Arctos Morei  
  
**Week 14 Homework Submission File: Web Development**

**HTTP Requests and Responses**

1. What type of architecture does the HTTP request and response process occur in?

HTTP request/response uses the client-server model.

1. What are the different parts of an HTTP request?

Status, Header, and Body

1. Which part of an HTTP request is optional?

The body

1. What are the three parts of an HTTP response?

Status, Header, Body

1. Which number class of status codes represents errors?

400’s and 500’s

1. What are the two most common request methods that a security professional will encounter?

GET and POST

1. Which type of HTTP request method is used for sending data?

POST

1. Which part of an HTTP request contains the data being sent to the server?

The Header

1. In which part of an HTTP response does the browser receive the web code to generate and style a web page?

The Body

**Using curl**

1. What are the advantages of using curl over the browser?

You can do more with a curl and run more commands than using a browser can. It’s also much faster. Also works with headless machines and containers.

1. Which curl option is used to change the request method?

--request-target <path>, -X, --request <method>

1. Which curl option is used to set request headers?

-H, --header <header/@file>

1. Which curl option is used to view the response header?

-i, --include, OR -v, --verbose

1. Which request method might an attacker use to figure out which HTTP requests an HTTP server will accept?

curl -v -X OPTIONS

**Sessions and Cookies**

1. Which response header sends a cookie to the client?

TTP/1.1 200 OK

Content-type: text/html

Set-Cookie: cart=Bob

1. Which request header will continue the client's session?

GET /cart HTTP/1.1

Host: www.example.org

Cookie: cart=Bob

**Example HTTP Requests and Responses**

**HTTP Request**

POST /login.php HTTP/1.1

Host: example.com

Accept-Encoding: gzip, deflate, br

Connection: keep-alive

Content-Type: application/x-www-form-urlencoded

Content-Length: 34

Upgrade-Insecure-Requests: 1

User-Agent: Mozilla/5.0 (Linux; Android 6.0; Nexus 5 Build/MRA58N) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/80.0.3987.132 Mobile Safari/537.36

username=Barbara&password=password

1. What is the request method?

POST

1. Which header expresses the client's preference for an encrypted response?

Upgrade-Insecure-Requests: 1

1. Does the request have a user session associated with it?

Doesn’t appear so.

1. What kind of data is being sent from this request body?

username=Barbara&password=password

**HTTP Response**

HTTP/1.1 200 OK

Date: Mon, 16 Mar 2020 17:05:43 GMT

Last-Modified: Sat, 01 Feb 2020 00:00:00 GMT

Content-Encoding: gzip

Expires: Fri, 01 May 2020 00:00:00 GMT

Server: Apache

Set-Cookie: SessionID=5

Content-Type: text/html; charset=UTF-8

Strict-Transport-Security: max-age=31536000; includeSubDomains

X-Content-Type: NoSniff

X-Frame-Options: DENY

X-XSS-Protection: 1; mode=block

[page content]

1. What is the response status code?

200 OK

1. What web server is handling this HTTP response?

Apache

1. Does this response have a user session associated to it?

Yes, there is a cookie. Set-Cookie: SessionID=5

1. What kind of content is likely to be in the [page content] response body?

Content-Type: text/html; charset=UTF-8 //The website’s code, or displaying text.

1. If your class covered security headers, what security request headers have been included?

The following request headers are pretty clear to be security related:

Strict-Transport-Security: max-age=31536000; includeSubDomains, X-Content-Type: NoSniff, X-Frame-Options: DENY, and X-XSS Protection: 1; mode=block .

**Monoliths and Microservices**

1. What are the individual components of microservices called?

Databases, Static Content, Management, Service Discovery, Clients, Identity Providers, API Gateways, and Messaging Formats.

1. What is a service that writes to a database and communicates to other services?

resource API’s

1. What type of underlying technology allows for microservices to become scalable and have redundancy?

Containers

**Deploying and Testing a Container Set**

1. What tool can be used to deploy multiple containers at once?

docker-compose

1. What kind of file format is required for us to deploy a container set?

YAML

**Databases**

1. Which type of SQL query would we use to see all of the information within a table called customers?

SELECT

1. Which type of SQL query would we use to enter new data into a table? (You don't need a full query, just the first part of the statement.)

INSERT INTO

1. Why would we never run DELETE FROM <table-name>; by itself?

It’d delete the whole table, so unless that’s your intention, you want to avoid running that by itself.