

## Exploring HTTP Status Codes and Methods

### 1. Introduction to HTTP Methods:

Research and list the different HTTP methods (GET, POST, PUT, DELETE, etc.).  
Write a brief description of each method and its typical use case.

The GET method retrieves data on a server. This method can be used to retrieve specific resources from an API, and it doesn't risk altering or corrupting data. GET requests do not include a request body, since it is not attempting to alter the database.

The POST method creates new resources by sending data to the server. The POST will include a request body that will contain the details of the resources to be created.

The PUT method places an existing resource with new updated versions. The PUT method will include a request body that contains details that will completely overwrite the resource's attributes. This means the fields within the resource will be deleted and lost.

The PATCH method updates an existing resource similar to PUT, but it allows clients to update specific properties of a resource without overwriting other properties. This method will keep the other fields/attributes in the resource that are not going to be updated by the request body.

The DELETE method removes data from a database. The request body will contain details of the resource specifics to be removed permanently. Some databases will require authorization mechanisms and permissions to perform the request.

### 2. Exploring HTTP Status Codes:

Using the browser, visit several websites.

Open the Developer Tools (usually accessible by right-clicking on the webpage and selecting 'Inspect' or pressing F12).

Go to the 'Network' tab.

Refresh the page and observe the network activity, focusing on the 'Status Code' column.

Identify and list at least 5 different status codes (e.g., 200, 404, 500) you observe.

Research and write a brief explanation for each status code listed.

Code found:

1. **200 OK** – Means as status success response code that the request has succeeded.
2. **307 Internal/Temporary Redirect** – The resource requested has been temporarily moved to the URL given by the Location headers.
3. **304 Not Modified** – This client redirection response code indicates that there is no need to retransmit the requested resources.
4. **101 Switching Protocols** – indicates a protocol to which the server switches.
5. **401 Unauthorized** – indicates that the client request has not been completed because it lacks the valid authentication credentials for the requested response.

### 3. Practical Exploration of HTTP Methods:

Find a website that has a form (like a contact form, search bar, etc.).

Fill out and submit the form while the Network tab is open.

Observe the HTTP method used when the form is submitted.

Write a brief report on which HTTP method was used and why you think that method was chosen for the form.

I used the search bar on reddit, and when I did a search a GET method was used. This makes sense as the website is trying to retrieve a specific resource/data that I wanted to search for. I also tried doing the login feature which called a login.json which also uses the method GET.

### 4. Understanding Server Responses:

Choose any website and use the developer tools to examine the HTTP response headers.

List out and explain at least three different response headers and their values.

General	
Request URL:	https://www.redditstatic.com/droparrowgray.gif
Request Method:	GET
Status Code:	200 OK (from memory cache)
Remote Address:	151.101.21.140:443
Referrer Policy:	no-referrer
Response Headers	
Accept-Ranges:	bytes
Content-Length:	67
Content-Type:	image/gif
Date:	Thu, 18 Jan 2024 05:43:42 GMT
Etag:	"5553782ff185bb0fd9b31b256f7ddbc7"
Expires:	Thu, 31 Dec 2037 23:59:59 GMT
Last-Modified:	Mon, 14 Nov 2011 00:48:50 GMT
Nel:	({"report_to": "w3-reporting-nel", "max_age": 14400, "include_subdomains": false, "success_fraction": 0.02, "failure_fraction": 0.02})
Report-To:	({"group": "w3-reporting-nel", "max_age": 14400, "include_subdomains": true, "endpoints": [{"url": "https://w3-reporting-nel.reddit.com/reports"}]}, {"group": "w3-reporting", "max_age": 14400, "include_subdomains": true, "endpoints": [{"url": "https://w3-reporting.reddit.com/reports"}]}, {"group": "w3-reporting-csp", "max_age": 14400, "include_subdomains": true, "endpoints": [{"url": "https://w3-reporting-csp.reddit.com/reports"}]})
Server:	snooserv
Vary:	Origin, Access-Control-Request-Headers, Access-Control-Request-Method
Via:	1.1 varnish, 1.1 varnish

This response header is for an gray arrow gif. I am able to see that this was last modified in Nov 2011, and will expire in December 2037.

▼ General	
Request URL:	https://www.reddit.com/api/vote
Request Method:	POST
Status Code:	200 OK
Remote Address:	151.101.21.140:443
Referrer Policy:	origin-when-cross-origin
▼ Response Headers	
Accept-Ranges:	bytes
Access-Control-Allow-Headers:	X-Signature,X-Signature-v2,Content-Type,Origin,Accept,X-origination-host,X-origination-path
Access-Control-Allow-Methods:	POST, OPTIONS
Access-Control-Allow-Origin:	*
Access-Control-Max-Age:	1728000
Cache-Control:	private, max-age=3600
Content-Length:	2
Content-Type:	application/json
Date:	Thu, 18 Jan 2024 05:52:49 GMT
Nel:	{"report_to": "w3-reporting-nel", "max_age": 14400, "include_subdomains": false, "success_fraction": 1.0, "failure_fraction": 1.0}
Report-To:	{ "group": "w3-reporting-nel", "max_age": 14400, "include_subdomains": true, "endpoints": [ { "url": "https://w3-reporting-nel.reddit.com/reports" } ] }, { "group": "w3-reporting", "max_age": 14400, "include_subdomains": true, "endpoints": [ { "url": "https://w3-reporting.reddit.com/reports" } ] }, { "group": "w3-reporting-csp", "max_age": 14400, "include_subdomains": true, "endpoints": [ { "url": "https://w3-reporting-csp.reddit.com/reports" } ] } }
Server:	snooserv
Strict-Transport-Security:	max-age=31536000; includeSubdomains
Vary:	Origin
Via:	1.1 varnish
X-Content-Type-Options:	nosniff
X-Frame-Options:	SAMEORIGIN
X-Xss-Protection:	1; mode=block

This request header is from when I used the log in form on reddit, and it seems that it's a vote api.

▼ General	
Request URL:	https://autologon.microsoftazuread-ssos.com/seattlecolleges.edu/winauth/ssoprobe?client-request-id=2203e4a6-0777-4e7a-a3b1-06699f621b208_1705559129608
Request Method:	GET
Status Code:	401 Unauthorized
Remote Address:	20.190.151.133:443
Referrer Policy:	strict-origin-when-cross-origin
▼ Response Headers <input type="checkbox"/> Raw	
Access-Control-Allow-Credentials:	true
Access-Control-Allow-Methods:	GET, OPTIONS
Access-Control-Allow-Origin:	https://login.microsoftonline.com
Cache-Control:	no-store, no-cache
Content-Length:	12
Content-Type:	image/png; charset=utf-8
Date:	Thu, 18 Jan 2024 06:25:31 GMT
Expires:	-1
Nel:	{"report_to": "network-errors", "max_age": 86400, "success_fraction": 0.001, "failure_fraction": 1.0}
P3p:	CP="DSP CUR OTPi IND OTRi ONL FIN"
Pragma:	no-cache
Referrer-Policy:	strict-origin-when-cross-origin
Report-To:	{ "group": "network-errors", "max_age": 86400, "endpoints": [ { "url": "https://identity.nel.measure.office.net/api/report?catId=GW+estsfd+est" } ] }
Set-Cookie:	fp=Aq7Xhah9XpDqqAFWPloxBvs; expires=Sat, 17-Feb-2024 06:25:31 GMT; path=/; secure; HttpOnly; SameSite=None ⚠
Set-Cookie:	x-ms-gateway-slice=estsfd; path=/; secure; samesite=none; httponly ⚠
Set-Cookie:	stsservicecookie=estsfd; path=/; secure; samesite=none; httponly ⚠
Vary:	Origin
Www-Authenticate:	Negotiate
X-Content-Type-Options:	nosniff
X-Ms-Ests-Server:	2.1.17097.4 - WUS3 ProdSlices
X-Ms-Request-Id:	772724d2-acf7-4536-a2b6-49b7257dca00
X-Xss-Protection:	0

This is one of the response headers when logging into outlook.

## 5. Error Simulation:

Try to access a non-existing page on a website to generate a 404 error.

Observe and describe what happens in the network tab when a 404 error is encountered.

Optionally, try to access a website you know will be blocked by your network to observe the status code.

For trying to access a non-existing page, I just added a few letters to the end of a URL, and it brought me to a 404 page not found. Looking at the response request, called studentssd, it has a status code of 404 Not Found as well as the non-existent page link I tried to access.

When trying to look at Instagram accounts that have private accounts, there are a few blocked requests on the network which is interesting. I am unable to see the response and request headers.