

DATA HACK 2023 MAKER WORKSHOP: JAVASCRIPT PROGRAMMING, DATA VISUALISING, AND MACHINE LEARNING - PART I

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Today's agenda.

1. Overview of **HTML, CSS, and JS (JavaScript)** in the context of front-end/back-end web development .
2. **Fundamental programming constructs** implemented in **JavaScript**.
3. **DOM** manipulation in **JavaScript**.
4. Master **JavaScript Event Listener** functions for improved interactivity in web publishing.
5. Introduction to **data visualization** in **JavaScript** Using **PapaParse, C3** and **Leaflet** JS libraries.

How does web publishing work?

Browser

Screen Display



Web Server

HTML/CSS/JS



```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8">
<title> A Tiny HTML Document </title>
<link href = "styles.css" rel="stylesheet">
<script src="scripts.js"></script>
</head>

<body>
<p>Let's rock the browser, HTML5 style.</p>
</body>
</html>
```

App Server

NodeJS/Python
Php/C#/Java



```
for powerix, y in
    range(1, powerix+1):
        print("Data given generated")

take input from the user
int("Select operation:")
int("1.Add")
int("2.Subtract")
int("3.Multiply")
int("4.Divide")
int("5.Power")
choice = Input("Enter choice(1/2/3/4/5):")

a1 = int(input("Enter first number:"))
a2 = int(input("Enter the second number:"))

choice == '1':
    print(a1, "+", a2, '=', a1+a2, file=peo.stdout, flush=True)
    print(value, ..., sep=' ', end='\n', file=peo.stdout, flush=True)
```

Database Server

SQL/NoSQL
Data



Database Structure									
#	ID	PHONE	POPULARNAME	PREFERREDNAME	LATITUDE	LONGITUDE	ADDRESS	EMAIL	WEBSITE
1	1194020	00994414	popular_name_00994414	preferred_name_00994414	23.789675	122.580000	1000 Avenue of the Stars	peo@192.168.1.100	http://192.168.1.100
2	1194021	00994415	popular_name_00994415	preferred_name_00994415	23.789675	122.580000	1000 Avenue of the Stars	peo@192.168.1.100	http://192.168.1.100
3	1194022	00994416	popular_name_00994416	preferred_name_00994416	23.789675	122.580000	1000 Avenue of the Stars	peo@192.168.1.100	http://192.168.1.100
4	1194023	00994417	popular_name_00994417	preferred_name_00994417	23.789675	122.580000	1000 Avenue of the Stars	peo@192.168.1.100	http://192.168.1.100
5	1194024	00994418	popular_name_00994418	preferred_name_00994418	23.789675	122.580000	1000 Avenue of the Stars	peo@192.168.1.100	http://192.168.1.100
6	1194025	00994419	popular_name_00994419	preferred_name_00994419	23.789675	122.580000	1000 Avenue of the Stars	peo@192.168.1.100	http://192.168.1.100
7	1194026	00994420	popular_name_00994420	preferred_name_00994420	23.789675	122.580000	1000 Avenue of the Stars	peo@192.168.1.100	http://192.168.1.100
8	1194027	00994421	popular_name_00994421	preferred_name_00994421	23.789675	122.580000	1000 Avenue of the Stars	peo@192.168.1.100	http://192.168.1.100
9	1194028	00994422	popular_name_00994422	preferred_name_00994422	23.789675	122.580000	1000 Avenue of the Stars	peo@192.168.1.100	http://192.168.1.100
10	1194029	00994423	popular_name_00994423	preferred_name_00994423	23.789675	122.580000	1000 Avenue of the Stars	peo@192.168.1.100	http://192.168.1.100
11	1194030	00994424	popular_name_00994424	preferred_name_00994424	23.789675	122.580000	1000 Avenue of the Stars	peo@192.168.1.100	http://192.168.1.100
12	1194031	00994425	popular_name_00994425	preferred_name_00994425	23.789675	122.580000	1000 Avenue of the Stars	peo@192.168.1.100	http://192.168.1.100
13	1194032	00994426	popular_name_00994426	preferred_name_00994426	23.789675	122.580000	1000 Avenue of the Stars	peo@192.168.1.100	http://192.168.1.100

Frontend

Backend

**Browser (e.g. Chrome) translates HTML/
CSS/JS into web pages ordinary human
can understand.**

Quick *overview* of HTML, CSS, and JS.

**HTML provides the basic elements
to be used on screen.**

Welcome to My Homepage

Use the menu to select different Stylesheets

- Stylesheet 1
- Stylesheet 2
- Stylesheet 3
- Stylesheet 4
- No Stylesheet

Same Page Different Stylesheets

This is a demonstration of how different stylesheets can change the layout of your HTML page. You can change the layout of this page by selecting different stylesheets in the menu, or by selecting one of the following links:

[Stylesheet1](#), [Stylesheet2](#), [Stylesheet3](#), [Stylesheet4](#).

No Styles

This page uses DIV elements to group different sections of the HTML page. Click here to see how the page looks like with no stylesheet:
[No Stylesheet](#).

Side-Bar

Lore ipsum dolor sit amet, consectetuer adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat.

https://www.w3schools.com/css/demo_default.htm#

CSS provides the composition and layout structure to style the elements.

Welcome to My Homepage

Use the menu to select different Stylesheets

Stylesheet 1

[Stylesheet 2](#)

[Stylesheet 3](#)

[Stylesheet 4](#)

[No Stylesheet](#)

Same Page Different Stylesheets

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No Styles

This page uses DIV elements to group different sections of the HTML page.

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Side-Bar

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https://www.w3schools.com/css/demo_default.htm#

Welcome to My Homepage

Use the menu to select different Stylesheets

Same Page Different Stylesheets

This is a demonstration of how different stylesheets can change the layout of your HTML page. You can change the layout of this page by selecting different stylesheets in the menu, or by selecting one of the following links:

[Stylesheet1](#), [Stylesheet2](#), [Stylesheet3](#), [Stylesheet4](#).

[Stylesheet 1](#)

[Stylesheet 2](#)

[Stylesheet 3](#)

[Stylesheet 4](#)

[No Stylesheet](#)

No Styles

This page uses DIV elements to group different sections of the HTML page. Click [here](#) to see how the page looks like with no stylesheet:

[No Stylesheet](#).

Side-Bar

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Welcome to My Homepage

Use the menu to select different Stylesheets

Stylesheet 1

Stylesheet 2

Stylesheet 3

Stylesheet 4

No Stylesheet

Same Page Different Stylesheets

This is a demonstration of how different stylesheets can change the layout of your HTML page. You can change the layout of this page by selecting different stylesheets in the menu, or by selecting one of the following links:

[Stylesheet1](#), [Stylesheet2](#), [Stylesheet3](#), [Stylesheet4](#).

No Styles

This page uses DIV elements to group different sections of the HTML page. Click [here](#) to see how the page looks like with no stylesheet:

[No Stylesheet](#).

Side-Bar

Loreum ipsum dolor sit amet, consectetuer adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat.

Welcome to My Homepage

Use the menu to select different Stylesheets

- Stylesheet 1
- Stylesheet 2
- Stylesheet 3
- **Stylesheet 4**
- No Stylesheet

Side-Bar

Loreum ipsum dolor sit amet,
consectetuer adipiscing elit, sed
diam nonummy nibh euismod
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Same Page Different Stylesheets

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[Stylesheet1](#), [Stylesheet2](#), [Stylesheet3](#), [Stylesheet4](#).

No Styles

This page uses DIV elements to group different sections of the HTML page. Click [here](#) to see how the page looks like with no stylesheet:

[No Stylesheet](#).

JS provides interactive supports for web navigation, form processing, database updates, and multimedia display.

```
<div class="wrapper">
  <div id="menubar">
    <ul id="menuList">
      <li class="menuItem" onclick="reStyle(0)">Stylesheet 1
      <li class="menuItem" onclick="reStyle(1)">Stylesheet 2
      <li class="menuItem" onclick="reStyle(2)">Stylesheet 3
      <li class="menuItem" onclick="reStyle(3)">Stylesheet 4
      <li class="menuItem" onclick="noStyles()">No Stylesheet
    </ul>
  </div>
  <div id="main">
    <h1>Same Page Different Stylesheets</h1>
    <p>This is a demonstration of how different stylesheets can change the layout of your HTML page. You can change the layout of this page by selecting different stylesheets in the menu, or by selecting one of the following links:<br>
      <a href="#" onclick="reStyle(0);return false">Stylesheet1</a>,
      <a href="#" onclick="reStyle(1);return false">Stylesheet2</a>,
      <a href="#" onclick="reStyle(2);return false">Stylesheet3</a>,
      <a href="#" onclick="reStyle(3);return false">Stylesheet4</a>.
    </p>
    <h2>No Styles</h2>
    <p>This page uses DIV elements to group different sections of the HTML page. Click here to see how the page looks like with no stylesheet:<br><a href="#" onclick="noStyles();return false">No Stylesheet</a>.</p>
  </div>
  <div id="sidebar">
    <h3>Side-Bar</h3>
    <p>Lorem ipsum dolor sit amet, consectetuer adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat.</p>
  </div>
</div>
```

```
function noStyles() {
    document.styleSheets[0].disabled = true;
    document.styleSheets[1].disabled = true;
    document.styleSheets[2].disabled = true;
    document.styleSheets[3].disabled = true;
}

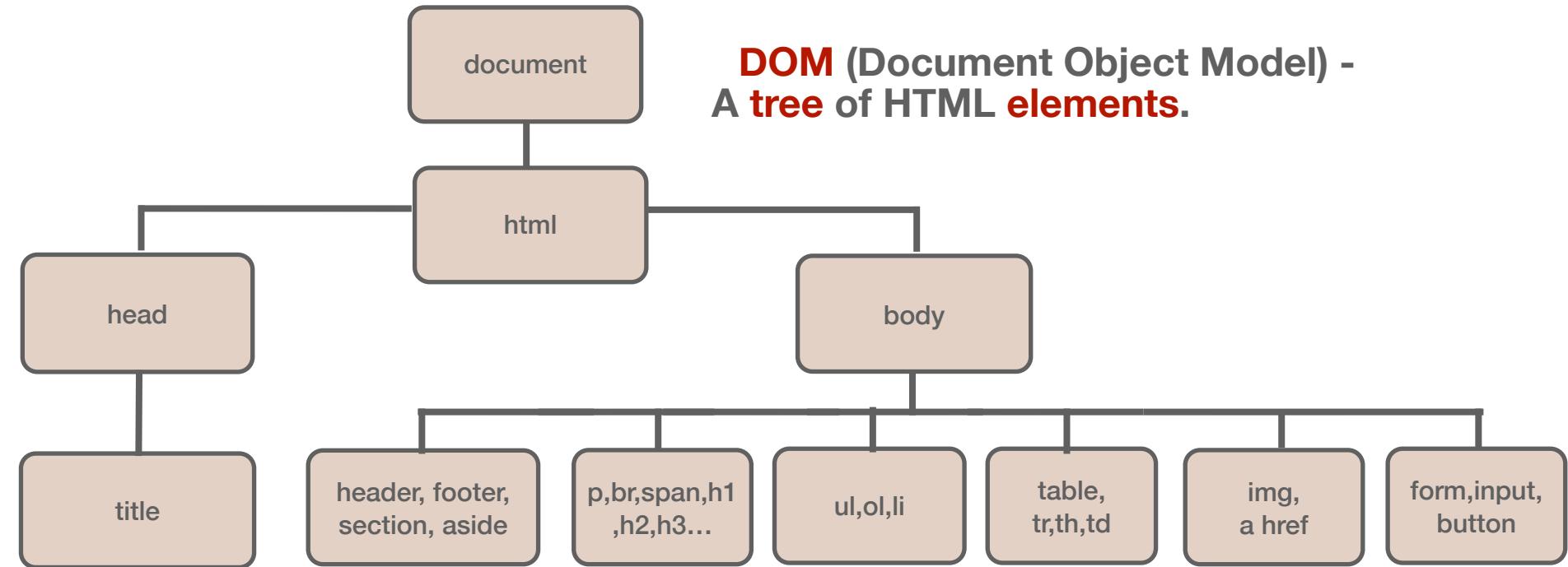
function reStyle(n) {
    noStyles()
    document.styleSheets[n].disabled = false;
}
```

VERB

JS

JavaScript acts on a HTML tag (CSS selector), CSS property or responds to an event triggered by user action.

DOM (Document Object Model) - A tree of HTML elements.



Using the Chrome Inspector Console for learning and debugging JavaScript

- Back
- Forward
- Reload
- Save As...
- Print...
- Cast...
- Search Images with Google
- Create QR code for this page
- Translate to English
- View Page Source
- Inspect**

The screenshot shows the Chrome DevTools interface with the 'Console' tab selected, indicated by a red box. The top navigation bar includes tabs for Elements, Sources, Performance insights, Network, Performance, and Memory. Below the tabs are icons for refresh, zoom, and search, followed by 'top ▾' and a 'Filter' input field. The main area displays the JavaScript console output:

```
Live reload enabled.  
> let x = 2 + 3;  
< undefined  
> x  
< 5
```

← → C

① 127.0.0.1:5501/index2.html

Elements Console Sources Performance insights  Network Performance Memory

Live reload enabled.

```
> let x = 2 + 3;
< undefined
> console.log("x = ",x)
x = 5
```

Data Types in JavaScript

Assigning HTML Element to Variable

**Assigning a value to a variable is called:
declaring a **variable**
and its data type:**

- **String** - e.g. **let str_var = “This is a string.”;**
- **Numeric** - e.g. **let num_var = 3.2;**
- **Boolean** - e.g. **let bool_var = true;**

Basic Input/Output Commands

- **Entering a variable** - e.g. **let x = prompt("Enter x value");**
- **Displaying a variable** - e.g. **alert("x = " + x);**

The screenshot shows a browser's developer tools interface with the "Console" tab selected. The top navigation bar includes "Elements", "Console", "Sources", "Performance insights", "Network", "Performance", and "Memory". Below the tabs are icons for "Run" (play), "Stop" (stop), "Top", and "Filter". The main area displays a command-line interaction:

```
Live reload enabled.  
> let x = 2 + 3;  
< undefined  
> console.log("x = ", x)  
x = 5  
< undefined  
> let x = prompt("Enter x value");  
< undefined  
> alert("x = " + x);
```

The last two lines of code, `let x = prompt("Enter x value");` and `alert("x = " + x);`, are highlighted with red boxes.



A screenshot of a browser's developer tools, specifically the Console tab. The tabs at the top are Elements, Console (which is selected), Sources, Performance insights, Network, Performance, and Memory. Below the tabs are icons for Live reload, Refresh, Stop, and Filter. The console output shows:

```
Live reload enabled.  
> let x = 2 + 3;  
< undefined  
> console.log("x = ",x)  
x = 5  
< undefined  
> let x = prompt("Enter x value");  
< undefined  
> alert("x = " + x);  
< undefined  
> alert(`x = ${x}`);
```

The last two lines of code, which contain template literals, are highlighted with a red rectangular box.

Boolean and String data types in JavaScript

Basic Logical and Mathematical Operations

- `==` equal (comparing string and boolean)
- `!=` not equal (comparing string and boolean)
- `=` equal (comparing numerical values)
- `>=` greater than or equal to (comparing numerical values)
- `<=` smaller or equal to (comparing numerical values)
- `+, -, *, /, %, &&, ||, !` (addition, subtraction, multiplication, division, modular, and, or, not)

Using Conditional Structure in JavaScript

if (condition) {action} else {action}

Examples:

- **if (boolean_var == true) {alert("That is correct");} else {alert("That is incorrect");}**
- **if (string_var != "Peter") {alert("Not Peter");}**
- **if (num_var >= 8) {alert("The number is greater than or equal to eight.");} else {alert("The number is smaller than eight.");}**

Loop, Array, and Object

Loop is an iterative programming construct suitable for handling JavaScript array and object.

```
for (initialization; condition; increment) {  
    JavaScript statements  
}
```

Try the following steps:

- 1) let fruits = [];
- 2) **for (i=1; i< 10 ;i++) {**
fruits[i] =
prompt("Enter
fruit:");
}
- 3) **alert("fruits contain"**
+ fruits);

Basic Structure of a JavaScript Function

```
<head>  
<script>
```

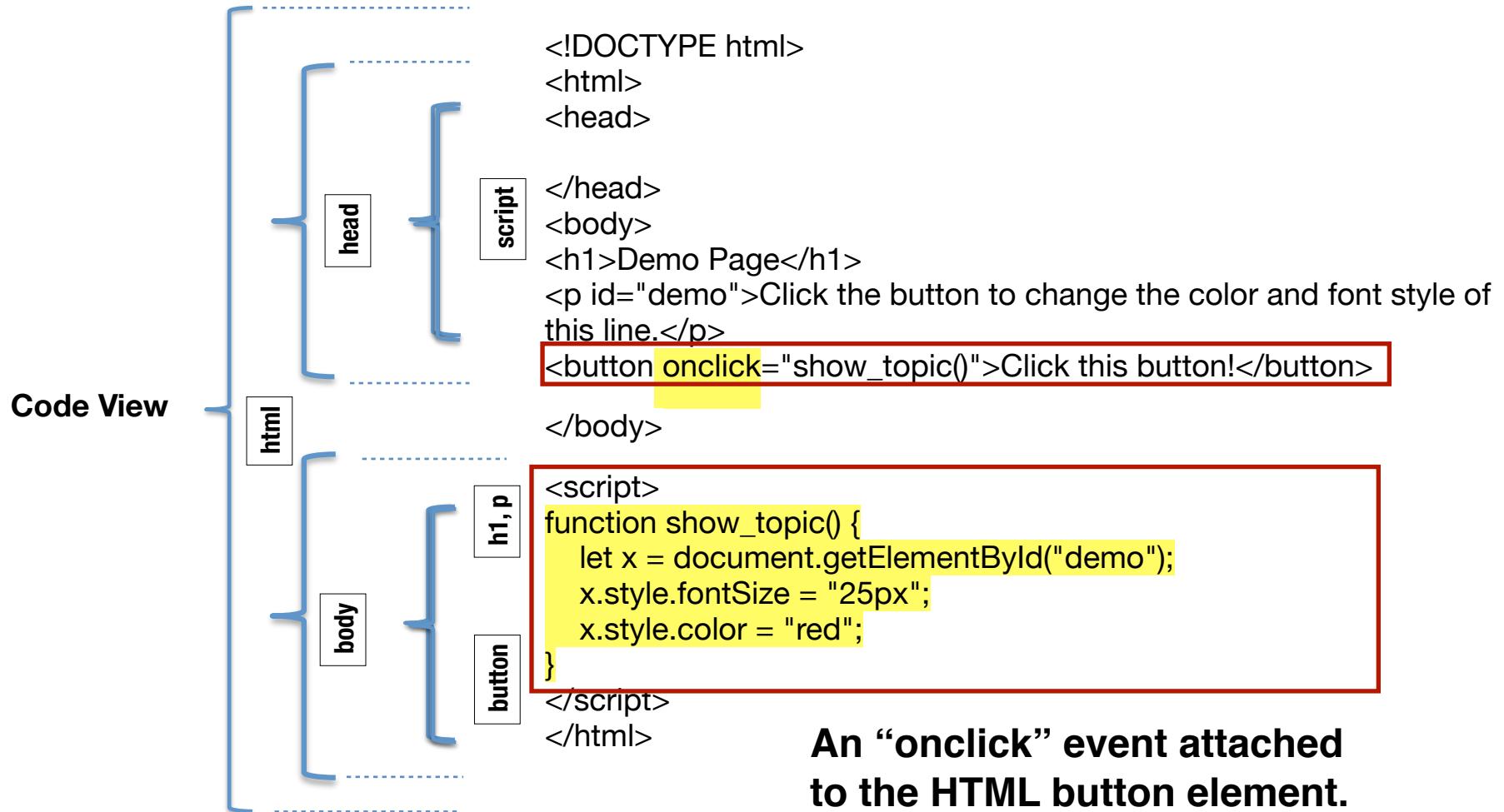
```
function function_name(parameter1, parameter 2...) {
```

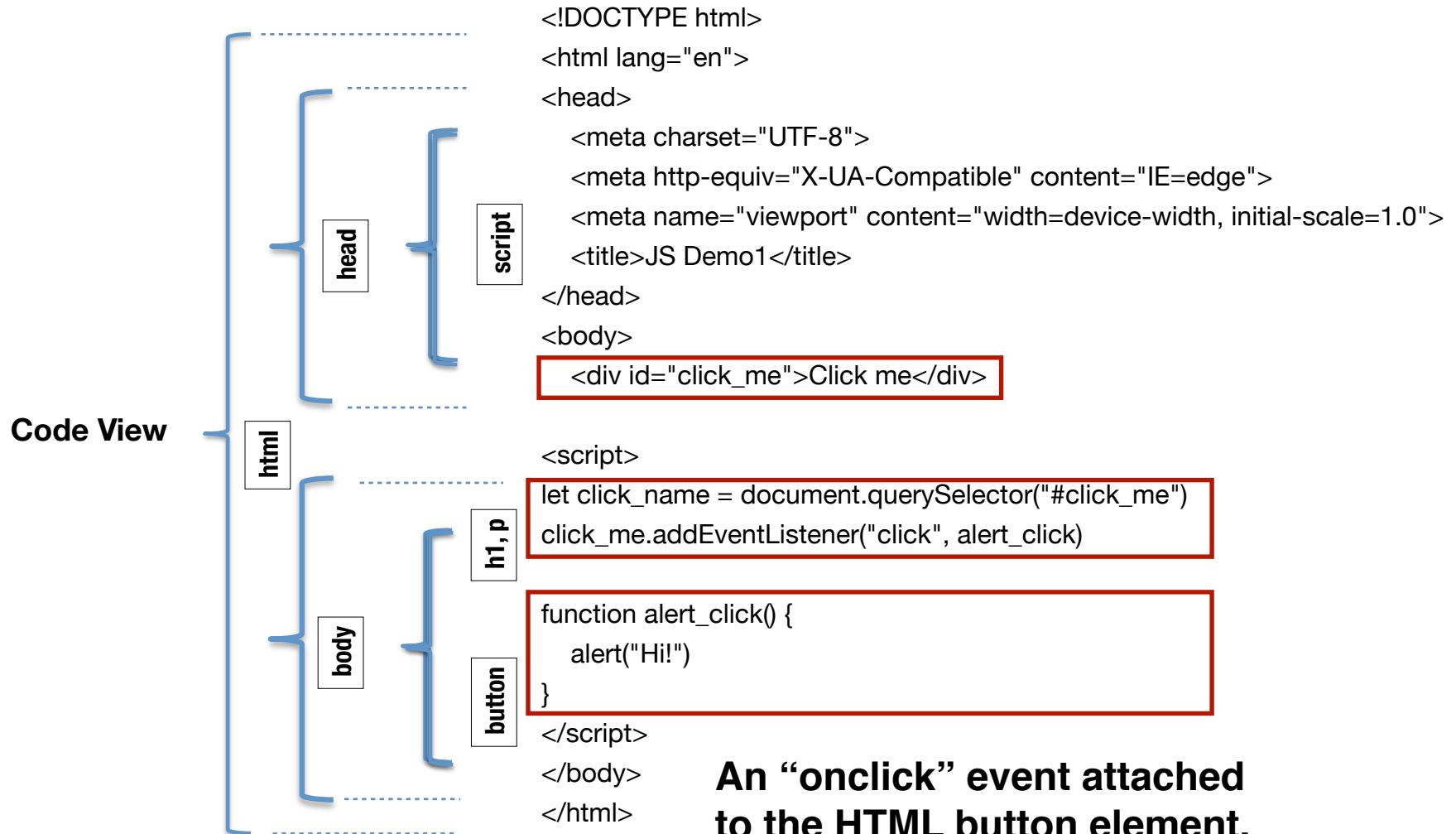
Embed data type variables, input/output commands and logical and mathematical operators in the function to compute and return values.

```
}
```

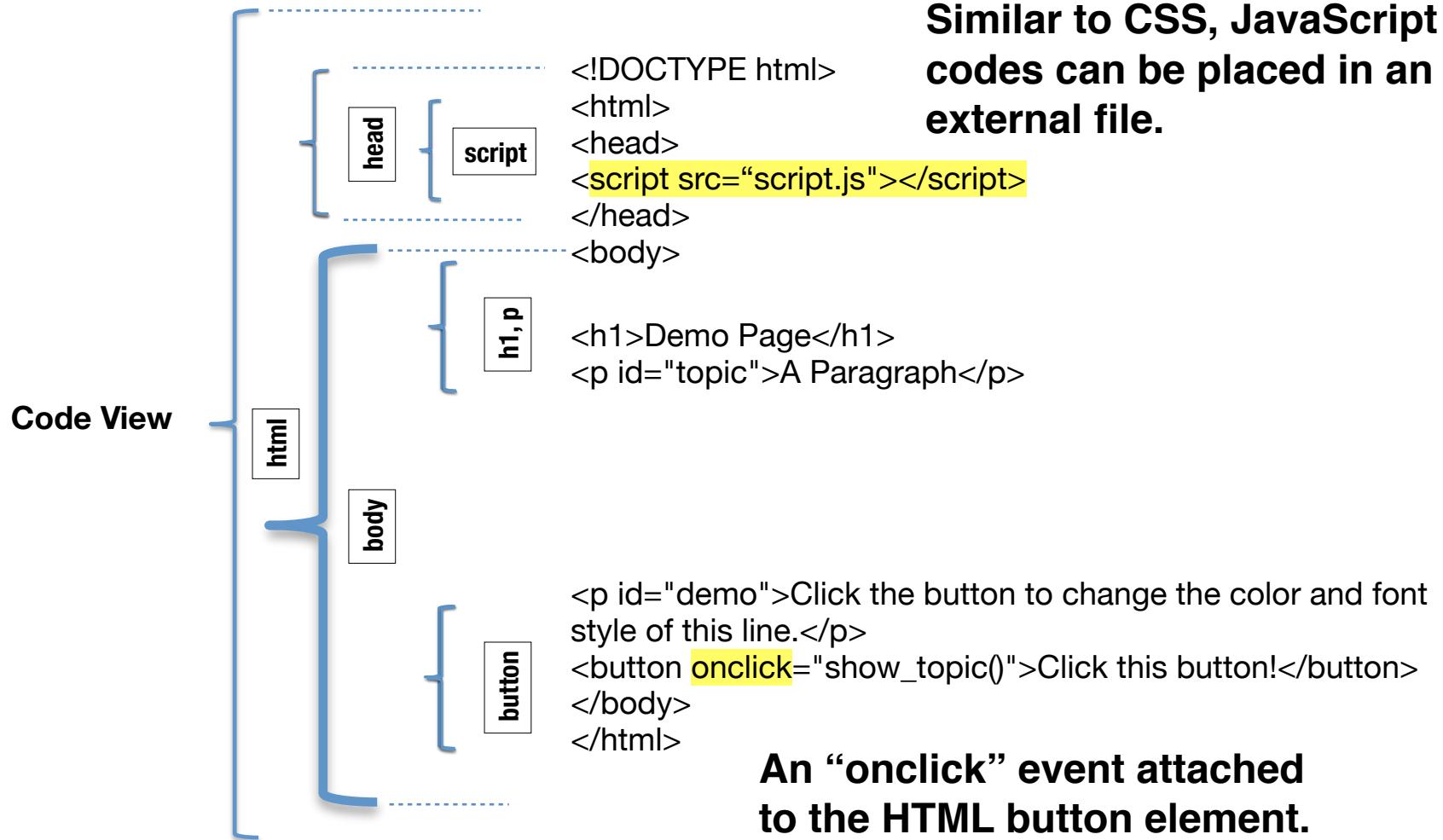
optional parameters







**Similar to CSS, JS can be placed in
an external File**



Basic Structure of a JavaScript Function

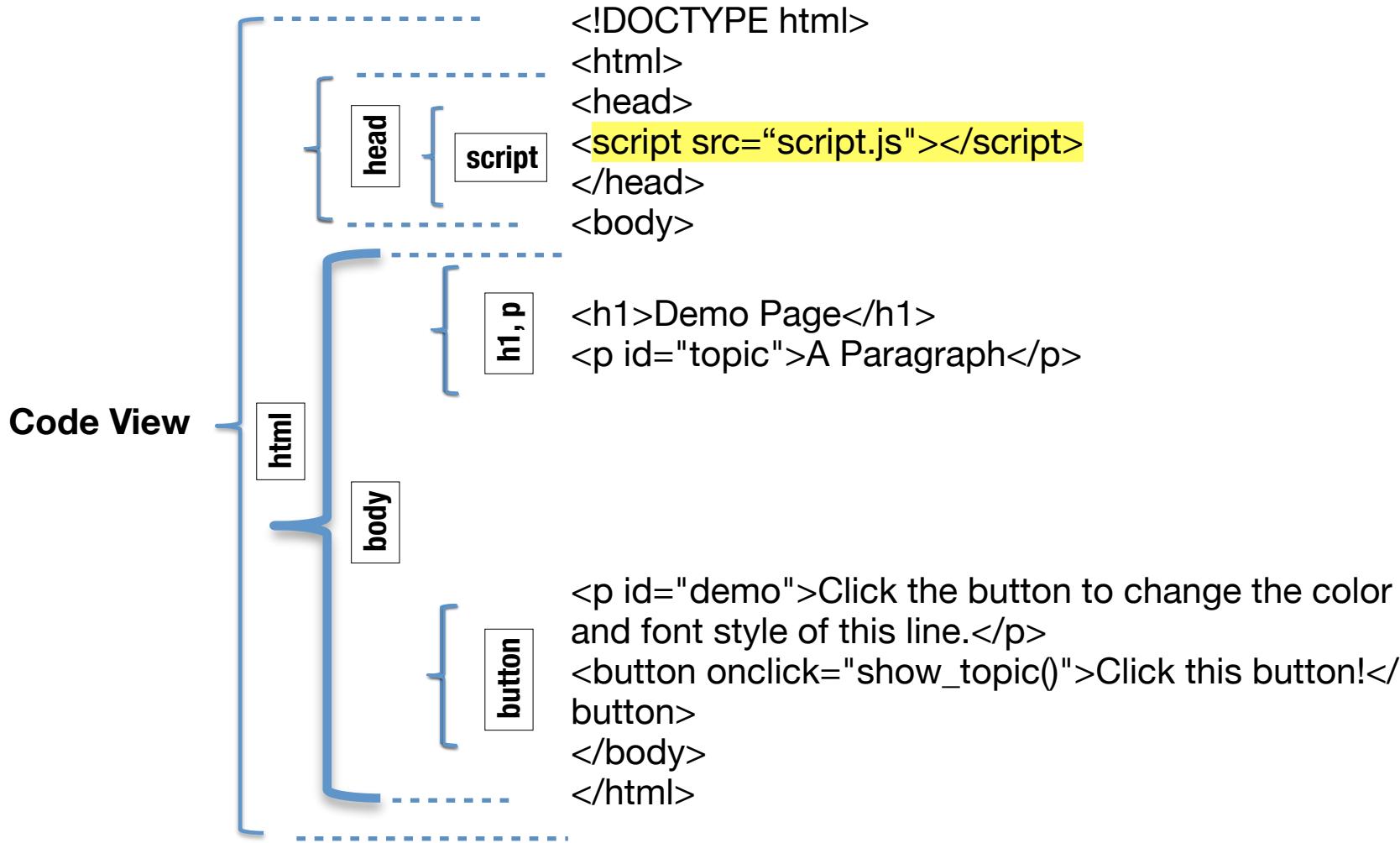
```
<!DOCTYPE html>
<html>
<head><script>
    function addition(a, b) {
        let a = parseInt(a);
        let b = parseInt(b);
        let c = a + b;
        let return c;
    }
    function get_values() {
        let a = prompt("Enter first number:");
        let b = prompt("Enter second number:");
        let z = addition(a,b);
        alert("The answer is:" + z);
    }
</script></head>
<body>
    <button onclick="get_values();>Click here</button>
</body>
</html>
```

An “onclick” event attached
to the HTML button element.

Use the querySelector and addEventListener for basic event handling.

What is “event handling”?

Ans: Call a function when the event gets triggered.



```
var var_name = document.querySelector("selector")  
var_name.addEventListener("event type", function_name)
```

Example:

```
<body>  
<div id="click_me">Click me</div>
```

```
<script>  
let click_name = document.querySelector("#click_me")  
click_me.addEventListener("click", alert_click)
```

```
function alert_click() {  
    alert("Hi!")  
}  
</script>
```

More JavaScript magic...

More Advanced JS Data Structures: **Array** and **Object**

- **Array** - a list of elements e.g.
`let fruits = ["apple","grape","pear"];`
`let student_list = []; // empty student list;`
- **Object** - a collection of properties represented in **name:values** pairs
e.g.
`let students {`
 `student_id: 1155115511;`
 `student_fname: "Peter";`
 `student_lname:"Chan";`
 `student_major: "New Media";`
`}`

Let try out an example in Chrome console

```
> students = [];
> student1 = {name:'Peter Chan', id:'1001'};
> student2 = {name:'David Li', id:'1002'};
> student3 = {name:'Joyce Xu', id:'1003'};
> students.push(student1);
> students.push(student2);
> students.push(student3);
```



Push objects
into the array to
form an array of
objects.

Handling JS Object & Array in a Loop

The screenshot shows a web browser window with the Google homepage loaded. At the top, there is a navigation bar with icons for back, forward, search, and other functions. Below the navigation bar is a bookmarks bar containing links to various tech-related websites like Cyberport Bootcamp, Blockchain, NLP and Chatbot, FinTech, E-Commerce, Classes, Development Tools, Data Science, Machine Learning, Music, Drupal, and Cloud Providers. To the right of the bookmarks bar are links for Gmail, Images, and a user profile icon.

The main content area features the classic Google logo. Below the logo is a search bar with the placeholder "Search Google or type a URL". To the right of the search bar is a microphone icon for voice search.

At the bottom of the screen, the developer tools are open. The tabs at the top of the developer tools are Elements, Console, Sources, Network, Performance, Memory, Application, Security, Audits, and JavaScript Profiler. The Console tab is currently selected. The console output pane shows the following log entries:

```
newtab?ie=UTF-8:8
17:25:20.426 SW registered
> 17:26:54.913 var student1 = {name:'John',id:1001};
< 17:26:54.918 undefined
> 17:27:13.330 var student2 = {name:'Mary',id:1002};
< 17:27:13.335 undefined
> 17:28:15.340 student3 = {name:'David',id:1003};
< 17:28:15.346 > {name: "David", id: 1003}
> students = [];
```

The screenshot shows a web browser window with the Google homepage loaded. The browser's address bar and various toolbars are visible at the top. Below the address bar, there is a horizontal navigation bar with links to various categories like Apps, Cyberport Bootca..., Blockchain, NLP and Chatbot, FinTech, E-Commerce, Classes, Development Tools, Data Science, Machine Learning, Music, Drupal, and Cloud Providers. To the right of these links, there are icons for Gmail, Images, and other browser controls.

The main content area displays the classic Google logo. Below the logo is a search bar with the placeholder "Search Google or type a URL".

At the bottom of the screen, the developer tools are open, specifically the "Console" tab. The console output shows the following log entries:

```
> 0: {name: "John", id: 1001}
  length: 1
  > __proto__: Array(0)

> 17:45:10.195 students.push(student2);
< 17:45:10.206 2

> 17:45:19.164 students.push(student3);
< 17:45:19.169 3

> 17:45:23.621 students;
< 17:45:23.629 ▶(3) [{} , {} , {}] ⓘ
  > 0: {name: "John", id: 1001}
  > 1: {name: "Mary", id: 1002}
  > 2: {name: "David", id: 1003}
  length: 3
  > __proto__: Array(0)
```

The screenshot shows a web browser window with the Google homepage loaded. At the top, there is a search bar and a navigation bar with various bookmarks like 'Cyberport Bootca...', 'Blockchain', 'NLP and Chatbot', etc. Below the search bar is a toolbar with icons for Gmail, Images, and other utilities.

The main content area features the classic Google logo. Below it is another search bar. The bottom of the page contains the standard Google footer with links to 'About Google', 'Privacy', 'Terms', and 'Help'.

The browser's developer tools are open, specifically the 'Console' tab. On the left side of the console, there is a sidebar with various log levels and counts: 6 messages, 1 user message, 0 errors, 2 warnings, 2 info, and 2 verbose. The main pane shows the following log entries:

```
> 17:40:25.934 students.push[student2];
< 17:40:25.939 undefined
> 17:40:28.751 students.push[student3];
< 17:40:28.756 undefined
> 17:40:31.102 students.push[student3];
< 17:40:31.107 undefined
> 17:40:37.113 students
< 17:40:37.116 []
    length: 0
    > __proto__: Array(0)
> 17:41:33.699 students;
< 17:41:33.705 []
> for (i = 0; i<4; i++) {document.write(students[i].name + "/" + students[i].id + "<br>");}
```

The last line of code, 'for (i = 0; i<4; i++) {document.write(students[i].name + "/" + students[i].id + "
");}', is highlighted with a red rectangular box.

**Output without popup:
innerHTML**

Home page

Home Page

Simple Demo of JavaScript and JQuery

Welcome to HTML/CSS/JS play

This is a simple demonstration of JavaScript and JQuery providing the simple CSS styling.

X + Y = ? Another X + Y = ?

Change Text Color of Welcome Message

Hide H2 text

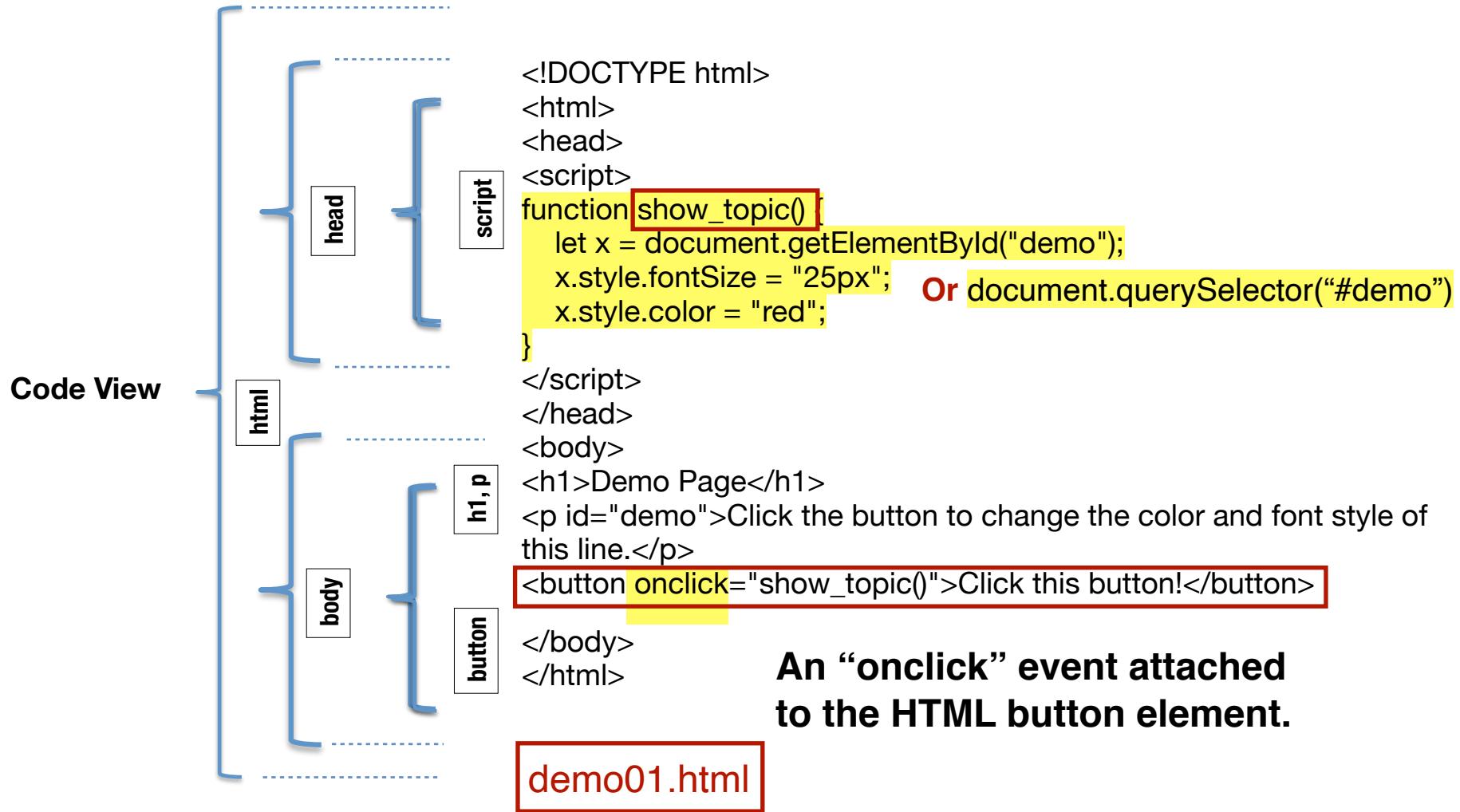
Show H2 text in blue

Enter first number:

Enter second number:

demo5.html

The **onclick** Method



The **addEventListener** Method

```
var var_name = document.querySelector("selector")  
var_name.addEventListener("event type", function_name)
```

Example:

```
<body>  
<div id="click_me">Click me</div>
```

```
<script>      Or document.getElementById("click_me")  
let click_name = document.querySelector("#click_me")  
click_me.addEventListener("click", alert_click)
```

```
function alert_click() {  
    alert("Hi!")  
}  
</script>
```

demo02.html

```
var var_name = document.querySelector("selector")  
var_name.addEventListener("event type", function_name)
```

Example:

```
<body>  
<div id="click_me">Click me</div>
```

```
<script>      Or document.getElementById("click_me")  
let click_name = document.querySelector("#click_me")  
click_me.addEventListener("click", alert_click)
```

```
function alert_click() {  
    window.location.href='https://www.cuhk.edu.hk';}  
</script>  
</body>
```

Leveraging the **Bootstrap** CSS Framework

New in v5.2 CSS variables, responsive offcanvas, new utilities, and more!



Build fast, responsive sites with Bootstrap

Powerful, extensible, and feature-packed frontend toolkit. Build and customize with Sass, utilize prebuilt grid system and components, and bring projects to life with powerful JavaScript plugins.

\$ npm i bootstrap@5.2.2



[Read the docs](#)

Currently v5.2.2 · [Download](#) · [v4.6.x docs](#) · [All releases](#)



Couchbase Capella DBaaS: Get the power of SQL with the flexibility of JSON

ads via Carbon

<https://getbootstrap.com/>

Getting started

Introduction

Download
Contents
Browsers & devices
JavaScript
Webpack
Parcel
Vite
Accessibility
RFS
RTL
Contribute

Customize

Overview
Sass
Options
Color
Components
CSS variables
Optimize

Layout

Breakpoints
Containers
Grid
Columns
Gutters
Utilities
Z-index
CSS Grid

Get started with Bootstrap

[View on GitHub](#)

Bootstrap is a powerful, feature-packed frontend toolkit. Build anything—from prototype to production—in minutes.

Quick start

Get started by including Bootstrap's production-ready CSS and JavaScript via CDN without the need for any build steps. See it in practice with this [Bootstrap CodePen demo](#).

1. Create a new `index.html` file in your project root. Include the `<meta name="viewport">` tag as well for proper responsive behavior in mobile devices.

```
<!doctype html>
<html lang="en">
  <head>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <title>Bootstrap demo</title>
  </head>
  <body>
    <h1>Hello, world!</h1>
  </body>
</html>
```

2. Include Bootstrap's CSS and JS. Place the `<link>` tag in the `<head>` for our CSS, and the `<script>` tag for our JavaScript bundle (including Popper for positioning dropdowns, poppers, and tooltips) before the closing `</body>`. Learn more about our [CDN links](#).

```
<!doctype html>
<html lang="en">
  <head>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <title>Bootstrap demo</title>
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.2.3/dist/css/bootstrap.min.css" rel="stylesheet">
  </head>
  <body>
```

On this page

Quick start
CDN links
Next steps
JS components
Important globals
HTML5 doctype
Responsive meta tag
Box-sizing
Reboot
Community

<https://getbootstrap.com/docs/5.2/getting-started/introduction/>

Screen Layout (Composition)

Using Bootstrap

twitter-bootstrap

The most popular front-end framework for developing responsive, mobile first projects on the web.

★ 160k  GitHub  package  0 vulnerabilities

MIT licensed <http://getbootstrap.com/>

Tags: css, less, mobile-first, responsive, front-end, framework, web, twitter, bootstrap

Version **5.2.2**

Asset Type **All**

Some files are hidden, click to show all files

<https://cdnjs.cloudflare.com/ajax/libs/twitter-bootstrap/5.2.2/js/bootstrap.min.js>

<https://cdnjs.cloudflare.com/ajax/libs/twitter-bootstrap/5.2.2/css/bootstrap-grid.min.css>

<https://cdnjs.cloudflare.com/ajax/libs/twitter-bootstrap/5.2.2/css/bootstrap-grid rtl.min.css>

<https://cdnjs.cloudflare.com/ajax/libs/twitter-bootstrap/5.2.2/css/bootstrap-reboot.min.css>

<https://cdnjs.cloudflare.com/ajax/libs/twitter-bootstrap/5.2.2/css/bootstrap-reboot rtl.min.css>

<https://cdnjs.com/libraries/twitter-bootstrap/5.2.2>

Use CDN link to access remote CSS and JS libraries for Bootstrap 5.5.2.

Bootstrap Examples, Components, and Icons



Examples

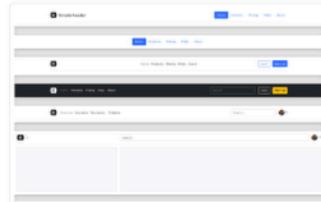
Quickly get a project started with any of our examples ranging from using parts of the framework to custom components and layouts.

[Download examples](#)[Download source code](#)

Your new development career awaits. Check out the latest listings.
ads via Carbon

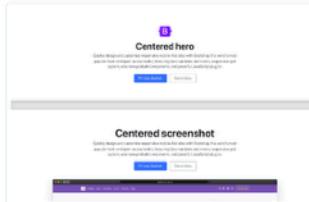
Snippets

Common patterns for building sites and apps that build on existing components and utilities with custom CSS and more.



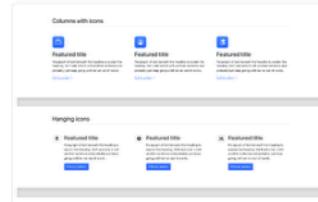
Headers

Display your branding, navigation, search, and more with these header components



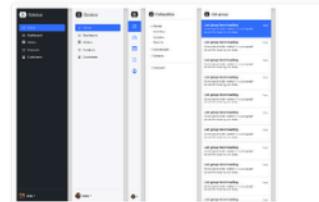
Heroes

Set the stage on your homepage with heroes that feature clear calls to action.



Features

Explain the features, benefits, or other details in your marketing content.



Sidebars

Common navigation patterns ideal for offcanvas or multi-column layouts.

Custom Components

Brand new components and templates to help folks quickly get started with Bootstrap and demonstrate best practices for adding onto the framework.



<https://getbootstrap.com/docs/5.2/examples/>



Example headline.

Some representative placeholder content for the first slide of the carousel.

[Sign up today](#)



Heading

Some representative placeholder content for the three columns of text below the carousel. This is the first column.

[View details »](#)



Heading

Another exciting bit of representative placeholder content. This time, we've moved on to the second column.

[View details »](#)



Example headline.

Some representative placeholder content for the first slide of the carousel.

[Sign up today](#)



Heading

Some representative placeholder content for the three columns of text below the carousel. This is the first column.

[View details »](#)



<https://getbootstrap.com/docs/5.2/examples/carousel/>

Accordion

[View on GitHub](#)

Build vertically collapsing accordions in combination with our Collapse JavaScript plugin.



Your new development career awaits. Check out the latest listings.
ads via Carbon

How it works

The accordion uses `collapse` internally to make it collapsible. To render an accordion that's expanded, add the `.open` class on the `.accordion`.

The animation effect of this component is dependent on the `prefers-reduced-motion` media query. See the [reduced motion section of our accessibility documentation](#).

Example

Click the accordions below to expand/collapse the accordion content.

Accordion Item #1



This is the first item's accordion body. It is shown by default, until the collapse plugin adds the appropriate classes that we use to style each element. These classes control the overall appearance, as well as the showing and hiding via CSS transitions. You can modify any of this with custom CSS or overriding our default variables. It's also worth noting that just about any HTML can go within the `.accordion-body`, though the transition does limit overflow.

<https://getbootstrap.com/docs/5.2/components/>

On this page

[How it works](#)
[Example](#)
[Flush](#)
[Always open](#)
[Accessibility](#)
[CSS](#)
[Variables](#)
[Sass variables](#)



Docs Examples **Icons** Themes Blog



New in v1.9.0: 140+ new icons!

Bootstrap Icons

Free, high quality, open source icon library with over 1,600 icons. Include them anyway you like—SVGs, SVG sprite, or web fonts. Use them with or without [Bootstrap](#) in any project.

\$ npm i bootstrap-icons



[Open in Figma](#)



Your new development career awaits.
Check out the latest listings.

[ads via Carbon](#)

Currently [v1.9.1](#) • [Icons](#) • [Install](#) • [Usage](#) • [Styling](#) • [Accessibility](#) • [GitHub repo](#)

Icons

Start typing to filter...

<https://icons.getbootstrap.com/>

Popular Components

- a. Container
- b. Navbar/Navs
- c. Icons
- d. Grid/Row/Column
- e. Images
- f. Buttons/Alerts
- g. Form
- h. Panel/Wells/Jumbotron
- i. Carousel/Collapse
- j. Scrollspy/Offcanvas
- k. Table
- l. Pagination
- m. Badges/List Group/Cards
- n. Modal/Tooltip/Toast/Popover

<https://www.w3schools.com/bootstrap5/index.php>

Bootstrap 5 Tutorial

BS5 HOME

BS5 Get Started

BS5 Containers

BS5 Grid Basic

BS5 Typography

BS5 Colors

BS5 Tables

BS5 Images

BS5 Jumbotron

BS5 Alerts

BS5 Buttons

BS5 Button Groups

BS5 Badges

BS5 Progress Bars

BS5 Spinners

BS5 Pagination

BS5 List Groups

BS5 Cards

BS5 Dropdowns

BS5 Collapse

BS5 Navs

BS5 Navbar

BS5 Carousel

BS5 Modal

Cards

A card in Bootstrap 5 is a bordered box with some padding around its content. It includes options for headers, footers, content, colors, etc.



John Doe

Some example text some example text. John Doe is an architect and engineer

[See Profile](#)

https://www.w3schools.com/bootstrap5/bootstrap_cards.php

[+ GRID SYSTEM](#) [?](#)

12	drag
6 6	drag
8 4	drag
4 4 4	drag
2 6 4	drag

[+ BASE CSS](#) [?](#)
[+ COMPONENTS](#) [?](#)
[+ JAVASCRIPT](#) [?](#)

Check out
our new
product



Using [Bootstrap 4.0.0](#)

Container

Row

Column

[drag](#) [remove](#)

Hello, world!

This is a template for a simple marketing or informational website. It includes a large callout called the hero unit and three supporting pieces of content. Use it as a starting point to create something more unique.

[Learn more](#)

<https://www.layoutit.com/build>

More [free](#) themes/templates.

1. <https://bootstraptaste.com/>
2. <http://blacktie.co/>

Define display area through selector.

Home page

Home Page

Simple Demo of JavaScript and JQuery

Output area (i.e. id="demo")

Welcome to HTML/CSS/JS play

p#demo 1100 x 20

This is a simple demonstration of JavaScript and JQuery providing the simple CSS styling.

X + Y = ?

Another X + Y = ?

Change Text Color of Welcome Message

Enter first number:

Enter second number:

Elements

Console

Sources

Performance insights

Network

Performance

Memory

Application

>

x 1

1



::before

<div class="col-sm-12">

 <h1>Home Page</h1>

 <h2>Simple Demo of JavaScript and JQuery</h2>

 <p id="welcome">Welcome to HTML/CSS/JS play</p>

<div class="well">

 <p id="demo"> == \$0

 "This is a simple demonstration of JavaScript and JQuery providing the simple CSS styling."

 </p>

</div>

<!-- Sign and date the page, it's only polite! -->

html body div.container div.row div.col-sm-12 div.well p#demo

Define output area id="demo".

Styles

Computed

Layout

>

Filter

:hov .cls +



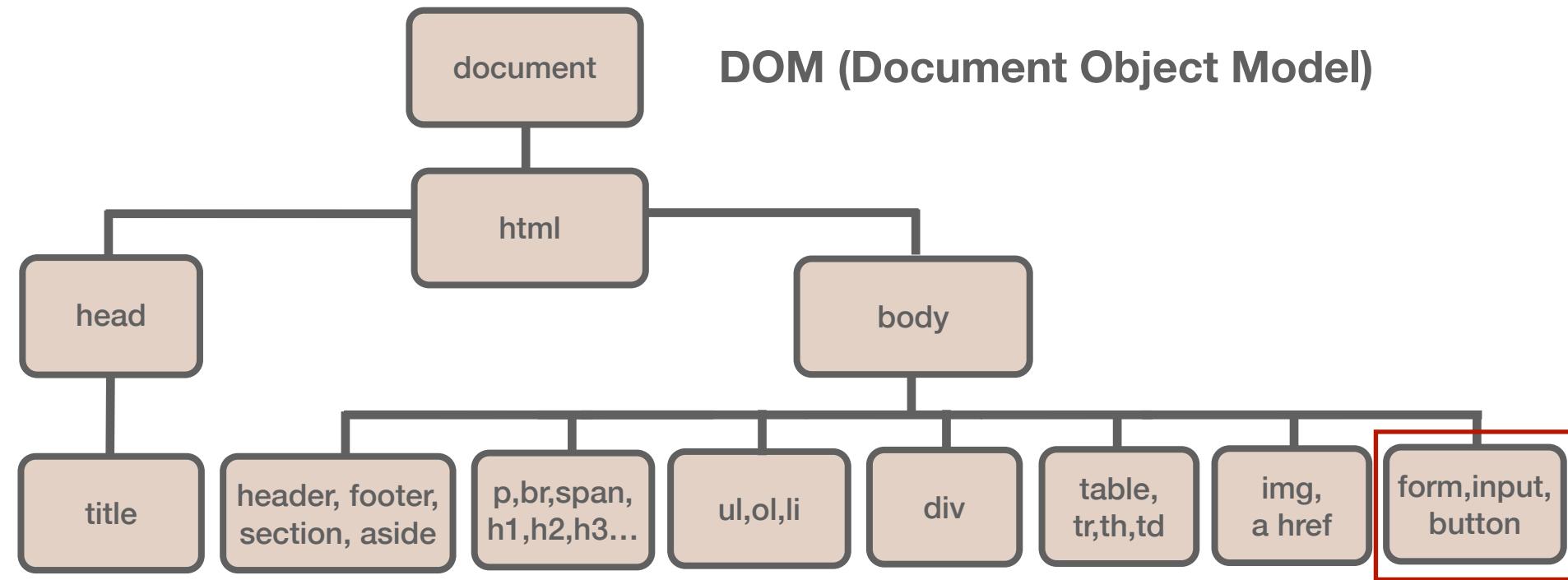
ent.style {

p { margin: 0 0 10px; } bootstrap.min.css:5

* { webkit_box_sizing: border-box; moz_box_sizing: border-box; box-sizing: border-box; } bootstrap.min.css:5

Form for handling data input in JavaScript

DOM (Document Object Model)



<https://www.runoob.com/htmldom/htmldom-tutorial.html>

Bootstrap

- BS Buttons
- BS Button Groups
- BS Glyphicons
- BS Badges/Labels
- BS Progress Bars
- BS Pagination
- BS Pager
- BS List Groups
- BS Panels
- BS Dropdowns
- BS Collapse
- BS Tabs/Pills
- BS Navbar

BS Forms

- BS Inputs
- BS Inputs 2
- BS Input Sizing
- BS Media Objects
- BS Carousel
- BS Modal
- BS Tooltip

Bootstrap Forms

 [Previous](#)[Next](#)

Bootstrap's Default Settings

Form controls automatically receive some global styling with Bootstrap:

All textual `<input>`, `<textarea>`, and `<select>` elements with class `.form-control` have a width of 100%.

Bootstrap Form Layouts

Bootstrap provides three types of form layouts:

https://www.w3schools.com/bootstrap/bootstrap_forms.asp

Home page

Home Page

Simple Demo of JavaScript and JQuery

Welcome to HTML/CSS/JS play

The answer is 50

X + Y = ?

Another X + Y = ?

Change Text Color of Welcome Message

Enter first number:

20

Enter second number:

30

Form receiving the input values.

```
<button type="button" class="btn btn-success" onclick="show_topic();>Change Text  
Color of Welcome Message</button>
```

```
<form id="myForm"> == $0  
  <div class="form-group">  
    <label for="1st">Enter first number:</label>  
    <input type="text" class="form-control" id="1st_num">  
  </div>  
  <div class="form-group">...</div>  
</form>
```

Storing 1st number value into input box with id="1st_num".

```
Filter :hov .cls + , □ □  
element.style {  
}  
* {  
  box-sizing: border-box;  
}  
form {  
  user agent stylesheet  
  display: block;
```



Elements

Console Sources

Performance insights

Network

Performance

Memory

Application

»

✖ 1

✖ 1



...

html body div.container div.row div.col-sm-12 form#myForm

Home page

Home Page

Simple Demo of JavaScript and JQuery

Welcome to HTML/CSS/JS play

The answer is 50

X + Y = ?

Another X + Y = ?

Change Text Color of Welcome Message

Enter first number:

20

Enter second number:

30

Elements

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Memory

Application

>

x 1

1

g

```
function ask_xy() {  
    var x = document.getElementById("1st_num").value;  
    var y = document.getElementById("2nd_num").value;  
    var z = compute_x_plus_y(x,y);  
    var x = document.getElementById("demo");  
    x.style.fontSize = "25px";  
    x.style.color = "red";  
    document.getElementById("demo").innerHTML = "The answer is " + z;  
}
```

Assign value stored in input box (id="1st_num") to x and
value stored in input box (id="2nd_num") to y.

Pass x and y values to function
compute_x_plus_y and store result in z.

matching selector or style

Home Page

Simple Demo of JavaScript and JQuery

Welcome to HTML/CSS/JS play

The answer is 50

X + Y = ? Another X + Y = ? Change Text Color of Welcome Message

Enter first number:
20

Enter second number:
30

Elements

Console

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Performance insights

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Performance

Memory

Application

x 1

F 1

g

```
function compute_x_plus_y(x,y) {  
    var z = 0;  
    x = parseInt(x);  
    y = parseInt(y);  
    z = x + y;  
    return z;  
}
```

Pass x and y values to function
compute_x_plus_y and store result in z.

```
function ask_for_x_n_y() {  
    var x = prompt("Enter x value");  
    var y = prompt("Enter y value");  
}
```

Styles Computed Layout >

Filter :hov .cls +

element.style {
}

* {
 -webkit-box-sizing: border-box;
 -moz-box-sizing: border-box;
 box-sizing: border-box;
}

form {
 user agent stylesheet
 display: block;

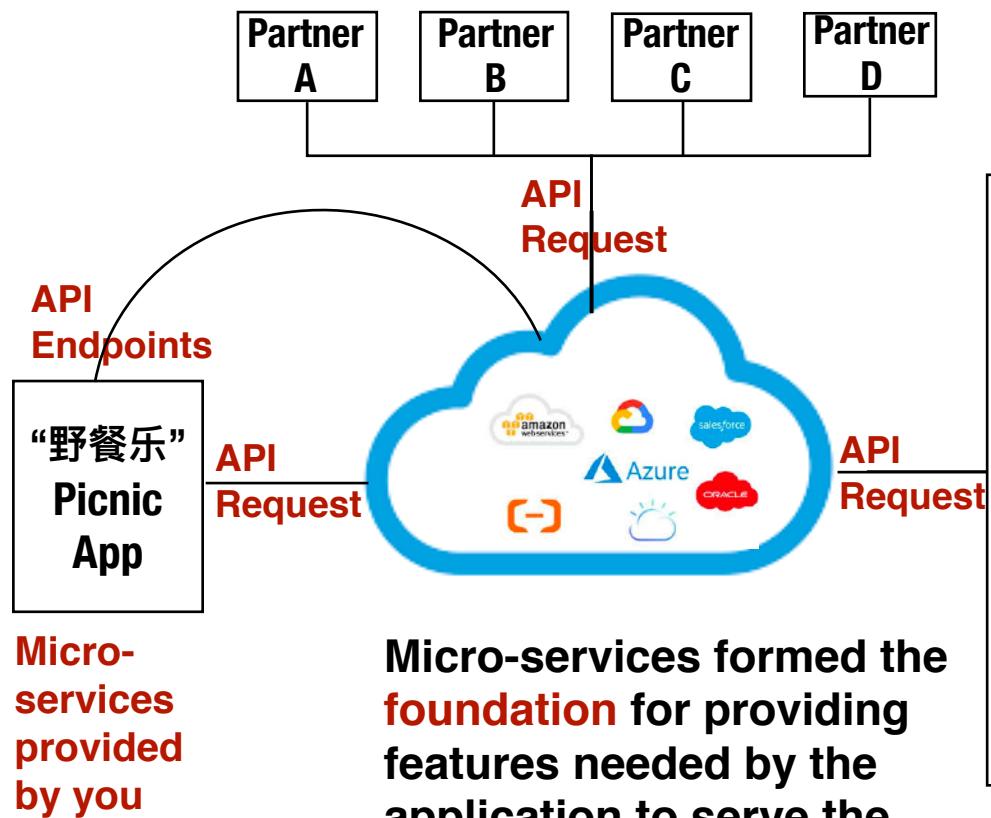
html body div.container div.row div.col-sm-12 form#myForm

Advanced JavaScript (JS-2015 / JS ES6)

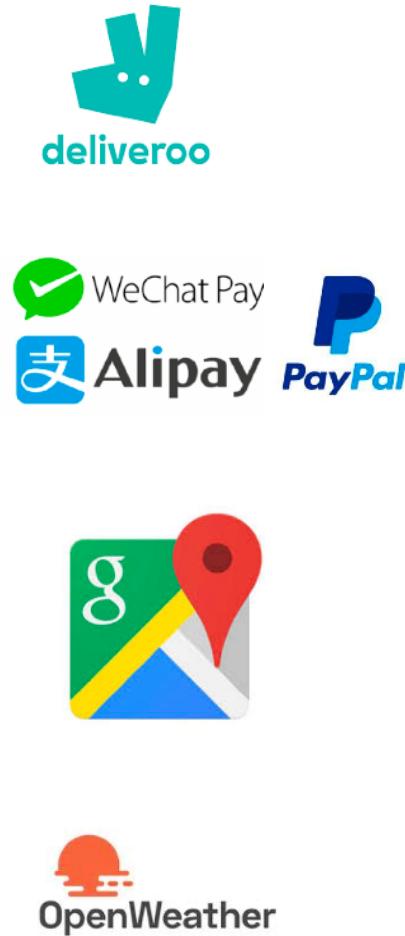
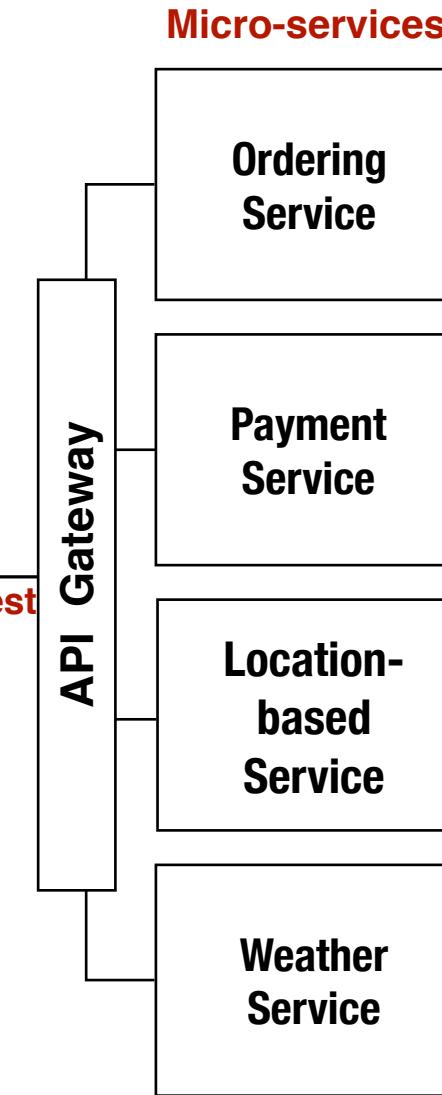


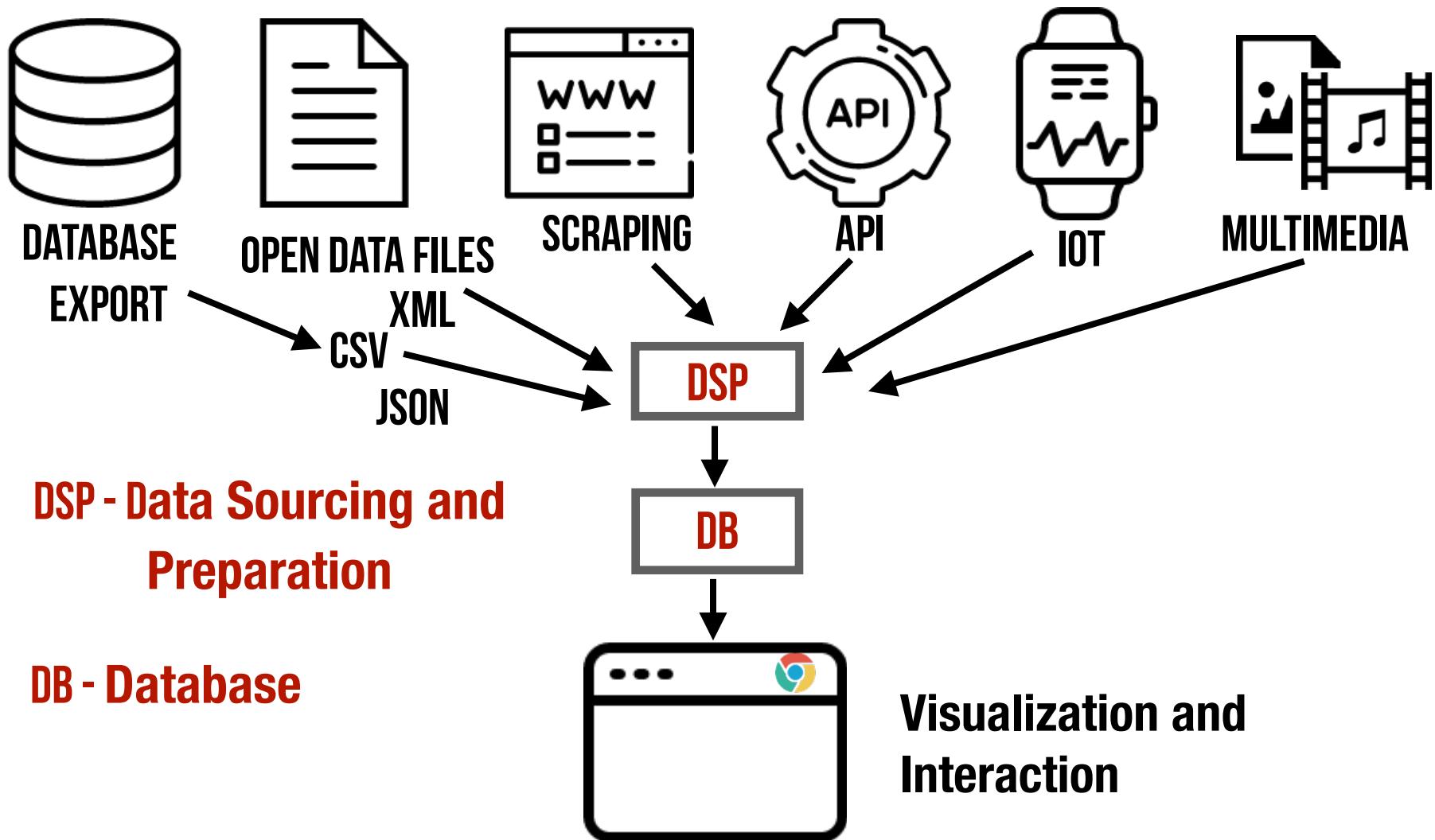
Understand JSON (JavaScript Object Notation) as a Standard for Data Exchange

Business partners requesting your services through API requests.



Micro-services formed the foundation for providing features needed by the application to serve the ultimate users/customers





DATASETS

GEOSPATIAL DATA



CITY DASHBOARD

City dynamics at a glance

New to The Site? **START HERE**

Search Data e.g. population

**BROWSE DATASETS**<https://data.gov.hk/en-data/dataset/hk-lcsd-facility-facility-bkbc>



HOME DATA LEARN COMMUNITY



ENG ▾

Home > Datasets > Basketball Courts (Free Outdoor Pitches/Courts)

Basketball Courts (Free Outdoor Pitches/Courts)

LEISURE AND CULTURAL SERVICES DEPARTMENT |

Recreation and Culture



UPDATE FREQUENCY: AS AND WHEN NEW FACILITY IS ADDED OR AMENDMENT IS MADE

Location of Basketball Courts (Free Outdoor Pitches/Courts)

Data Dictionary : https://www.lcsd.gov.hk/datagovhk/facility/facility-bkbc_data_dictionary.pdf

1 JSON file(s)



Add All to Queue

[{"District_en": "Kowloon City", "District_cn": "九龍城區", "Name_en": "Carpenter Road Park", "Name_cn": "賈炳達道公園", "Address_en": "Carpenter Road, Kowloon City, Kowloon.", "Address_cn": "九龍城賈炳達道", "GIHS": "9G5i7NFpXL", "Court_no_en": "4", "Court_no_cn": "4", "Ancillary_facilities_en": "Toilets are provided in the Park.
Other facilities include a jogging track, 7 fitness stations, a cycling track, 2 sets of children's playground, an elderly fitness station, a 7-a-side hard-surface soccer pitch and 2 volleyball courts.
Barrier Free Facilities: Accessible Toilet, Tactile Guide Path, Braille Directory Map\\Floor Plan
", "Ancillary_facilities_cn": "公園內設有洗手間
其他設施包括1條緩跑徑、7個健身站、1條單車徑、2個兒童遊樂場、1個長者健身站、1個7人硬地足球場和2個排球場
無障礙設施: 暢通易達洗手間、觸覺引路帶、觸覺點字及觸覺平面圖。
", "Opening_hours_en": "7 am to 11 pm daily", "Opening_hours_cn": "每日上午7時至晚上11時", "Phone": "2716 9962", "Remarks_en": "", "Remarks_cn": "", "Longitude": "114-11-27", "Latitude": "22-19-52"}, {"District_en": "Kowloon City", "District_cn": "九龍城區", "Name_en": "Ho Man Tin Park", "Name_cn": "何文田公園", "Address_en": "No.1 Chung Yee Street, Ho Man Tin, Kowloon.", "Address_cn": "九龍何文田忠義街一號", "GIHS": "MSKgwBPmtd", "Court_no_en": "2", "Court_no_cn": "2", "Ancillary_facilities_en": "Men's and ladies' changing rooms and toilets
A fee-charging car park (including 1 designated disabled parking space)
Other facilities include a hard-surface 7-a-side soccer pitch cum handball court, a children's playground and a jogging track with 6 fitness stations.
Barrier Free Facilities: Accessible Toilet, Tactile Guide Path, Braille Directory Map\\Floor Plan", "Ancillary_facilities_cn": "男、女更衣室及洗手間
1個收費停車場 (設有1個殘疾人士專用車位)
其他設施包括1個硬地7人足球場兼手球場、1個兒童遊樂場、1條緩跑徑和6個健身站
無障礙設施: 暢通易達洗手間、觸覺引路帶、觸覺點字及觸覺平面圖", "Opening_hours_en": "7 am to 11 pm daily", "Opening_hours_cn": "每日上午7時至晚上11時", "Phone": "2762 7837", "Remarks_en": "", "Remarks_cn": "", "Longitude": "114-10-50", "Latitude": "22-18-44"}, {"District_en": "Kowloon City", "District_cn": "九龍城區", "Name_en": "Hoi Sham Park", "Name_cn": "海心公園", "Address_en": "Yuk Yat Street, Tokwawan, Kowloon.", "Address_cn": "九龍土瓜灣旭日街", "GIHS": "nZ2deVMDpF", "Court_no_en": "1", "Court_no_cn": "1", "Ancillary_facilities_en": "Men's and ladies' toilets
Other facilities include 2 hard-surface 5-a-side soccer, a children's playground and elderly fitness equipment.
Barrier Free Facilities: Accessible Toilet, Tactile Guide Path, Braille Directory Map\\Floor Plan", "Ancillary_facilities_cn": "男、女洗手間
其他設施包括2個硬地5人足球場、兒童遊樂場及長者健體設施
無障礙設施: 暢通易達洗手間、觸覺引路帶、觸覺點字及觸覺平面圖", "Opening_hours_en": "7 am to 11 pm daily", "Opening_hours_cn": "每日上午7時至晚上11時", "Phone": "2334 3576 \ 2762 2083", "Remarks_en": "", "Remarks_cn": "", "Longitude": "114-11-30", "Latitude": "22-18-54"}, {"District_en": "Kowloon City", "District_cn": "九龍城區", "Name_en": "Junction Road Park", "Name_cn": "聯合道公園", "Address_en": "Junction Road, Kowloon City, Kowloon.", "Address_cn": "九龍聯合道", "GIHS": "9G5i7NFpXL", "Court_no_en": "4", "Court_no_cn": "4", "Ancillary_facilities_en": "Toilets are provided in the Park.
Other facilities include a jogging track, 7 fitness stations, a cycling track, 2 sets of children's playground, an elderly fitness station, a 7-a-side hard-surface soccer pitch and 2 volleyball courts.
Barrier Free Facilities: Accessible Toilet, Tactile Guide Path, Braille Directory Map\\Floor Plan
", "Ancillary_facilities_cn": "公園內設有洗手間
其他設施包括1條緩跑徑、7個健身站、1條單車徑、2個兒童遊樂場、1個長者健身站、1個7人硬地足球場和2個排球場
無障礙設施: 暢通易達洗手間、觸覺引路帶、觸覺點字及觸覺平面圖。
", "Opening_hours_en": "7 am to 11 pm daily", "Opening_hours_cn": "每日上午7時至晚上11時", "Phone": "2716 9962", "Remarks_en": "", "Remarks_cn": "", "Longitude": "114-11-27", "Latitude": "22-19-52"}]

- Convert JSON to CSV (<https://codebeautify.org/jsonviewer>)
- Convert XML to CSV (<https://www.convertcsv.com/xml-to-csv.htm>)
- Import CSV into Excel or Numbers

JSON Viewer

Save & Share

Sample

```
1 [{"District_en": "Kowloon City", "District_cn": "九龍城區",  
  "Name_en": "Carpenter Road Park", "Name_cn": "賈炳達道公園",  
  "Address_en": "Carpenter Road, Kowloon City, Kowloon.",  
  "Address_cn": "九龍城賈炳達道", "GIHS": "9G5i7NFnXL",  
  "Court_no_en": "4", "Court_no_cn": "4",  
  "Ancillary_facilities_en": "<li>Toilets are provided in the Park.<br><li>Other facilities include a jogging track, 7 fitness stations, a cycling track, 2 sets of children's playground, an elderly fitness station, a 7-a-side hard-surface soccer pitch and 2 volleyball courts.<br><li>Barrier Free Facilities: Accessible Toilet, Tactile Guide Path, Braille Directory Map</Floor Plan<br>"},  
  {"Ancillary_facilities_cn": "<li>公園內設有洗手間<br><li>其他設施包括1條緩跑徑、7個健身站、1條單車徑、2個兒童遊樂場、1個長者健身站、1個7人硬地足球場和2個排球場<br><li>無障礙設施：暢通易達洗手間、觸覺引路帶、觸覺點字及觸覺平面圖。<br>", "Opening_hours_en": "7 am to 11 pm daily",  
  "Opening_hours_cn": "每日上午7時至晚上11時", "Phone": "2716 9962", "Remarks_en": "", "Remarks_cn": "", "Longitude": "114-11-27", "Latitude": "22-19-52"}, {"District_en": "Kowloon City", "District_cn": "九龍城區", "Name_en": "Ho Man Tin Park", "Name_cn": "何文田公園", "Address_en": "No.1 Chung Yee Street, Ho Man Tin, Kowloon.", "Address_cn": "九龍何文田忠義街一號", "GIHS": "MSKgwBPmtd", "Court_no_en": "2", "Court_no_cn": "2", "Ancillary_facilities_en": "<li>Men's and ladies' changing rooms and toilets<br><li>A fee-charging car park (including 1 designated disabled parking space)<br><li>Other facilities include a hard-surface 7-a-side soccer pitch cum handball court, a children's playground and a jogging track with 6 fitness stations.<br><li>Barrier Free Facilities: Accessible Toilet, Tactile Guide Path, Braille Directory Map</Floor Plan", "Opening_hours_en": "7 am to 11 pm daily", "Opening_hours_cn": "每日上午7時至晚上11時", "Phone": "2716 9962", "Remarks_en": "", "Remarks_cn": "", "Longitude": "114-11-27", "Latitude": "22-19-52"}]
```

Result mode:

view ▾

Load Url

Browse

Tree Viewer

2 Tab Space ▾

Beautify

(i) X

Website Designer Near You

Stallions SEO LLC

We want to make you
businesses phone ring!

OPEN

Minify

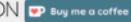
Validate

```
array > 0 >
▼ array [228]
  ▼ 0 {18}
    District_en : Kowloon City
    District_cn : 九龍城區
    Name_en : Carpenter Road Park
    Name_cn : 賈炳達道公園
    Address_en : Carpenter Road, Kowloon City, Kowloon.
    Address_cn : 九龍城賈炳達道
    GIHS : 9G5i7NFpXL
    Court_no_en : 4
    Court_no_cn : 4
    Ancillary_facilities_en : <li>Toilets are provided in the Park.<br><li>Other facilities include a jogging track, 7 fitness stations, a cycling track, 2 sets of children's playground, an elderly fitness station, a 7-a-side hard-surface soccer pitch and 2 volleyball courts.<br><li>Barrier Free Facilities: Accessible Toilet, Tactile Guide Path, Braille Directory Map/Floor Plan<br>
    Ancillary_facilities_cn : <li>公園內設有洗手間<br><li>其他設施包括1條緩跑徑、7個健身站、1條單車徑、2個兒童遊樂場、1個長者健身體站、1個7人硬地足球場和2個排球場<br><li>無障礙設施 暢通易達洗手間、觸覺引路帶、觸
```

<https://codebeautify.org/jsonviewer>

Convert CSV to JSON

Use the tool on this page to convert CSV data to JSON



Command Line and Desktop Tools Now Available



What can this tool do? ▾

What are my options? ▾

What else? ▾

Step 1: Select your input

Enter Data Choose File Enter URL

Tuen Mun,屯門區,Heng Kwai Street Playground,恒貴街遊樂場,"6, Heng Kwai Street, Tuen Mun",屯門恒貴街6號,QceapQmibx,1,1,"Men's Toilet, Ladies' Toilet, Toilet for Persons with a Disability, Changing Room and Baby Care Room",男洗手間、女洗手間、暢通道Kwai Tsing,葵青區,Tsing Yi Northeast Park,青衣東北公園,"10 Tam Kon Shan Road, Tsing Yi",青衣恒翠山10號,mmUuxFQDGX,2 Basketball cum Volleyball Courts,2個籃球暨排球場,<lb>1 11-a-side Artificial Turf Soccer Pitch</lb><lb>1 Piazza</lb><lb>1 Skateboard Kwun Tong,觀塘區,Sau Ming Road Park,秀明道公園,"20 Sau Ming Road, Sau Mau Ping, Kwan Tong, Kowloon",九龍觀塘秀茂坪秀明道20號,odpwMhJ,2,2,<lb>Toilets and changing rooms are provided in the Playground.
<lb>1 Barrier Free Facilities: Accessible North,北面,<lb>1 Wo Road Basketball Court,百和路藍球場,"Chi Wa Lane, Farning, N.T.",新界粉嶺華廈路1號,qirImuznMld,1,1,Barrier Free Facilities: Tactile Guide Path,無障礙設施：觸覺引路帶,24 hours daily,全日開放,2679 2818,With Floodlight,設有射燈,114-7-59,22-4 Sai Kung,西貢區,Tai Ping Village Playground,太平村遊樂場,"Po Lo Che Road, Sai Kung",西貢波羅華路,RzNsmQxh2J,1,1,Barrier Free Facilities: Tactile Guide Path, Braille Directory Map/Floor Plan*,無障礙設施：觸覺引路帶、觸覺點字及觸覺平面圖,7am - 6pm, -Sai Kung,西貢區,Chui Ling Lane Playground,昌祺里遊樂場,"Chui Ming Street, Tsing Kwan O",將軍澳彩明街,hbhmmnH3,2,2,Barrier Free Facilities: Tactile Guide Path, Braille Directory Map/Floor Plan*,無障礙設施：觸覺引路帶、觸覺點字及觸覺平面圖,9am - -Sai Kung,西貢區,Sheung Ning Playground,常寧遊樂場,"Sheung Ning Road, Tsueung Kwan O",將軍澳常寧路,KsTjAOvK9,3,3,<lb>Changing rooms and toilets</lb><lb>1 Floodlights
<lb>1 Barrier Free Facilities: Accessible Toilet, Tactile Guide Path, Braille Directory Kwun Tong,觀塘區,Tung Tong Recreation Ground,觀塘遊樂場,"No.6, Tsui Ping Road, Kwan Tong",觀塘翠屏路6號,vwKpuLytn,3,3,<lb>Toilets, changing rooms with lockers and outdoor storage cages are provided in the Recreation Ground.</lb><lb>The courts c Tai Po,大埔區,San Tong Tsuen Playground,新壇村遊樂場,"San Tong Tsuen, Tai Po, N.T.",大埔新壇村,hE635g7ch,Half Court,半個,7 am to 11 pm,早上七時至晚上十一時,3183 9050,,114-8-9,22-26-5 Tai Po,大埔區,Shuen Wan Joint Village Basketball Court,船灣聯村藍球場,"Shuen Wan Joint Village, Tai Po, N.T.",大埔船灣聯村,pQcG3zwdf,1,1,,7 am to 11 pm,早上七時至晚上十一時,3183 9050,,114-12-34,22-28-5 North,北面,Tong Kung Leng Basketball Court,同慶籃球場,"Tong Kung Lena, Sheung Shui , N.T.",新界上水康公錦,hE635q7ch,1,1,Barrier Free Facilities: Tactile Guide Path,無障礙設施：觸覺引路帶,24 hours daily,全日開放,2679 2818,With Floodlight,設有射燈,11- Clear Input Example 1 Example 2

Input Records- Header: true Header Fields: 18
Data: Separator: , Fields: 18 Records: 228

Step 2: Choose input options (optional) ▾

Step 3: Choose output options (optional) ▾

Step 4: Create Custom Output via Template (optional) ▾

Step 5: Generate output

Choose Conversion Type:

CSV To JSON CSV To Keyed JSON CSV To JSON Array CSV To JSON Column Array

Result Data: 

```
Version: 2023-07-17
{
    "Remarks_en": "",
    "Longitude": "114-15-43",
    "Latitude": "22-18-55"
},
{
    "District_en": "Kwun Tong",
    "District_ch": "觀塘區",
    "Name_en": "Kwun Tong Recreation Ground",
    "Name_ch": "觀塘遊樂場"
}
```

<https://www.convertcsv.com/csv-to-json.htm>



Weather in your city

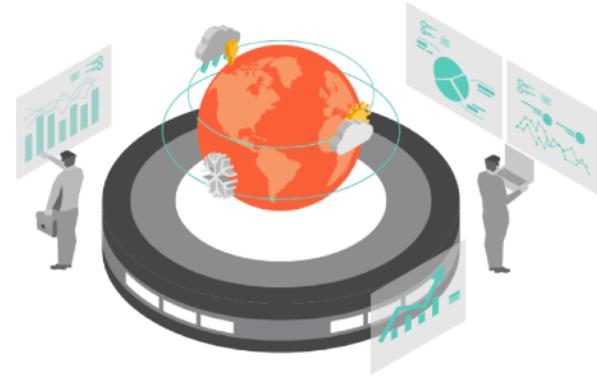
Get Started API Pricing Maps FAQ Partners Blog Marketplace Sign in Support

OpenWeather global services

Weather forecasts, nowcasts and history in fast and elegant way

2 Billion Forecasts Per Day
2,500 new subscribers a day

2,600,000 customers
20+ weather APIs



Search city

Search



Different Weather?

Metric: °C, m/s

Imperial: °F, mph

3:39pm, Sep 12

London, GB

21°C





Weather in your city

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format.

Call current weather data

How to make an API call

API call

```
https://api.openweathermap.org/data/2.5/weather?lat={lat}&lon={lon}&appid={API key}
```



Parameters

lat, lon required Geographical coordinates (latitude, longitude). If you need the geocoder to automatically convert city names and zip-codes to geo coordinates and the other way around, please use

[Geocoding API](#)

<https://openweathermap.org/current>

Call current weather data

[How to make an API call](#)

Bulk downloading

[Weather fields in API response](#)

JSON

XML

[List of condition codes](#)

[Min/max temperature in current weather API and forecast API](#)

Other features

[Geocoding API](#)

[Built-in geocoding](#)

[Built-in API request by city name](#)

[Built-in API request by city ID](#)

[Built-in API request by ZIP code](#)

Format

[Units of measurement](#)

[Multilingual support](#)

[Call back function for JavaScript code](#)



Weather in your city

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By city name

Description:

You can call by city name or city name, state code and country code. API responds with a list of weather parameters that match a search request.

API call:

`api.openweathermap.org/data/2.5/weather?q={city name}&appid={your api key}`

`api.openweathermap.org/data/2.5/weather?q={city name},{state code}&appid={your api key}`

`api.openweathermap.org/data/2.5/weather?q={city name},{state code},{country code}&appid={your api key}`

Parameters:

q city name, state code and country code divided by comma, use ISO 3166 country codes. You can specify the parameter not only in English. In this case, the API response should be returned in the same language as the language of requested location name if the location is in our predefined list of more than 200,000 locations.

Examples of API calls:

`api.openweathermap.org/data/2.5/weather?q=London`

`api.openweathermap.org/data/2.5/weather?q=London,uk`

Searching by states available only for the USA locations.

There is a possibility to receive a central district of the city/town with its own parameters

- List of condition codes
- Min/max temperature in current weather API and forecast API

- Other features

- Format
- Units format
- Multilingual support
- Call back function for JavaScript code

```
{"coord":{"lon":-0.1257,"lat":51.5085}, "weather":  
[{"id":804,"main":"Clouds","description":"overcast  
clouds","icon":"04n"}], "base":"stations", "main":  
{"temp":282.23,"feels_like":280.5,"temp_min":280.8,"temp_max":283.76,"press  
ure":1034,"humidity":87}, "visibility":10000, "wind":  
{"speed":3.09,"deg":270}, "clouds":{"all":100}, "dt":1675460291, "sys":  
{"type":2,"id":2075535,"country":"GB","sunrise":1675409784,"sunset":1675443  
126}, "timezone":0, "id":2643743, "name": "London", "cod":200}
```

Demonstration of REST API/JSON Data Flow

{JSON} Placeholder

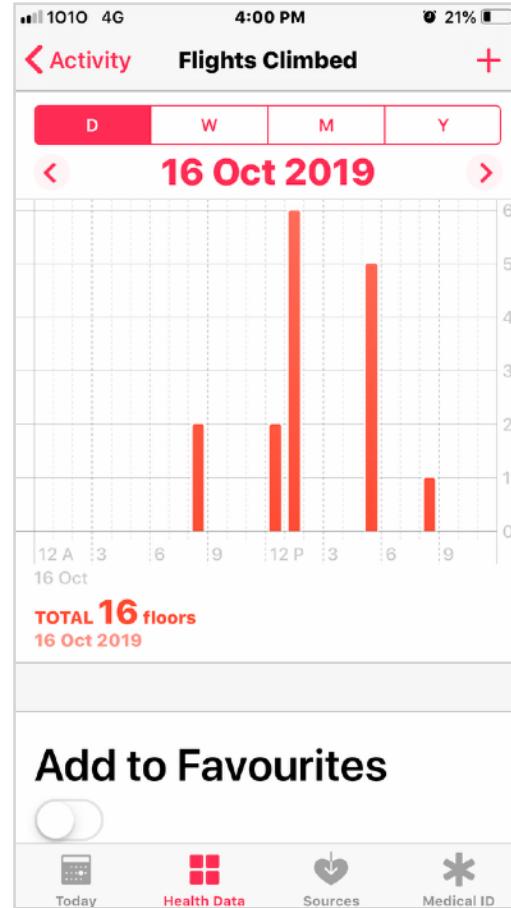
Free fake API for testing and prototyping.

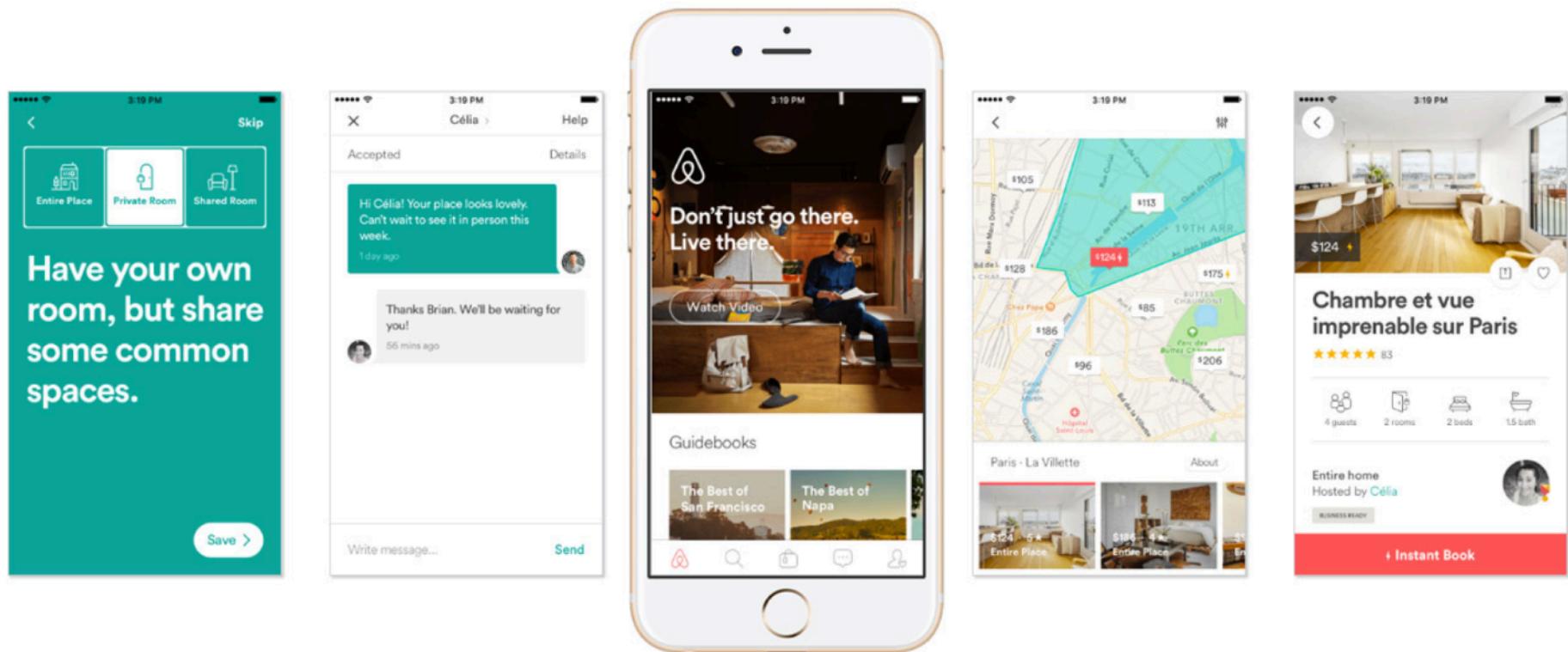
Powered by [JSON Server](#) + [LowDB](#)

As of Oct 2021, serving ~1.7 billion requests each month.

<https://jsonplaceholder.typicode.com/>

Implementation of Dashboard





Source: Airbnb



Data-Driven Documents

A small orange rectangular button with white text and a white stitched border. The text reads "Fork me on GitHub".



Like visualization and creative coding? Try interactive JavaScript notebooks in [Observable](#)!

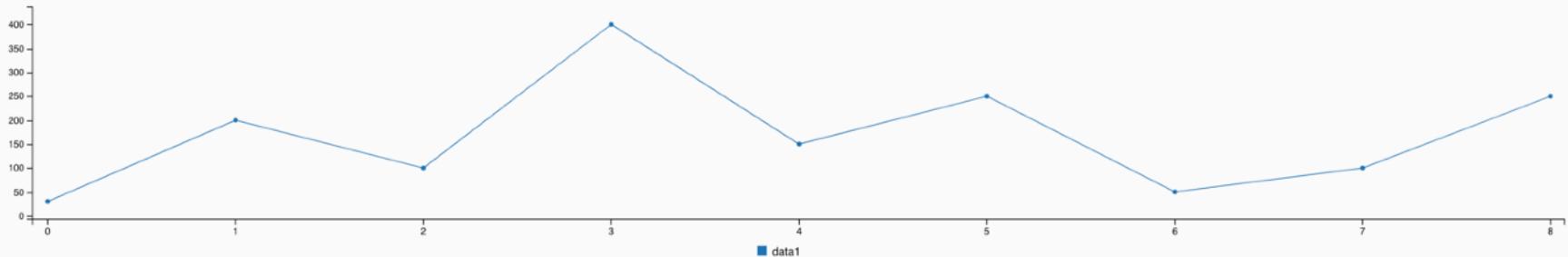
D3.js is a JavaScript library for manipulating documents based on data. **D3** helps you bring data to life using HTML, SVG, and CSS. D3's emphasis on web standards gives you the full capabilities of modern browsers without tying yourself to a proprietary framework, combining powerful visualization components and a data-driven approach to DOM manipulation.

[Download the latest version \(7.6.1\) here.](#)

-  See more examples
 -  Chat with the community
 -  Follow announcements
 -  Report a bug
 -  Ask for help

Source: <https://d3js.org/>

C3.js D3-based reusable chart library

[Start Demo](#)

Why C3?

Comfortable

C3 makes it easy to generate D3-based charts by wrapping the code required to construct the entire chart. We don't need to write D3 code any more.

Customizable

C3 gives some classes to each element when generating, so you can define a custom style by the class and it's possible to extend the structure directly by D3.

Controllable

C3 provides a variety of APIs and callbacks to access the state of the chart. By using them, you can update the chart even after it's rendered.

<https://c3js.org/>

Musings of a Strange Loop

Vainolo's Blog



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Buy Me a Coffee

All content on this site is provided as-is and is in no way the opinion of my previous, current, or future employers. Take a look at my [privacy policy](#) for more information.

When I learn something I like to write about it because it helps me remember things better, it creates an archive where I can go back and see how things are done (my way :-)), and it's a good way to share what I learn. So here it is. The code for this lesson (and all future lessons) is located here: <https://github.com/vainolo/learning-c3>

One of the things I really like about JavaScript is that you can start with a text editor and a browser and create incredibly complex things, like in this case. I'll start by creating a simple line chart from data embedded in the same `HTML` page where the chart is shown. The code is very simple:

```
1 <html>
2   <head>
3     <script src="https://unpkg.com/d3@5.12.0/dist/d3.min.js"></script>
4     <link href="https://unpkg.com/c3@0.7.11/c3.min.css" rel="stylesheet">
5     <script src="https://unpkg.com/c3@0.7.11/c3.min.js"></script>
6   </head>
7   <body>
8     <div id="chart"></div>
9     <script>
10    var chart = c3.generate({
11      bindto: '#chart',
12      data: {
13        columns: [
14          ['data1', 50, 20, 10, 40, 15, 25]
15        ]
16      }
17    });
18    </script>
19  </body>
20 </html>
```

The code is based on the C3.js getting started with a small twist – no need to download code and build dependencies as the code is referenced directly from unpkg.com. Probably not what you would do in production but for learning it's very powerful.

Next I create a `div` that will contain the chart, and lastly generate the chart using `c3.generate`. Here's the resulting chart:

Just like this,
out of the box,
we get



Source: <https://vainolo.com/2019/10/12/learning-c3-js-lesson-1-getting-started/>

```
<html>
  <head>
    <script src="https://unpkg.com/d3@5.12.0/dist/d3.min.js"></script>
    <link href="https://unpkg.com/c3@0.7.11/c3.min.css" rel="stylesheet">
    <script src="https://unpkg.com/c3@0.7.11/c3.min.js"></script>
  </head>
  <body>
    <div id="chart"></div>
    <script>
      var chart = c3.generate({
        bindto: '#chart',
        data: {
          columns: [
            ['data1', 50, 20, 10, 40, 15, 25]
          ]
        }
      });
    </script>
  </body>
</html>
```

Id Selector “chart” is used here to define location for displaying the chart.

C3 chart is a data structure presented by object of objects to be linked to selector.

Define data structure as objects having array based value pairs (e.g. columns as key to array)

chart01.html

Default chart type is line chart.

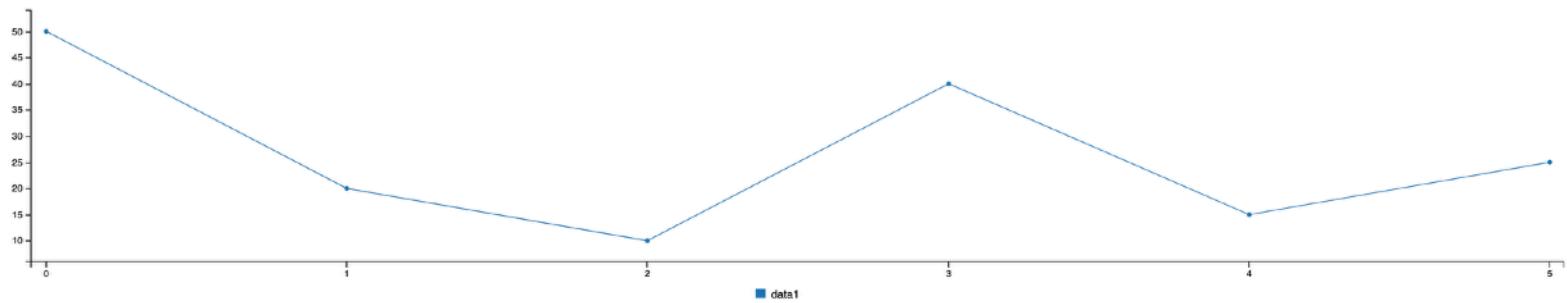


chart01.html

Chart

Line Chart

Line chart with sequential data.

[View details »](#)

Simple XY Line Chart

Simple line chart with custom x.

[View details »](#)

Step Chart

Display as Step Chart.

[View details »](#)

Bar Chart

Display as Bar Chart

[View details »](#)

Timeseries Chart

Simple line chart with timeseries data.

[View details »](#)

Multiple XY Line Chart

Multiple line chart with multiple custom x.

[View details »](#)

Area Chart

Display as Area Chart.

[View details »](#)

Stacked Bar Chart

Display as Stacked Bar Chart.

[View details »](#)

Spline Chart

Display as Spline Chart.

[View details »](#)

Line Chart with Regions

Set regions for each data with style.

[View details »](#)

Stacked Area Chart

Display as Stacked Area Chart.

[View details »](#)

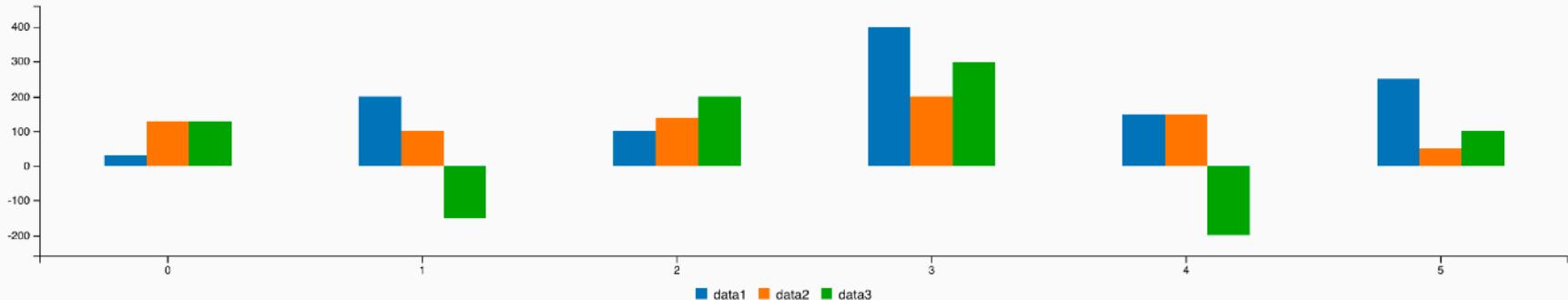
Scatter Plot

Display as Scatter Plot.

[View details »](#)

<https://c3js.org/examples.html#chart>

Bar Chart



```
# chart_bar.js
```

```
var chart = c3.generate({
  data: {
    columns: [
      ['data1', 30, 200, 100, 400, 150, 250],
      ['data2', 130, 100, 140, 200, 150, 50]
    ],
    type: 'bar'
  },
  bar: {
    width: {
      ratio: 0.5 // this makes bar width 50% of length between ticks
    }
  }
});
```

Define data structure as objects having array based value pairs (e.g. data1 and data2).

Define chart type as bar chart and set bar width.

https://c3js.org/samples/chart_bar.html

Picking Chart Colors



HTML COLOR CODES



Get HTML color codes, Hex color codes, RGB and HSL values with our color picker, color chart and HTML color names. Let's go!



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Create a Professional Online Presence for Yourself or Your Business with Wix. Start Today!

OPEN



HEX #FF5733

RGB 255, 87, 51

HSL 11, 80%, 60%



Color 1 Color 2 Color 3 Color 4 Color 5 Color 6



HELPFUL TIPS



Picking

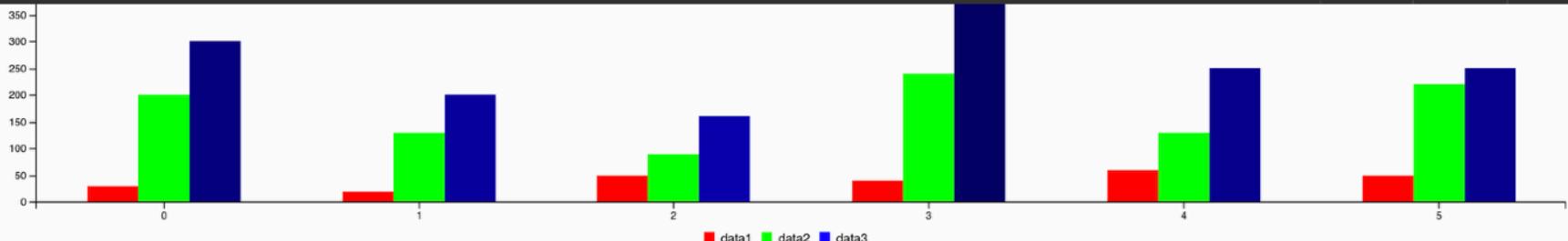


Saving



Exporting

<https://htmlcolorcodes.com/>



```
# data_color.js
```

```
var chart = c3.generate({
  data: {
    columns: [
      ['data1', 30, 20, 50, 40, 60, 50],
      ['data2', 200, 130, 90, 240, 130, 220],
      ['data3', 300, 200, 160, 400, 250, 250]
    ],
    type: 'bar',
    colors: {
      data1: '#ff0000',
      data2: '#00ff00',
      data3: '#0000ff'
    },
    color: function (color, d) {
      // d will be 'id' when called for legends
      return d.id && d.id === 'data3' ? d3.rgb(color).darker(d.value / 150) : color;
    }
});
```

Define data structure and chart type.

Overwrite default color.

https://c3js.org/samples/data_color.html

```
var chart = c3.generate({
  data: {
    columns: [
      ['data1', 30, 200, 100, 400, 150, 250],
      ['data2', 130, 100, 140, 200, 150, 50]
    ],
    type: 'bar',
    colors: {
      data1: '#7FB3D5',
      data2: '#598EAE'
    }
  },
  bar: {
    width: {
      ratio: 0.5 // this makes bar width 50% of length between ticks
    },
    // or
    //width: 100 // this makes bar width 100px
  }
});
```

Define data structure and chart type.

Overwrite default color.

chart02.html

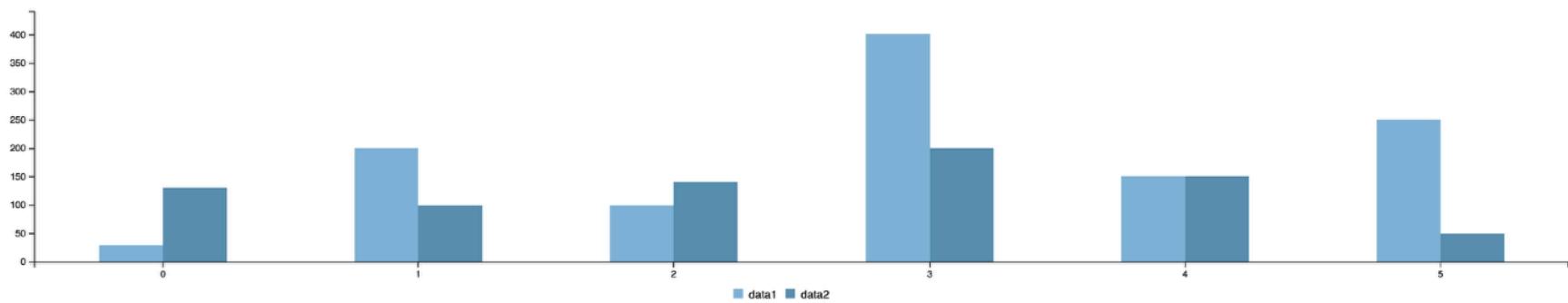


chart02.html

Geodata Mapping

Using Leaflet and Open Street Map



an open-source JavaScript library
for mobile-friendly interactive maps



[Overview](#) [Tutorials](#) [Docs](#) [Download](#) [Plugins](#) [Blog](#)

May 8, 2019 — [Leaflet 1.5.1](#) has been released!

Leaflet is the leading open-source JavaScript library for mobile-friendly interactive maps. Weighing just about 38 KB of JS, it has all the mapping [features](#) most developers ever need.

Leaflet is designed with *simplicity, performance* and *usability* in mind. It works efficiently across all major desktop and mobile platforms, can be extended with lots of [plugins](#), has a beautiful, easy to use and [well-documented API](#) and a simple, readable [source code](#) that is a joy to [contribute](#) to.

<https://leafletjs.com/>

Declare the parameters used by the map and the source of the map tiles.

Search

Where is this?

Go



Welcome to OpenStreetMap!

OpenStreetMap is a map of the world, created by people like you and free to use under an open licence.

Hosting is supported by [UCL](#), [Bytemark Hosting](#), and other [partners](#).

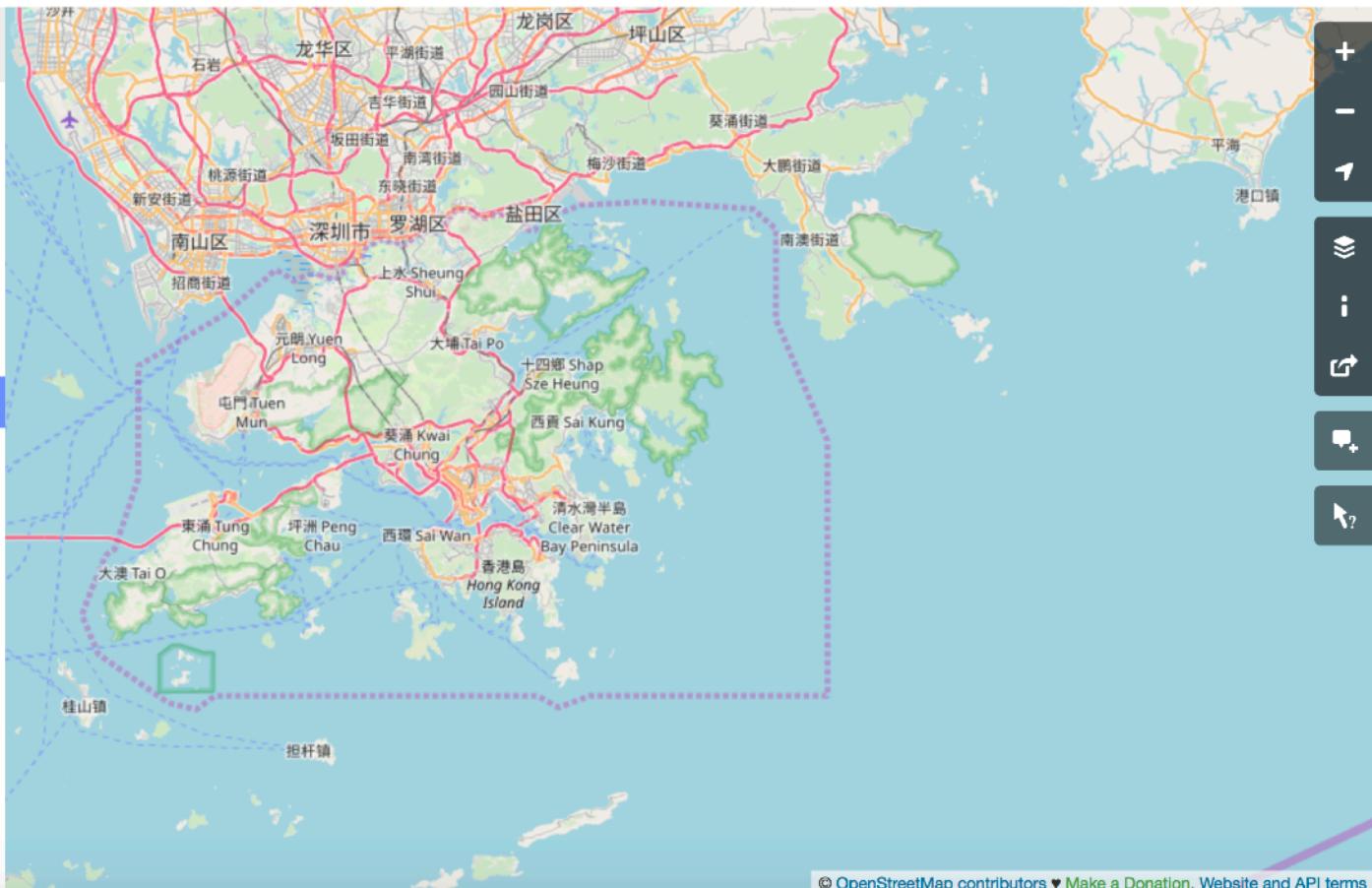
[Learn More](#)[Start Mapping](#)

SOTM



Dhaka, Bangladesh 2019

10 km
5 mi



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<https://www.openstreetmap.org>



Leaflet Tips and Tricks

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Table of Contents

Acknowledgements

Make sure you get the most up to date copy of Leaflet Tips and Tricks

Introduction

What is leaflet.js?

What do you need to get started?

Start With a Simple Map

We will walk through the building of a simple web page using an HTML file. The page will host a Leaflet map so that we can understand all the different portions of the file and the processes that needs to be gone through to make it happen.

- This wont be an *exact* template for building on, since there are some liberties that are taken, but it will do the job and provides a base for explanation of the process and it will demonstrate how easy it can be.

The following is the full code listing of the file `simple-map.html` that we will be examining:

```
<!DOCTYPE html>
<html>
<head>
  <title>Simple Leaflet Map</title>
  <meta charset="utf-8" />
  <link
    rel="stylesheet"
    href="http://cdn.leafletjs.com/leaflet-0.7/leaflet.css"
  />
</head>
```

<https://unpkg.com/leaflet@1.9.3/dist/leaflet.css>

[https://leanpub.com/leaflet-tips-and-tricks/
read#leanpub-auto-start-with-a-simple-map](https://leanpub.com/leaflet-tips-and-tricks/read#leanpub-auto-start-with-a-simple-map)

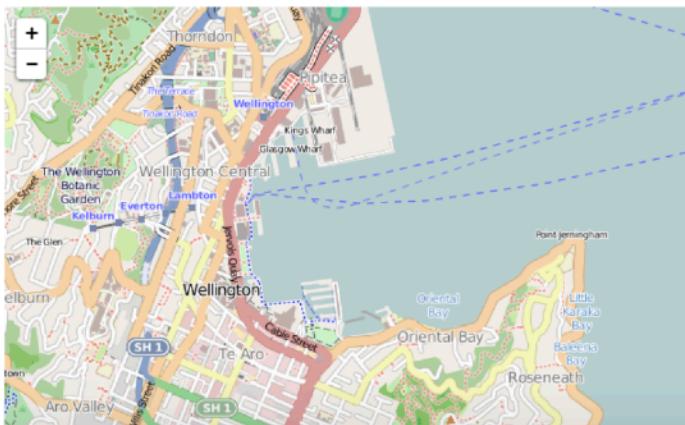
```

<!DOCTYPE html>
<html>
<head>
    <title>Simple Leaflet Map</title>
    <meta charset="utf-8" />
    <link
        rel="stylesheet"
        href="https://unpkg.com/leaflet@1.9.3/dist/leaflet.css" <-- 1
    />
</head>
<body>
    <div id="map" style="width: 600px; height: 400px"></div>
    <script
        src="https://unpkg.com/leaflet@1.9.3/dist/leaflet.js" <-- 2
    </script>

    <script>
        var map = L.map('map').setView([-41.2858, 174.78682], 14);
        mapLink =
            '<a href="http://openstreetmap.org">OpenStreetMap</a>';
        L.tileLayer(
            'http://(s).tile.openstreetmap.org/{z}/{x}/{y}.png', {
                attribution: 'Map data © ' + mapLink,
                maxZoom: 18,
            }).addTo(map);
    </script>
</body>
</html>

```

The output that it will produce on a web page will look like this;



1. Define the selector (i.e. `div id="map"`) for inserting the map into the DOM.
2. Initialize map view and tile layer.
3. Source of the map tiles (e.g. Open Street Map).

Adding a marker to our map

At some stage we will most likely want to add a marker to our map to pinpoint something. Leaflet makes the process nice and easy by including a [marker function with several options](#);

In its most simple form the following is the full code to show a map with a marker;

```
<!DOCTYPE html>
<html>
<head>
  <title>Marker Leaflet Map</title>
  <meta charset="utf-8" />
  <link
    rel="stylesheet"
    href="http://cdn.leafletjs.com/leaflet-0.7/leaflet.css"
  />
</head>
<body>
  <div id="map" style="width: 600px; height: 400px"></div>

  <script
    src="http://cdn.leafletjs.com/leaflet-0.7/leaflet.js">
  </script>

  <script>
    var map = L.map('map').setView([-41.2858, 174.78682], 14);
    mapLink =
      '<a href="http://openstreetmap.org">OpenStreetMap</a>';
    L.tileLayer(
      'http://{s}.tile.openstreetmap.org/{z}/{x}/{y}.png', {
        attribution: 'Map data © ' + mapLink,
        maxZoom: 18,
      }).addTo(map);
    var marker = L.marker([-41.29042, 174.78219])
      .addTo(map);
  </script>
</body>
</html>
```

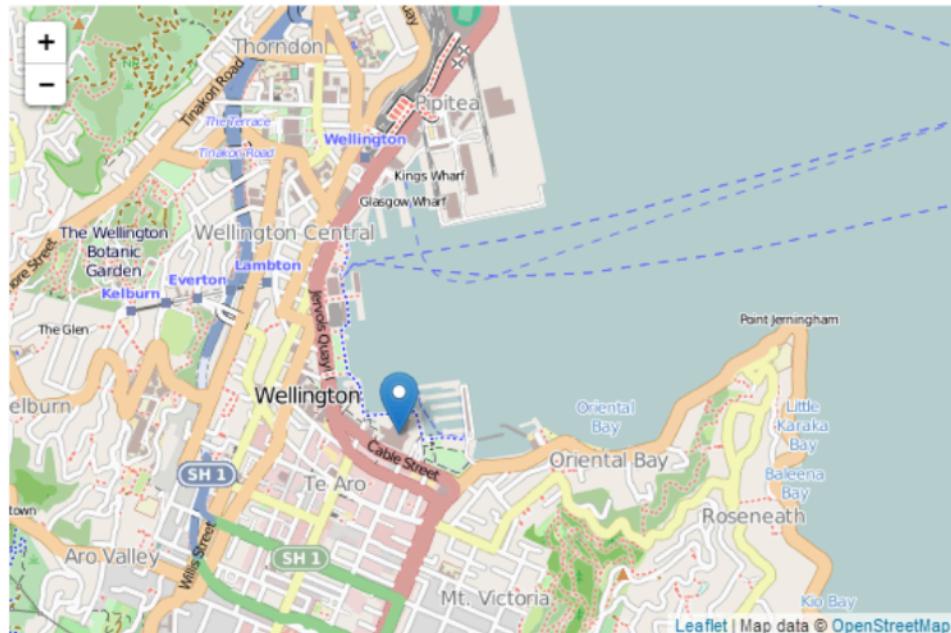
4

1. Define the selector (i.e. div id="map") for inserting the map into the DOM.
2. Initialize view and tile layer.
3. Source of the map tiles (e.g. Open Street Map).
4. Add a marker to the map view.

map01.html

[https://leanpub.com/leaflet-tips-and-tricks/
read#leanpub-auto-adding-a-marker-to-our-map](https://leanpub.com/leaflet-tips-and-tricks/read#leanpub-auto-adding-a-marker-to-our-map)

```
var map = L.map('map').setView([-41.2858, 174.78682], 14);
mapLink =
  '<a href="http://openstreetmap.org">OpenStreetMap</a>';
L.tileLayer(
  'http://{s}.tile.openstreetmap.org/{z}/{x}/{y}.png', {
    attribution: '&copy; ' + mapLink + ' Contributors',
    maxZoom: 18,
  }).addTo(map);
```



Map with marker

```
var marker = L.marker([-41.29042, 174.78219])
  .addTo(map);
```

Change the latitude and longitude codes of the map to your home town and place a marker with latitude and longitude codes of a notable landmark nearby.

Finding the **Latitude** and **Longitude** Coordinates

Google

google map

All Maps Images News Videos More Settings Tools SafeSearch on

About 7,200,000,000 results (0.58 seconds)

Google Maps Click the link to start the web app.
<https://maps.google.com>

Find a place. Your location. Trails. Dedicated lanes. Bicycle-friendly roads. Dirt/unpaved trails. Live traffic. Fast. Slow. 2000 km. Set depart & arrive time.

Maps
Your location. Trails. Dedicated lanes. Bicycle-friendly roads ...

Map
Find local businesses, view maps and get driving directions in ...

My Maps
Discover the world with Google Maps. Experience Street View ...
[More results from google.com »](#)

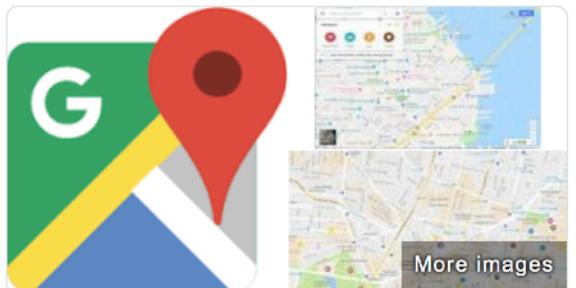
Location
Your location. Trails. Dedicated lanes. Bicycle-friendly roads ...

Settings
Tap to see quick actions. Unable to connect to Google Maps ...

Where's the Map?
Find local businesses, view maps and get driving directions in ...

Google Maps
<https://www.google.com.hk/maps>

Find local businesses, view maps and get driving directions in Google Maps.

 Google Maps
Website

Google Maps is a web mapping service developed by Google. It offers satellite imagery, aerial photography, street maps, 360° panoramic views of streets, real-time traffic conditions, and route planning for traveling by foot, car, bicycle and air, or public transportation.

[Wikipedia](#)

Date launched: February 8, 2005

Owner: Google

0

Enter the address or name of your destination.

SearchX

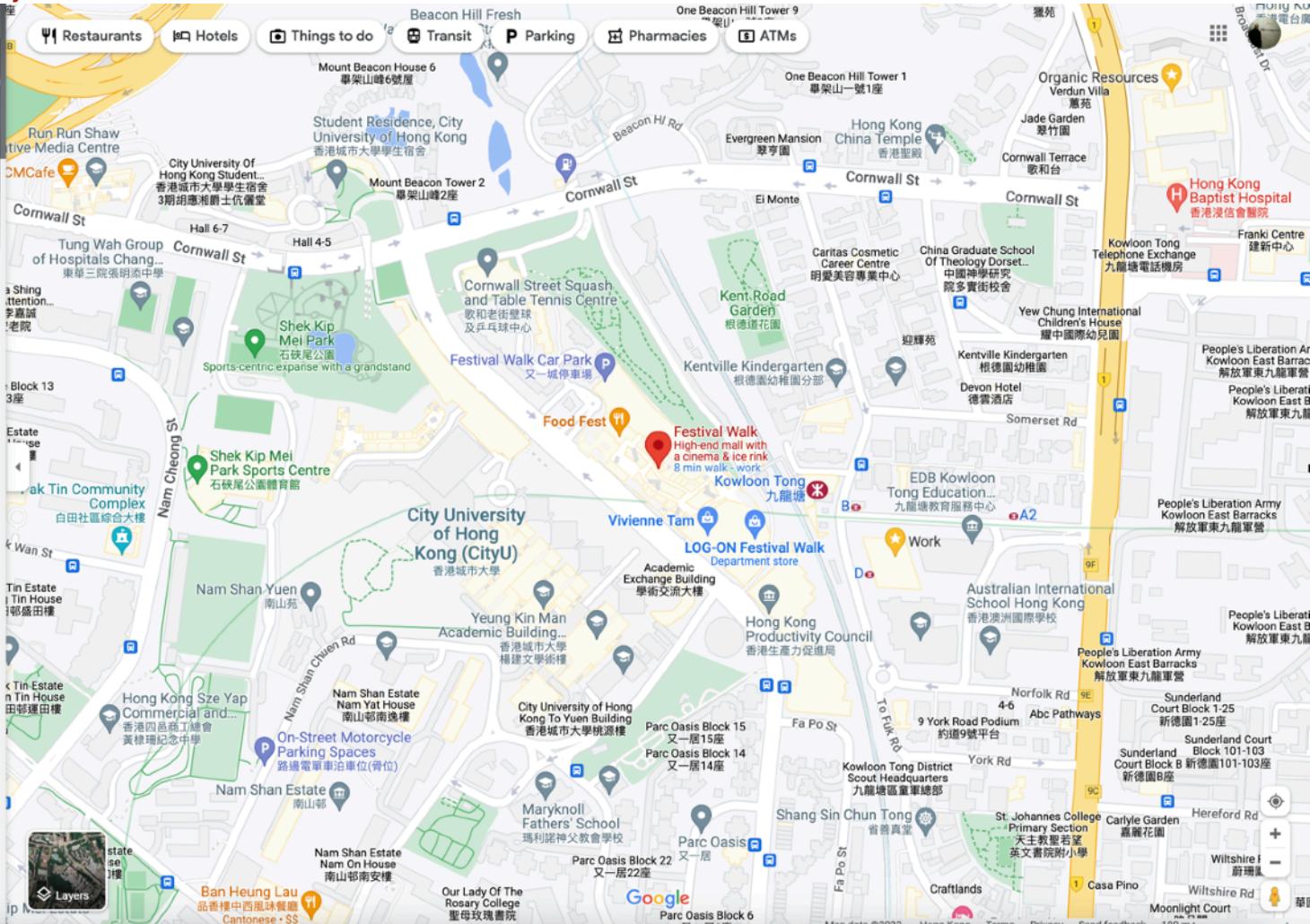


Festival Walk
又一城
4.1 ★★★★☆ 7,731 reviews
Shopping mall

Directions Save Nearby Send to phone Share

Upscale, contemporary indoor mall with 200+ stores & restaurants, plus a cinema & ice skating.

80 Tat Chee Ave, Kowloon Tong
Open · Closes 9PM
festivalwalk.com.hk
2844 2222
85PF+XQ Kowloon Tong
Send to your phone
Claim this business
Add a label



Festival Walk, Tat Chee Avenue, HK

Festival Walk

又一城

4.1 ★★★★☆ 7,731 reviews

Shopping mall

Directions Save Nearby Send to phone Share

Upscale, contemporary indoor mall with 200+ stores & restaurants, plus a cinema & ice skating.

80 Tat Chee Ave, Kowloon Tong

Open · Closes 9PM

festivalwalk.com.hk

2844 2222

85PF+XQ Kowloon Tong

Send to your phone

Claim this business

Add a label

Right mouse button to bring up the popup window. Click the latitude and longitude location to copy the codes.

22.33775, 114.17475

Directions from here

Directions to here

What's here?

Search nearby

Print

Add a missing place

Add your business

Report a data problem

Measure distance

Map data ©2022 Google

```

var map = L.map('map').setView([-41.2858, 174.78682], 14);
mapLink =
  '<a href="http://openstreetmap.org">OpenStreetMap</a>';
L.tileLayer(
  'http://{s}.tile.openstreetmap.org/{z}/{x}/{y}.png', {
    attribution: '&copy; ' + mapLink + ' Contributors',
    maxZoom: 18,
  }).addTo(map);

```



```

var marker = L.marker([-41.29042, 174.78219])
  .addTo(map);

```

Change the latitude and longitude codes of the map to your home town and place a marker with latitude and longitude codes of a notable landmark nearby.

map01.html

Retrieving Google Spreadsheet Data in JSON Format Through JS Code

Papa Parse

The powerful, in-browser CSV parser for big boys and girls

[Download](#)[Demo](#)[Documentation](#)

```
// Parse CSV string
var data = Papa.parse(csv);

// Convert back to CSV
var csv = Papa.unparse(data);

// Parse local CSV file
Papa.parse(file, {
    complete: function(results) {
        console.log("Finished:", results.data);
    }
});

// Stream big file in worker thread
Papa.parse(bigFile, {
    worker: true,
    step: function(results) {
        console.log("Row:", results.data);
    }
});
```



<https://www.papaparse.com/>

1 contributor

33 lines (27 sloc) | 1.66 KB

Raw Blame   

```
1  <!DOCTYPE html>
2  <html>
3  <body>
4      <p id="food"></p>
5
6      <script type="text/javascript" src="https://cdnjs.cloudflare.com/ajax/libs/PapaParse/5.1.0/papaparse.min.js"></script>
7      <script type="text/javascript">
8          var public_spreadsheet_url = 'https://docs.google.com/spreadsheets/d/e/2PACX-1vRB4E_6RnpLP1wMjqcwsUvotNATB8Np30ntLxb7066ULcAHI9oqqRhuctFifPTYNd7DRNR56c
9
10         function init() {
11             Papa.parse(public_spreadsheet_url, {
12                 download: true,
13                 header: true,
14                 complete: showInfo
15             })
16         }
17
18         window.addEventListener('DOMContentLoaded', init)
19
20         function showInfo(results) {
21             var data = results.data
22
23             // data comes through as a simple array since simpleSheet is turned on
24             alert("Successfully processed " + data.length + " rows!")
25             document.getElementById("food").innerHTML = "<strong>Foods:</strong> " + [ data[0].Name, data[1].Name, data[2].Name ].join(", ");
26             console.log(data);
27         }
28
29         document.write("The published spreadsheet is located at <a target='_new' href='" + public_spreadsheet_url + "'>" + public_spreadsheet_url + "</a>");
30     </script>
31     <p><strong>This example is only going to work if it's on the internet or on a local server!</strong> To run a local server, run "terminal" or "command prompt
32     </body>
33 </html>
```

Demo Codes

<https://github.com/jsoma/tabletop/blob/master/examples/simple/no-tabletop.html>



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Name	Category	Healthiness
Carrot	Vegetable	Adequate
Pork Shoulder	Meat	Questionable
Bubblegum	Candy	Super High

1	Name	Category	Healthiness
2	Carrot	Vegetable	Adequate
3	Pork Shoulder	Meat	Questionable
4	Bubblegum	Candy	Super High
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Sample spreadsheet (Foods) - Sheet1

File Edit View Insert Format Data Tools Extensions Help Last edit was 3 minutes ago

New Open Import Make a copy Share

Share with others Publish to web

Print

A1

D E F G H I J K L M N O F

1 Name
2 Category
3 Price
4 Buttons
5 Email
6 Download
7 Rename
8 Move
9 Add shortcut to Drive
10 Move to trash
11 Version history
12 Make available offline
13 Details
14 Settings

Sample spreadsheet (Foods) - Sheet1

File Edit View Insert Format Data Tools Extensions Help Last edit was 3 minutes ago

Share

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	F
1	Name	Category	Healthiness													
2	Carrot	Vegetable	Adequate													
3	Pork Shoulder	Meat	Questionable													
4	Bubblegum	Candy	Super High													
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Link **Embed**

Sample spreadsheet... ▾ Comma-separated values (.csv) ▾

Publish

Published content & settings

Entire Document ▾

Start publishing

Automatically republish when changes are made

Sample spreadsheet (Foods) - Sheet1

Sample spreadsheet (Foods) - Sheet1

File Edit View Insert Format Data Tools Extensions Help Last edit was 3 minutes ago



Share

A1 Name Category Healthiness

1 Name Category Healthiness

2 Carrot Vegetable Adequate

3 Pork Shoulder Meat Questionable

4 Bubblegum Candy Super High

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L M N O F

A1

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[Link](#) [Embed](#)

Sample spreadsheet... Comma-separated values (.csv)

EwsJU0ayl6syuo8Z6dsQ_zRCDY/pub?gid=186998376&single=true&output=csv

Or share this link using:

Note: Viewers may be able to access the underlying data for published charts. [Learn more](#)

Published

▼ Published content & settings

Sample spreadsheet...

Stop publishing

Automatically republish when changes are made

Chart1

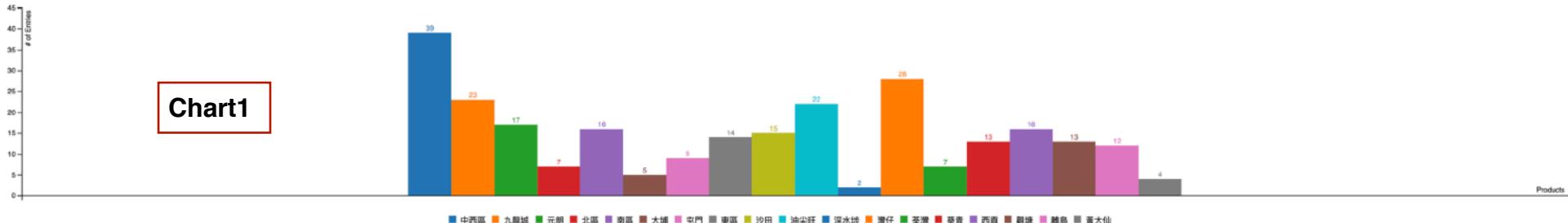
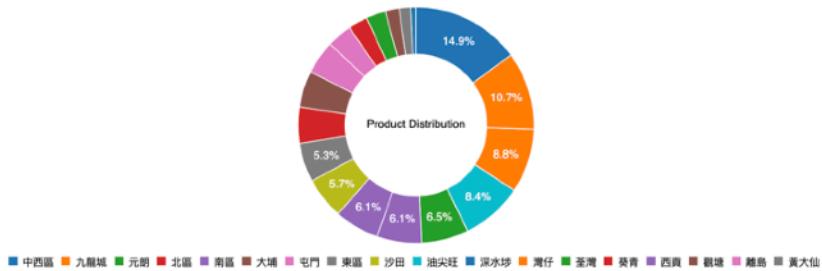


Chart2



Using Google Spreadsheet Data in JSON Format for Data Visualization

```

48 var chart = c3.generate({
49   data: {
50     columns: dataSet,
51     type : 'bar',
52     labels:true,
53     colors: {
54       radio: '#7FB3D5',
55       computer: '#5499C7',
56       tv: '#2980B9',
57       tablet: '#2471A3'
58     }
59   },
60   bar: {
61     title: "Product by Category:",
62     width: {
63       ratio: 0.5 // this makes bar width 50% of length
64     }
65   },
66   tooltip: {
67     show: false,
68   },
69   axis: {
70     x: {
71       label: 'Products',
72       type: 'category',
73       categories:['','','','']
74     },
75     y: {label: '# of Entries'}
76   },
77   bindto: '#chart1'
78 }); // end c3.generate
79
80 var chart = c3.generate({
81   data: {
82     columns: dataSet,
83     type : 'donut',
84     colors: {
85       radio: '#7FB3D5',
86       computer: '#5499C7',
87       tv: '#2980B9',
88       tablet: '#2471A3'
89     }
90   },
91   donut: {
92     title: "Product Distribution",
93   },
94   bindto: '#chart2'
95 }); // end c3.generate
96
97
98 console.log(data);
99

```

4

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```

31
32   for (i=0; i < data.length; i++ ) {
33     districts = districts + "<br>" + data[i].chi_district
34     items = []
35     items.push(data[i].chi_district)
36     items.push(data[i].total_no_of_cases)
37     dataSet.push(items)
38   }
39   document.getElementById("districts").innerHTML = districts
40

```

1. Define the selector
2. Define the Google Spreadsheet URL
3. Create the array of array structure for data mapping.
4. Generate the chart using mapped data structure and place it inside the DOM specified by the selector.

HTML

```

1  <!DOCTYPE html>
2  <html>
3    <head>
4      <title>Demo</title>
5      <meta charset="utf-8">
6      <meta name="viewport" content="width=device-width, initial-scale=1">
7      <link rel="stylesheet" type="text/css" href="https://cdnjs.cloudflare.com/ajax/libs/twitter-bootstrap/4.5.2/css/bootstrap.css">
8      <link href="https://cdnjs.cloudflare.com/ajax/libs/c3/0.7.11/c3.min.css" rel="stylesheet" type="text/css">
9      <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/leaflet/1.3.4/leaflet.css">
10     <link rel="stylesheet" href="css/style.css">
11   </head>
12   <body>
13     <p id="district"></p>
14     <p id="districts"></p>
15     <div id="chart1"></div><div id="chart2"></div>
16     <div id="map" style="width: 100%; height: 500px"></div>
17     <script src="https://cdnjs.cloudflare.com/ajax/libs/leaflet/1.3.4/leaflet.js"></script>
18     <script src="https://api.tiles.mapbox.com/mapbox.js/plugins/leaflet-markercluster/v0.4.0/leaflet.markercluster.js">
19     </script>
20     <script type="text/javascript" src="https://cdnjs.cloudflare.com/ajax/libs/d3/5.12.0/d3.min.js"></script>
21     <script type="text/javascript" src="https://cdnjs.cloudflare.com/ajax/libs/c3/0.7.11/c3.min.js"></script>
22     <script type="text/javascript" src="https://cdnjs.cloudflare.com/ajax/libs/PapaParse/5.1.0/papaparse.min.js"></script>
23     <script type="text/javascript" src="js/app.js"></script>
24     <p><strong>This example is only going to work if it's on the internet or on a local server!</strong>.</p>
25   </body>
26 </html>

```

The published spreadsheet is located at <https://docs.google.com/spreadsheets/d/e/2PACX-1vTzAUVeFq2IQR7aDc>

1

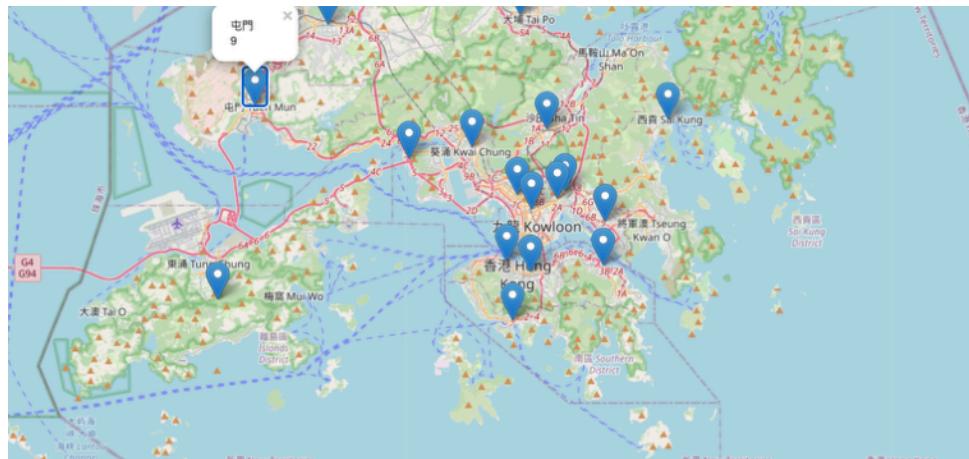
```
var chart = c3.generate({
  data: {
    columns: dataSet,
    type : 'bar',
    labels:true,
    colors: {
      radio: '#7FB3D5',
      computer: '#5499C7',
      tv: '#2980B9',
      tablet: '#2471A3'
    }
  },
  bar: {
    title: "Product by Category:",
    width: {
      ratio: 0.5 // this makes bar width 50% of length
    }
  },
  tooltip: {
    show: false,
  },
  axis: {
    x: {
      label: 'Products',
      type: 'category',
      categories:['', '', '', '']
    },
    y: {label: '# of Entries'}
  },
  bindto: '#chart1' Bind to the selector.
}); // end c3.generate
```

Chart1

**Specify color used.
Use names found in the
dataset (e.g. 中西區/九龍城/
元朗/北區/南區/大埔/屯門/東
區/沙田/油尖旺/深水埗/灣仔/
荃灣/葵青/西貢/觀塘/離島/黃
大仙).**

```
var chart = c3.generate({
  data: {
    columns: dataSet,
    type : 'donut',
    colors: {
      radio: '#7FB3D5',
      computer: '#5499C7',
      tv: '#2980B9',
      tablet: '#2471A3'
    }
  },
  donut: {
    title: "Product Distribution",
  },
  bindto: '#chart2' Bind to the selector.
}); // end c3.generate
```

Chart2



1. Define the element selector.
2. Initialize map view and tile layer.
3. Source of the map tiles (e.g. Open Street Map).
4. Define Google Sheet URL
5. Fetch data object into JS array.
6. Add markers to the map view based of the data set array.
7. Marker popup

```

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var public_spreadsheet_url =
'https://docs.google.com/spreadsheets/d/e/2PACX-1vTzAUVeFq2IQR7aD0uiACxRjmXicRqak53Gvej-Tb-RQdZI8Zpkf1SJ0R0XbrR6qrqqvg9pxzgn/pub?gid=1037024612&single=true&output=csv';

function init() {
  Papa.parse(public_spreadsheet_url, [
    download: true,
    header: true,
    complete: showInfo
  ]);
}

var mapboxTiles = L.tileLayer('https://{s}.tile.openstreetmap.org/{z}/{x}/{y}.png', {attribution: 'Map data &copy; OpenStreetMap', maxZoom: 11,});
// var mapboxTiles = L.tileLayer.grayscale();
var map = L.map('map')
.addLayer(mapboxTiles)
.setView([22.287111, 114.191667], 11);

layerGroup = L.layerGroup().addTo(map);

function showInfo(results) {
  var data = results.data
  var dataSet = []
  var i = 0
  var districts = ''
  // data comes through as a simple array since simpleSheet is turned on
  // alert("Successfully processed " + data.length + " rows!")
  document.getElementById("district").innerHTML = "<strong>District:</strong> " + [ data[0].chi_district, data[0].total_no_of_cases, data[0].lat, data[0].lng ].join(", ");

  for (i=0; i < data.length; i++) {
    districts = districts + "<br>" + data[i].chi_district
    items = []
    items.push(data[i].chi_district)
    items.push(data[i].total_no_of_cases)
    dataSet.push(items)
    document.getElementById("districts").innerHTML = districts
  }

  for (var i in data) {
    var latlng = L.latLng({ lat: data[i].lat, lng: data[i].lng })
    L.marker( latng )
      .bindPopup( data[i].chi_district+"<br>"+data[i].total_no_of_cases)
      .addTo(layerGroup);
  }
}

```

4 2 3 5 6 7

1. Define the element selector.
2. Initialize map view and tile layer.
3. Source of the map tiles (e.g. Open Street Map).
4. Define Google Sheet URL.
5. Fetch data object into JS array.
6. Add markers to the map view based of the data set array.
7. Marker popup

4

3

HTML

```

1 <!DOCTYPE html>
2 <html>
3   <head>
4     <title>Demo</title>
5     <meta charset="utf-8">
6     <meta name="viewport" content="width=device-width, initial-scale=1">
7     <link rel="stylesheet" type="text/css" href="https://cdnjs.cloudflare.com/ajax/libs/twitter-bootstrap/4.5.2/css/bootstrap.css">
8     <link href="https://cdnjs.cloudflare.com/ajax/libs/c3/0.7.11/c3.min.css" rel="stylesheet" type="text/css">
9     <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/leaflet/1.3.4/leaflet.css">
10    <link rel="stylesheet" href="css/style.css">
11  </head>
12  <body>
13    <p id="district"></p>
14    <p id="districts"></p>
15    <div id="chart1"></div><div id="chart2"></div>
16    <div id="map" style="width: 100%; height: 500px"></div>
17    <script src="https://cdnjs.cloudflare.com/ajax/libs/leaflet/1.3.4/leaflet.js"></script>
18    <script src="https://api.tiles.mapbox.com/mapbox.js/plugins/leaflet-markercluster/v0.4.0/leaflet.markercluster.js">
19    </script>
20    <script type="text/javascript" src="https://cdnjs.cloudflare.com/ajax/libs/d3/5.12.0/d3.min.js"></script>

```

1

Integration through RESTful API.

Gallery



#1
Name: CUHK
Lat: 22.4185
Lng: 114.20407

[View](#)



#2
Name: Choi Hung
Lat: 22.33448
Lng: 114.21002

[View](#)



#3
Name: HK Cultural Center
Lat: 22.29385
Lng: 114.17032

[View](#)

REST API Endpoint of a Python Flask application.

```
@app.route('/api/home')
def api_home():
    sqlalchemyObj = db.engine.execute('select * from venues WHERE front_page ORDER BY Name')
    venues = []
    for i in sqlalchemyObj:
        venues.append(i)
    # print(venues)
    dataset = []
    dict={}
    desc_str = ''
    for i in venues:
        dict['Name'] = i[0]
        dict['Lat'] = i[1]
        dict['Lng'] = i[2]
        dict['Url'] = i[3]
        dict['Img_url'] = i[4]
        # desc_str = remove_html_tags(i[5])
        desc_str = i[5]
        dict['Desc'] = desc_str[:150]+"..."
        dict['front_page'] = i[6]
        # print(i)
        # print(dict)
        dataset.append(dict.copy())
    return jsonify({'Venues' : dataset})
```

JSON data returned by the Python Flask REST API Endpoint.

```
{"Venues": [{"Desc": "Happy Valley, an upper-income residential area in Hong Kong, is home to the Happy Valley Racecourse, Hong Kong Racing Museum, Hong Kong Jockey Club Ha...", "Img_url": "https://upload.wikimedia.org/wikipedia/commons/thumb/1/12/Happy_Valley_2015.jpg/440px-Happy_Valley_2015.jpg", "Lat": 22.26667, "Lng": 114.18333, "Name": "Happy Valley", "Url": "https://en.wikipedia.org/wiki/Happy_Valley,_Hong_Kong", "front_page": 1}, {"Desc": "Lan Kwai Fong (often abbreviated as LKF) is a small square of streets in Central, Hong Kong. The area was dedicated to hawkers before the Second World...", "Img_url": "https://upload.wikimedia.org/wikipedia/commons/thumb/4/4b/LKF_Street_View01.jpg/480px-LKF_Street_View01.jpg", "Lat": 22.28097, "Lng": 114.15553, "Name": "Lan Kwai Fong", "Url": "https://en.wikipedia.org/wiki/Lan_Kwai_Fong", "front_page": 1}, {"Desc": "Mong Kok is an area in Kowloon, Hong Kong. Mong Kok is one of the major shopping areas in Hong Kong. The area is characterised by a mixture of old and...", "Img_url": "https://upload.wikimedia.org/wikipedia/commons/thumb/c/c5/Sai_Yeung_Choi_Street_South_2008_Night.jpg/440px-Sai_Yeung_Choi_Street_South_2008_Night.jpg", "Lat": 22.3225, "Lng": 114.17056, "Name": "Mong Kok", "Url": "https://en.wikipedia.org/wiki/Mong_Kok", "front_page": 1}, {"Desc": "<p>North Point is a an urban area in the Eastern District of Hong Kong. It is in the northeastern part of Hong Kong Island, between Causeway Bay and Q...", "Img_url": "https://upload.wikimedia.org/wikipedia/commons/thumb/6/61/Chun_Yeung_Street%2C_Tram_140_%28Hong_Kong%29.jpg/440px-Chun_Yeung_Street%2C_Tram_140_%28Hong_Kong%29.jpg", "Lat": 22.28711, "Lng": 114.19167, "Name": "North Point", "Url": "https://en.wikipedia.org/wiki/North_Point", "front_page": 1}]}]
```

WordPress Website with REST API Support

DESIGN & CODE

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Aut deserunt sit velit reiciendis totam nihil

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Temporibus est repellat odit. [Read more](#)



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Consectetur eos quibusdam non animi
delectus

Sunt harum dolores ipsa quia eum nam et. Et voluptas
aperiam voluptate non rerum vero nihil molestiae Dolor et
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JSON data returned by WordPress REST API Endpoint.

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[`<!-->`](#)[`<!DOCTYPE>`](#)

HTML <iframe> Tag

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Example

An inline frame is marked up as follows:

```
<iframe src="https://www.w3schools.com" title="W3Schools Free Online Web Tutorials"></iframe>
```

[Try it Yourself »](#)

More "Try it Yourself" examples below.

https://www.w3schools.com/tags/tag_iframe.ASP

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1

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Text

[b](#) [i](#) [link](#) [b-quote](#) [del](#) [ins](#) [img](#) [ul](#) [ol](#) [li](#) [code](#) [more](#) [close tags](#)

```
<iframe src="https://suentze2020.github.io/datahack/js_workshop_i/data_viz/dataviz02.html"
frameborder="0" scrolling="no" style="width:100%; height:900px;" title="HKDesign - a Design and Coding Hub"></iframe>
```

Word count: 0

Last edited by admin on February 8, 2023 at 7:35 am

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Page Attributes

Parent

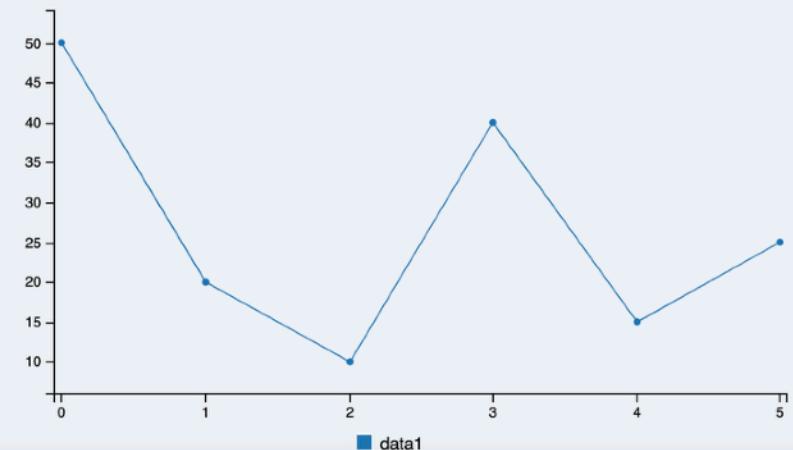
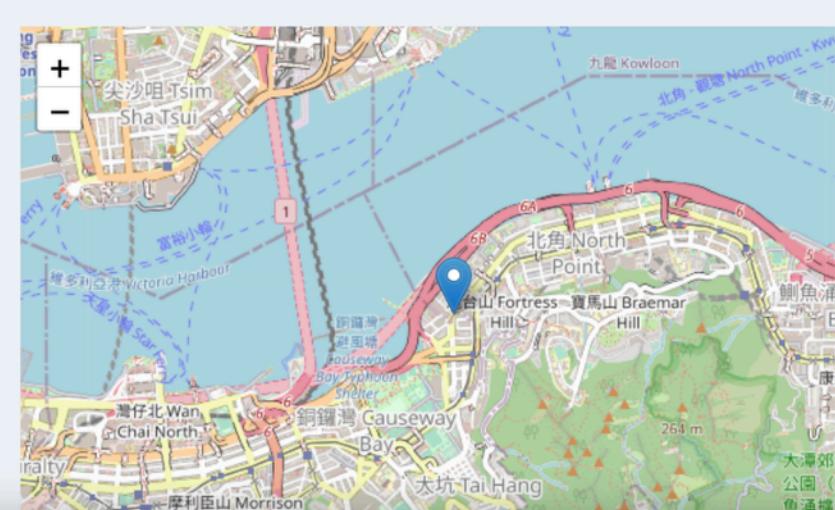
(no parent)

Order

0

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Data Visualization



**Let's learn `JavaScript` together with
some additional visual tools.**

! NEW FEATURE: You can now create a gradient out of 3 colors!



Beta

ColorSpace

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GRADIENT

3-COLOR-GRADIENT

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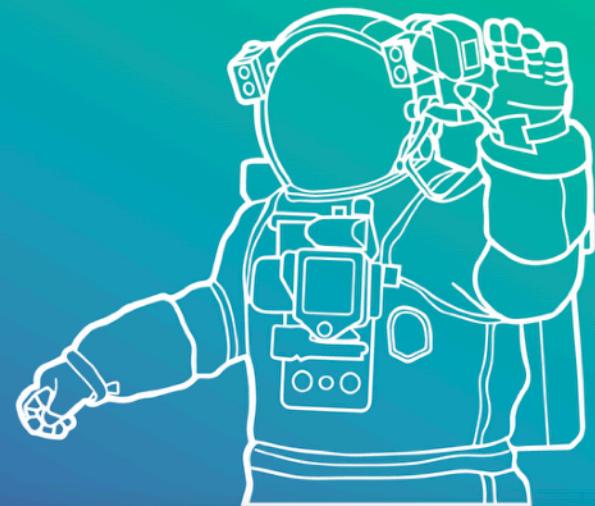
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2,729



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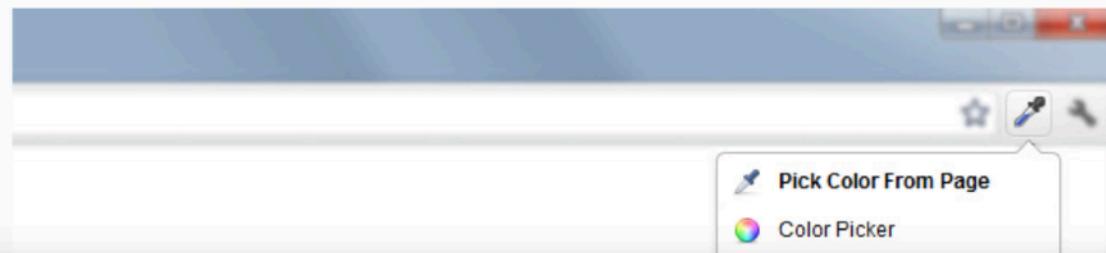
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