

COEN 241 Assignment 2 Answers

Q1. What is the command to invoke slack-request function?

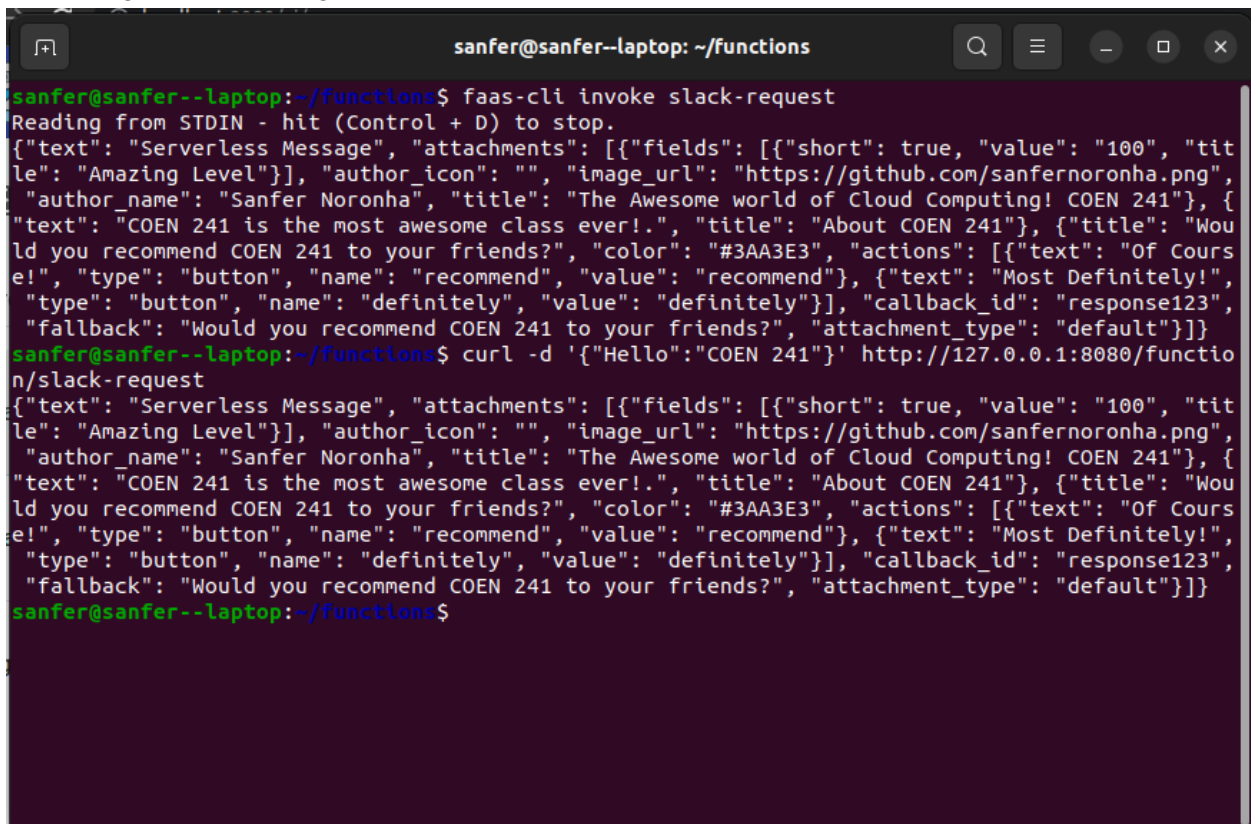
- a. Via curl
- b. Via faas-cli

Ans. Via curl : `curl -d '{"Hello": "COEN 241"}' http://127.0.0.1:8080/function/slack-request`

Via faas-cli: `faas-cli invoke slack-request`

Q2. What is the output you see when you invoke the slack-request function?

Ans. We get the following outputs

A terminal window titled 'sanfer@sanfer--laptop: ~/functions' with standard window controls. The terminal shows the command 'faas-cli invoke slack-request' being executed. The output is a JSON object representing a Slack message. The message has a text field 'Serverless Message', an attachments array with one attachment, and a fallback field. The attachment contains a title 'Amazing Level', an author icon, an image URL, an author name 'Sanfer Noronha', a title 'The Awesome world of Cloud Computing! COEN 241', and a text field 'COEN 241 is the most awesome class ever!.'. It also includes a title 'About COEN 241', a text field 'Would you recommend COEN 241 to your friends?', a color '#3AA3E3', and two buttons: 'Of Course!' and 'Most Definitely!'. The buttons have names 'recommend' and 'definitely' respectively. The callback_id is 'response123' and the attachment_type is 'default'.

```
sanfer@sanfer--laptop:~/functions$ faas-cli invoke slack-request
Reading from STDIN - hit (Control + D) to stop.
{"text": "Serverless Message", "attachments": [{"fields": [{"short": true, "value": "100", "title": "Amazing Level"}], "author_icon": "", "image_url": "https://github.com/sanfernoronha.png", "author_name": "Sanfer Noronha", "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": "response123", "fallback": "Would you recommend COEN 241 to your friends?", "attachment_type": "default"}]}
sanfer@sanfer--laptop:~/functions$ curl -d '{"Hello": "COEN 241"}' http://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://github.com/sanfernoronha.png", "author_name": "Sanfer Noronha", "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": "response123", "fallback": "Would you recommend COEN 241 to your friends?", "attachment_type": "default"}]}
sanfer@sanfer--laptop:~/functions$
```

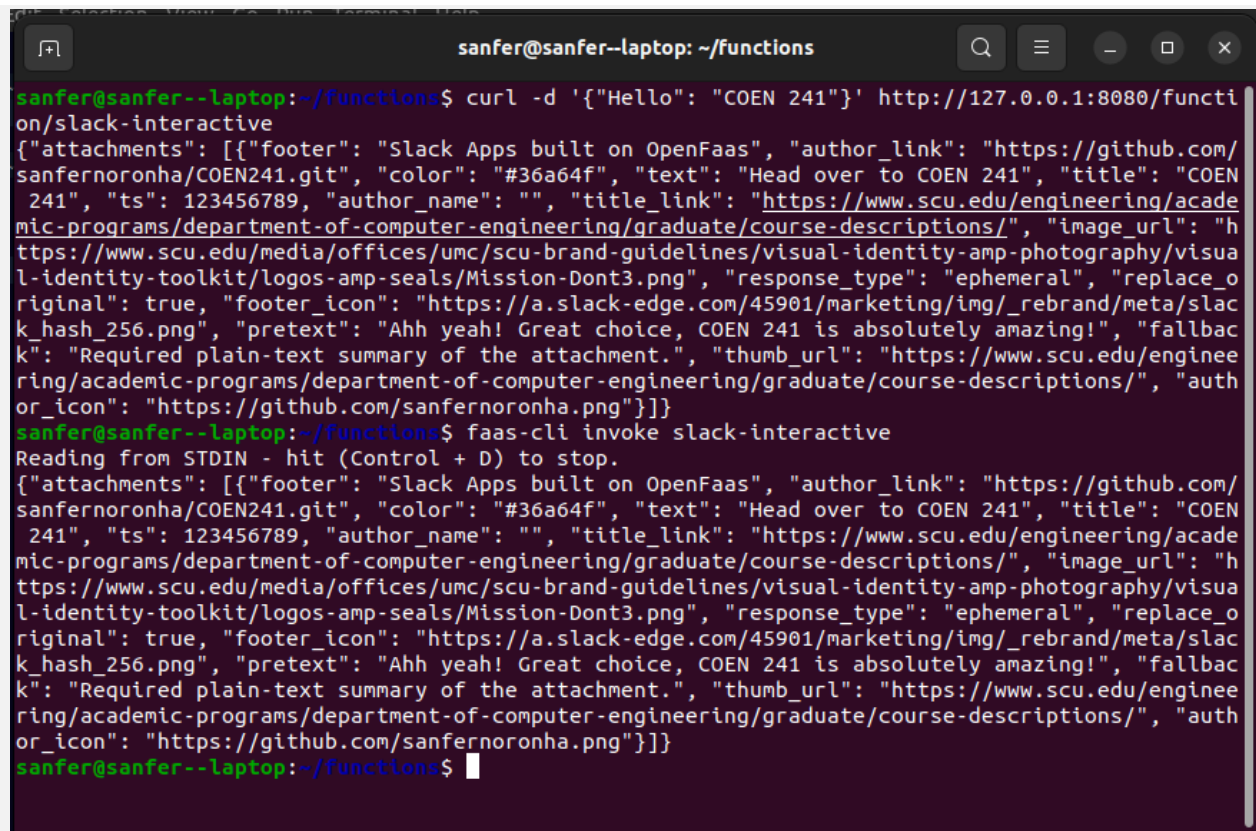
Q3. What is the command to invoke the slack-interactive function?

- a. Via curl
- b. Via faas-cli

Ans. Via curl: `curl -d '{"Hello": "COEN 241"}' http://127.0.0.1:8080/function/slack-interactive`

Via faas-cli: `faas-cli invoke slack-interactive`

Q4. What is the output seen after invoking the slack-interactive function?

A terminal window titled 'sanfer@sanfer--laptop: ~/functions' with standard window controls. The terminal shows two commands and their outputs. The first command is a curl POST request to 'http://127.0.0.1:8080/function/slack-interactive' with a JSON body. The output is a large JSON object representing a Slack message. The second command is 'faas-cli invoke slack-interactive', which produces the same JSON output. The terminal text is as follows:

```
sanfer@sanfer--laptop:~/functions$ curl -d '{"Hello": "COEN 241"}' http://127.0.0.1:8080/function/slack-interactive
{"attachments": [{"footer": "Slack Apps built on OpenFaas", "author_link": "https://github.com/sanfernoronha/COEN241.git", "color": "#36a64f", "text": "Head over to COEN 241", "title": "COEN 241", "ts": 123456789, "author_name": "", "title_link": "https://www.scu.edu/engineering/academic-programs/department-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/department-of-computer-engineering/graduate/course-descriptions/", "author_icon": "https://github.com/sanfernoronha.png"}]}
sanfer@sanfer--laptop:~/functions$ faas-cli invoke slack-interactive
Reading from STDIN - hit (Control + D) to stop.
{"attachments": [{"footer": "Slack Apps built on OpenFaas", "author_link": "https://github.com/sanfernoronha/COEN241.git", "color": "#36a64f", "text": "Head over to COEN 241", "title": "COEN 241", "ts": 123456789, "author_name": "", "title_link": "https://www.scu.edu/engineering/academic-programs/department-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/department-of-computer-engineering/graduate/course-descriptions/", "author_icon": "https://github.com/sanfernoronha.png"}]}
sanfer@sanfer--laptop:~/functions$
```

Q5. How would you pass different arguments to the functions?

Ans. Following are some of the ways of passing arguments to functions.

1. `curl -d '{"Hello": "COEN 241"}' http://127.0.0.1:8080/function/slack-interactive`

The above command sends the specified data in a POST request to an HTTP server.

2. `echo "Hello, FaaS World" | faas-cli invoke figlet`

Here, we invoke the figlet function using faas-cli and the argument given to the function is "Hello, FaaS World".

We can also use the openfaas UI.

Q5. How would you pass different arguments to the functions?

Ans. urllib is used to decode any string into a URL using the default UTF-8 encoding. json.load() method is used to transform a valid JSON string, such as a urlstring, into a Python dictionary. The functions are like API endpoints. We send req to the function which is accessed using the req parameter and decoded with above mentioned libraries. Different requests can be extracted using various api functions of the above libraries. Api testing tools like Postman can be used to send various arguments to the functions for testing. json.dumps is used to return data to the requesting client.

Codes:

slack-interactive/handler.py

```
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": "Ahh yeah! Great choice, COEN 241 is absolutely amazing!",
                "author_name": "",
                "author_link": "https://github.com/sanfernoronha/COEN241.git",
                "author_icon": "https://github.com/sanfernoronha.png",
                "title": "COEN 241",
                "title_link": "https://www.scu.edu/engineering/academic-programs/departm",
                "text": "Head over to COEN 241",
                "image_url": "https://www.scu.edu/media/offices/umc/scu-brand-guideline",
                "thumb_url": "https://www.scu.edu/engineering/academic-programs/departm",
                "footer": "Slack Apps built on OpenFaas",
                "footer_icon": "https://a.slack-edge.com/45901/marketing/img/_rebrand/m",
                "ts": 123456789
            }
        ]
    }
    return json.dumps(data)
```

slack-interactive.yml

```
provider:
  name: openfaas
```

```
gateway: http://127.0.0.1:8080
functions:
  slack-interactive:
    lang: python
    handler: ./slack-interactive
    image: sanfernoronha/slack-interactive
    environment:
      content_type: application/json
```

slack-request/handler.py

```
import json

def handle(req):
    data = {
        "text": "Serverless Message",
        "attachments": [{
            "title": "The Awesome world of Cloud Computing! COEN 241",
            "fields": [{
                "title": "Amazing Level",
                "value": "100",
                "short": True
            }],
            "author_name": "Sanfer Noronha",
            "author_icon": "",
            "image_url": "https://github.com/sanfernoronha.png"
        },
        {
            "title": "About COEN 241",
            "text": "COEN 241 is the most awesome class ever!."
        },
        {
            "fallback": "Would you recommend COEN 241 to your friends?",
            "title": "Would you recommend COEN 241 to your friends?",
            "callback_id": "response123",
            "color": "#3AA3E3",
            "attachment_type": "default",
            "actions": [
                {
```

```
        "name": "recommend",
        "text": "Of Course!",
        "type": "button",
        "value": "recommend"
    },
    {
        "name": "definitely",
        "text": "Most Definitely!",
        "type": "button",
        "value": "definitely"
    }
]
}]
}
return json.dumps(data)
```

slack-request.yml

```
provider:
  name: openfaas
  gateway: http://127.0.0.1:8080
functions:
  slack-request:
    lang: python
    handler: ./slack-request
    image: sanfernoronha/slack-request
    environment:
      content_type: application/json
```