API

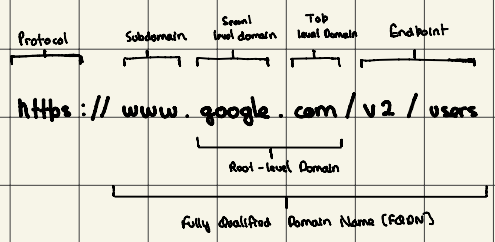
API (Application Programming Interface)

- Set of rules and protocols that allow software applications to communicate with each other.
- Specifies data formats and conventions for performing functions.
- Act as an intermediary, facilitating interactions b/w developers and software systems.
- API is like a Waiter in a restraunt

How it works

- An API is "called" when a Client invokes a URL with a specified end point and Method.
- This is called a Request
- Some API Requests require Headers, Parameters, and/or a Payload. More on these later!
- When an API sends data (or an Error!) back to the Requester, it is called a Response.
- Responses will also contain Headers, a Status Code and a Body.

Anatomy of a URL



Making a Request

- A Request is an outbound API call from an application to a URL asking for data or action to be taken
- Headers - Metadata
- Method - Indicates a desired action and dictates which of the following will be sent:
  - Payload - A JSON body object
  - Path Parameters - Variables embedded directly in URL path.
  - Query String Parameters - Appended to the end of URL to filter data.

Methods

- Methods are an important aspect of REST APIs.
- Classify the kind of action that the Client is requesting of the Server.
- Most common methods are:
  - A GET Request is a read-only request for data.
  - A POST, PUT, or PATCH Request will send data to the server to be created or updated.
  - A DELETE Request will remove data from the Server.
- Any Request Method can contain Parameters or Headers.
- Additionally, POST, PUT, or PATCH Requests usually contain a Payload object.

Receiving a Response

- All requests will recieve a response
- Headers, Status Code and (hopefully) a Body!
- Body - The requested data (or Error)!
- Common Status Codes:
  - 200 - Okay
  - 401 - Unathorized
  - 404 - Not found
  - 500 - Internal Server Error