

HTTP & REST

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LESSON

LEARNING OBJECTIVES

- + **Define** HTTP and REST
- + **Examine** an HTTP request and response, and be able to identify useful information
- + **Identify** HTTP Verbs and the uses for each
- + **Pass** parameters into an HTTP request

LESSON

**WHAT HAPPENS WHEN
YOU OPEN A WEBSITE
ON YOUR BROWSER?**

ACTIVITY: WRITE-PAIR-SHARE



5 mins

DIRECTIONS

What happens when you open Facebook or Github on your browser.

1. Think & Write your thoughts down (1 min)
2. Discuss with a partner (2 min)

DELIVERABLE

Discuss as a class

LESSON

HTTP

HTTP

HTTP

Hyper-Text Transfer Protocol

Is a protocol for exchanging hyper-text.

HTTP

HYPER-TEXT

```
<html>  
  <body>  
    <a href="http://www.ga.nyc"/>  
  </body>  
</html>
```

HTTP

URI

A URI (Uniform Resource Identifier) is a string of characters that identifies a resource.

HTTP

URI

`github.com/sirwellington/alchemy`

HTTP

URL

A URL is a URI that includes information how to access the resource, i.e. a protocol.

HTTP

URL

<https://github.com/sirwellington/alchemy>

ACTIVITY: STOP-AND-JOT



1 mins

DIRECTIONS

Which of the following are URLs? URIs?

- + bk.asia-city.com/movies/news/future-thai-indie-film
- + <https://www.youtube.com/watch?v=0JVoApMH-y4>
- + <tcp://broker.hivemq.com>
- + abc.xyz

DELIVERABLE

Write down your answer

HTTP

PROTOCOL TYPES

- + http
- + ftp
- + tcp
- + telnet
- + ssh

- + http
- + nfs
- + udp
- + smtp
- + scp

THE ANATOMY OF A URL

[https://](https://owlbot.info:80/api/v1/dictionary/lexicon?format=json)owlbot.info:80/api/v1/dictionary/lexicon?format=json

protocol

THE ANATOMY OF A URL

`https://owlbot.info:80/api/v1/dictionary/lexicon?format=json`

domain

THE ANATOMY OF A URL

`https://owlbot.info:80/api/v1/dictionary/lexicon?format=json`

port

THE ANATOMY OF A URL

`https://owlbot.info:80/api/v1/dictionary/lexicon?format=json`

path

THE ANATOMY OF A URL

`https://owlbot.info:80/api/v1/dictionary/lexicon?format=json`

path

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`https://owlbot.info:80/api/v1/dictionary/lexicon?format=json`

path

THE ANATOMY OF A URL

`https://owlbot.info:80/api/v1/dictionary/lexicon?format=json`

path

THE ANATOMY OF A URL

`https://owlbot.info:80/api/v1/dictionary/lexicon?format=json`

query
parameter
symbol

THE ANATOMY OF A URL

`https://owlbot.info:80/api/v1/dictionary/lexicon?format=json`

query
parameter

THE ANATOMY OF A URL

`https://owlbot.info:80/api/v1/dictionary/lexicon?format=json`

query
parameter
key

THE ANATOMY OF A URL

`https://owlbot.info:80/api/v1/dictionary/lexicon?format=json`

query
parameter
value

ACTIVITY: BREAK-IT-DOWN



2 mins

DIRECTIONS

Decompose the following URLs

- + <https://www.youtube.com/watch?v=0JVoApMH-y4>
- + <http://api.datausa.io/api?show=geo&sumlevel=nation&year=latest&required=pop>

DELIVERABLE

Stop and jot your answer

LESSON

REST

HTTP

GET

The GET method is used to retrieve information from the given server using a given URI. Requests using GET should only **retrieve data** and should have **no other effect** on the data.

HTTP

HEAD

Same as GET, but transfers the status line and header section only.

POST

A POST request is used to send data to the server, and to create new resources. For example, creating a customer account, or ordering something online.

HTTP

PUT

Similar to POST, a PUT request updates or creates a resource.

HTTP

DELETE

Removes a resource at the specified URI.

HTTP

CRUD!

Create. Read. **Update.** Delete.

IDEMPOTENT

Idempotency refers to the state of the server after a request. If you perform an operation more than once, and the server remains the same, the operation is said to be idempotent.

ACTIVITY: FILL-IN-THE-BLANK



2 mins

OPERATION	HTTP METHOD	IDEMPOTENT?
View a User's post?		
Remove a comment		
Like(♥) a picture		
Edit your profile		

ANSWERS

OPERATION	HTTP METHOD	IDEMPOTENT?
View a User's post?	GET	YES
Remove a comment	DELETE	YES
Like(♥) a picture	POST/PUT	YES/NO
Edit your profile	PUT	YES

DEMO

LET'S CURL REQUESTS

- + `http://google.com/`
- + `https://raw.githubusercontent.com/RedRoma/Sulcus/develop/README.md`

LESSON

WHAT IS REST?

HTTP

REST

REPRESENTATIONAL STATE TRANSFER

REST PRINCIPLES

- + Everything is a resource
- + Uniform Interface
- + Stateless
- + Client-Server

ACTIVITY: MAKE REQUESTS



CODE

5 mins

DIRECTIONS

Lookup the following words, given this URL:

<https://owlbot.info:80/api/v1/dictionary/lexicon?format=json>

- + Apathy
- + Rest
- + Theory
- + Music

DELIVERABLES

LESSON

CONCLUSION

- + HTTP is like the language of the Web
- + REST is like the grammar

LESSON

Q & A

THANKS!

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FOR INSTRUCTOR PURPOSES ONLY

MATERIALS

- + [Lab](#)
- + [Lesson Plan](#)
- + [REST Architecture](#)