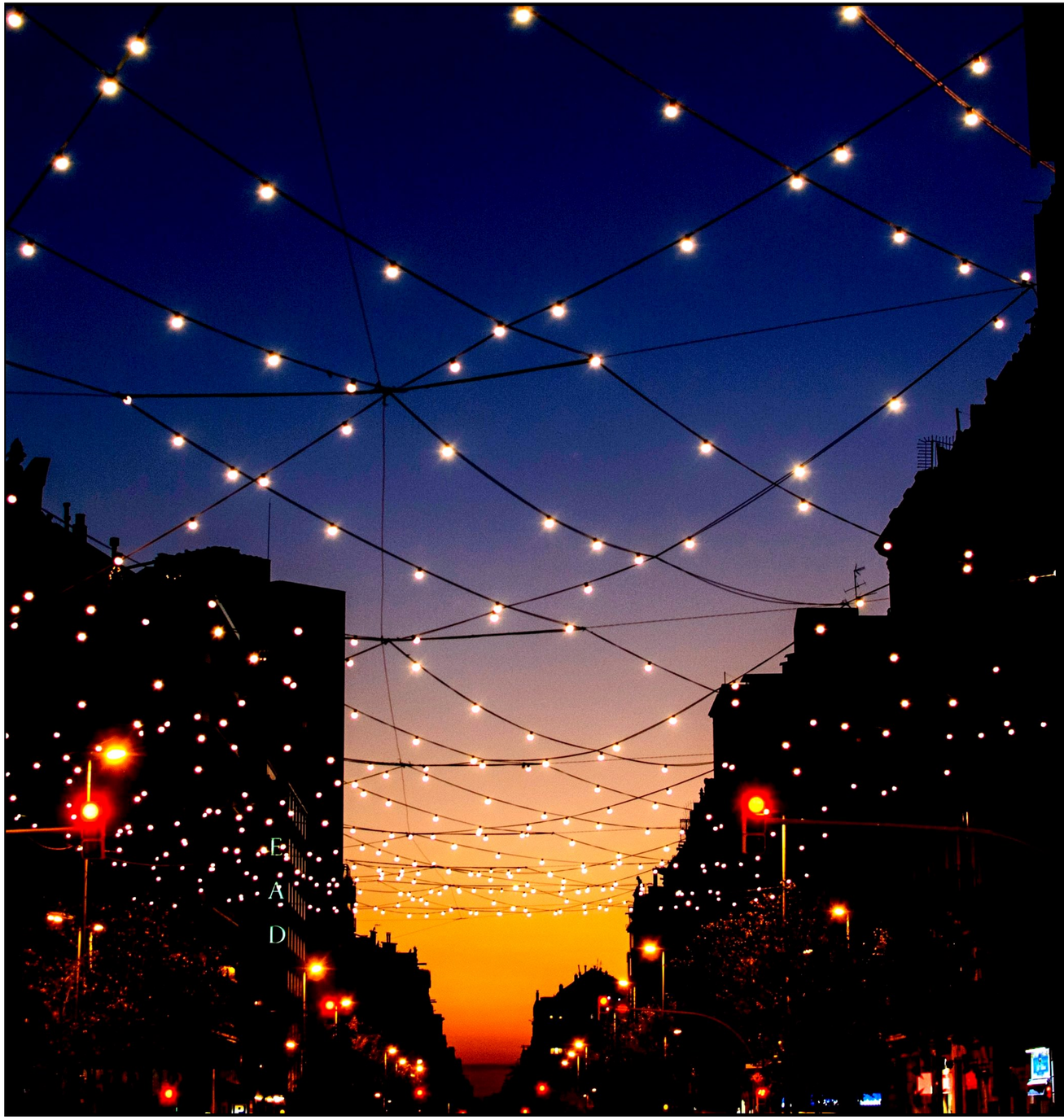
MGT 3745 B: integration w/ javascript



AGENDA

September 26, 2023
(79 days = 11 weeks, 2 days)

- hw4 review

- open source, web apis, rest, client-server model, json, urls

- chrome JSON, jsoncrack, postman

- upcoming assignments

Business Problem Solving

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Wicked Business Problem Domains

- **Communication** - documentation, visualization, and understanding the format of information your audience is seeking and their preferred consumption style (e.g., README files via markdown & HTML, graph views, Miro, Notion)
- **Automation** - reduction of human intervention in processes (Google App Script aka, JavaScript, nodejs)
- **Integration** - the process of combining data or functionality from one or more sources within an application (APIs)
- **Experimentation** - the process of confirming or rejecting a hypothesis (bubble.io, electron, chrome extensions)
- **Analysis** (Decision Intelligence) - asserting past occurrences and predicting future events (tableau, jest, charting)

Key Terms

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Open Source

open source software (OSS) - software with source code that anyone can inspect, modify, and enhance and is released under a license in which the copyright holder grants users the rights to use, study, change, and distribute the software and its source code to anyone and for any purpose. OSS enables a development method for software that harnesses the power of distributed peer review and transparency of process. The promise/benefit of open source is higher quality, better reliability, greater flexibility, lower cost, and an end to predatory vendor lock-in.

open source initiative (OSI) - non-profit corporation with global scope formed to educate and advocate for the benefits of open source and to build bridges among different constituencies in the open source community and the freedoms and opportunities of open source software can be enjoyed by all.

Source: https://opensource.org/about
Source: https://opensource.com/resources/what-open-source
Source: https://en.wikipedia.org/wiki/Open-source_software

Key Terms

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Coding Syntax

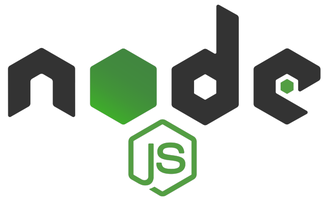
package management system - collection of software tools that automates the process of installing, upgrading, configuring, and removing computer programs for a computer in a consistent manner. A package manager deals with packages, distributions of software and data in archive files.

node package manager (npm) - open source project to help JavaScript developers share packaged modules of code

npmjs.com - registry of public packages of open-source code for node.js, front-end web apps, mobile apps, robots, routers, and other needs of the javascript community.
npm is the command line client that allows developers to install and publish those packages.

Source: https://en.wikipedia.org/wiki/Package_manager
Source: https://www.npmjs.com/about

https://chancejs.com/



https://nodejs.org/en/

https://axios-http.com

Key Terms

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Web API Syntax

application programming interfaces (APIs) - connections between computers or between computer programs. It is a type of software interface, offering a service to other pieces of software.

api key - a code used to identify and authenticate an application or user

representational state transfer (REST) - RESTful APIs by using Hypertext Transfer Protocol (HTTP). An HTTP method tells the server what it needs to do to the resource. The following are four common HTTP methods:

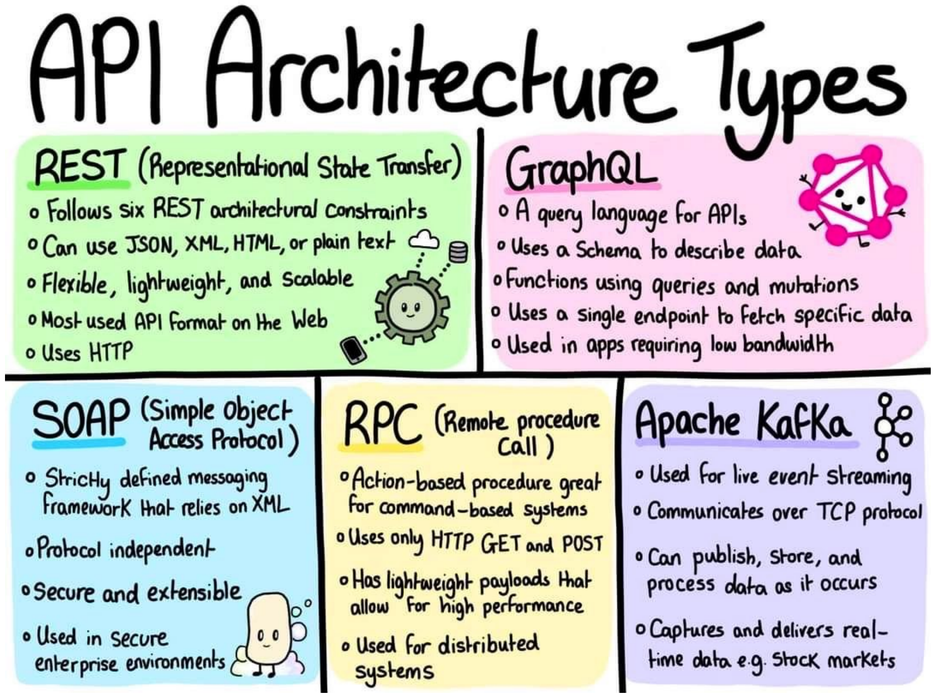
GET - to read/retrieve resource only (no modification)

POST - create new subordinate resources

PUT - update an existing resource or create if it does not exist

DELETE - delete resources

Source: https://en.wikipedia.org/wiki/Representational_state_transfer

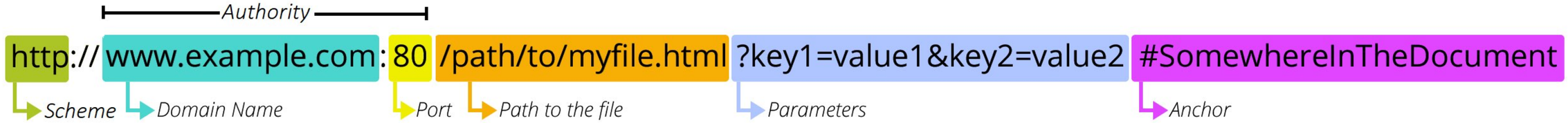


Key Terms

Web API Syntax

json (javascript object notation) - open standard file format and data interchange format that uses human-readable text to store and transmit data objects consisting of attribute–value pairs and arrays (or other serializable values).

uniform resource locator (url) - reference to a web resource that specifies its location on a computer network and a mechanism for retrieving it.



Source: https://en.wikipedia.org/wiki/URL
Source: https://en.wikipedia.org/wiki/API
Source: https://en.wikipedia.org/wiki/JSON
Source: https://developer.mozilla.org/en-US/docs/Learn/Common_questions/What_is_a_URL

Key Terms

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Example of JSON

```
{
  "browsers": {
    "firefox": {
      "name": "Firefox",
      "pref_url": "about:config",
      "releases": {
        "1": {
          "release_date": "2004-11-09",
          "status": "retired",
          "engine": "Gecko",
          "engine_version": "1.7"
        }
      }
    }
  }
}
```

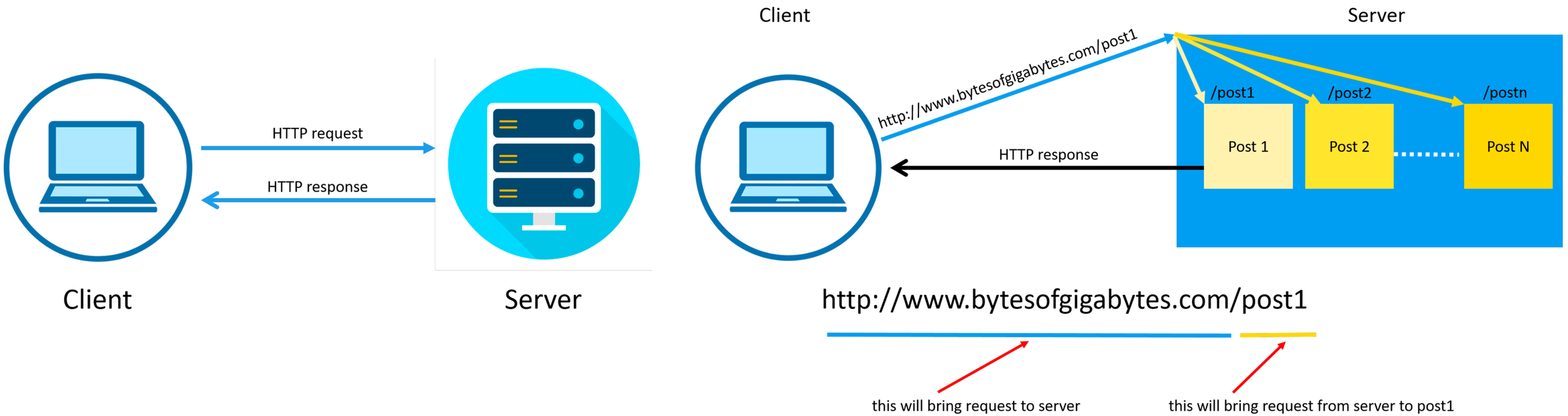
Source: https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/JSON

Key Terms

Web API Syntax

client-server model - distributed application structure that partitions tasks or workloads between the providers of a resource or service, called servers, and service requesters, called clients. Often clients and servers communicate over a computer network on separate hardware.

Source: https://en.wikipedia.org/wiki/Client%E2%80%93server_model
Source: https://bytesofgigabytes.com/networking/how-http-request-and-response-works/



Key Terms

Coding Syntax

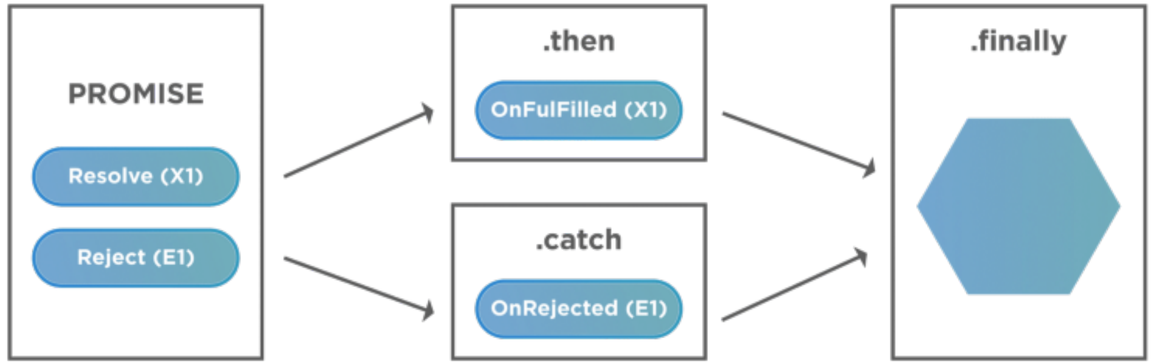
asynchronous programming - technique that enables code to start tasks that take time and still run / respond to other events rather waiting until that task has finished (synchronous)

promise - object represents the eventual completion / failure of asynchronous operations

then() - method schedules callback for handling successful promise completion

catch() - method schedules callbacks used for error handling of promise composition

```
let myPromise = new Promise(function(myResolve, myReject) {
// "Producing Code" (May take some time)
  myResolve(); // when successful
  myReject();  // when error
});
// "Consuming Code" (Must wait for a fulfilled Promise)
myPromise.then(
  function(value) { /* code if successful */ },
)
.catch(
  function(error) { /* code if some error */ }
)
```



Source: https://developer.mozilla.org/en-US/docs/Learn/JavaScript/Asynchronous/Introducing

Source: https://www.w3schools.com/js/js_promise.asp

Source: https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise/catch

Image Source: https://javascript.plainenglish.io/promise-in-javascript-with-all-the-methods-b7357196a57e

JSON Viewer

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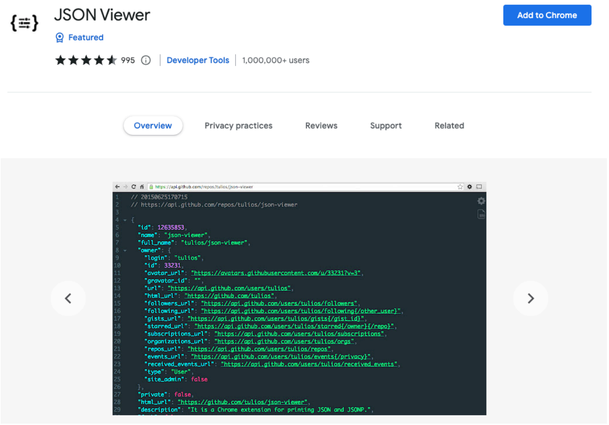
Web API Syntax

Chrome JSON Viewer Extension - extension for making JSON browser readable

JSON Crack - visualize JSON

Postman - API client, design, documentation, testing, and mock server tool for using RESTful APIs



JSON CRACK

POSTMAN

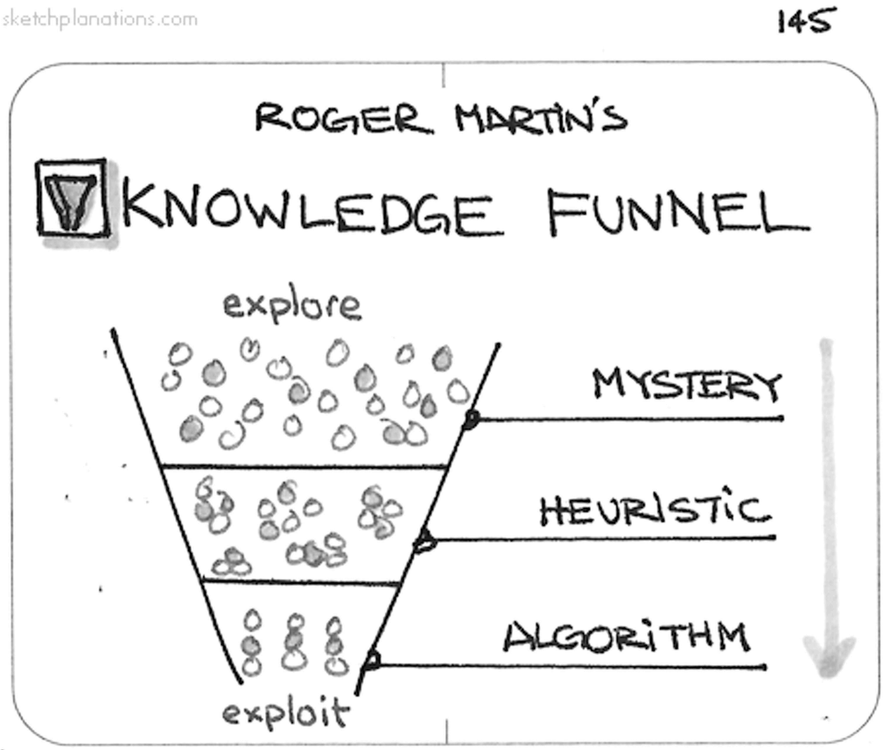
Source: https://www.postman.com/
Source: https://jsoncrack.com/
Source: https://chrome.google.com/webstore/detail/json-viewer/aimiinbnnkboelefkjlenlgimcabobli

Key Terms

Problem Solving Methodology

1. Create a **problem statement**
2. Use computational thinking as the process that **produces an algorithm/pseudocode** (plain language description of the steps) that generates the desired condition or result
3. Convert algorithms/pseudocode, or **encode**, into JavaScript

In-class exercise #1: https://replit.com/@johnmcswain/MGT3745Fall2023Sept25



Source: https://en.wikipedia.org/wiki/Pseudocode
Source: https://rogerlmartin.com/lets-read/the-design-of-business

Assignments

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Homework 4 Solved

https://docs.google.com/spreadsheets/d/1Wwo0Ow4FK1OzFh5zGj8vI2sNmqgDIIC8IVRfCsHwU64/edit#gid=1347388723

Homework 5

https://gatech.instructure.com/courses/347044/assignments/1521950

Week 5 Discussion

https://gatech.instructure.com/courses/347044/discussion_topics/1570125

Week 6 Discussion

https://gatech.instructure.com/courses/347044/discussion_topics/1575317

Assignments

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References

Install Postman

Readings

JavaScript Promise Syntax

JavaScript Fetch Syntax

APIs Aren't Just for Tech Companies

Amazon AWS: What is an API? (up to 'What is an API endpoint and why it is important')

Mozilla Developer Network: What is a URL? (All)

Questions?