Google Cloud Platform for Everyone

Day 3: Google Sheet API Workshop

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Google Sheet API Workshop

Speakers

Tiew Chee Yan
Year 1
Computer System and Network

Lee Weng Hong
Year 1
Software Engineering

What you have learnt?

01 Introduction to HTML and CSS

02 Styling website with CSS

03 Website hosting theory

04 Hands-on session with Firebase

Github Page

https://dscum.github.io/GCPE2023-Info/Day03

Event Page

https://bit.ly/GCPEDay03

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In the end of the workshop,

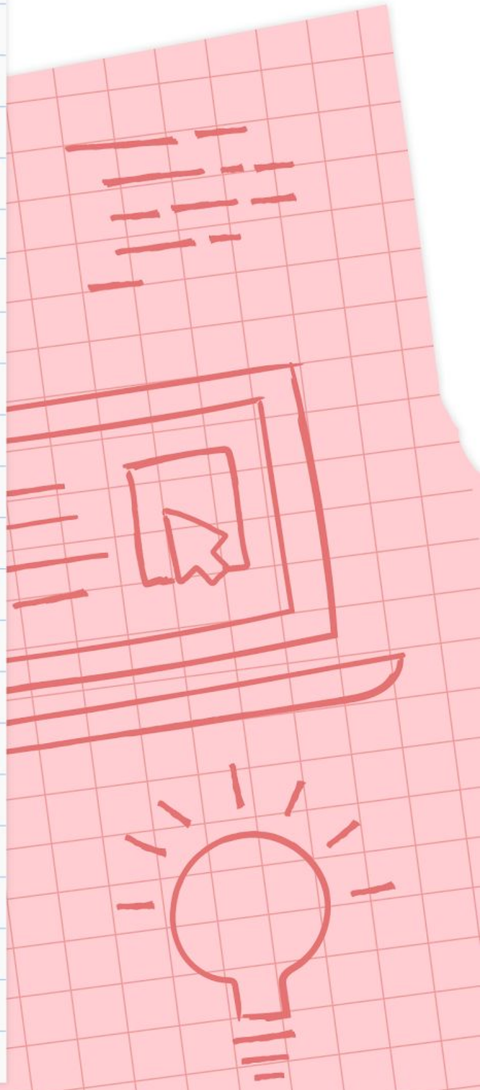
you should be able to…

Objectives

- Link frontend (Web App) with backend (Google Spreadsheet) as Database by using Google Sheets API
- Have brief idea on Node.Js, POST, GET Request
- Know the flow of data entry process in from web app to Google Sheets

Why Google Sheet API ?

- A powerful and versatile web-based tool that allows developers to access and manage data stored in Google Sheets programmatically.



GCPE ATTENDANCE

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Name

Phone number

Course

Year

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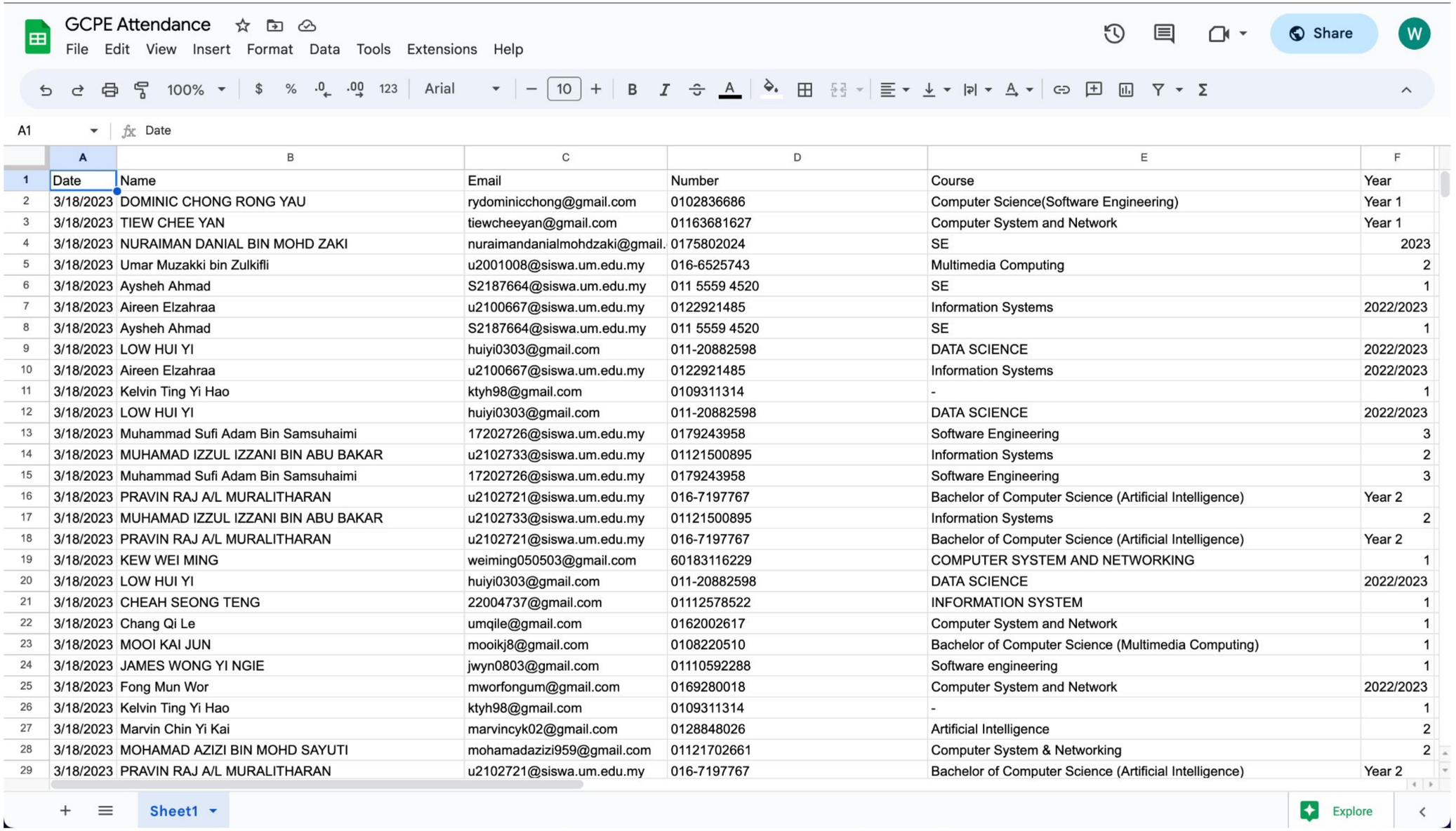

GCPE Attendance

File Edit View Insert Format Data Tools Extensions Help

Share

A1 Date

	A	B	C	D	E	F
1	Date	Name	Email	Number	Course	Year
2	3/18/2023	DOMINIC CHONG RONG YAU	rydominicchong@gmail.com	0102836686	Computer Science(Software Engineering)	Year 1
3	3/18/2023	TIEW CHEE YAN	tiewcheeyan@gmail.com	01163681627	Computer System and Network	Year 1
4	3/18/2023	NURAIMAN DANIAL BIN MOHD ZAKI	nuraimandanialmohdzaki@gmail.	0175802024	SE	2023
5	3/18/2023	Umar Muzakki bin Zulkifli	u2001008@siswa.um.edu.my	016-6525743	Multimedia Computing	2
6	3/18/2023	Aysheh Ahmad	S2187664@siswa.um.edu.my	011 5559 4520	SE	1
7	3/18/2023	Aireen Elzahraa	u2100667@siswa.um.edu.my	0122921485	Information Systems	2022/2023
8	3/18/2023	Aysheh Ahmad	S2187664@siswa.um.edu.my	011 5559 4520	SE	1
9	3/18/2023	LOW HUI YI	huiyi0303@gmail.com	011-20882598	DATA SCIENCE	2022/2023
10	3/18/2023	Aireen Elzahraa	u2100667@siswa.um.edu.my	0122921485	Information Systems	2022/2023
11	3/18/2023	Kelvin Ting Yi Hao	ktyh98@gmail.com	0109311314	-	1
12	3/18/2023	LOW HUI YI	huiyi0303@gmail.com	011-20882598	DATA SCIENCE	2022/2023
13	3/18/2023	Muhammad Sufi Adam Bin Samsuhaimi	17202726@siswa.um.edu.my	0179243958	Software Engineering	3
14	3/18/2023	MUHAMAD IZZUL IZZANI BIN ABU BAKAR	u2102733@siswa.um.edu.my	01121500895	Information Systems	2
15	3/18/2023	Muhammad Sufi Adam Bin Samsuhaimi	17202726@siswa.um.edu.my	0179243958	Software Engineering	3
16	3/18/2023	PRAVIN RAJ A/L MURALITHARAN	u2102721@siswa.um.edu.my	016-7197767	Bachelor of Computer Science (Artificial Intelligence)	Year 2
17	3/18/2023	MUHAMAD IZZUL IZZANI BIN ABU BAKAR	u2102733@siswa.um.edu.my	01121500895	Information Systems	2
18	3/18/2023	PRAVIN RAJ A/L MURALITHARAN	u2102721@siswa.um.edu.my	016-7197767	Bachelor of Computer Science (Artificial Intelligence)	Year 2
19	3/18/2023	KEW WEI MING	weiming050503@gmail.com	60183116229	COMPUTER SYSTEM AND NETWORKING	1
20	3/18/2023	LOW HUI YI	huiyi0303@gmail.com	011-20882598	DATA SCIENCE	2022/2023
21	3/18/2023	CHEAH SEONG TENG	22004737@gmail.com	01112578522	INFORMATION SYSTEM	1
22	3/18/2023	Chang Qi Le	umqile@gmail.com	0162002617	Computer System and Network	1
23	3/18/2023	MOOI KAI JUN	mooikj8@gmail.com	0108220510	Bachelor of Computer Science (Multimedia Computing)	1
24	3/18/2023	JAMES WONG YI NGIE	jwyn0803@gmail.com	01110592288	Software engineering	1
25	3/18/2023	Fong Mun Wor	mworfongum@gmail.com	0169280018	Computer System and Network	2022/2023
26	3/18/2023	Kelvin Ting Yi Hao	ktyh98@gmail.com	0109311314	-	1
27	3/18/2023	Marvin Chin Yi Kai	marvincyk02@gmail.com	0128848026	Artificial Intelligence	2
28	3/18/2023	MOHAMAD AZIZI BIN MOHD SAYUTI	mohamadazizi959@gmail.com	01121702661	Computer System & Networking	2
29	3/18/2023	PRAVIN RAJ A/L MURALITHARAN	u2102721@siswa.um.edu.my	016-7197767	Bachelor of Computer Science (Artificial Intelligence)	Year 2

Sheet1

Explore

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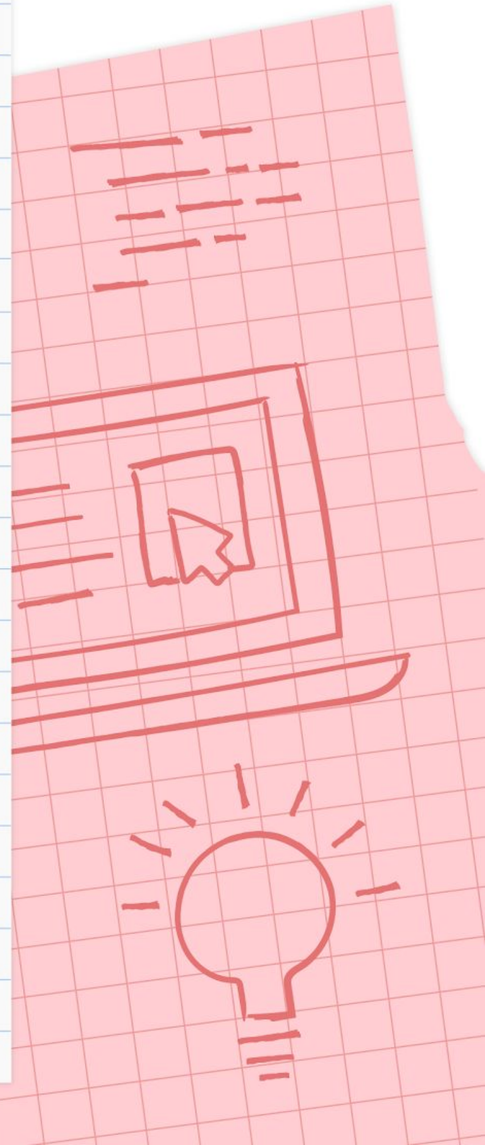
- It provides an interface to read, write, and manipulate data within Google Sheets from any application that can send HTTP requests, such as web browsers or mobile apps.

- Example of operations : Creating new sheets, reading or modifying cell data, formatting cells, adding or deleting rows or columns.



Real-life implementation of Google Sheet API

Business

- Automate the collection and processing of sales data by input sales information into web form > API > Google Sheet
- Allows business to create custom solution
- Result: Track performance, analyze trends and make informed decisions

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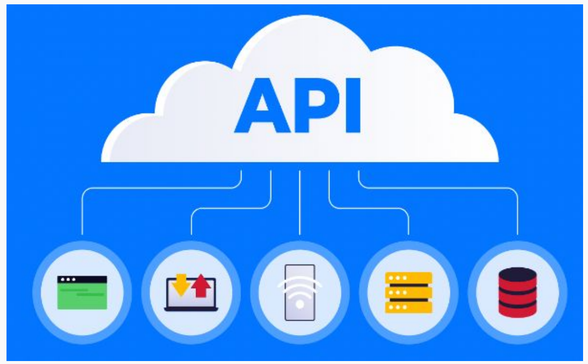
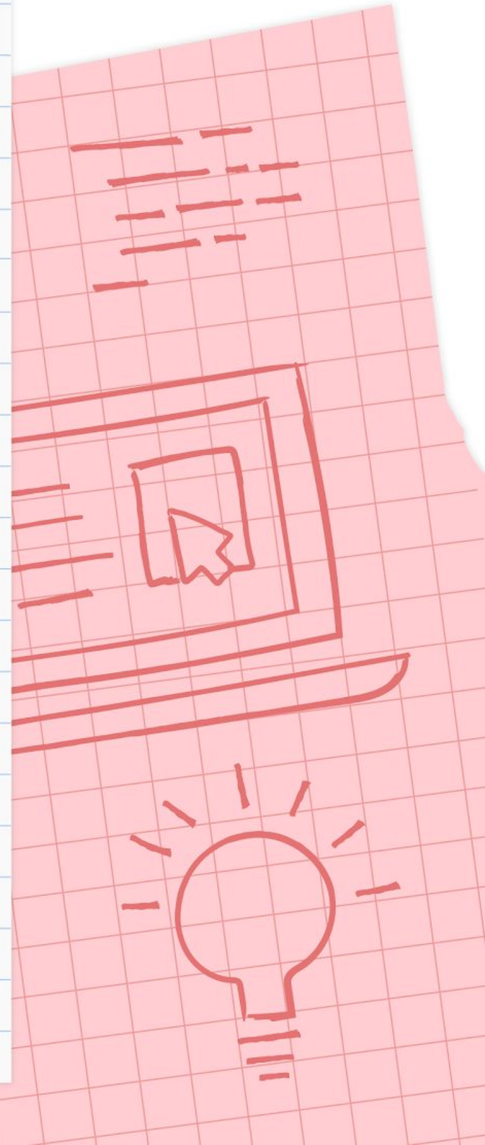
What is API and How does it work?



API

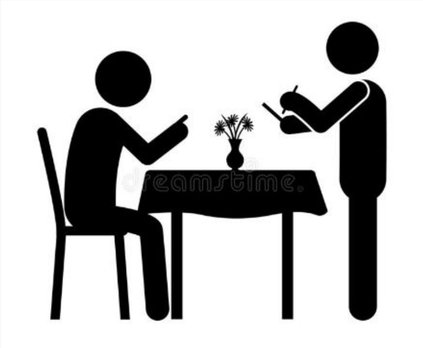
Application Programming Interface (API)

- An interface that helps software programs connect and communicate with one another
- Interface is a point where two systems, subjects, organizations, and so forth meet and interact



How does API work?

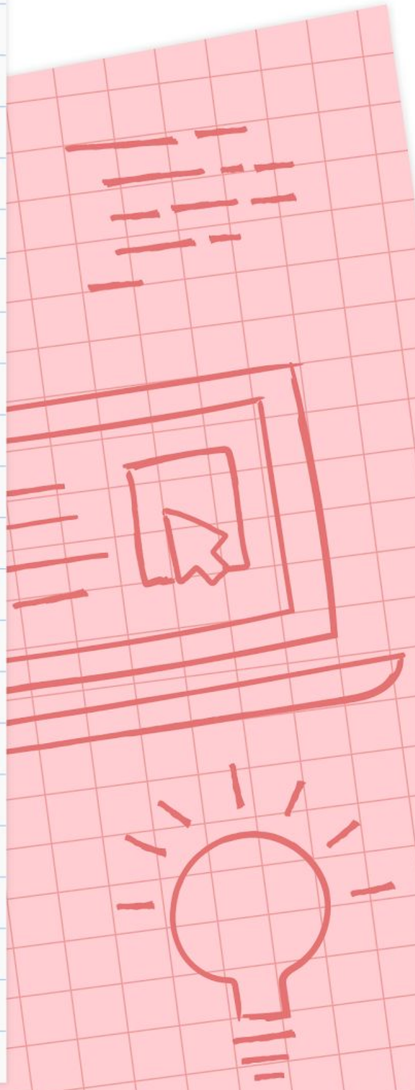
Here is a waiter analogy
Customer = user & Waiter = API



Order
(Request)

Meal
(Response)
Data /
Functionality

Kitchen
(System)



How does an API work?

End user

End user will get the required info on your app.

Developers

Developers will design your app in a way that it can access data stored in assets/ databases via APIs.

API

API will connect with assets/databases to access required info, sending it to the app.

Assets (Database)

The data of the other brands will be used for providing third-party services.

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Google Workspace

VIEW ALL (29)

Google Drive API
Google Enterprise API

Create and manage resources in Google Drive.

Google Calendar API
Google Enterprise API

Manage calendars and events in Google Calendar.

Gmail API
Google Enterprise API

View and manage Gmail mailbox data.

Google Sheets API
Google Enterprise API

Read and write Google Sheets data

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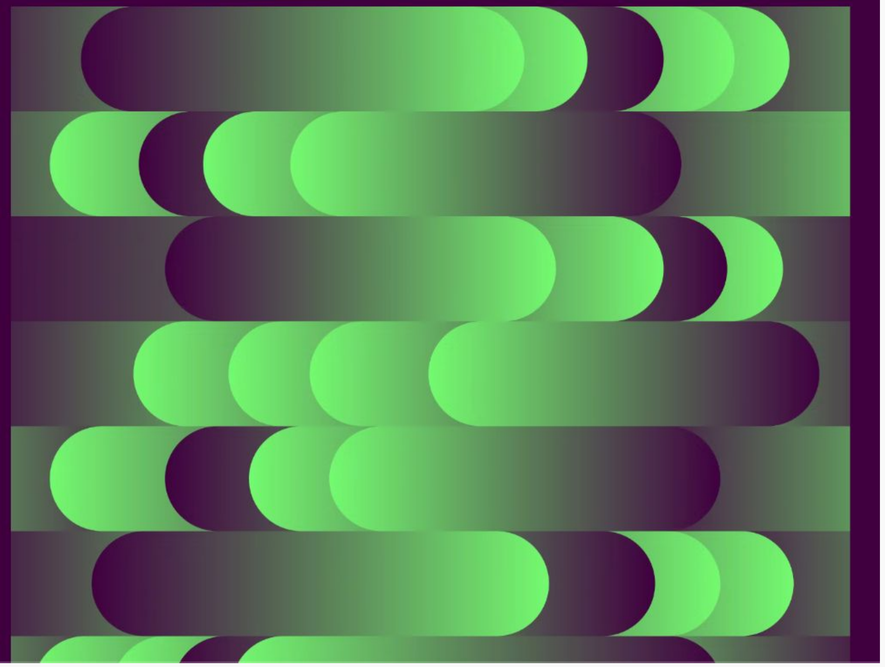
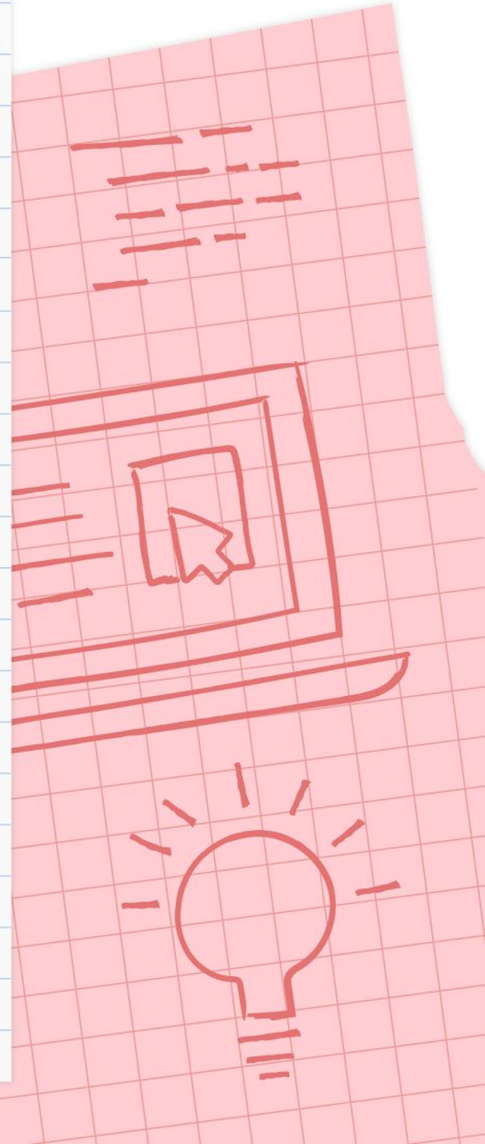
OpenAI Research Product Developers Safety Company Search

Introducing ChatGPT and Whisper APIs

Developers can now integrate ChatGPT and Whisper models into their apps and products through our API.





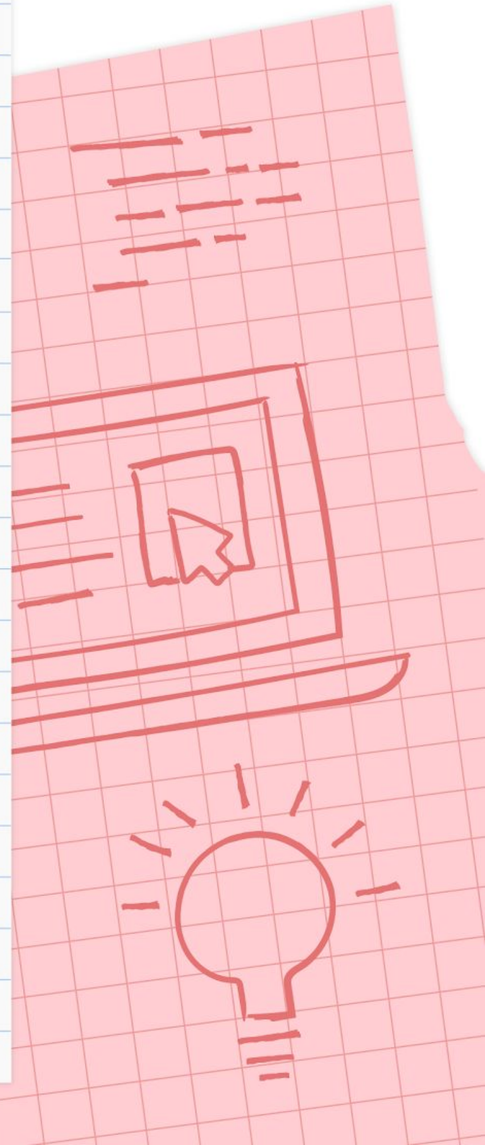
With the existence of API…

Integrate any third party software/ services

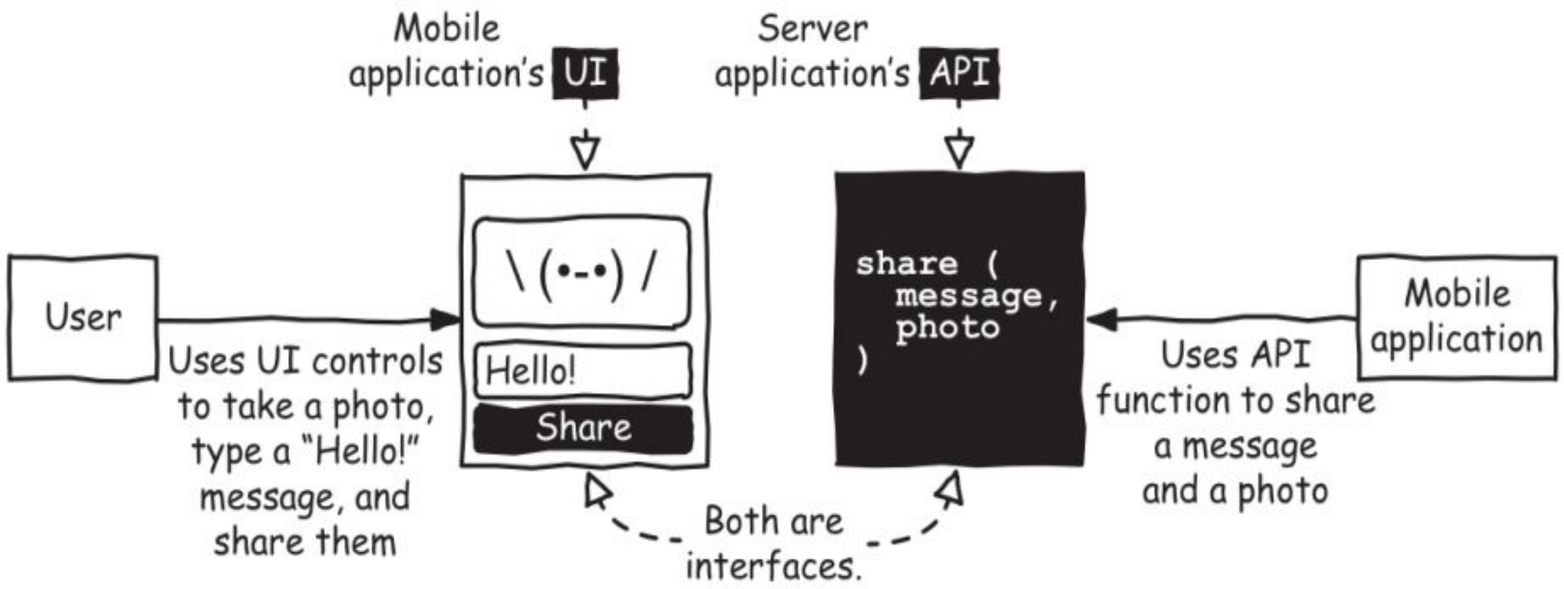
Code Reusability

Code access control and authentication

Cross-platform compatibility



Similarity between UI & API



Example of API

Subscribe Button API by YouTube

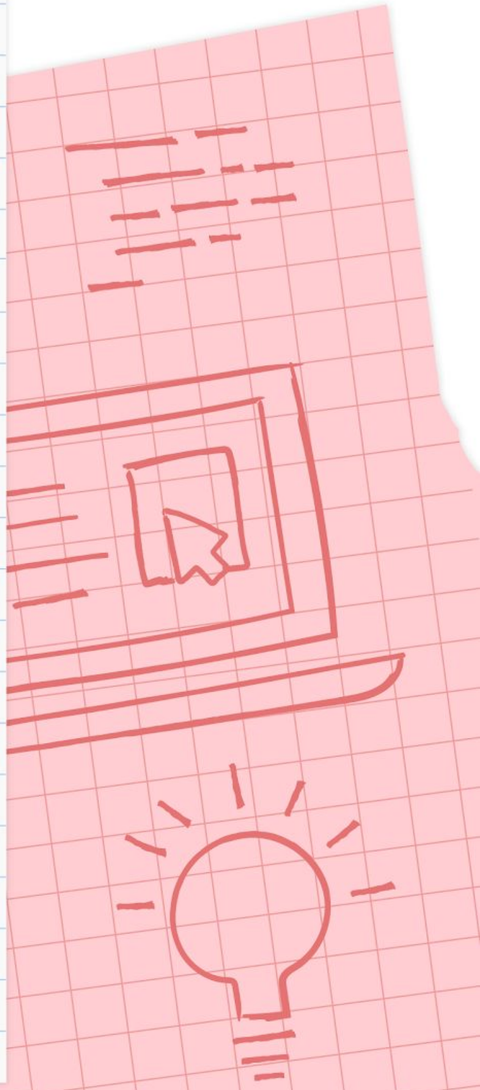
- Lets us subscribe to a YouTube Channel outside of YouTube using an embedded Subscribe button
- For further information, can refer to the link below

https://developers.google.com/youtube/youtube_subscribe_button

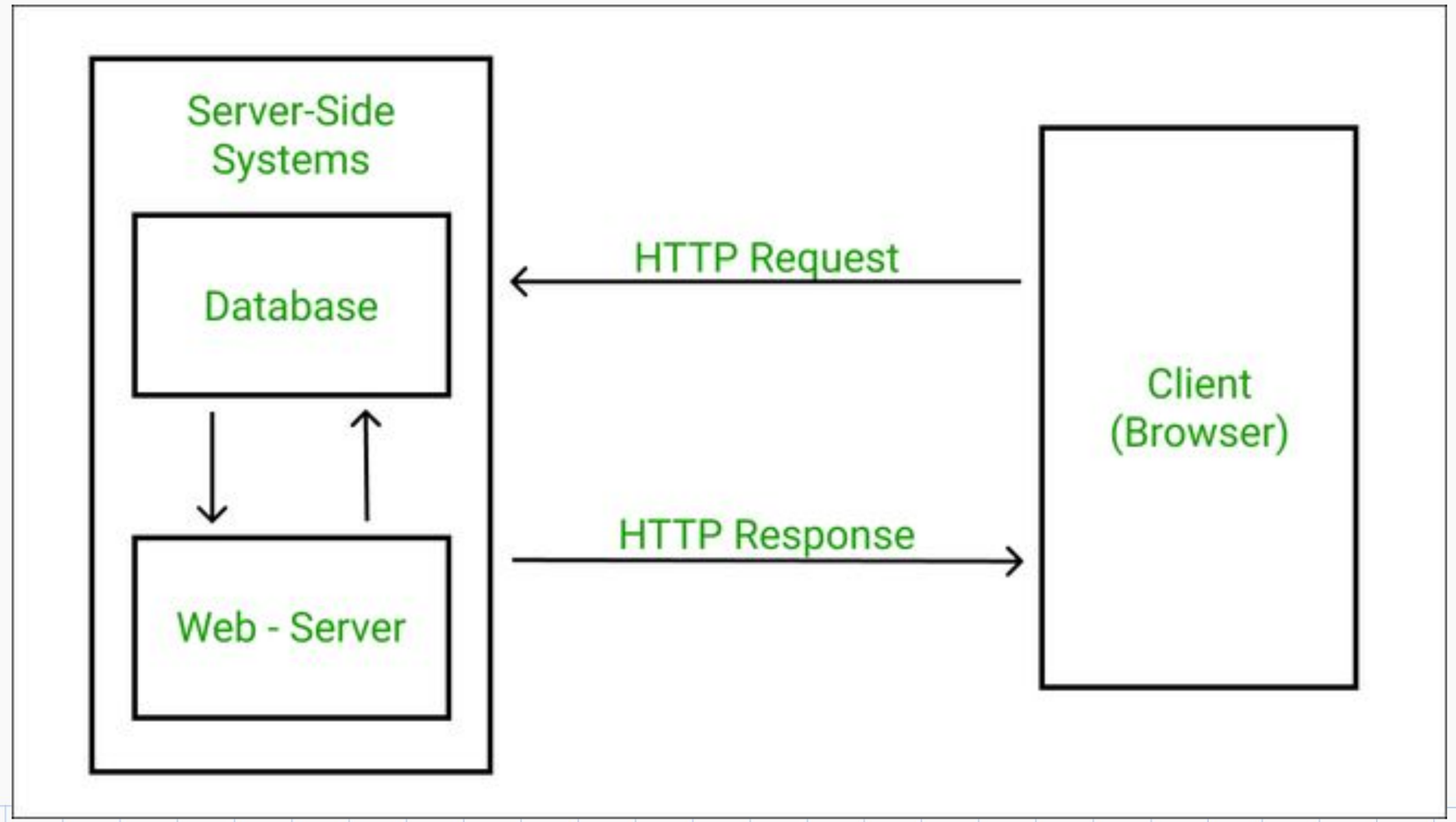
Code

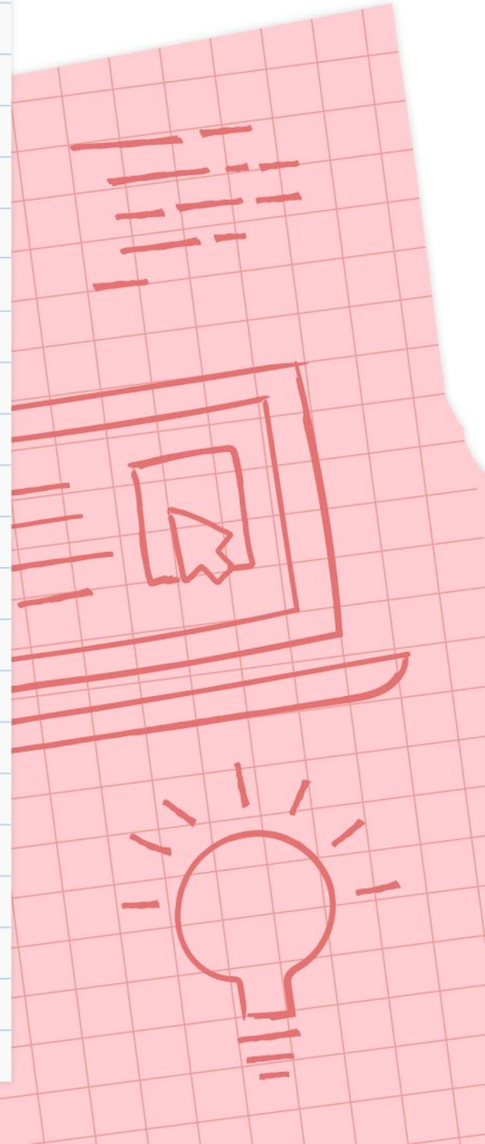
```
<script src="https://apis.google.com/js/platform.js"></script>

<div class="g-ytsubscribe" data-channel="GoogleDevelopers" data-layout="default" data-count="default"></div>
```

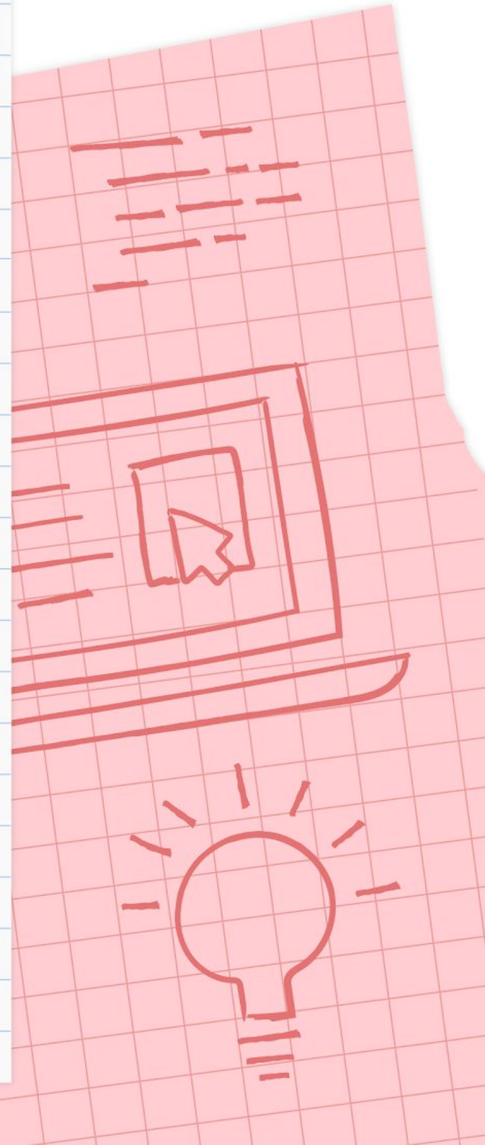


A glimpse of HTTP Request Flow





API makes everything easier… (behind the scenes)



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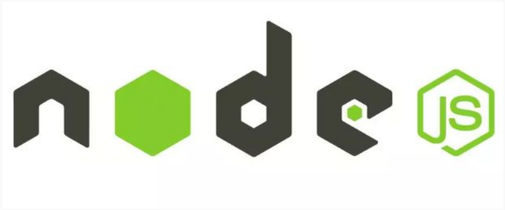
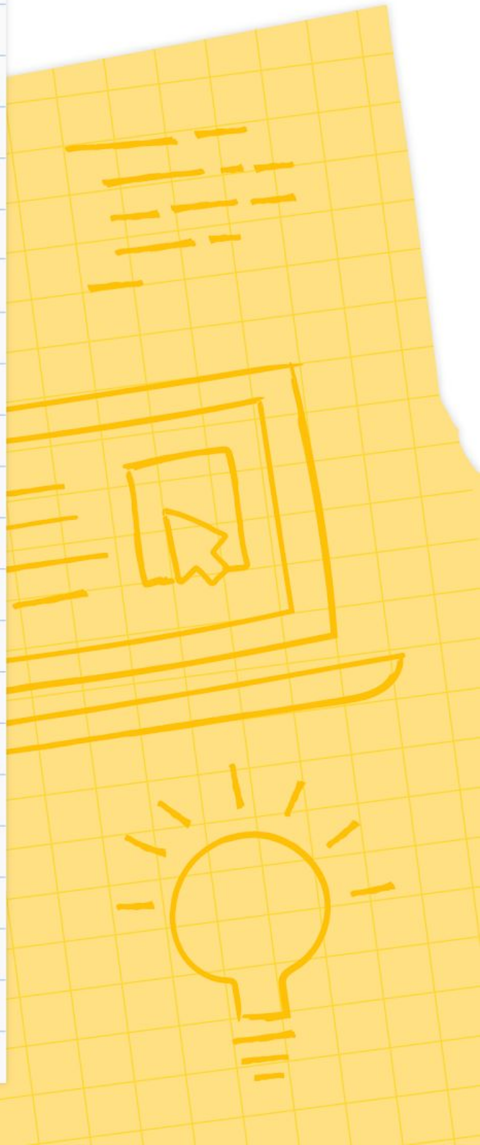
What is Node.js?



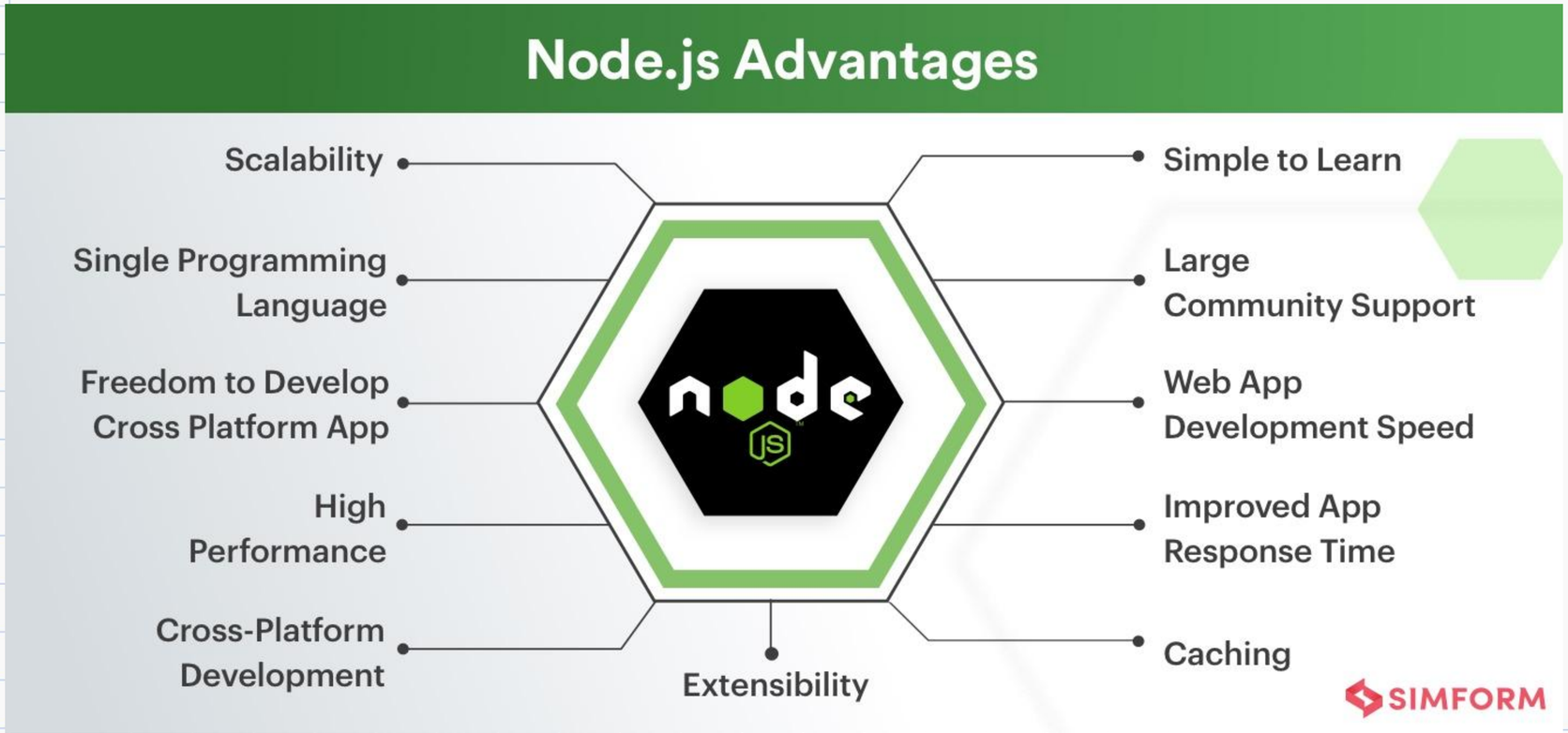
Definition of Node.js

- Node.js is an open-source, cross-platform JavaScript runtime environment and library for running web applications outside the client's browser

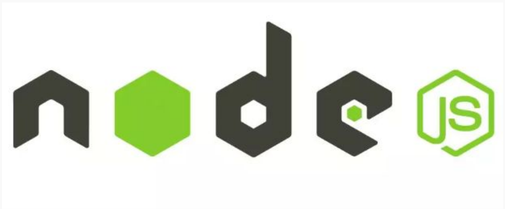
- It is a modular platform and its language is based on JavaScript



Advantages of using Node.js

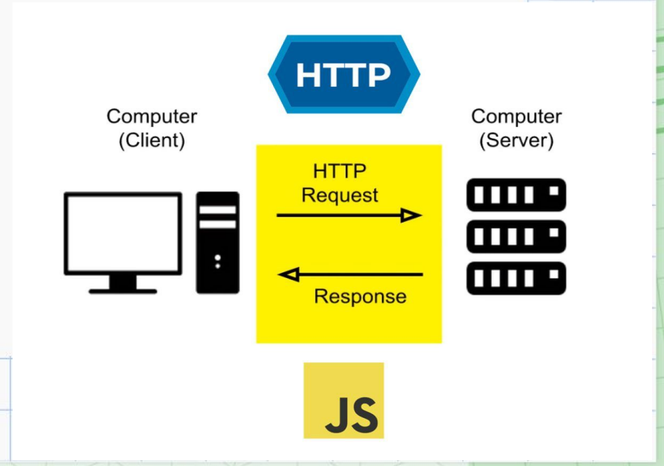


Get and Post Request Methods in Node.js



What is GET Request?

- HTTP request method used to retrieve data from a web server and display in front end
- Should never be used when dealing with sensitive data as the data is visible to everyone
- Often used for login purposes



What is POST Request?

- HTTP request method used to submit the data to the server
- Use to send data from frontend to backend
- Often used when submitting forms

HTTP request

HTTP response

Client

Server

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Coding Part for Post Request

```
<form id="my-form" method="POST"
    action="<YOUR_DEPLOYMENT_URL>">
</form>
```

Differences between GET and POST Requests

GET	POST
Limited data can be sent as data is sent in header	Large amount of data can be sent as data is sent in body
Less secure as data is visible in URL	More secure as data is not visible in URL

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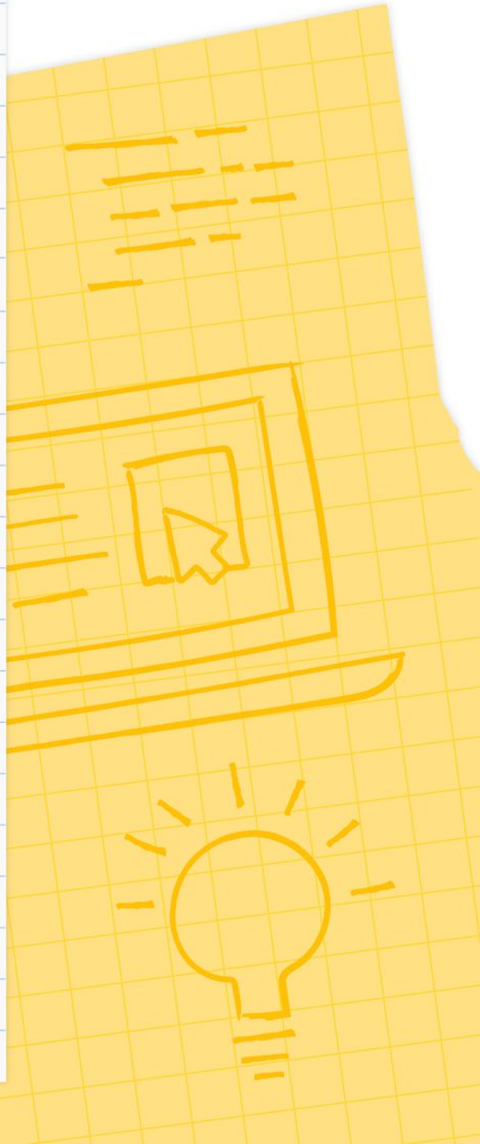
Quiz Time



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Prize Giving Ceremony

Day 3 : Google Sheet API Workshop

Upcoming Workshop 4

Dewan Perdana 1, Ground Floor Block D, Kompleks Perdanasiswa (KPS)

01 Image data extraction with ML

02 Cloud bucket as a storage

03 Cloud Vision API and its function

04 Linking output from Cloud Vision API to Google Sheet

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Thank You !!

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