

HW2:

Installation of OpenFaaS:

```
/faasd.service; enabled; preset: enabled)
2022-11-02 01:41:14 PDT; 21min ago

up

[5]: 2022/11/02 01:41:21 Resolver: "faasd-provider"="10.62.0.1"
[5]: 2022/11/02 01:41:21 Resolver: "prometheus"="10.62.0.2"
[5]: 2022/11/02 01:41:21 Resolver: "basic-auth-plugin"="10.62.0.3"
[5]: 2022/11/02 01:41:21 Resolver: "nats"="10.62.0.4"
[5]: 2022/11/02 01:41:21 Resolver: "gateway"="10.62.0.5"
[5]: 2022/11/02 01:41:21 Resolver: "queue-worker"="10.62.0.6"
[5]: 2022/11/02 01:41:21 Looking up IP for: "prometheus"
[5]: 2022/11/02 01:41:21 Proxy from: 127.0.0.1:9090, to: prometheus:9090 (10.62.0.2)
[5]: 2022/11/02 01:41:21 faasd: waiting for SIGTERM or SIGINT
[5]: 2022/11/02 01:41:22 Proxy from: 0.0.0.0:8080, to: gateway:8080 (10.62.0.5)

seed@seed-VirtualBox:~/functions$ mkdir -p ~/functions && cd ~/functions
seed@seed-VirtualBox:~/functions$ faas-cli new --lang python slack-request
2022/11/02 01:58:49 No templates found in current directory.
2022/11/02 01:58:49 Attempting to expand templates from https://github.com/openfaas/templates.git
2022/11/02 01:58:50 Fetched 17 template(s) : [csharp dockerfile go java11 java11-vertx node node12 node12-debian node14 node16 node17 php7 php8 python python3 python3-debian ruby] from https://github.com/openfaas/templates.git
Folder: slack-request created.

Function created in folder: slack-request
Stack file written: slack-request.yml
seed@seed-VirtualBox:~/functions$
```

trying out the function from the store:

```
seed@seed-VirtualBox:~/functions/faasd$ faas-cli store deploy figlet
Deployed. 200 OK.
URL: http://127.0.0.1:8080/function/figlet

seed@seed-VirtualBox:~/functions/faasd$ faas-cli store inspect figlet
Info for: Figlet

Name      figlet
Description Generate ASCII logos with the figlet CLI
Image     ghcr.io/openfaas/figlet:latest
Process   figlet
Repo URL  https://github.com/openfaas/store-functions

seed@seed-VirtualBox:~/functions/faasd$
```

Invoking the figlet function

```
seed@seed-VirtualBox:~/functions/faasd$ echo "Hello, FaaS, world" | faas-cli invoke figlet
```



```
sudo journalctl -u faasd -lines 40
```

```
51]: 2022/11/02 20:47:58 - gateway
51]: 2022/11/02 20:47:58 - queue-worker
51]: Starting: basic-auth-plugin
51]: 2022/11/02 20:47:58 Created container: basic-auth-plugin
51]: 2022/11/02 20:48:00 basic-auth-plugin has IP: 10.62.0.2
51]: 2022/11/02 20:48:00 Task: basic-auth-plugin      Container: basic-auth->
51]: Starting: nats
51]: Creating local directory: /var/lib/faasd/nats
51]: 2022/11/02 20:48:00 Running nats with user: "65534"
51]: 2022/11/02 20:48:00 Created container: nats
51]: 2022/11/02 20:48:01 nats has IP: 10.62.0.3
51]: 2022/11/02 20:48:01 Task: nats      Container: nats
51]: Starting: prometheus
51]: Creating local directory: /var/lib/faasd/prometheus
51]: 2022/11/02 20:48:01 Running prometheus with user: "65534"
51]: 2022/11/02 20:48:01 Created container: prometheus
51]: 2022/11/02 20:48:02 prometheus has IP: 10.62.0.4
51]: 2022/11/02 20:48:02 Task: prometheus      Container: prometheus
51]: Starting: gateway
51]: 2022/11/02 20:48:02 Created container: gateway
51]: 2022/11/02 20:48:03 gateway has IP: 10.62.0.5
51]: 2022/11/02 20:48:03 Task: gateway      Container: gateway
51]: Starting: queue-worker
51]: 2022/11/02 20:48:03 Created container: queue-worker
51]: 2022/11/02 20:48:03 queue-worker has IP: 10.62.0.6
51]: 2022/11/02 20:48:03 Task: queue-worker      Container: queue-worker
51]: 2022/11/02 20:48:03 Supervisor init done in: 5 seconds
51]: 2022/11/02 20:48:03 Looking up IP for: "prometheus"
```

```
Nov 02 20:47:58 seed-VirtualBox faasd[451]: 2022/11/02 20:47:58 - gateway
Nov 02 20:47:58 seed-VirtualBox faasd[451]: 2022/11/02 20:47:58 - queue-worker
Nov 02 20:47:58 seed-VirtualBox faasd[451]: Starting: basic-auth-plugin
Nov 02 20:47:58 seed-VirtualBox faasd[451]: 2022/11/02 20:47:58 Created container: basic-auth-plugin
Nov 02 20:48:00 seed-VirtualBox faasd[451]: 2022/11/02 20:48:00 basic-auth-plugin has IP: 10.62.0.2
Nov 02 20:48:00 seed-VirtualBox faasd[451]: 2022/11/02 20:48:00 Task: basic-auth-plugin
Nov 02 20:48:00 seed-VirtualBox faasd[451]: Starting: nats
Nov 02 20:48:00 seed-VirtualBox faasd[451]: Creating local directory: /var/lib/nats
Nov 02 20:48:00 seed-VirtualBox faasd[451]: 2022/11/02 20:48:00 Running nats with user: "65534"
Nov 02 20:48:00 seed-VirtualBox faasd[451]: 2022/11/02 20:48:00 Created container: nats
Nov 02 20:48:01 seed-VirtualBox faasd[451]: 2022/11/02 20:48:01 nats has IP: 10.62.0.3
Nov 02 20:48:01 seed-VirtualBox faasd[451]: 2022/11/02 20:48:01 Task: nats
Nov 02 20:48:01 seed-VirtualBox faasd[451]: Starting: prometheus
Nov 02 20:48:01 seed-VirtualBox faasd[451]: Creating local directory: /var/lib/prometheus
Nov 02 20:48:01 seed-VirtualBox faasd[451]: 2022/11/02 20:48:01 Running prometheus with user: "65534"
Nov 02 20:48:01 seed-VirtualBox faasd[451]: 2022/11/02 20:48:01 Created container: prometheus
Nov 02 20:48:02 seed-VirtualBox faasd[451]: 2022/11/02 20:48:02 prometheus has IP: 10.62.0.4
Nov 02 20:48:02 seed-VirtualBox faasd[451]: 2022/11/02 20:48:02 Task: prometheus
Nov 02 20:48:02 seed-VirtualBox faasd[451]: Starting: gateway
Nov 02 20:48:02 seed-VirtualBox faasd[451]: 2022/11/02 20:48:02 Created container: gateway
Nov 02 20:48:03 seed-VirtualBox faasd[451]: 2022/11/02 20:48:03 gateway has IP: 10.62.0.5
Nov 02 20:48:03 seed-VirtualBox faasd[451]: 2022/11/02 20:48:03 Task: gateway
Nov 02 20:48:03 seed-VirtualBox faasd[451]: Starting: queue-worker
Nov 02 20:48:03 seed-VirtualBox faasd[451]: 2022/11/02 20:48:03 Created container: queue-worker
Nov 02 20:48:03 seed-VirtualBox faasd[451]: 2022/11/02 20:48:03 queue-worker has IP: 10.62.0.6
Nov 02 20:48:03 seed-VirtualBox faasd[451]: 2022/11/02 20:48:03 Task: queue-worker
Nov 02 20:48:03 seed-VirtualBox faasd[451]: 2022/11/02 20:48:03 Supervisor initialized
Nov 02 20:48:03 seed-VirtualBox faasd[451]: 2022/11/02 20:48:03 Looking up IP for gateway
Lines 1-28
```

```
ner: basic-auth-plugin
gin has IP: 10.62.0.2
th-plugin      Container: basic-auth-plugin

/faasd/nats
ith user: "65534"
ner: nats
0.62.0.3
Container: nats

/faasd/prometheus
heus with user: "65534"
ner: prometheus
IP: 10.62.0.4
us      Container: prometheus

ner: gateway
: 10.62.0.5
Container: gateway

ner: queue-worker
as IP: 10.62.0.6
rker      Container: queue-worker
t done in: 5 seconds
for: "prometheus"
Lines 1-28
```

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

The screenshot shows the OpenFaaS Portal interface in a web browser. The title bar says "OpenFaaS Portal". The address bar shows the URL "127.0.0.1:8080/ui/". The main content area displays a function named "slack-request".

slack-request

Status: Ready

Replicas: 1

Invocation count:

Image: docker.io/weiguangjames/slack-request:latest

URL: http://127.0.0.1:8080/function/slack-request

Function process: python index.py

The screenshot shows the OpenFaaS Portal interface in a web browser. The title bar says "OpenFaaS Portal". The address bar shows the URL "127.0.0.1:8080/ui/". The main content area displays a function named "slack-interactive".

slack-interactive

Status: Ready

Replicas: 1

Invocation count:

Image: docker.io/weiguangjames/slack-interactive:latest

URL: http://127.0.0.1:8080/function/slack-interactive

Function process: python index.py

slack-request/handler.py

```
Open handler.py ~/Functions/slack-request
handler.py x
Open recent document (Ctrl+K) handler.py x

import json
def handle(req):
    data ={
        "text": "Serverless Message",
        "attachments": [
            {
                "title": "The Awsome world of Cloud Computing! COEN 241",
                "fields": [
                    {
                        "title": "Amazing Level",
                        "value": "100",
                        "short": True
                    }
                ],
                "author_name": "weiguangjames",
                "author_icon": "https://avatars.githubusercontent.com/u/116145145?s=40&v=4",
                "image_url": "https://www.scu.edu/media/offices/umc/scu-brand-guidelines/visual-identity-amp-photography/visual-identity-toolkit/logos-amp-seals/Mission-Dont3.png"
            },
            {
                "title": "About COEN 241",
                "text": "Sean Choi is the best professor!. "
            }
        ]
    }
    return json.dumps(data)

slack-interactive/handler.py
```

```
Open ▾ handler.py  ~/functions/slack-interactive
import json
import urllib

def handle(req):
    urlstring = urllib.unquote(req).decode('utf8').strip('payload=')
    response = json.loads(urlstring)
    data = {
        "attachments": [
            {
                "replace_original": True,
                "response_type": "ephemeral",
                "fallback": "Required plain-text summary of the attachment.",
                "color": "#36a64f",
                "pretext": "Welcome to COEN 241",
                "author_name": "weiquangjames",
                "author_link": "https://github.com/weiquangjames",
                "author_icon": "https://avatars.githubusercontent.com/u/116145145?s=40&v=4",
                "title_link": "https://www.scu.edu/engineering/academic-programs/department-of-computer-engineering/graduate/course-descriptions/",
                "text": "Course searching",
                "image_url": "https://www.scu.edu/media/offices/umc/scu-brand-guidelines/visual-identity-amp-photography/visual-identity-toolkit/logos-amp-seals/Mission-Dont3.png",
            }
        ]
    }
    return json.dumps(data)
```

```
Open ▾  handler.py  ~/functions/slack-interactive
"author_link": "https://github.com/weiquangjames",
"author_icon": "https://avatars.githubusercontent.com/u/116145145?s=40&v=4",
"title_link": "https://www.scu.edu/engineering/academic-programs/department-of-computer-engineering/graduate/course-descriptions/",
"text": "Course searching",
"image_url": "https://www.scu.edu/media/offices/umc/scu-brand-guidelines/visual-identity-amp-photography/visual-identity-toolkit/logos-amp-seals/Mission-Dont3.png",
"thumb_url": "https://www.scu.edu/engineering/academic-programs/department-of-computer-engineering/graduate/course-descriptions/",
"footer": "Slack Apps built on OpenFaaS",
"footer_icon": "https://a.slack-edge.com/45901/marketing/img/_rebrand/meta/slack_hash_256.png",
"ts": 123456789
}
]
}

return json.dumps(data)
```

Answer the questions

1. a. Via Curl

```
Curl 127.0.0.1:8080/function/slack-request -d {}
```

b. Via faas-cli

```
faas-cli invoke slack-request
```

2. output :

```
seed@seed-VirtualBox:~/functions$ curl 127.0.0.1:8080/function/slack-request -d {}
{"text": "Serverless Message", "attachments": [{"fields": [{"short": true, "value": "100", "title": "Satisfaction"}], "author_icon": "https://avatars.githubusercontent.com/u/116145145?s=40&v=4", "image_url": "https://www.scu.edu/media/offices/umc/scu-brand-guidelines/visual-identity-amp-photography/visual-identity-toolkit/logos-amp-seals/Mission-Dont3.png", "author_name": "weiguangjames", "title": "The course of COEN 241 Cloud Computing!"}, {"text": "Sean Choi is the best professor!", "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": "One more time", "type": "button", "name": "Take it again", "value": "Take it again"}], "callback_id": "response123", "fallback": "Would you recommend COEN 241 to your friends?", "attachment_type": "default"}]}
seed@seed-VirtualBox:~/functions$
```

3.

a) via curl

```
curl 127.0.0.1:8080/function/slack-interactive -d {}
```

b) via faas-cli

```
faas-cli invoke slack-interactive
```

4. I got error here

```
seed@seed-VirtualBox:~/functions$ faas-cli invoke slack-interactive
Reading from STDIN - hit (Control + D) to stop.
^FServer returned unexpected status code: 500 - exit status 1
Traceback (most recent call last):
  File "index.py", line 16, in <module>
    ret = handler.handle(st)
  File "/home/app/function/handler.py", line 6, in handle
    response = json.loads(urlstring)
  File "/usr/local/lib/python2.7/json/__init__.py", line 339, in loads
    return _default_decoder.decode(s)
  File "/usr/local/lib/python2.7/json/decoder.py", line 364, in decode
    obj, end = self.raw_decode(s, idx=_w(s, 0).end())
  File "/usr/local/lib/python2.7/json/decoder.py", line 382, in raw_decode
    raise ValueError("No JSON object could be decoded")
ValueError: No JSON object could be decoded

seed@seed-VirtualBox:~/functions$
```

5. Via curl:

a) Curl 127.0.0.1:80/function/slack-request -d{<arguments>}

- b) Echo '{<arguments>}' |faas-cli invoke slack-request
6. Parsing different inputs "req" , return base on the input by function.