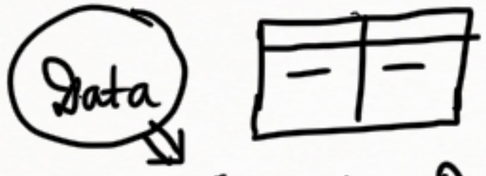
Types of SQL Commands



C – Create Operation
R – Read/Retrieve Operation
U – Update Operation
D – Delete Operation

SQL Commands/Statements

- DDL (Data Definition Language)
  - CREATE [TABLE | DB | PROCEDURE | FUNCTION | VIEW]
  - DROP
  - ALTER TABLE
- DQL (Data Query Language)
  - SELECT (Read operation)
- TCL (Transaction Control Language)
  - START TRANACTION
  - COMMIT
  - ROLLBACK
- DML (Data Manipulation Language)
  - INSERT INTO (Create operation)
  - UPDATE, REPLACE (Update operation)
  - DELETE FROM (Delete operation)
- DCL (Data control Language)
  - GRANT
  - REVOKE

HTTP Requests (What client sends to the server)

Every HTTP request → URL has the following:-

1) Params (the part of the URL after ? pairs of keys and values (param=value) separated by &)

Note In a URL, special characters are not allowed, e.g. " ", "@" (not-safe)

So, special characters are encoded.

Example:- user@gmail.com ➡ user%40gmail.com

(index)	character	encodeURI	encodeURIComponent
0	"#"	"#"	"%23"
1	"$"	"$"	"%24"
2	"&"	"&"	"%26"
3	"+"	"+"	"%2B"
4	","	","	"%2C"
5	"/"	"/"	"%2F"
6	":"	":"	"%3A"
7	";"	";"	"%3B"
8	"="	"="	"%3D"
9	"?"	"?"	"%3F"
10	"@"	"@"	"%40"

2) Authorization

3) Headers

→ Metadata about the request

→ Usually automatically added & sent with every request

→ Example:-

↳ Content-Length

↳ Host

↳ User-Agent :- type of client & client version

↳ Accept :- the list of expected response types

↳ Accept-Encoding :- the list of permissible response encodings (gzip, deflate, etc.)

↳ Connection :- connection type, e.g - keep-alive

↳ Cookies (optional)

4) Body

→ Used for sending data to the server hidden from the URL

→ Types of Request Body :-

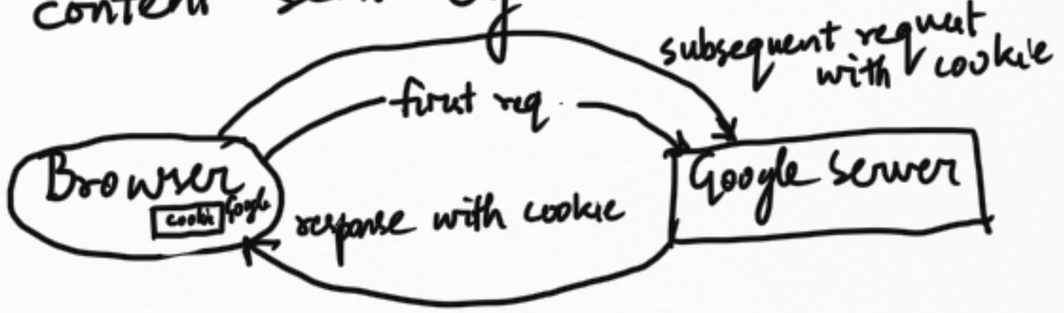
- ↳ none
- ↳ form-data
- ↳ x-www-form-urlencoded } (used by HTML forms)
- ↳ raw (used by AJAX to send JSON/XML data)
- ↳ binary (send a binary file)
- ↳ GraphQL

→ Used by POST, PUT and PATCH methods

HTTP Responses (What the server sends back)

Every HTTP response (ResponseEntity) contains the following:-

1) Body
   → the HTML or the XHR(JSON/XML) content sent by the server



2) Cookies
   → optional, but usually present
   → A cookie is a piece of data from a website that is stored within a web browser's storage. The website can retrieve the cookie later.
   → Cookies are automatically sent with every request to that website.
   → Cookies are used to tell the server that users have returned to a website. (e.g.-keep users signed in)
   → can expire

3) Headers

→ Metadata (additional data) about the response

→ Usually automatically sent with every response.

→ Some common Response Headers are:-

↳ Content-type : the type of response (e.g.- text/html, application/json, etc.)

↳ Date

↳ Expires : default is -1.

↳ Cache-Control : whether the browser can cache the response

↳ Content-Encoding : the compression applied to the ResponseEntity (e.g.- gzip)

↳ Server

↳ X-XSS-Protection

↳ X-Frame-Options

↳ Transfer Encoding

↳ Set-cookie

4) Status Code

→ Indicates whether a specific request has been successfully completed or not.

→ Issued by the server in response to the client's request