PART ONE:

Question 1:

Output:

Harmanjots-MacBook-Pro:~ harmanjotkpaul$ curl -I -v https://harman977.github.io/CTIS230assignments/homepage.html

\* Trying 185.199.108.153...

\* TCP\_NODELAY set

\* Connected to harman977.github.io (185.199.108.153) port 443 (#0)

\* ALPN, offering h2

\* ALPN, offering http/1.1

\* successfully set certificate verify locations:

\* CAfile: /etc/ssl/cert.pem

CApath: none

\* TLSv1.2 (OUT), TLS handshake, Client hello (1):

\* TLSv1.2 (IN), TLS handshake, Server hello (2):

\* TLSv1.2 (IN), TLS handshake, Certificate (11):

\* TLSv1.2 (IN), TLS handshake, Server key exchange (12):

\* TLSv1.2 (IN), TLS handshake, Server finished (14):

\* TLSv1.2 (OUT), TLS handshake, Client key exchange (16):

\* TLSv1.2 (OUT), TLS change cipher, Change cipher spec (1):

\* TLSv1.2 (OUT), TLS handshake, Finished (20):

\* TLSv1.2 (IN), TLS change cipher, Change cipher spec (1):

\* TLSv1.2 (IN), TLS handshake, Finished (20):

\* SSL connection using TLSv1.2 / ECDHE-RSA-AES128-GCM-SHA256

\* ALPN, server accepted to use h2

\* Server certificate:

\* subject: C=US; ST=California; L=San Francisco; O=GitHub, Inc.; CN=www.github.com

\* start date: May 6 00:00:00 2020 GMT

\* expire date: Apr 14 12:00:00 2022 GMT

\* subjectAltName: host "harman977.github.io" matched cert's "\*.github.io"

\* issuer: C=US; O=DigiCert Inc; OU=www.digicert.com; CN=DigiCert SHA2 High Assurance Server CA

\* SSL certificate verify ok.

\* Using HTTP2, server supports multi-use

\* Connection state changed (HTTP/2 confirmed)

\* Copying HTTP/2 data in stream buffer to connection buffer after upgrade: len=0

\* Using Stream ID: 1 (easy handle 0x7fe4ae00d600)

> HEAD /CTIS230assignments/homepage.html HTTP/2

> Host: harman977.github.io

> User-Agent: curl/7.64.1

> Accept: \*/\*

>

\* Connection state changed (MAX\_CONCURRENT\_STREAMS == 100)!

< HTTP/2 200

HTTP/2 200

< server: GitHub.com

**server**: GitHub.com

< content-type: text/html; charset=utf-8

**content-type**: text/html; charset=utf-8

< permissions-policy: interest-cohort=()

**permissions-policy**: interest-cohort=()

< strict-transport-security: max-age=31556952

**strict-transport-security**: max-age=31556952

< last-modified: Fri, 30 Apr 2021 01:24:04 GMT

**last-modified**: Fri, 30 Apr 2021 01:24:04 GMT

< access-control-allow-origin: \*

**access-control-allow-origin**: \*

< etag: "608b5c34-ea5"

**etag**: "608b5c34-ea5"

< expires: Fri, 30 Apr 2021 21:13:22 GMT

**expires**: Fri, 30 Apr 2021 21:13:22 GMT

< cache-control: max-age=600

**cache-control**: max-age=600

< x-proxy-cache: MISS

**x-proxy-cache**: MISS

< x-github-request-id: 4C22:0AEB:13EB3CB:203D2B3:608C709A

**x-github-request-id**: 4C22:0AEB:13EB3CB:203D2B3:608C709A

< accept-ranges: bytes

**accept-ranges**: bytes

< date: Fri, 30 Apr 2021 21:03:22 GMT

**date**: Fri, 30 Apr 2021 21:03:22 GMT

< via: 1.1 varnish

**via**: 1.1 varnish

< age: 0

**age**: 0

< x-served-by: cache-wdc5527-WDC

**x-served-by**: cache-wdc5527-WDC

< x-cache: MISS

**x-cache**: MISS

< x-cache-hits: 0

**x-cache-hits**: 0

< x-timer: S1619816602.028849,VS0,VE6

**x-timer**: S1619816602.028849,VS0,VE6

< vary: Accept-Encoding

**vary**: Accept-Encoding

< x-fastly-request-id: d93aef60f51c7acd4c8ae81f2ebfd57b9d85bb80

**x-fastly-request-id**: d93aef60f51c7acd4c8ae81f2ebfd57b9d85bb80

< content-length: 3749

**last-modified**: Fri, 30 Apr 2021 01:24:04 GMT

<

\* Connection #0 to host harman977.github.io left intact

\* Closing connection 0

1. No, Server is Github.com
2. 200
3. **last-modified**: Fri, 30 Apr 2021 01:24:04 GMT
4. content-length: 3749
5. text/html; charset=utf-8

Question 2:

Output:

Harmanjots-MacBook-Pro:~ harmanjotkpaul$ curl -I -v https://harman977.github.io/CTIS230assignments/image1.png

\* Trying 185.199.108.153...

\* TCP\_NODELAY set

\* Connected to harman977.github.io (185.199.108.153) port 443 (#0)

\* ALPN, offering h2

\* ALPN, offering http/1.1

\* successfully set certificate verify locations:

\* CAfile: /etc/ssl/cert.pem

CApath: none

\* TLSv1.2 (OUT), TLS handshake, Client hello (1):

\* TLSv1.2 (IN), TLS handshake, Server hello (2):

\* TLSv1.2 (IN), TLS handshake, Certificate (11):

\* TLSv1.2 (IN), TLS handshake, Server key exchange (12):

\* TLSv1.2 (IN), TLS handshake, Server finished (14):

\* TLSv1.2 (OUT), TLS handshake, Client key exchange (16):

\* TLSv1.2 (OUT), TLS change cipher, Change cipher spec (1):

\* TLSv1.2 (OUT), TLS handshake, Finished (20):

\* TLSv1.2 (IN), TLS change cipher, Change cipher spec (1):

\* TLSv1.2 (IN), TLS handshake, Finished (20):

\* SSL connection using TLSv1.2 / ECDHE-RSA-AES128-GCM-SHA256

\* ALPN, server accepted to use h2

\* Server certificate:

\* subject: C=US; ST=California; L=San Francisco; O=GitHub, Inc.; CN=www.github.com

\* start date: May 6 00:00:00 2020 GMT

\* expire date: Apr 14 12:00:00 2022 GMT

\* subjectAltName: host "harman977.github.io" matched cert's "\*.github.io"

\* issuer: C=US; O=DigiCert Inc; OU=www.digicert.com; CN=DigiCert SHA2 High Assurance Server CA

\* SSL certificate verify ok.

\* Using HTTP2, server supports multi-use

\* Connection state changed (HTTP/2 confirmed)

\* Copying HTTP/2 data in stream buffer to connection buffer after upgrade: len=0

\* Using Stream ID: 1 (easy handle 0x7fac8e80d600)

> HEAD /CTIS230assignments/image1.png HTTP/2

> Host: harman977.github.io

> User-Agent: curl/7.64.1

> Accept: \*/\*

>

\* Connection state changed (MAX\_CONCURRENT\_STREAMS == 100)!

< HTTP/2 200

HTTP/2 200

< server: GitHub.com

**server**: GitHub.com

< content-type: image/png

**content-type**: image/png

< permissions-policy: interest-cohort=()

**permissions-policy**: interest-cohort=()

< strict-transport-security: max-age=31556952

**strict-transport-security**: max-age=31556952

< last-modified: Fri, 30 Apr 2021 01:24:04 GMT

**last-modified**: Fri, 30 Apr 2021 01:24:04 GMT

< access-control-allow-origin: \*

**access-control-allow-origin**: \*

< etag: "608b5c34-f182"

**etag**: "608b5c34-f182"

< expires: Fri, 30 Apr 2021 21:47:21 GMT

**expires**: Fri, 30 Apr 2021 21:47:21 GMT

< cache-control: max-age=600

**cache-control**: max-age=600

< x-proxy-cache: MISS

**x-proxy-cache**: MISS

< x-github-request-id: 0E2E:64A2:1BE4FC2:26DAB00:608C7891

**x-github-request-id**: 0E2E:64A2:1BE4FC2:26DAB00:608C7891

< accept-ranges: bytes

**accept-ranges**: bytes

< date: Fri, 30 Apr 2021 21:37:21 GMT

**date**: Fri, 30 Apr 2021 21:37:21 GMT

< via: 1.1 varnish

**via**: 1.1 varnish

< age: 0

**age**: 0

< x-served-by: cache-wdc5544-WDC

**x-served-by**: cache-wdc5544-WDC

< x-cache: MISS

**x-cache**: MISS

< x-cache-hits: 0

**x-cache-hits**: 0

< x-timer: S1619818642.907870,VS0,VE9

**x-timer**: S1619818642.907870,VS0,VE9

< vary: Accept-Encoding

**vary**: Accept-Encoding

< x-fastly-request-id: bb5afba73996b5a2c1290e0fd2e37da84428a1c1

**x-fastly-request-id**: bb5afba73996b5a2c1290e0fd2e37da84428a1c1

< content-length: 61826

**content-length**: 61826

<

\* Connection #0 to host harman977.github.io left intact

\* Closing connection 0

1. Github.com
2. 200
3. **last-modified**: Fri, 30 Apr 2021 01:24:04 GMT
4. **content-length**: 61826
5. **content-type**: image/png

The difference is content type and content length.

Last modified would be different but I used “git add .” before my last push to GitHub so last modified is also the same.

PART TWO:

1. Website: nike.com
2. Curl -I <https://www.nike.com>

This command is used to print response headers and body together.

Curl -s -o /dev/null -D - <https://www.nike.com>

The above command will only print the response headers.

1. Cache control constraint was interesting.

cache-control: max-age=785

It was interesting because of the cap of 785. Not sure what exactly was max-age = 785.

PART THREE:

1. harmanjotkpaul$ curl -s -H 'Accept-Language: es-CO,es;q=0.9,it;q=0.8' -XGET "http://www.google.com"

Spansih: es-CO

1. curl -s -H 'Accept-Language: pt-BR,pt;q=0.9,it;q=0.8' -XGET "http://www.google.com"

Portuguese: pt-BR