

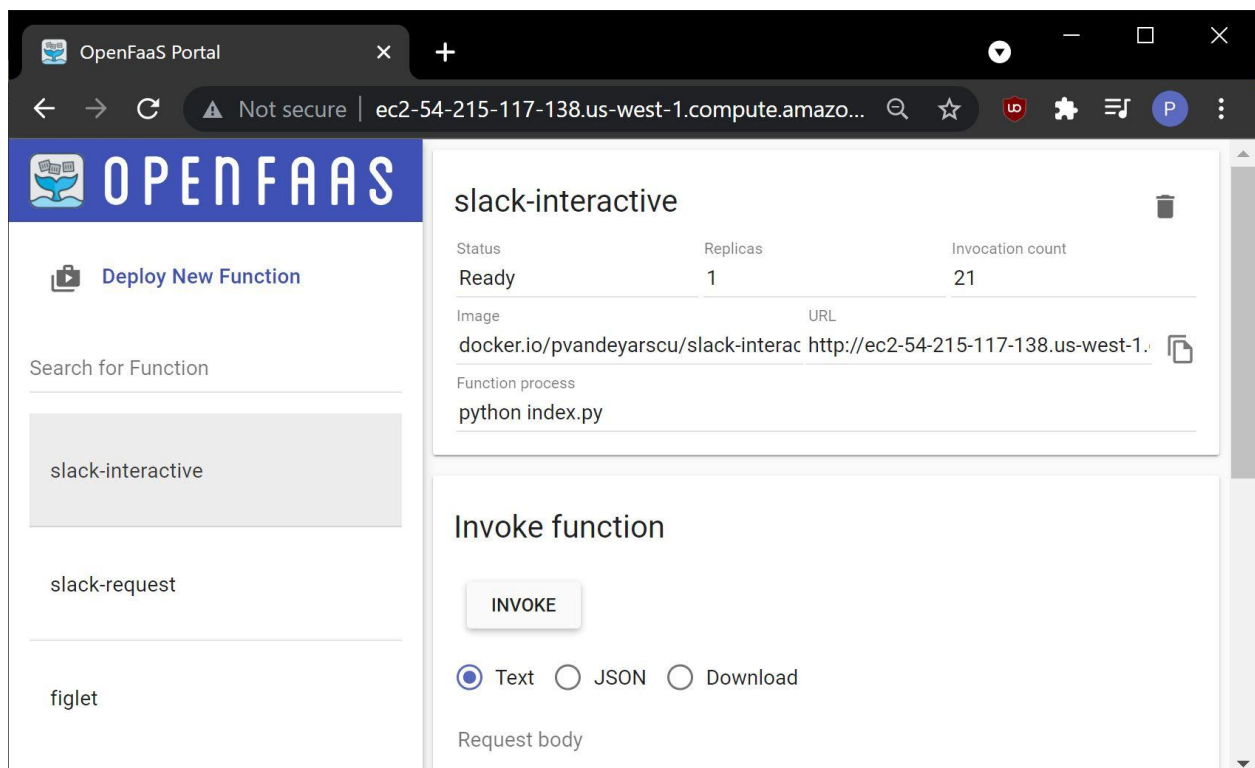
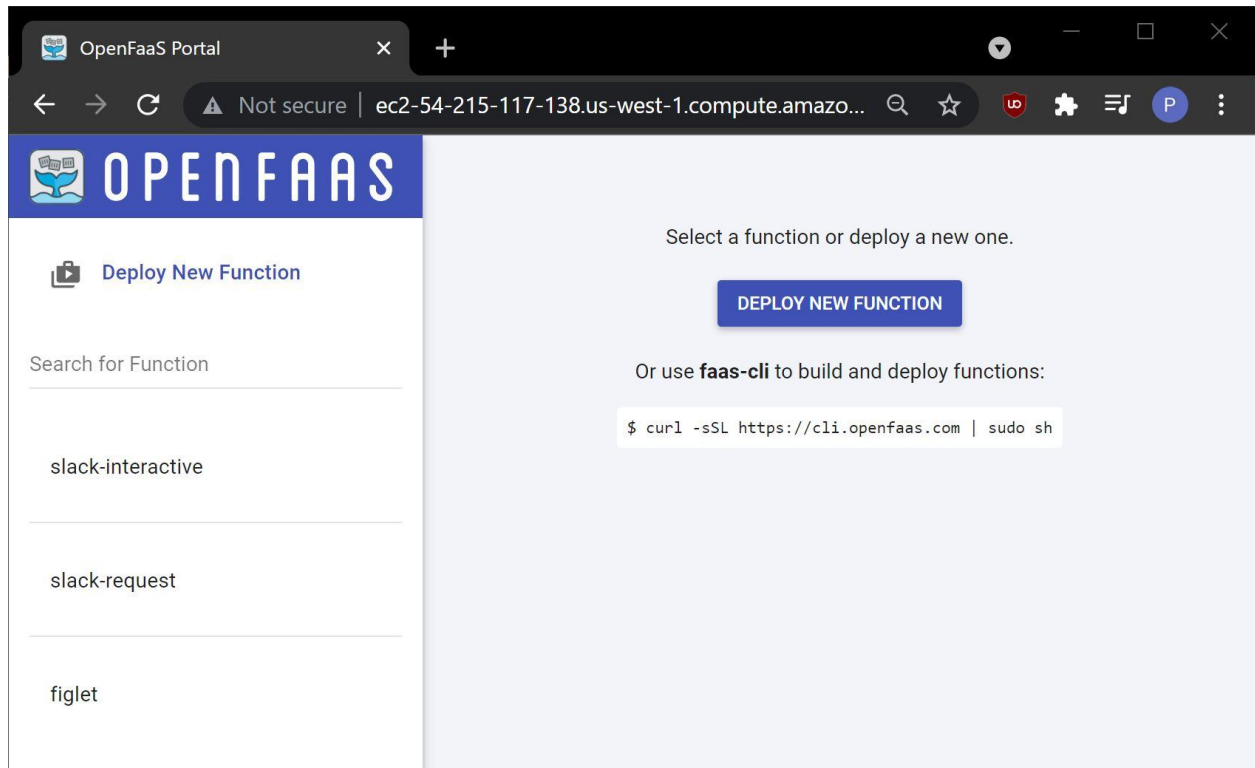
- Provide a screenshot of invoking the figlet function (10 pts)

The image consists of two parts. The top part is a terminal window showing the execution of the figlet function. The terminal prompt is `ec2-user@ip-172-31-27-98:~`. The command `echo "Praveen Vandeyar" | faas-cli invoke figlet` is entered, resulting in the name "Praveen Vandeyar" being rendered in a large, stylized ASCII art font. Below this, the command `curl 127.0.0.1:8080/function/figlet -H 'Content-Type: text/html' -d 'Praveen Vandeyar'` is entered, and the same ASCII art output is shown.

The bottom part is a screenshot of the OpenFaaS Portal web interface. The browser address bar shows the URL `ec2-54-215-117-138.us-west-1.compute.amazonaws.com:8080/ui/`. On the left sidebar, the "figlet" function is selected. The main panel displays the function's details: Status is "Ready", Replicas is "1", and Invocation count is "8". The "Image" is `ghcr.io/openfaas/figlet:latest` and the "URL" is `http://ec2-54-215-117-138.us-west-1.compute.amazonaws.com:8080/function/figlet`. Below this, the "Invoke function" section has an "INVOKE" button and radio buttons for "Text" (selected), "JSON", and "Download". The "Request body" is `Praveen Vandeyar`. At the bottom, the "Response status" is `200`, the "Round-trip (s)" is `0.031`, and the "Response body" shows the ASCII art output of the function.


- ```
ec2-user@ip-172-31-27-98:~
[ec2-user@ip-172-31-27-98 ~]$ sudo journalctl -u faasd --lines 40
-- Logs begin at Sat 2021-11-06 03:25:22 UTC, end at Wed 2021-11-10 06:27:17 UTC. --
Nov 06 03:41:53 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:41:53 Start-up order:
Nov 06 03:41:53 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:41:53 - nats
Nov 06 03:41:53 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:41:53 - queue-worker
Nov 06 03:41:53 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:41:53 - basic-auth-plugin
Nov 06 03:41:53 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:41:53 - prometheus
Nov 06 03:41:53 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:41:53 - gateway
Nov 06 03:41:53 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: Starting: nats
Nov 06 03:41:58 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:41:58 Created container: nats
Nov 06 03:41:58 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:41:58 nats has IP: 10.62.0.2
Nov 06 03:41:58 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:41:58 Task: nats Container: nats
Nov 06 03:41:58 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: Starting: queue-worker
Nov 06 03:41:58 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:41:58 Created container: queue-worker
Nov 06 03:41:59 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:41:59 queue-worker has IP: 10.62.0.3
Nov 06 03:41:59 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:41:59 Task: queue-worker Container: queue-worker
Nov 06 03:41:59 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: Starting: basic-auth-plugin
Nov 06 03:41:59 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:41:59 Created container: basic-auth-plugin
Nov 06 03:41:59 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:41:59 basic-auth-plugin has IP: 10.62.0.4
Nov 06 03:41:59 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:41:59 Task: basic-auth-plugin Container: basic-auth-plugin
Nov 06 03:41:59 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: Starting: prometheus
Nov 06 03:41:59 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:41:59 Created container: prometheus
Nov 06 03:41:59 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:41:59 prometheus has IP: 10.62.0.5
Nov 06 03:41:59 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:41:59 Task: prometheus Container: prometheus
Nov 06 03:41:59 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: Starting: gateway
Nov 06 03:41:59 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:41:59 Created container: gateway
Nov 06 03:42:00 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:42:00 gateway has IP: 10.62.0.6
Nov 06 03:42:00 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:42:00 Task: gateway Container: gateway
Nov 06 03:42:00 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:42:00 Supervisor init done in 16.685533775s
Nov 06 03:42:00 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:42:00 Looking up IP for "gateway"
Nov 06 03:42:00 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:42:00 Resolver rebuilding map
Nov 06 03:42:00 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:42:00 Resolver: "localhost"="127.0.0.1"
Nov 06 03:42:00 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:42:00 Resolver: "faasd-provider"="10.62.0.1"
Nov 06 03:42:00 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:42:00 Resolver: "nats"="10.62.0.2"
Nov 06 03:42:00 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:42:00 Resolver: "queue-worker"="10.62.0.3"
Nov 06 03:42:00 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:42:00 Resolver: "basic-auth-plugin"="10.62.0.4"
Nov 06 03:42:00 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:42:00 Resolver: "prometheus"="10.62.0.5"
Nov 06 03:42:00 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:42:00 Resolver: "gateway"="10.62.0.6"
Nov 06 03:42:00 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:42:00 Looking up IP for "prometheus"
Nov 06 03:42:00 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:42:00 Proxy from 127.0.0.1:9090, to: prometheus:9090
Nov 06 03:42:00 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:42:00 faasd: waiting for SIGTERM or SIGINT
Nov 06 03:42:00 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:42:00 Proxy from 0.0.0.0:8080, to: gateway:8080 (10.62.0.6)
...skipping...
-- Logs begin at Sat 2021-11-06 03:25:22 UTC, end at Wed 2021-11-10 06:27:17 UTC. --
Nov 06 03:41:53 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:41:53 Start-up order:
Nov 06 03:41:53 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:41:53 - nats
Nov 06 03:41:53 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:41:53 - queue-worker
Nov 06 03:41:53 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:41:53 - basic-auth-plugin
Nov 06 03:41:53 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:41:53 - prometheus
Nov 06 03:41:53 ip-172-31-27-98.us-west-1.compute.internal faasd[4081]: 2021/11/06 03:41:53 - gateway
```


- Provide a screenshot of your OpenFaaS gateway AFTER deploying figlet, slack-handler and slack-interactive functions (10 pts)



OpenFaaS Portal

Not secure | ec2-54-215-117-138.us-west-1.compute.amazo...

**OPENFAAS**

 **Deploy New Function**

Search for Function

slack-interactive

slack-request

figlet

### slack-request

Status

Replicas

Invocation count

Ready115

Image

URL

docker.io/pvandeyarscu/slack-requeshttp://ec2-54-215-117-138.us-west-1...

Function process

python index.py

### Invoke function


INVOKE


☒ Text ☐ JSON ☐ Download

Request body

OpenFaaS Portal

Not secure | ec2-54-215-117-138.us-west-1.compute.amazo...

**OPENFAAS**

 **Deploy New Function**

Search for Function

slack-interactive

slack-request

figlet

### figlet

Status

Replicas

Invocation count

Ready16

Image

URL

ghcr.io/openfaas/figlet:latesthttp://ec2-54-215-117-138.us-west-1...

Function process

figlet

### Invoke function

INVOKE

☒ Text ☐ JSON ☐ Download

Request body



- Provide a screenshot of invoking slack-request and slack-interactive functions (10 pts)

```
ec2-user@ip-172-31-27-98:~
[ec2-user@ip-172-31-27-98 ~]$ echo "" | faas-cli invoke slack-request
{
 "text": "Serverless Message",
 "attachments": [
 {
 "fields": [
 {
 "short": true,
 "value": "100",
 "title": "Amazing Level"
 }
],
 "author_icon": "",
 "image_url": "https://avatars.githubusercontent.com/u/58917968?v=4",
 "author_name": "Praveen Vandeyar",
 "title": "The Awesome world of Cloud Computing! COEN 241",
 "text": "COEN 241 is the most awesome class ever!.",
 "title": "About COEN 241",
 "text": "Would you recommend COEN 241 to your friends?",
 "color": "#3AA3E3",
 "actions": [
 {
 "text": "Of Course!",
 "type": "button",
 "name": "recommend",
 "value": "recommend"
 },
 {
 "text": "Most Definitely!",
 "type": "button",
 "name": "definitely",
 "value": "definitely"
 }
],
 "callback_id": "responsel23",
 "fallback": "Would you recommend COEN 241 to your friends?",
 "attachment_type": "default"
 }
]
}
[ec2-user@ip-172-31-27-98 ~]$
[ec2-user@ip-172-31-27-98 ~]$ curl 127.0.0.1:8080/function/slack-request
{
 "text": "Serverless Message",
 "attachments": [
 {
 "fields": [
 {
 "short": true,
 "value": "100",
 "title": "Amazing Level"
 }
],
 "author_icon": "",
 "image_url": "https://avatars.githubusercontent.com/u/58917968?v=4",
 "author_name": "Praveen Vandeyar",
 "title": "The Awesome world of Cloud Computing! COEN 241",
 "text": "COEN 241 is the most awesome class ever!.",
 "title": "About COEN 241",
 "text": "Would you recommend COEN 241 to your friends?",
 "color": "#3AA3E3",
 "actions": [
 {
 "text": "Of Course!",
 "type": "button",
 "name": "recommend",
 "value": "recommend"
 },
 {
 "text": "Most Definitely!",
 "type": "button",
 "name": "definitely",
 "value": "definitely"
 }
],
 "callback_id": "responsel23",
 "fallback": "Would you recommend COEN 241 to your friends?",
 "attachment_type": "default"
 }
]
}
[ec2-user@ip-172-31-27-98 ~]$
```

The screenshot shows the OpenFaaS Portal interface. On the left, there's a sidebar with a search bar and a list of functions: 'slack-interactive', 'slack-request' (highlighted), and 'figlet'. The main area displays the details for the 'slack-request' function. It shows a status of 'Ready', 1 replica, and 20 invocation counts. The image is 'docker.io/pvandeyarscu/slack-request:latest' and the function process is 'python index.py'. Below this, there's an 'Invoke function' section with an 'INVOKE' button and radio buttons for 'Text' (selected), 'JSON', and 'Download'. The 'Request body' is empty. The 'Response status' is 200, and the 'Round-trip (s)' is 0.102. The 'Response body' is a JSON object: { "text": "Serverless Message", "attachments": [ { ... } ] }.

```
ec2-user@ip-172-31-27-98:~
[ec2-user@ip-172-31-27-98 ~]$ echo '{"json": "object"}' | faas-cli invoke slack-interactive
{
 "attachments": [
 {
 "footer": "Slack Apps built on OpenFaas",
 "author_link": "https://github.com/pv-gitjob",
 "color": "#36a64f",
 "text": "Head over to COEN 241",
 "title": "COEN 241",
 "ts": 123456789,
 "author_name": "Praveen Vandeyar",
 "title_link": "https://www.scu.edu/engineering/academic-programs/departments-of-computer-engineering/graduate/course-descriptions/",
 "image_url": "https://www.scu.edu/media/offices/umc/scu-brand-guidelines/visual-identity-and-photography/visual-identity-toolkit/logos-and-seals/Mission-Dont3.png",
 "response_type": "ephemeral",
 "replace_original": true,
 "footer_icon": "https://a.slack-edge.com/45901/marketing/img/_rebrand/meta/slack_hash_256.png",
 "pretext": "Ahh yeah! Great choice, COEN 241 is absolutely amazing!",
 "fallback": "Required plain-text summary of the attachment.",
 "thumb_url": "https://www.scu.edu/engineering/academic-programs/departments-of-computer-engineering/graduate/course-descriptions/",
 "author_icon": "https://avatars.githubusercontent.com/u/58917968?v=4"}
]
 }
}
[ec2-user@ip-172-31-27-98 ~]$
[ec2-user@ip-172-31-27-98 ~]$ curl 127.0.0.1:8080/function/slack-interactive -H 'Content-Type: application/json' -d '{"json": "object"}'
{
 "attachments": [
 {
 "footer": "Slack Apps built on OpenFaas",
 "author_link": "https://github.com/pv-gitjob",
 "color": "#36a64f",
 "text": "Head over to COEN 241",
 "title": "COEN 241",
 "ts": 123456789,
 "author_name": "Praveen Vandeyar",
 "title_link": "https://www.scu.edu/engineering/academic-programs/departments-of-computer-engineering/graduate/course-descriptions/",
 "image_url": "https://www.scu.edu/media/offices/umc/scu-brand-guidelines/visual-identity-and-photography/visual-identity-toolkit/logos-and-seals/Mission-Dont3.png",
 "response_type": "ephemeral",
 "replace_original": true,
 "footer_icon": "https://a.slack-edge.com/45901/marketing/img/_rebrand/meta/slack_hash_256.png",
 "pretext": "Ahh yeah! Great choice, COEN 241 is absolutely amazing!",
 "fallback": "Required plain-text summary of the attachment.",
 "thumb_url": "https://www.scu.edu/engineering/academic-programs/departments-of-computer-engineering/graduate/course-descriptions/",
 "author_icon": "https://avatars.githubusercontent.com/u/58917968?v=4"}
]
 }
}
[ec2-user@ip-172-31-27-98 ~]$
```

OpenFaas Portal

Not secure | ec2-54-215-117-138.us-west-1.compute.amazonaws.com:8080/ui/

OPENFAAS

Deploy New Function

Search for Function

slack-interactive

slack-request

figlet

slack-interactive

| Status | Replicas | Invocation count |
|--------|----------|------------------|
| Ready  | 1        | 28               |

Image

docker.io/pvandeyarscu/slack-interactive:latest

URL

http://ec2-54-215-117-138.us-west-1.compute.amazonaws.com:8080/function/

Function process

python index.py

Invoke function

INVOKE

☐ Text

☒ JSON

☐ Download

Request body

{}

Response status

200

Round-trip (s)

0.128

Response body

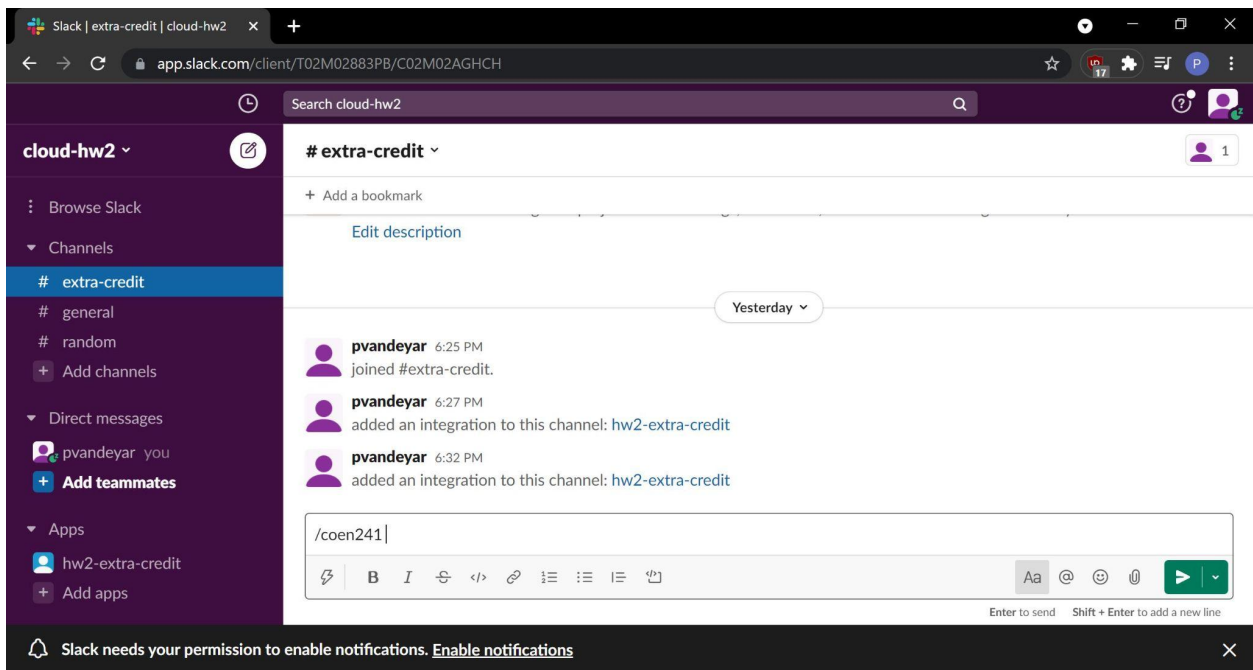
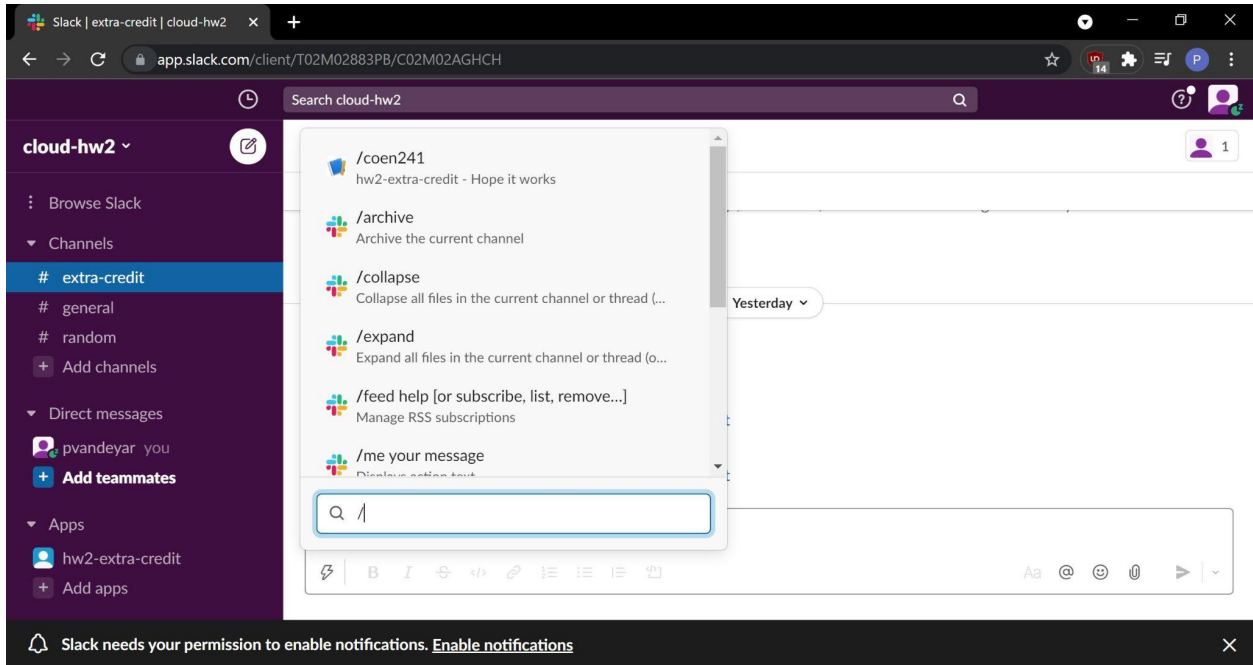
{  
 "attachments": [  
 {  
 "footer": "Slack Apps built on OpenFaas",

- Provide the link to your application and a screenshot of you running your application inside slack for the full credit!

[https://join.slack.com/t/cloud-hw2/shared\\_invite/zt-yh18x9oy-PwvUZnK0qJALSKJ\\_KFilsog](https://join.slack.com/t/cloud-hw2/shared_invite/zt-yh18x9oy-PwvUZnK0qJALSKJ_KFilsog)

The top screenshot shows the 'Slash Commands' configuration page in the Slack API Applications settings. The left sidebar contains a 'Settings' section with options like 'Basic Information', 'Collaborators', 'Socket Mode', 'Install App', 'App Manifest (BETA)', and 'Manage Distribution'. Below this is a 'Features' section with 'App Home', 'Org Level Apps', 'Incoming Webhooks', 'Interactivity & Shortcuts', 'Slash Commands' (highlighted), and 'Workflow Steps'. The main content area has a blue banner about a new configuration way, followed by the 'Slash Commands' title. It explains that commands enable users to interact with the app and that adding commands requires a bot user. A table lists existing commands, with one entry: '/coen241' with the description 'Hope it works'. There are edit and delete icons for this command, and a 'Create New Command' button at the bottom.

The bottom screenshot shows the 'Interactivity & Shortcuts' configuration page. The sidebar is identical to the top screenshot. The main content area has the same blue banner, followed by the 'Interactivity & Shortcuts' title. It features a section for 'Interactivity' with a toggle switch set to 'On'. Below this, it states that interactions with shortcuts, modals, or interactive components will be sent to a specified URL. A 'Request URL' field contains the text 'http://ec2-54-215-117-138.us-west-1.compute.amazonaws.com:80'. At the bottom right, there are 'Discard Changes' and 'Save Changes' buttons.





Slack | extra-credit | cloud-hw2

app.slack.com/client/T02M02883PB/C02M02AGHCH

Search cloud-hw2

cloud-hw2

Browse Slack

Channels

# extra-credit

# general

# random

Add channels

Direct messages

pvandeyar you

Add teammates

Apps

hw2-extra-credit

Add apps

# extra-credit

Add a bookmark

Only visible to you

Today

hw2-extra-credit APP 10:43 PM

Serverless Message

Praveen Vandeyar

The Awesome world of Cloud Computing! COEN 241 (2 kB)

Amazing Level

100

Send a message to #extra-credit

Slack needs your permission to enable notifications. [Enable notifications](#)

Slack | extra-credit | cloud-hw2

app.slack.com/client/T02M02883PB/C02M02AGHCH

Search cloud-hw2

cloud-hw2

Browse Slack

Channels

# extra-credit

# general

# random

Add channels

Direct messages

pvandeyar you

Add teammates

Apps

hw2-extra-credit

Add apps

# extra-credit

Add a bookmark

Today

About COEN 241

COEN 241 is the most awesome class ever!

Would you recommend COEN 241 to your friends?

Of Course! Most Definitely!

Send a message to #extra-credit

Slack needs your permission to enable notifications. [Enable notifications](#)

\* After clicking “Of Course!”

