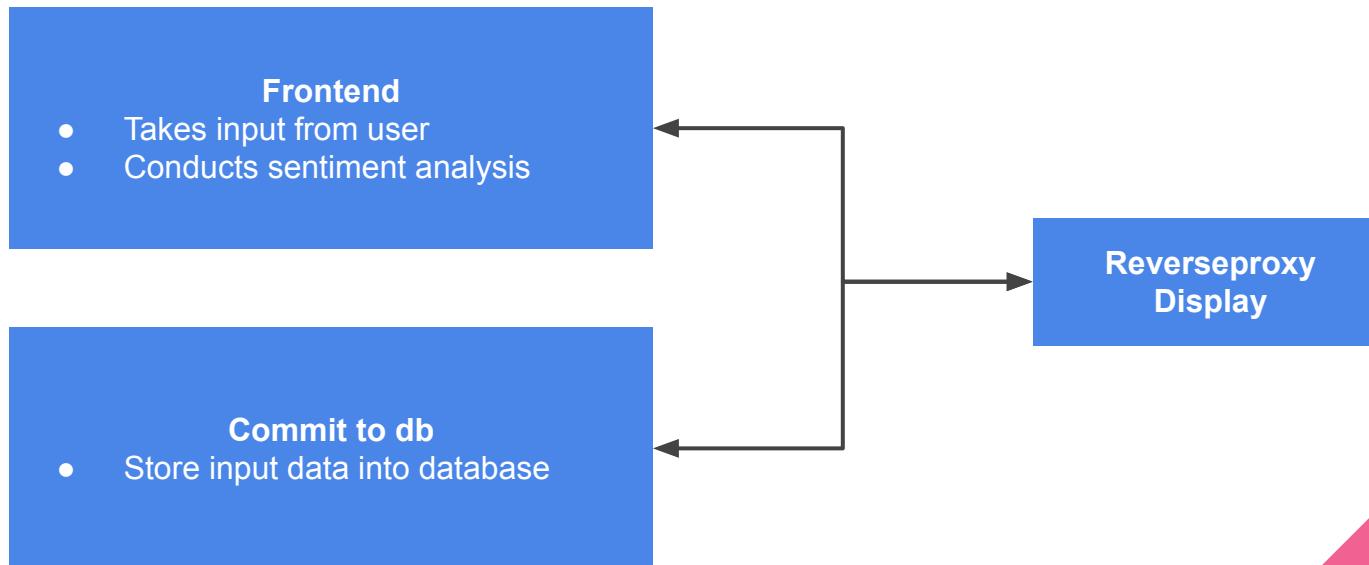


Capstone Project

Anubhav Aron

Brief Summary

Microservices



GitHub Repositories

<https://github.com/aronanubhav/capstonefrontend.git>

<https://github.com/aronanubhav/capstonecommittodb.git>

<https://github.com/aronanubhav/capstonereverseproxy.git>

CapstoneSentiment App

- Takes a comment or text as input from users
- Conducts sentiment analysis of the input comment
- Commit user input data into AWS RDS
- Fetch data from RDS to webpage/html

Travis CI - Output (1/3)

arunanubhav / capstonefrontend build passing

Current Branches Build History Pull Requests More options

✓ main Update index.html

→ #10 passed

Ran for 1 min 4 sec
2 minutes ago

Commit c5dbc7d ⚡
Compare e674b25..c5dbc7d ⚡
Branch main ⚡

arunanubhav

Node.js: 13
AMD64

Job log View config

Worker information

Build system information

\$ sudo systemctl start docker

\$ git clone --depth=50 --branch=main https://github.com/[secure]/capstonefrontend.git [secure]/capstonefrontend

git.log

Remove log Raw log

worker_info 0.07s
system_info 0.01s
docker_mtu 2.45s
resolvconf 3.02s
services 0.43s
git.checkout 0.01s

Travis CI - Output (2/3)

arunanubhav / capstonecommittodb  build passing

Current Branches Build History Pull Requests More options 

✓ main Create .travis.yml
-o Commit ce6fe2d
↳ Compare 2d12c40..ce6fe2d
Branch main
arunanubhav

-o #1 passed
🕒 Ran for 1 min 5 sec
less than a minute ago
Restart build

🕒 </> Node.js:13
AMD64

Job log View config 

Worker information
Build system information
161
162
163 \$ sudo systemctl start docker
164 \$ git clone --depth=50 --branch=main https://github.com/[secure]/capstonecommittodb.git [secure]/capstonecommittodb
168
169
170 Setting environment variables from repository settings

X Remove log  Raw log 
worker_info 0.07s
system_info 0.01s
docker_stu 2.50s
resolvconf
services 0.02s
git_checkout 0.43s
0.01s

Travis CI - Output (3/3)

arunanubhav / capstonereverseproxy  build unknown

Current Branches Build History Pull Requests More options 

✓ main Update reverseproxy.js   Commit 5e44f07   Compare 98666d3..5e44f07   Branch main 

 arunanubhav

 Node.js:13 

Job log View config 

Remove log Raw log

Worker information  worker_info  system_info  docker_mtu  resolvconf  services  git.checkout 
Build system information  161  162  163 \$ sudo systemctl start docker  164 \$ git clone --depth=50 --branch=main https://github.com/[secure]/capstonereverseproxy.git [secure]/capstonereverseproxy  165  166  167 Setting environment variables from repository settings  168 \$ export DOCKER_PASSWORD=[secure]  169 \$ export DOCKER_USERNAME=[secure] 

Travis CI - Successful builds with 0 (1/3)

```
264  
265 added 60 packages from 48 contributors and audited 60 packages in 1.401s  
266 found 0 vulnerabilities  
267  
268 Removing intermediate container d29f841de7a6  
269 ...-> 6ab46692391f  
270 Step 5/7 : COPY . .  
271 ...-> 6cee081845fc  
272 Step 6/7 : EXPOSE 3000  
273 ...-> Running in 8d2630e1d7e8  
274 Removing intermediate container 8d2630e1d7e8  
275 ...-> 432c3b7508d9  
276 Step 7/7 : CMD [ "npm", "start" ]  
277 ...-> Running in 6451a332aeefb  
278 Removing intermediate container 6451a332aeefb  
279 ...-> cebba77b9d6d  
280 Successfully built cebba77b9d6d  
281 Successfully tagged capstonefrontend:latest  
282 The command "docker build -t capstonefrontend ." exited with 0.  
283 $ docker tag capstonefrontend [secure]/capstonefrontend:latest 0.07s  
284 The command "docker tag capstonefrontend [secure]/capstonefrontend:latest" exited with 0.  
► 285 store build cache cache_2  
287  
► 288 $ echo "$DOCKER_PASSWORD" | docker login -u "$DOCKER_USERNAME" --password-stdin after_success.1 0.33s  
► 294 $ docker push [secure]/capstonefrontend after_success.2 5.36s  
331  
332 Done. Your build exited with 0.
```

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Travis CI - Successful builds with 0 (2/3)

```
265 npm WARN capstonecommitdb@0.0.1 No license field.
266
267 added 60 packages from 48 contributors and audited 60 packages in 1.373s
268 found 0 vulnerabilities
269
270 Removing intermediate container 3974d00cb52d
271 --> 852c733e1726
272 Step 5/7 : COPY . .
273 --> 9f8deced7097
274 Step 6/7 : EXPOSE 3000
275 --> Running in 1006997de14e
276 Removing intermediate container 1006997de14e
277 --> 1ee745fa90df
278 Step 7/7 : CMD [ "npm", "start" ]
279 --> Running in eff429326303
280 Removing intermediate container eff429326303
281 --> 7c6ec9af107a
282 Successfully built 7c6ec9af107a
283 Successfully tagged capstonecommitdb:latest
284 The command "docker build -t capstonecommitdb ." exited with 0.
285 $ docker tag capstonecommitdb [secure]/capstonecommitdb:latest
286 The command "docker tag capstonecommitdb [secure]/capstonecommitdb:latest" exited with 0.
▶ 287 store build cache
291
▶ 292 $ echo "$DOCKER_PASSWORD" | docker login -u "$DOCKER_USERNAME" --password-stdin
▶ 293 $ docker push [secure]/capstonecommitdb
335
336 Done. Your build exited with 0.
```

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Travis CI - Successful builds with 0 (3/3)

```
272 Step 6/7 : EXPOSE 8080
273 ---> Running in d93e008f9373
274 Removing intermediate container d93e008f9373
275 ---> 08e6e825101d
276 Step 7/7 : CMD ["node", "reverseproxy.js"]
277 ---> Running in 411fd28705ec
278 Removing intermediate container 411fd28705ec
279 ---> 42ff1692eb6b
280 Successfully built 42ff1692eb6b
281 Successfully tagged capstonereverseproxy:latest
282 The command "docker build -t capstonereverseproxy ." exited with 0.
283 $ docker tag capstonereverseproxy [secure]/capstonereverseproxy:latest
284 The command "docker tag capstonereverseproxy [secure]/capstonereverseproxy:latest" exited with 0.
▶ 285 store build cache
287
▶ 288 $ echo "$DOCKER_PASSWORD" | docker login -u "$DOCKER_USERNAME" --password-stdin
▶ 294 $ docker push [secure]/capstonereverseproxy
331
332 Done. Your build exited with 0.
```

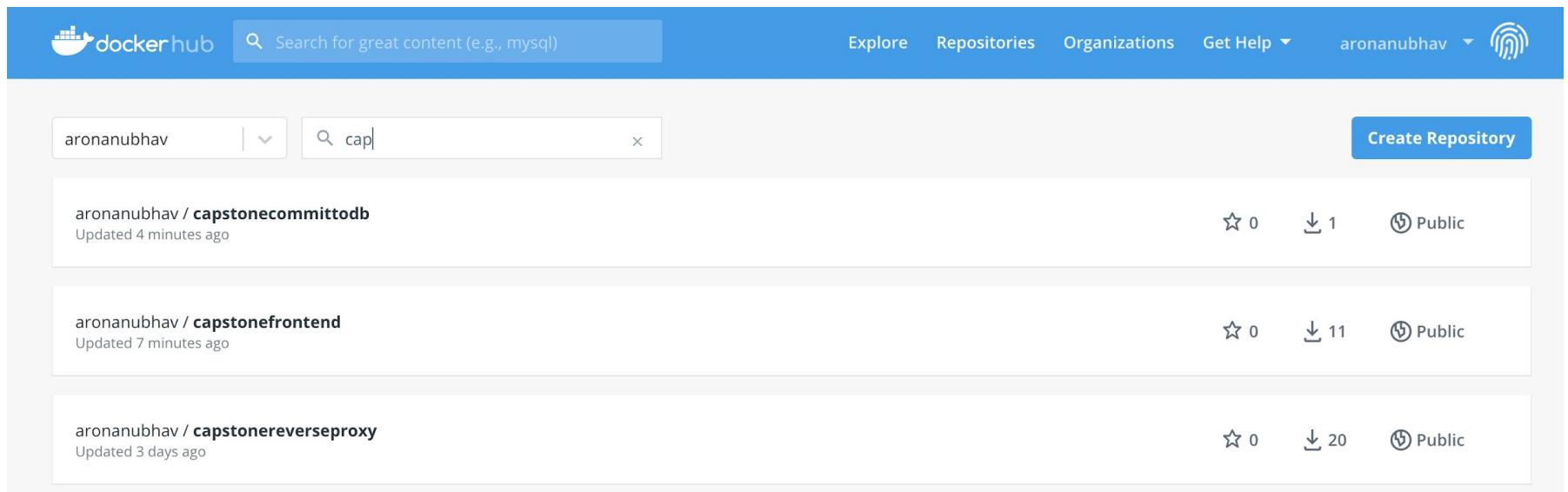
cache.2 0.07s

after_success.1 0.30s

after_success.2 11.21s

Top ▲

DockerBuild - Output (1/4)



A screenshot of the DockerHub website showing search results for the query "cap". The search bar at the top contains "Search for great content (e.g., mysql)". Below it, the user "aronanubhav" is selected in the dropdown. The search term "cap" is entered in the search input field. A "Create Repository" button is visible on the right. The results list three repositories:

- aronanubhav / capstonecommittodb**
Updated 4 minutes ago
0 stars, 1 download, Public
- aronanubhav / capstonefrontend**
Updated 7 minutes ago
0 stars, 11 downloads, Public
- aronanubhav / capstonerreverseproxy**
Updated 3 days ago
0 stars, 20 downloads, Public

DockerBuild - Output (2/4)

Screenshot of the DockerHub interface showing the build output for the repository aronanubhav/capstonefrontend:latest.

The top navigation bar includes the DockerHub logo, a search bar, and links for Explore, Repositories, Organizations, Get Help, and user account information (aronanubhav).

The repository path is shown as: Repositories > aronanubhav/capstonefrontend > latest.

Build statistics for the latest tag:

- DIGEST: sha256:b49e10eda66e0ee802a6d9f95c1c0fbef40f5243298b63b821f224aeb9206901
- OS/ARCH: linux/amd64
- SIZE: 347.15 MB
- LAST PUSHED: 6 minutes ago by aronanubhav

The IMAGE LAYERS section displays the build history:

Step	Command	Size
1	ADD file ... in /	43.27 MB
2	CMD ["bash"]	0 B
3	/bin/sh -c apt-get update &&	10.3 MB
4	/bin/sh -c set -ex; if	4.14 MB
5	/bin/sh -c apt-get update &&	47.76 MB

A modal window is open over the layers table, showing the command for step 1: ADD file:13031623172f5c5857e27de93553adedf17d955fa370882f850bb6ed6fb8cee7 in /.

DockerBuild - Output (3/4)

docker hub

Explore Repositories Organizations Get Help ▾ aronanubhav ▾

Repositories / aronanubhav/capstonecommittodb / latest

Using 0 of 1 private repositories. [Get more](#)

 aronanubhav/capstonecommittodb:latest
DIGEST: sha256:01d37d325db2f8c44379be951a61e028116820ef0878d2869bddb2b7105fa9f1

OS/ARCH	SIZE	LAST PUSHED
linux/amd64	347.15 MB	4 minutes ago by aronanubhav

IMAGE LAYERS ②

Layer	Command	Size
1	ADD file ... in /	43.27 MB
2	CMD ["bash"]	0 B
3	/bin/sh -c apt-get update &&	10.3 MB
4	/bin/sh -c set -ex; if	4.14 MB

Command

```
ADD file:13031623172f5c5857e27de93553adef17d955fa370882f850bb6ed6fb8cee7 in /
```

DockerBuild - Output (4/4)

The screenshot shows the DockerHub interface for the repository `aronanubhav/capstonereverseproxy`. The image `latest` has been pushed 4 minutes ago by `aronanubhav`. The image details include:

- DIGEST: sha256:516266e178530523629855fb43a9e0c530a2838da80ac3471a12e6d07296fc
- OS/ARCH: linux/amd64
- SIZE: 347.15 MB
- LAST PUSHED: 4 minutes ago by `aronanubhav`

The image layers are listed as follows:

- 1 ADD file ... in / 43.27 MB
- 2 CMD ["bash"] 0 B
- 3 /bin/sh -c apt-get update && 10.3 MB
- 4 /bin/sh -c set -ex; if 4.14 MB

A tooltip for the first layer's command shows the full command: `ADD file:13031623172f5c5857e27de93553adedf17d955fa370882f850bb6ed6fb8cee7 in /`.

EKS Clusters - Output (1/3)

The screenshot shows the AWS EKS Cluster configuration page for the cluster 'capstonefrontend'. The left sidebar lists services: Amazon Container Services, Amazon ECS, Amazon EKS (Clusters selected), and Amazon ECR. The main content area shows the cluster details:

Cluster configuration

- Kubernetes version: 1.17
- Status: Active
- Platform version: eks.3

Compute tab is selected.

Node Groups (1)

Group name	Desired size	AMI release version	Launch template	Status
capstonefrontend	2	1.17.11-20200921	-	Active

Fargate Profiles (0)

No Fargate Profiles. This cluster does not have any Fargate Profiles.

Add Fargate Profile

EKS Clusters - Output (2/3)

AWS Services ▾

Amazon Container Services X

EKS > Clusters > capstonecommittodb

capstonecommittodb

Cluster configuration [Info](#)

Kubernetes version Info	1.17	Status	Active
Platform version Info	eks.3		

Details [Compute](#) Networking Logging Update history Tags

Node Groups (1) [Info](#)

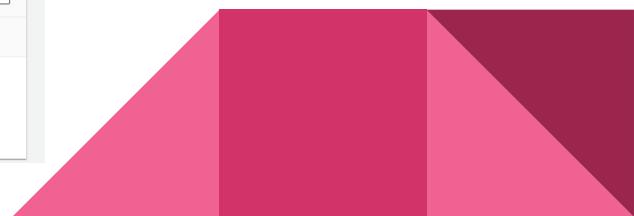
Group name	▲ Desired size	AMI release version	Launch template	Status
<input type="radio"/> capstonecommittodb	2	1.17.11-20201002	-	Active

Fargate Profiles (0) [Info](#)

Profile name	Namespaces	Status
No Fargate Profiles		

This cluster does not have any Fargate Profiles.

Add Fargate Profile



EKS Clusters - Output (3/3)

The screenshot shows the AWS EKS Cluster configuration page for the cluster 'capstonerreverseproxy'. The left sidebar lists services: Amazon ECS, Clusters, Task definitions; Amazon EKS, Clusters; and Amazon ECR, Repositories. The main content area shows the cluster details:

Cluster configuration (Info)

- Kubernetes version: Info 1.17 Status: Active
- Platform version: Info eks.3

Below this, the Compute tab is selected, showing the Node Groups section:

Node Groups (1) Info

Group name	Desired size	AMI release version	Launch template	Status
capstonerreverseproxy	2	1.17.11-20200921	-	Active

Under the Compute tab, the Fargate Profiles section is also present:

Fargate Profiles (0) Info

Profile name	Namespaces	Status
No Fargate Profiles This cluster does not have any Fargate Profiles.		

Compute (selected), Details, Networking, Logging, Update history, Tags

RDS MySQL - Output

AWS Services ▾

RDS > Databases > capstonesentiment2

capstonesentiment2

Modify Actions ▾

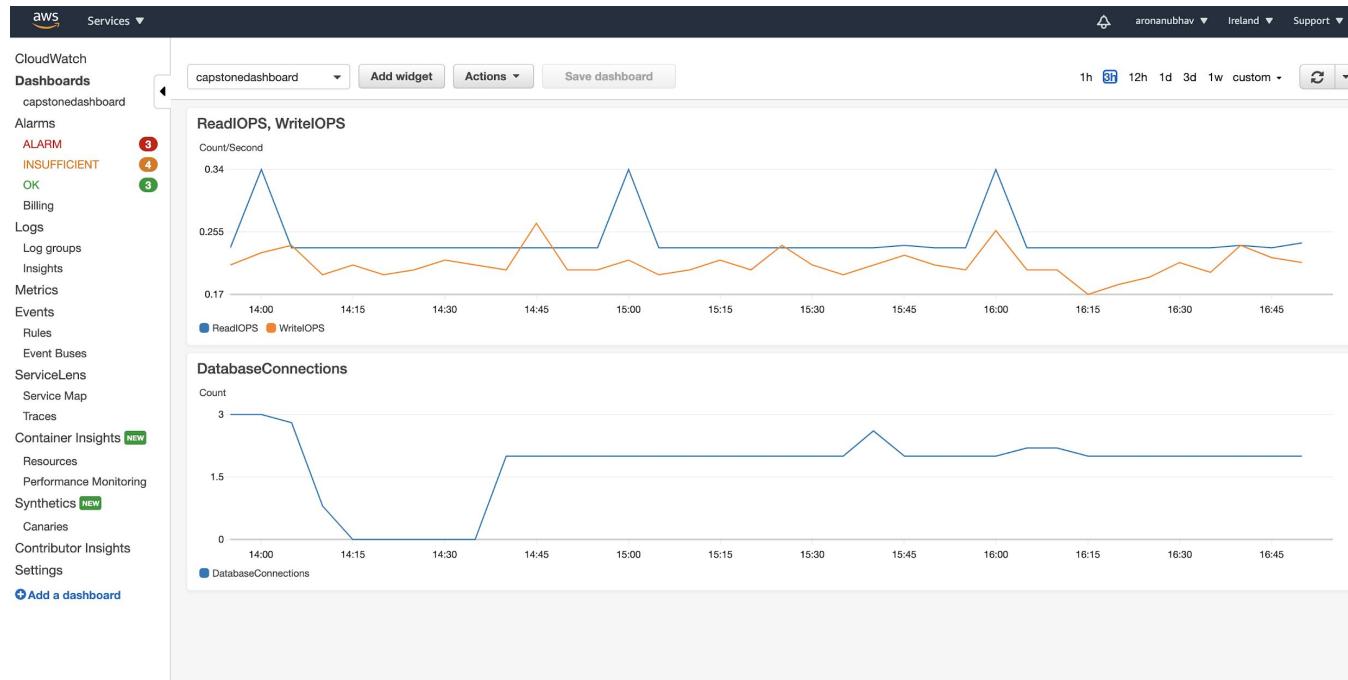
DB identifier	CPU	Info	Class
capstonesentiment2	1.48%	Available	db.t2.micro
Role	Current activity	Engine	Region & AZ
Instance	2 Connections	MySQL Community	eu-west-1c

Summary Connectivity & security Monitoring Logs & events Configuration Maintenance & backups Tags

Connectivity & security

Endpoint & port	Networking	Security
Endpoint capstonesentiment2.cjzgfj3nh7rd.eu-west-1.rds.amazonaws.com	Availability zone eu-west-1c	VPC security groups default (sg-58197e1b) (active) Open-To-The-World (sg-083d92b35069a8843) (active)
Port 3306	VPC vpc-3f57ae46	Subnet group default-vpc-3f57ae46
		Public accessibility Yes

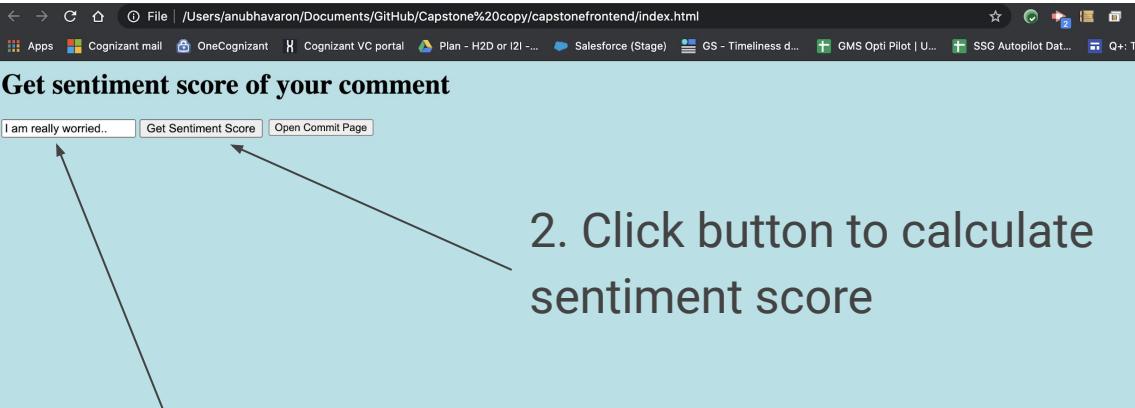
CloudWatch for RDS Performance - Output



Kubectl Commands - Output

```
anubhavaron-macbookpro:capstonecommittodb anubhavaron$  
anubhavaron-macbookpro:capstonecommittodb anubhavaron$ kubectl get pods  
NAME                      READY   STATUS    RESTARTS   AGE  
capstonecommittodb-85d99bd64b-2fq8n   1/1     Running   0          4m22s  
capstonecommittodb-85d99bd64b-dthj5   1/1     Running   0          4m22s  
capstonefrontend-d599c79d8-69rgv      1/1     Running   0          86s  
capstonefrontend-d599c79d8-rzlb9      1/1     Running   0          86s  
capstonereverseproxy-6cc445d8dc-fpckq 1/1     Running   0          112s  
capstonereverseproxy-6cc445d8dc-l7fxk 1/1     Running   0          112s  
anubhavaron-macbookpro:capstonecommittodb anubhavaron$  
anubhavaron-macbookpro:capstonecommittodb anubhavaron$ kubectl get services  
NAME            TYPE      CLUSTER-IP    EXTERNAL-IP   PORT(S)    AGE  
capstonecommittodb   ClusterIP  10.100.254.39 <none>        8080/TCP   4m8s  
capstonefrontend    ClusterIP  10.100.249.92 <none>        8080/TCP   86s  
capstonereverseproxy ClusterIP  10.100.113.63 <none>        8080/TCP   109s  
kubernetes         ClusterIP  10.100.0.1   <none>        443/TCP    30m  
anubhavaron-macbookpro:capstonecommittodb anubhavaron$  
anubhavaron-macbookpro:capstonecommittodb anubhavaron$ kubectl logs capstonecommittodb-85d99bd64b-2fq8n  
  
> capstonesentiment@0.0.1 start /usr/src/app  
> node server.js  
  
Running on 3000  
anubhavaron-macbookpro:capstonecommittodb anubhavaron$ kubectl logs capstonefrontend-d599c79d8-69rgv  
  
> capstonesentiment@0.0.1 start /usr/src/app  
> node server.js  
  
Running on 3000  
anubhavaron-macbookpro:capstonecommittodb anubhavaron$ kubectl logs capstonereverseproxy-6cc445d8dc-fpck  
q  
Server running at //localhost:8080/  
anubhavaron-macbookpro:capstonecommittodb anubhavaron$ █
```

LocalHost Application



1. Enter the comments

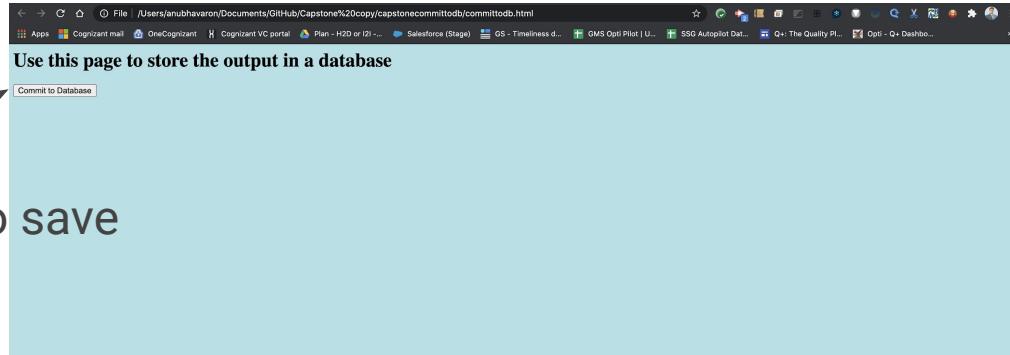
2. Click button to calculate sentiment score



3. Popup to confirm the processing of sentiment calculation



4. Click button to open data commit page



5. Click this button to save data to RDS



MySQL Workbench

Output display from RDS to HTML

```
anubhavaron-macbookpro:capstonereverseproxy anubhavaron$  
anubhavaron-macbookpro:capstonereverseproxy anubhavaron$ node reverseproxy.js  
Server running at //localhost:8080/
```

The screenshot shows a web browser window with the URL `localhost:8080` in the address bar. The page title is "Node.js MySQL Select". The content of the page is a table with two columns: "Nr." and "textbox". The "Nr." column contains integers from 1 to 15. The "textbox" column contains various text entries and sentiment scores. The table is as follows:

Nr.	textbox	sentiment_score
1	I am happy with the work you have done	0.9
2	What have I done in GitHub	-0.1
3	What a successful achievement	0.9
4	What a nice color	0.9
5	hope	0.5
6	hoping to get sentiment	0.5
7	third time is a charm	0.9
8	hoping to get the sentiment	0.6
9	it should work now	-0.3
10	Hoping for the best	0.7
11	should get the data in database	-0.5
12	data into db check	0
13	Trying commit to database	0
14	commit should work	-0.1
15	I am really worried..	-0.8