

# **BEGINNING WEB PUBLISHING II: PROGRAMMING IN JAVASCRIPT**

**Today's agenda.**

1. Overview of **HTML, CSS, and JS (JavaScript)** in the context of full-stack 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. Retrieving **JSON** data in **JavaScript** using the **JS Fetch API**.
6. Introduction to **data visualization** in **JavaScript** Using **PapaParse, C3** and **Leaflet** JS libraries.

## Workshop Survey Form

School/Department/Faculty \*

Describe your HTML level. \*

Describe your CSS level. \*

Did you learn JavaScript before? \*

Do you know one of the following programming languages (Python, Java, Php, C#/C/C++)? \*

<https://airtable.com/shrSBKLP1OwFz2uKs>

# **How does web publishing work?**

# **Full-stack Web Development: Front-end vs. Back-end**

## 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

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[https://www.w3schools.com/css/demo\\_default.htm#](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

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[Stylesheet 2](#)

[Stylesheet 3](#)

[Stylesheet 4](#)

[No Stylesheet](#)

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### Side-Bar

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[https://www.w3schools.com/css/demo\\_default.htm#](https://www.w3schools.com/css/demo_default.htm#)

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# Welcome to My Homepage

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#### 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

## Side-Bar

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## Same Page Different Stylesheets

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## 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;
}
```

**We need a `code editor` to create  
HTML/CSS/JS files.**

Version 1.47 is now available! Read about the new features and fixes from June.

# Code editing. Redefined.

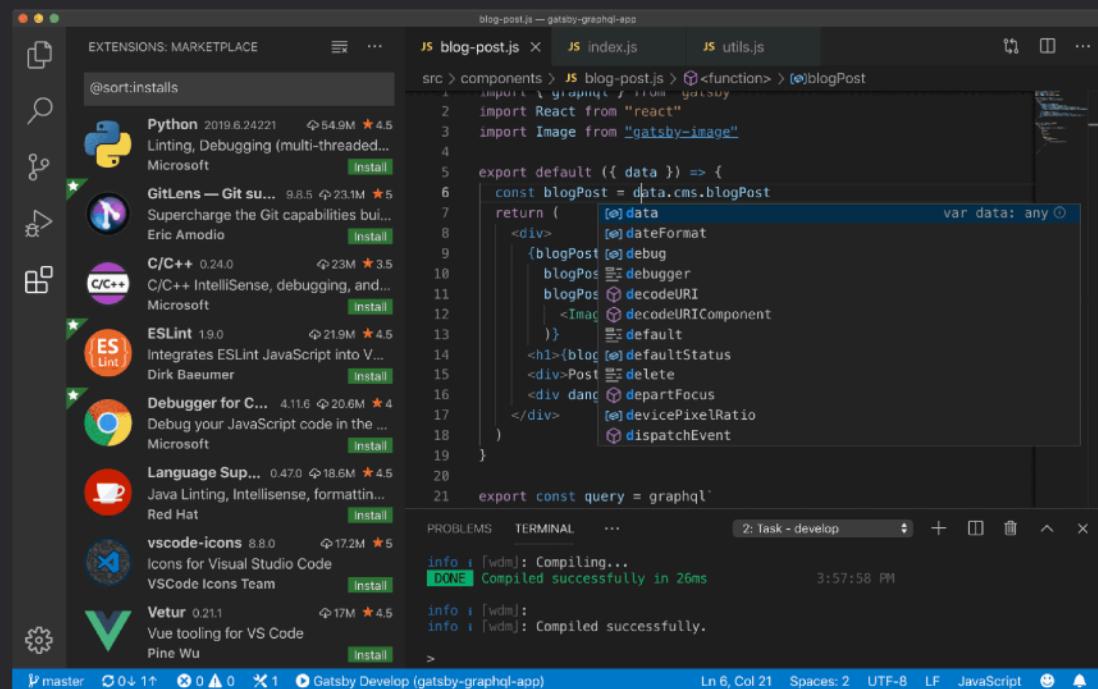
Free. Built on open source. Runs everywhere.

[Download for Mac](#)

Stable Build

[Other platforms and Insiders Edition](#)

By using VS Code, you agree to its  
[license](#) and [privacy statement](#).



<https://code.visualstudio.com/>

**Live Server** ritwickdey.liveserver

Ritwick Dey | ⚡ 10,396,619 | ★★★★★ | Repository | License | v5.6.1

Launch a development local Server with live reload feature for static & dynamic pages

[Disable](#) [Uninstall](#)  This extension is enabled globally.

---

[Details](#) [Feature Contributions](#) [Changelog](#)

*[I'm sorry but I'm super busy now. If you want to be a maintainer of the project, please feel free to contact me! You've to be passionate about programming]*

## Live Server

Live Server loves ❤️ your multi-root workspace

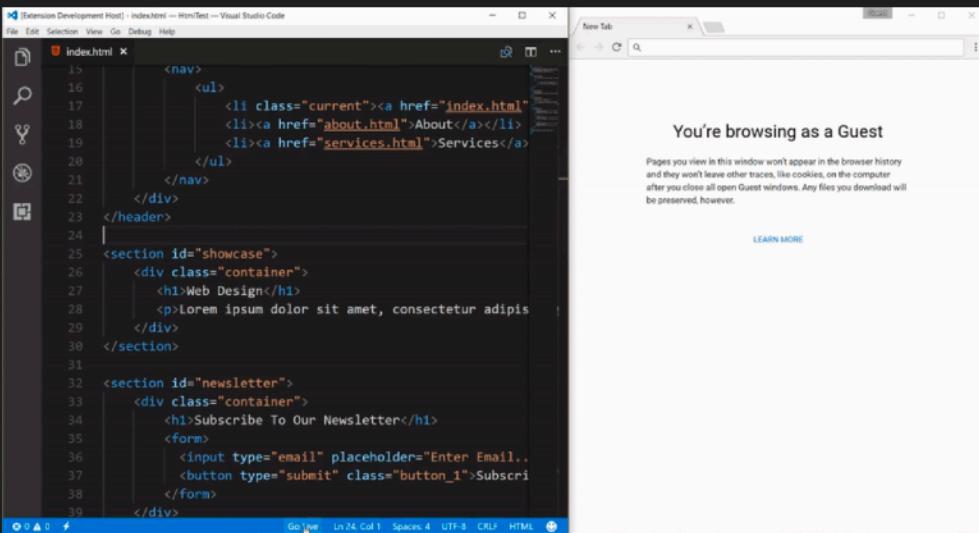
[Live Server for server side pages like PHP. Check Here](#)

[\[For 'command not found error' #78\]](#)

vscode marketplace v5.6.1 downloads 14M rating 4.5/5 (288)

travis branch passing appveyor branch failing license MIT

Launch a local development server with live reload feature for static & dynamic pages.



The screenshot displays the 'Live Server' extension page in the VS Code Marketplace. It features a dark-themed header with the extension's name, developer, ratings, and version information. Below the header, there are two prominent buttons: 'Disable' and 'Uninstall'. A note indicates that the extension is currently enabled. The main content area contains a message from the developer expressing they are very busy and asking for maintainers. It also highlights the extension's ability to handle multi-root workspaces and server-side pages like PHP. A link to a GitHub issue for command-not-found errors is provided. Below this, standard marketplace metrics for downloads and rating are shown, along with links to continuous integration status and license information. At the bottom, a callout for launching a local development server with live reload is presented, accompanied by a screenshot of the VS Code interface showing a code editor and a browser window displaying a guest message. The browser window includes a note about guest browsing behavior.

# Browser

Screen Display



# Web Server

HTML/CSS/JS

```
1 <!DOCTYPE html>
2 <html lang="en">
3   <head>
4     <meta charset="utf-8">
5     <title> A Tiny HTML Document </title>
6     <link href="styles.css" rel="stylesheet">
7     <script src="scripts.js"></script>
8   </head>
9
10  <body>
11    <p>Let's rock the browser, HTML5 style.</p>
12  </body>
13 </html>
```

# Code Editor

Visual Studio Code

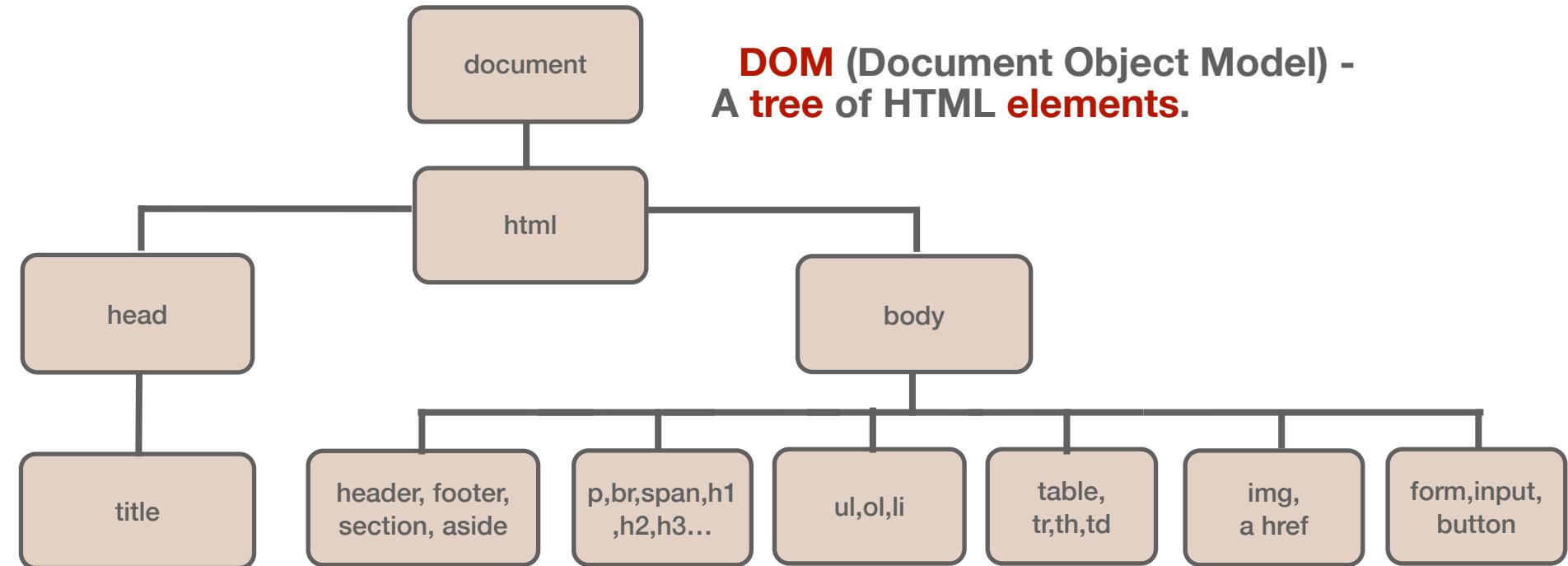
A screenshot of the Visual Studio Code interface. A file named "index.html" is open in the editor. The code shown is identical to the one in the central code editor window. The interface includes a sidebar with file navigation, a status bar at the bottom, and a red border around the main code area.

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.**



## HTML Elements

<html>, <head>, <title>, <meta>, <style>, <script>, <body>, **<header>, <footer>, <nav>, <main>, <section>, <aside>**, <p>, <br>, <a>, <ol>, <ul>, <li>, <table>, <div>, <form>

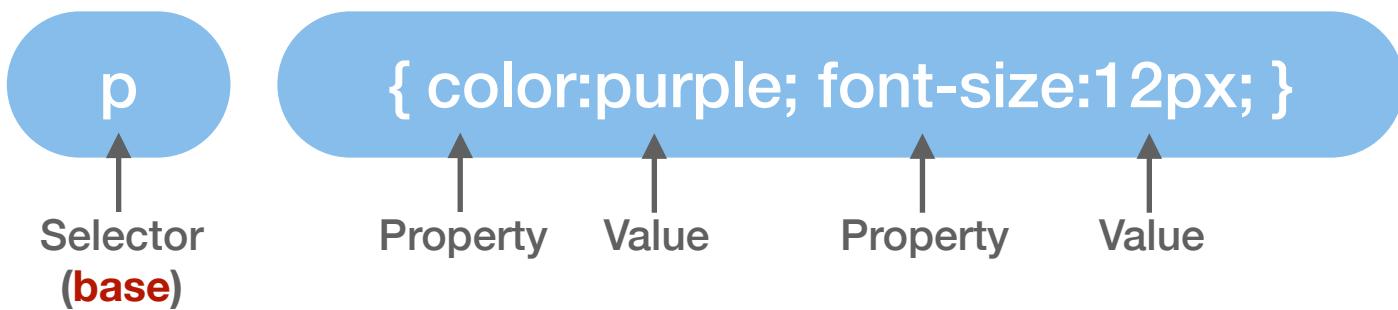
Elements has  
attributes

(Also called properties which  
can be styled by CSS)

(e.g. color, background-color, position, font-family, font-size, font-style, display, width, margin, border, padding)

\*\*\*HTML5 semantic tags

CSS



In CSS, the HTML tags are called **selectors**.

# CSS

You define the name

.box

Selector  
**(custom**  
id, class)

{ margin:5px; padding:3px; }

Property

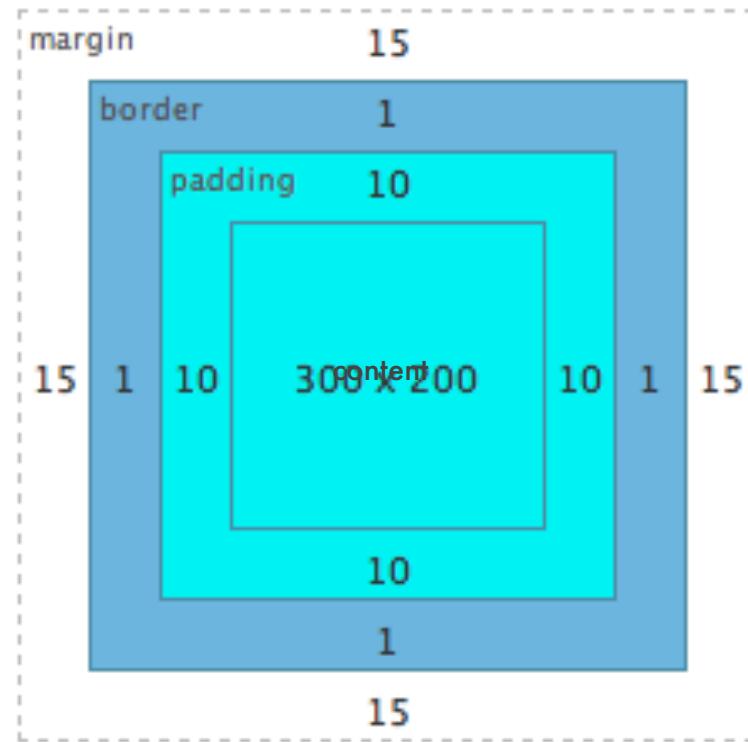
Value

Property

Value

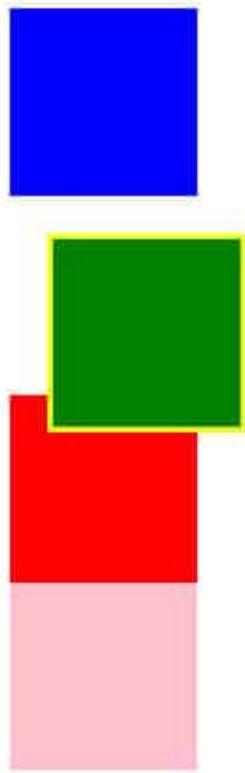
In CSS, the HTML tags are called **selectors**.

# The Box Model



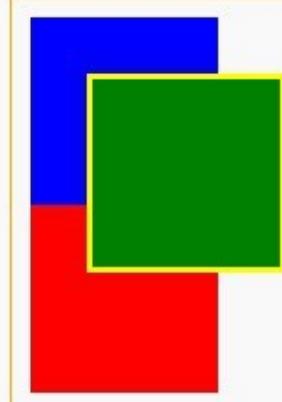
# **4 Ways of Positioning Display Box**

- Static - default position of a box following the normal document flow (not affected by top, left, right, bottom pos.)
- Fixed - it always stay on the same location as defined by the positions (top and left or bottom or right) even the page is scrolled. Unlike absolute, its parent is the viewport.
- Relative - relative when used with top and left position pair or bottom and right position pair will allow the object box to be moved to a new location relative to its current position (not container).
- Absolute - take the positioning out of the document flow and place it at a location (top and left position) as defined in relationship to its containing (or parent) element (context). The container/parent should be set to relative.



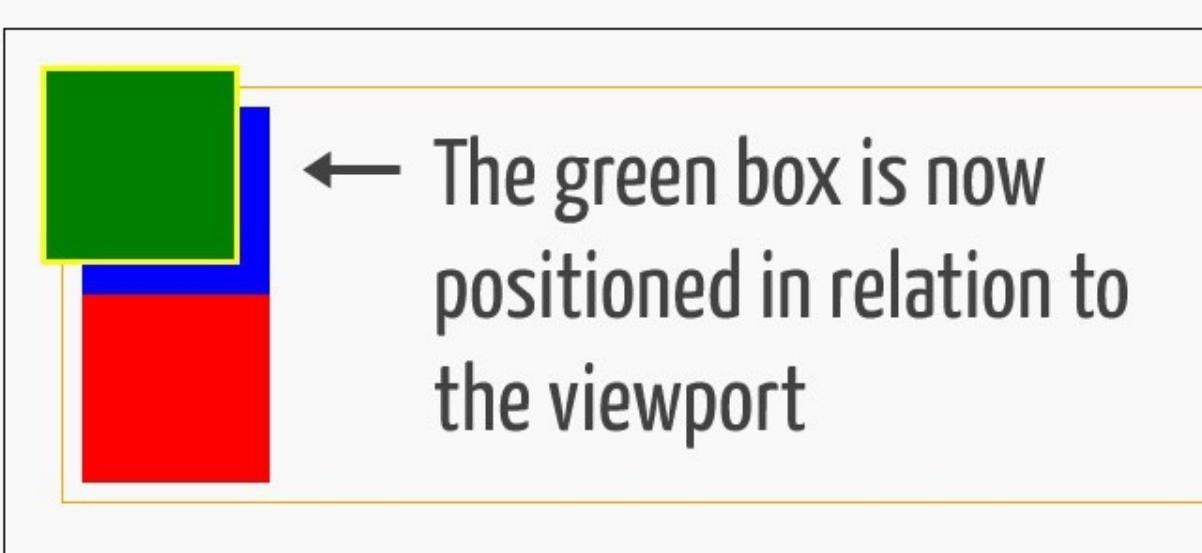
The second box is set to “position: relative” and is offset using top and left values.

Source: CSS Positioning: A Comprehensive Look  
(<http://blog.teamtreehouse.com/css-positioning>)

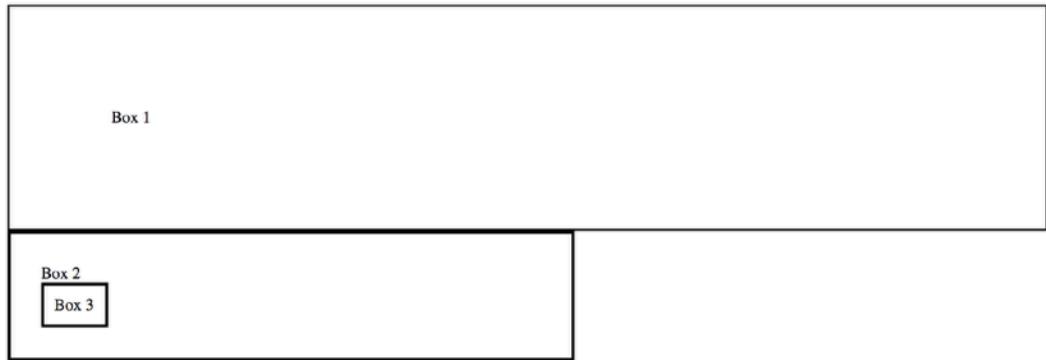


The second box is set to “position: absolute” and is offset in relation to the “.container” element

Source: CSS Positioning: A Comprehensive Look  
(<http://blog.teamtreehouse.com/css-positioning>)



Source: CSS Positioning: A Comprehensive Look  
(<http://blog.teamtreehouse.com/css-positioning>)



**A Simple Example**

## **3 Ways of Style Definition + Cascading Rule**

- **Inline style definition (Highest priority)**
- **Internal style definition (Middle priority)**
- **External style definition (Lowest priority)**
- **Style defined last has priority over style defined earlier**

# **A Quick Demo of HTML/CSS as System Components Using Visual Studio Live Server and Chrome Inspector**

# **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. **var str\_var = "This is a string.";**
- **Numeric** - e.g. **var num\_var = 3.2;**
- **Boolean** - e.g. **var bol\_var = true;**

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 for Elements, Console, Sources, Network, Performance, Memory, Application, Security, Audits, and JavaScript Profiler are visible. The Console tab is currently selected, showing the following log output:

```
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 sidebar on the left of the console shows log levels: 23 messages (info), 2 user messages (warning), 0 errors (success), 4 warnings (warning), 14 info (info), and 5 verbose (verbose). The main pane of the console shows the following JavaScript output:

```
> 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. The browser's address bar and various bookmarked links are visible at the top. Below the address bar is a toolbar with icons for Gmail, Images, and other functions. The main content area features the classic Google logo.

Below the Google logo is a search bar with the placeholder "Search Google or type a URL".

The bottom half of the image shows the developer tools' Console tab, which is currently selected. The console output pane displays 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>");}
```

## **Basic Input/Output Commands**

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

## **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)

## Basic Logical and Mathematical Operations

**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

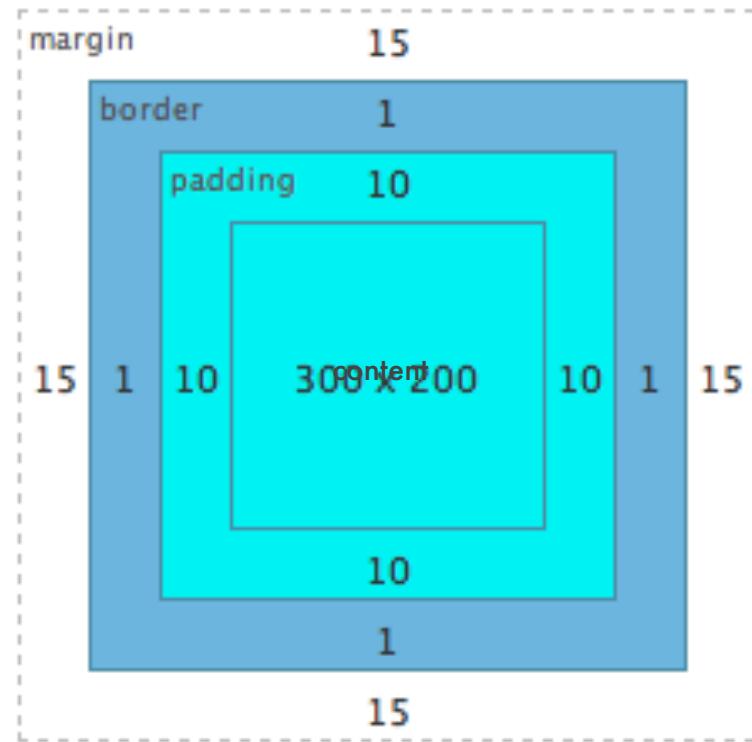
**Loop is an iterative programming construct suitable for handling JavaScript array and object.**

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

**Try the following steps:**

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

# The Box Model



## Basic Structure of a JavaScript Function

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

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

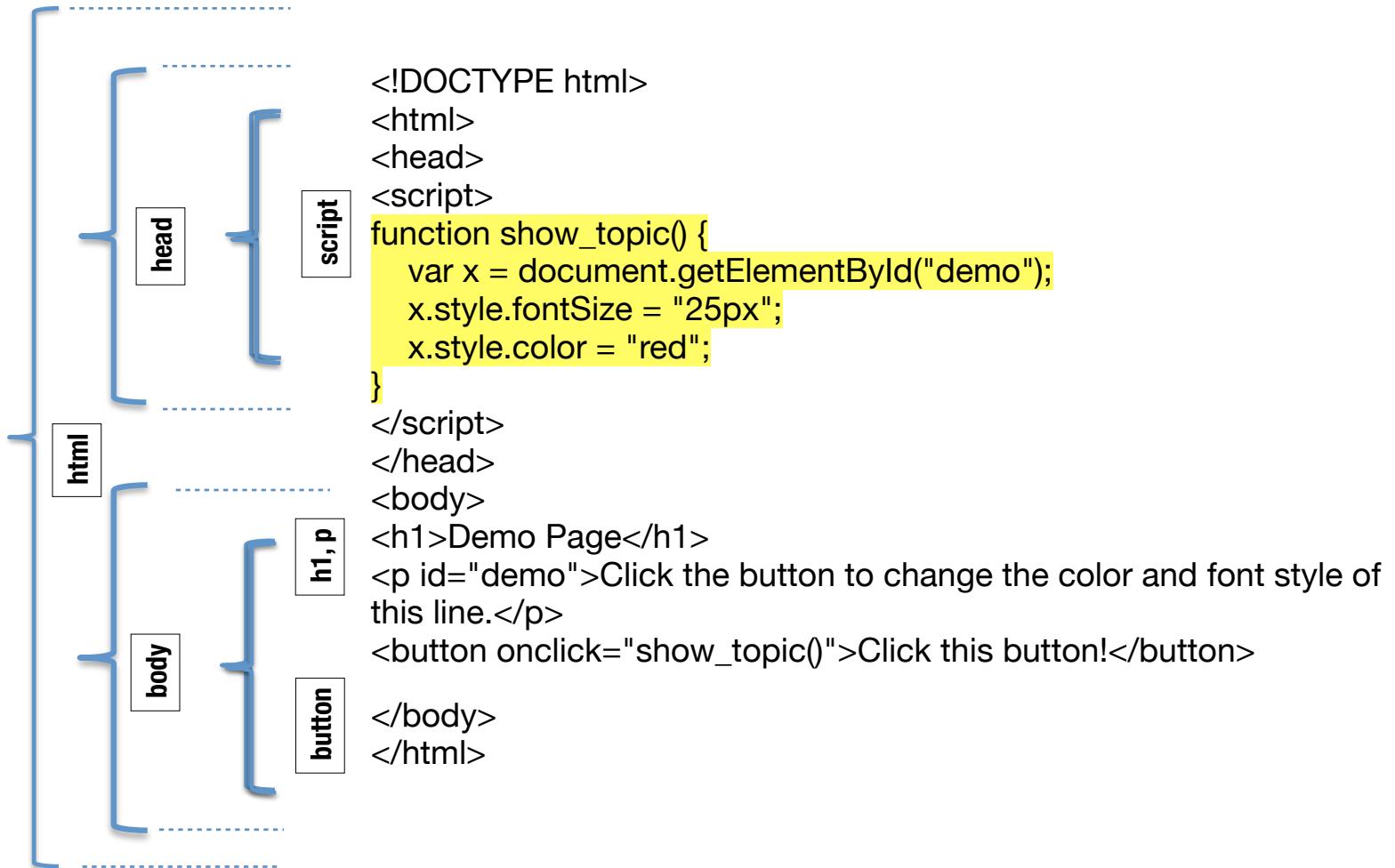
Embed data type variables, input/output commands and logical and mathematical operators in the function to compute and return values.

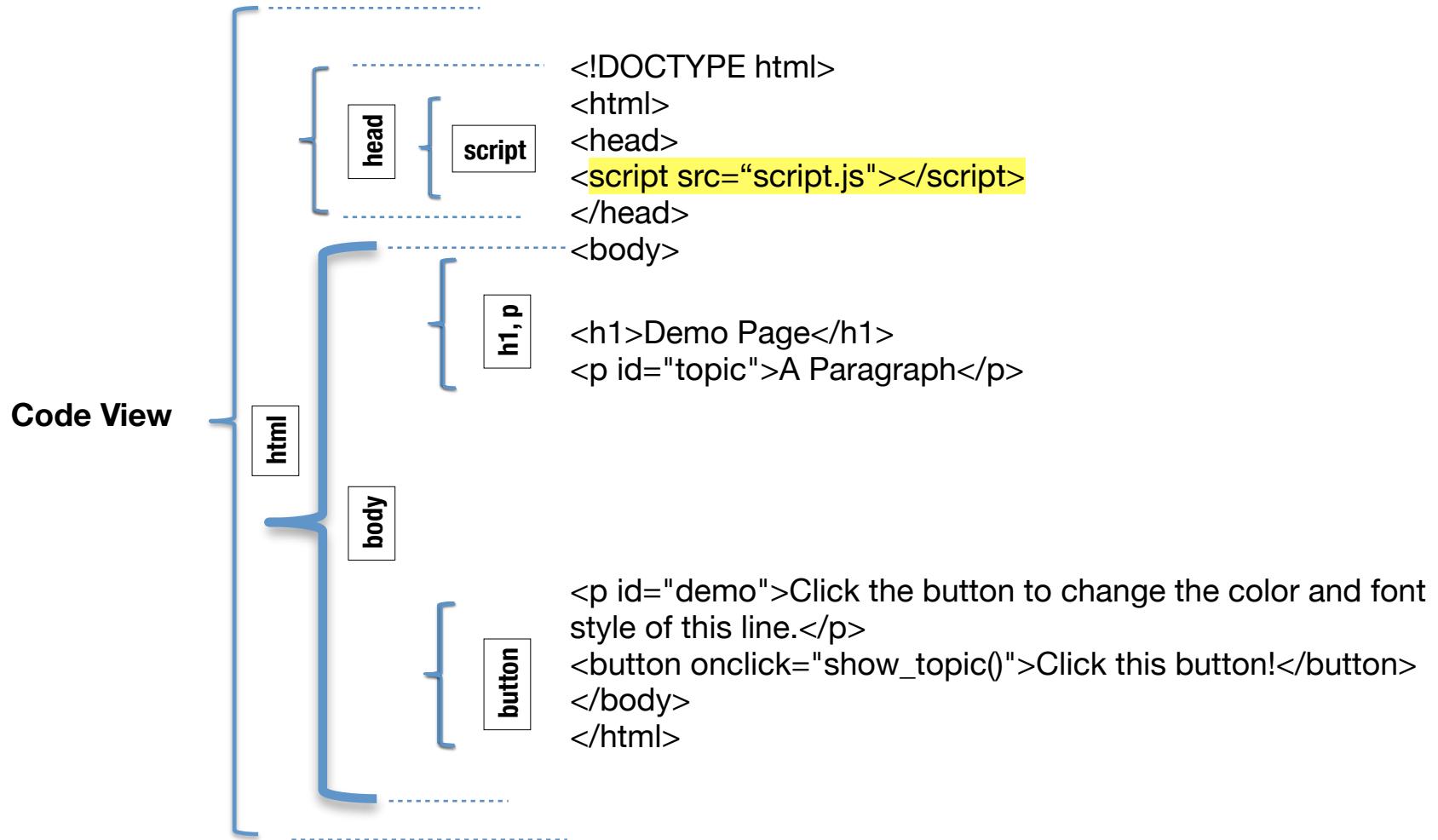
```
}
```

optional parameters



## Code View





## Code View

```
<!DOCTYPE html>
<html>
<head>
<script>
function show_topic() {
    var x = document.getElementById("demo");
    x.style.fontSize = "25px";
    x.style.color = "red";
}
</script>
</head>
<body>
<h1>Demo Page</h1>
<p id="demo">Click the button to change the color and font
style of this line.</p>
<button onclick="show_topic()">Click this button!</button>
</body>
</html>
```

The diagram illustrates the hierarchical structure of the provided HTML code. A dashed blue box encloses the entire code block. Brackets on the left side group elements by type: 'html', 'head', 'body', 'script', 'h1, p', and 'button'. Brackets on the right side group elements by function: 'head', 'script', 'body', and 'h1, p'.

- html**: Groups the entire document.
- head**: Groups the `<head>` section.
- body**: Groups the `<body>` section.
- script**: Groups the `<script>` section.
- h1, p**: Groups the `<h1>` and `<p>` elements.
- button**: Groups the `<button>` element.

Specific code elements are highlighted:

- The `show_topic()` function and its body are highlighted in yellow.
- The `id="demo"` attribute of the `<p>` element is highlighted in yellow.

# Basic Structure of a JavaScript Function

```
<!DOCTYPE html>
<html>
  <head><script>
    function addition(a, b) {
      var a = parseInt(a);
      var b = parseInt(b);
      var c = a + b;
      var return c;
    }

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

# **Input/Output Commands without Pop-up**

- **Entering a variable values through HTML form - e.g.**

**<script>**

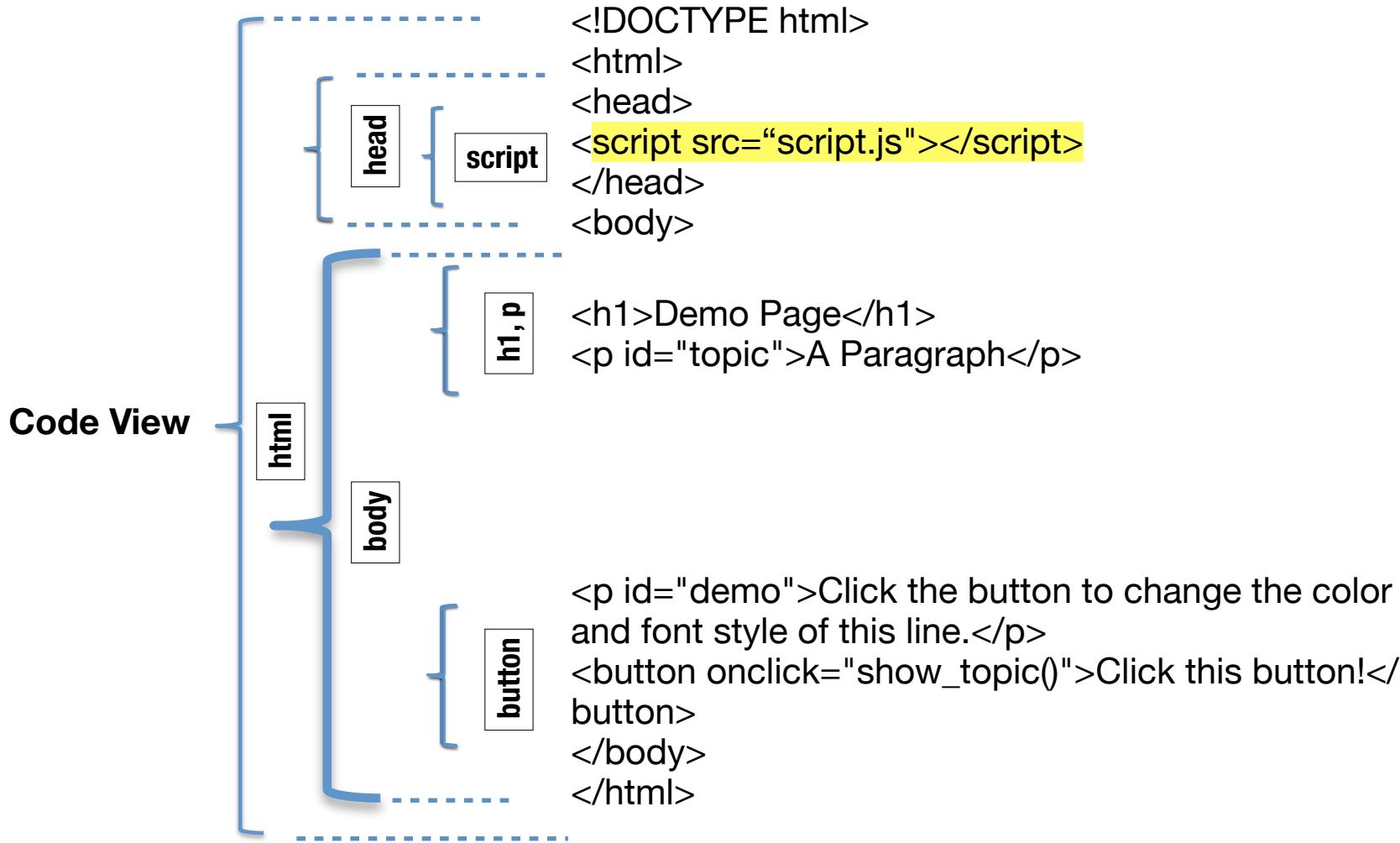
```
function guessInteger() {
    guess = document.forms['guessForm']['guessValue'].value;
    if (guess == '') {
        document.getElementById('demo').innerHTML = 'Empty!';
    } else {
        guess_int = parseInt(guess);
    }
    if (guess_int == 20) {
        document.getElementById('demo').innerHTML = "Right!";
    } else {
        document.getElementById('demo').innerHTML = "Wrong!";
    }
    return;
}
```

**</script>**

**<body>**

```
<form name='guessForm'>
    <label>Guess a number between 0 and 20: </label>
    <input name = 'guessValue' class='inputField'>
    <input type='button' class='button' value='submit answer' onclick='guessInteger()'>
</form>
</body>
```

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



**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>  
var click_name = document.querySelector("#click_me")  
click_me.addEventListener("click", alert_click)  
  
function alert_click() {  
    alert("Hi!")  
}  
</script>
```

**getElementById, getElementsByTagName  
and getElementsByClassName**

```
<body>
  <div>
    <button onclick="button_one()" class="btn1">
      Click to change to red button
    </button><br>
    <button onclick="button_two()" class="btn2">
      Click to change to blue button
    </button><br>
  </div>
  <script>
    function button_one() {
      document.getElementsByClassName('btn1')[0]
        .style.backgroundColor = 'red';
    }
    function button_two() {
      var elements = document
        .getElementsByClassName('btn2');

      for (var i = 0; i < elements.length; i++) {
        elements[i].style.backgroundColor = 'blue';
      }
    }
  </script>
</body>
```

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

- **Array** - a list of elements e.g.  
`var fruits = ["apple", "grape", "pear"];`  
`var student_list = [ ]; // empty student list;`
- **Object** - a collection of properties represented in **name:values** pairs  
e.g.  
`var students {`  
    `student_id: 1155115511;`  
    `student_fname: "Bernard";`  
    `student_lname: "Suen";`  
    `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 sites 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 for Elements, Console, Sources, Network, Performance, Memory, Application, Security, Audits, and JavaScript Profiler are visible. The Console tab is currently selected, showing the following log output:

```
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 sidebar on the left of the console shows log levels: 23 messages (info), 2 user messages (warning), 0 errors (success), 4 warnings (warning), 14 info (info), and 5 verbose (verbose). The main pane of the console shows the following JavaScript output:

```
> 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's 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 half of the screen is occupied by the developer tools' DevTools panel. The tabs at the top of the panel are Elements, Console, Sources, Network, Performance, Memory, Application, Security, Audits, and JavaScript Profiler. The Console tab is currently selected.

In the left sidebar of the DevTools, there are summary statistics: 6 messages, 1 user message, 0 errors, 2 warnings, 2 info, and 2 verbose. The main content area of the DevTools 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 + "<br>");}`, is highlighted with a red rectangular box.

# **The HTML Form and Input Tags**

## HTML Form

```
<form name='guessForm'>
    <input name = "guessValue" class="inputField">
</form>
<button class='button' onclick='guessInteger()'>Guess an
Integer</button>
<div id='demo'></div>
```

About Courses Meetings

127.0.0.1:5502 says

Hello Bernard! Your password is password.

OK

## Section 1

### Article 1

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User Name:

Password:

Event	Month	Day	Venue
Lesson 5	Oct	5th	Online
Lesson 6	Oct	12th	Online
Lesson 7	Oct	19th	Online
Lesson 8	Oct	26th	Online

### Article 2

About Courses Meetings

127.0.0.1:5502 says

Hello Bernard! Your password is password.

OK

```
<form id='login'>
  <div class='form-group'>
    <label>
      User Name:
    </label>
    <input type='text' name='username'>
  </div>
  <div class='form-group'>
    <label>
      Password:
    </label>
    <input type='password' name='pwd'>
  </div>
  <button id='submitBtn' type='button'>Send</button>
</form>
```

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egestas erat.

User Name:

Password:

Send

1



Event	Month	Day	Venue
Lesson 5	Oct	5th	Online
Lesson 6	Oct	12th	Online
Lesson 7	Oct	19th	Online
Lesson 8	Oct	26th	Online

```
<script>
  document.getElementById('submitBtn').addEventListener('click', sayHello);
  function sayHello() {
    var username = document.forms[0].username.value;
    var password = document.forms[0].pwd.value;
    alert("Hello " + username + "! Your password is " + password + '.');
  }
</script>
```

## Article 2

About Courses Meetings

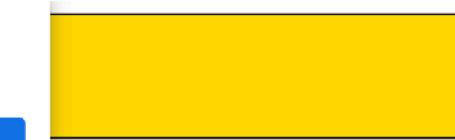
127.0.0.1:5502 says  
Hello Bernard! Your password is password.

```
<form id='login'>
  <div class='form-group'>
    <label>
      User Name:
    </label>
    <input type='text' name='username'>
  </div>
  <div class='form-group'>
    <label>
      Password:
    </label>
    <input type='password' name='pwd'>
  </div>
  <button id='submitBtn' type='button'>Send</button>
</form>
```

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## Article 2

OK



User Name:

Password:

Send



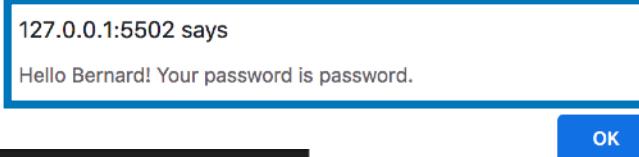
Event	Month	Day	Venue
Lesson 5	Oct	5th	Online
Lesson 6	Oct	12th	Online
Lesson 7	Oct	19th	Online
Lesson 8	Oct	26th	Online

```
<script>
  document.getElementById('submitBtn').addEventListener('click', sayHello);

  function sayHello() {
    var username = document.forms[0].username.value;
    var password = document.forms[0].pwd.value;
    alert("Hello " + username + "! Your password is " + password + '.');
  }
</script>
```

1

2



```
<form id='login'>
  <div class='form-group'>
    <label>
      User Name:
    </label>
    <input type='text' name='username'>
  </div>
  <div class='form-group'>
    <label>
      Password:
    </label>
    <input type='password' name='pwd'>
  </div>
  <button id='submitBtn' type='button'>Send</button>
</form>
```

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User Name:  
Bernard

Password:  
.....

Send



Event	Month	Day	Venue
Lesson 5	Oct	5th	Online
Lesson 6	Oct	12th	Online
Lesson 7	Oct	19th	Online
Lesson 8	Oct	26th	Online

```
<script>
  document.getElementById('submitBtn').addEventListener('click', sayHello);
  function sayHello() {
    var username = document.forms[0].username.value;
    var password = document.forms[0].pwd.value;
    alert("Hello " + username + "! Your password is " + password + ".");
  }
</script>
```

## Article 2

**Output without popup:  
innerHTML**

```

<form id='login'>
  <div class='form-group'>
    <label>
      User Name:
    </label>
    <input type='text' name='username'>
  </div>
  <div class='form-group'>
    <label>
      Password:
    </label>
    <input type='password' name='pwd'>
  </div>
  <button id='submitBtn' type='button'>Send</button>
</form>
<div id='answer'></div>

```

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User Name:

Bernard

Password:

\*\*\*\*\*

Send

Hello Bernard! Your password is password.



Event	Month	Day	Venue
Lesson 5	Oct	5th	Online
Lesson 6	Oct	12th	Online

```

<script>
  document.getElementById('submitBtn').addEventListener('click', sayHello);
  function sayHello() {
    var username = document.forms[0].username.value;
    var password = document.forms[0].pwd.value;
    alert("Hello " + username + "! Your password is " + password + '.');
    var answer = "Hello " + username + "! Your password is " + password + '.';
    document.getElementById('answer').innerHTML = answer;
  }
</script>

```

## Article 2

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

3 Return result z

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

1 Input x and y values

2 Call compute\_x\_plus\_y function

4 Output z

```
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;  
}
```

1 Input x and y values

2 Call compute\_x\_plus\_y function

4 Output z

# 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

Enter first number:

Enter second number:

About Courses Meetings Blogs

## Section 1

### Article 1

```
<script>
    document.getElementById('submitBtn').addEventListener('click', sayHello);
    function sayHello() {
        var username = document.forms[0].username.value;
        var password = document.forms[0].pwd.value;
        alert("Hello " + username + "! Your password is " + password + '.');
    }
</script>
```

User Name:

Password:

Send

Day	Venue
	Online
	Online
	Online
	Online

### Article 2

About Courses Meetings

127.0.0.1:5502 says  
username cannot be blank!

OK

## Section 1

### Article 1

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Event	Month	Day	Venue
Lesson 5	Oct	5th	Online
Lesson 6	Oct	12th	Online
Lesson 7	Oct	19th	Online
Lesson 8	Oct	26th	Online

### Article 2

About Courses Meetings

127.0.0.1:5502 says  
password cannot be blank!

OK

## Section 1

### Article 1

```
<script>
    document.getElementById('submitBtn').addEventListener('click', sayHello);
    function sayHello() {
        var username = document.forms[0].username.value;
        var password = document.forms[0].pwd.value;
        if (username == '') {alert('username cannot be blank!');}
        if (password == '') {alert('password cannot be blank!');}
        if (username !== '' && password !== '') {
            alert("Hello " + username + "! Your password is " + password + '.');
            var answer = "Hello " + username + "! Your password is " + password + '.';
            document.getElementById('answer').innerHTML = answer;
        }
    }
</script>
```

User Name:

Password:

Send

Day	Venue
1	Online
2	Online
3	Online
4	Online

## 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);
> for (i=0; i< 3 ;i++) { alert(students[i].id);}
> for (i=0; i< students.length ;i++) { alert(students[i].id);}
> for (i=0; i< students.length ;i++)
{document.getElementById("result").innerHTML += "<br>"+
students[i].id;}
```

# **Application of Loop in LocalStorage**

## Section 1

```
<form id="fid">
  <div class='form-group'>
    <label>Student Id:</label><input type="text" id="student_id" name="st
  </div>
  <div class='form-group'>
    <label>Student Name:</label><input type="text" id="student_name" name="st
  </div>
</form>
<button id="enter_btn">Enter</button>
<button id="store_btn">Store</button>
<button id="clear_btn">Clear Screen</button>
<button id="retrieve_btn">Retrieve</button>
<button id="delete_btn">Delete All</button>
<h4><b>Student List</b></h4>
<div id="demo"></div>
```

## Section 2

User Name:	<input type="text"/>
Password:	<input type="password"/>
<input type="button" value="Send"/>	

Event	Month	Day	Venue
Lesson 5	Oct	5th	Online
Lesson 6	Oct	12th	Online
Lesson 7	Oct	19th	Online
Lesson 8	Oct	26th	Online

Student Id:	<input type="text" value="student ID"/>
Student Name:	<input type="text" value="student Name"/>
<input type="button" value="Enter"/> <input type="button" value="Store"/> <input type="button" value="Clear Screen"/> <input type="button" value="Retrieve"/> <input type="button" value="Delete All"/>	
<b>Student List</b>	

## Section 1

### Article 1

```
document.getElementById("enter_btn").addEventListener("click", function() {
    sid = document.getElementById("student_id").value;
    sname = document.getElementById("student_name").value;
    message = "Student ID:"+sid+"  
"+"Student Name:"+sname+"  
";
    document.getElementById("demo").innerHTML += message;
    student = {};
    student.id = sid;
    student.name = sname;
    students.push(student);
});
```

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## Section 2

User Name:	<input type="text"/>
Password:	<input type="password"/>
<input type="button" value="Send"/>	

Event	Month	Day	Venue
Lesson 5	Oct	5th	Online
Lesson 6	Oct	12th	Online
Lesson 7	Oct	19th	Online
Lesson 8	Oct	26th	Online

Student Id:	<input type="text" value="1111"/>
Student Name:	<input type="text" value="Peter"/>

### Student List

```
<button id="enter_btn">Enter</button>
<button id="store_btn">Store</button>
<button id="clear_btn">Clear Screen</button>
<button id="retrieve_btn">Retrieve</button>
<button id="delete_btn">Delete All</button>
<h4><b>Student List</b></h4>
<div id="demo"></div>
```

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erat molestie pharetra massa eget placerat lectus. Aenean pharetra dolor sed odio vehicula ut commodo.



```
document.getElementById("enter_btn").addEventListener("click", function() {
    sid = document.getElementById("student_id").value;
    sname = document.getElementById("student_name").value;
    message = "Student ID:" + sid + "<br>" + "Student Name:" + sname + "<br>";
    document.getElementById("demo").innerHTML += message;
    student = {};
    student.id = sid;
    student.name = sname;
    students.push(student);
});
```

## Section 2

User Name:

Password:

Send

Event	Month	Day	Venue
Lesson 5	Oct	5th	Online
Lesson 6	Oct	12th	Online
Lesson 7	Oct	19th	Online
Lesson 8	Oct	26th	Online

Student Id:

Student Name:

[Enter](#) [Store](#) [Clear Screen](#) [Retrieve](#) [Delete All](#)

**Student List**

Student ID:1111  
Student Name:Peter

## Section 1

### Article 1

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### Article 2

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## Section 2

### Article 1

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User Name:	<input type="text"/>
Password:	<input type="password"/>
<input type="button" value="Send"/>	

Event	Month	Day	Venue
Lesson 5	Oct	5th	Online
Lesson 6	Oct	12th	Online
Lesson 7	Oct	19th	Online
Lesson 8	Oct	26th	Online

Student Id:	<input type="text" value="3333"/>
Student Name:	<input type="text" value="John"/>
<input type="button" value="Enter"/> <input type="button" value="Store"/> <input type="button" value="Clear Screen"/> <input type="button" value="Retrieve"/> <input type="button" value="Delete All"/>	

Student List
Student ID:1111
Student Name:Peter
Student ID:2222
Student Name:David
Student ID:3333
Student Name:John

## Section 1

```
<script>
  document.getElementById('submitBtn').addEventListener('click', sayHello);
  function sayHello() {
    var username = document.forms[0].username.value;
    var password = document.forms[0].pwd.value;
    alert("Hello " + username + "! Your password is " + password + '.');
  }
</script>
```

## Article 2

```
document.getElementById("store_btn").addEventListener("click", function() {
  localStorage.setItem("studentDB", JSON.stringify(students));
}),
```

ipsum sed dolor feugiat suscipit. Donec gravida tellus maximus ex auctor laoreet.



## Section 2

### Anonymous JavaScript Function

## Article 1

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User Name:	<input type="text"/>
Password:	<input type="password"/>
<input type="button" value="Send"/>	

Event	Month	Day	Venue
Lesson 5	Oct	5th	Online
Lesson 6	Oct	12th	Online
Lesson 7	Oct	19th	Online
Lesson 8	Oct	26th	Online

Student Id:	<input type="text" value="3333"/>
Student Name:	<input type="text" value="John"/>

<input type="button" value="Enter"/>	<input style="background-color: black; color: white; font-weight: bold; border: none;" type="button" value="Store"/>	<input type="button" value="Clear Screen"/>	<input type="button" value="Retrieve"/>	<input type="button" value="Delete All"/>
<b>Student List</b>				
Student ID:1111				
Student Name:Peter				
Student ID:2222				
Student Name:David				
Student ID:3333				
Student Name:John				

Article 2

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```
document.getElementById("store_btn").addEventListener("click", function() {
    localStorage.setItem("studentDB", JSON.stringify(students));
});
```

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Lesson 5	Oct	5th	Online
Lesson 6	Oct	12th	Online
Lesson 7	Oct	19th	Online
Lesson 8	Oct	26th	Online

<b>Student Id:</b>	<input type="text" value="3333"/>
<b>Student Name:</b>	<input type="text" value="John"/>

**Student List**

Student ID:1111  
Student Name: Peter  
Student ID:2222  
Student Name: David  
Student ID:3333  
Student Name: John



The screenshot shows the Chrome DevTools Application tab selected. On the left sidebar, under the Application section, 'Local Storage' is expanded, revealing its contents. The URL `http://127.0.0.1:5502` is listed. The main area displays a table with two columns: 'Key' and 'Value'. There is one entry named 'studentDB' with the value being an array of three objects representing student data.

Key	Value
studentDB	[{"id": "1111", "name": "Peter"}, {"id": "2222", "name": "David"}, {"id": "3333", "name": "John"}]

▼ [{"id": "1111", "name": "Peter"}, {"id": "2222", "name": "David"}, {"id": "3333", "name": "John"}]  
▶ 0: {"id": "1111", "name": "Peter"}  
▶ 1: {"id": "2222", "name": "David"}  
▶ 2: {"id": "3333", "name": "John"}

## Section 1

### Article 1

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```
document.getElementById("clear_btn").addEventListener("click", function() {
    students = [];
    display_list = '';
    json_string = '';
    document.getElementById("demo").innerHTML = display_list;
});
```

## Section 2

### Article 1

User Name:	<input type="text"/>
Password:	<input type="password"/>
<input type="button" value="Send"/>	

Event	Month	Day	Venue
Lesson 5	Oct	5th	Online
Lesson 6	Oct	12th	Online
Lesson 7	Oct	19th	Online
Lesson 8	Oct	26th	Online

Student Id:	<input type="text" value="3333"/>
Student Name:	<input type="text" value="John"/>

**Student List**

## Section 1

### Article 1

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### Article 2

```
document.getElementById("retrieve_btn").addEventListener("click", function() {
    json_string = localStorage.getItem("studentDB");
    student_list = JSON.parse(json_string);
    for (i=0;i<student_list.length;i++) {
        display_list = display_list + "Student ID:"+student_list[i].id+"<br>"+"Student Name: "+student_list[i].name;
        students.push(student_list[i]);
    };
});
```

## Section 2

### Article 1

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User Name:	<input type="text"/>
Password:	<input type="password"/>
<input type="button" value="Send"/>	

Event	Month	Day	Venue
Lesson 5	Oct	5th	Online
Lesson 6	Oct	12th	Online
Lesson 7	Oct	19th	Online
Lesson 8	Oct	26th	Online

Student Id:	<input type="text" value="3333"/>
Student Name:	<input type="text" value="John"/>
<input type="button" value="Enter"/> <input type="button" value="Store"/> <input type="button" value="Clear Screen"/> <input type="button" value="Retrieve"/> <input type="button" value="Delete All"/>	

Student List
Student ID:1111
Student Name: Peter
Student ID:2222
Student Name: David
Student ID:3333
Student Name: John

## Section 1

### Article 1

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```
document.getElementById("delete_btn").addEventListener("click", function() {
    localStorage.removeItem("studentDB");
    students = [];
    display_list = '';
    json_string = '';
    document.getElementById("demo").innerHTML = display_list;
});
```



User Name:	<input type="text"/>
Password:	<input type="password"/>
<input type="button" value="Send"/>	

Event	Month	Day	Venue
Lesson 5	Oct	5th	Online
Lesson 6	Oct	12th	Online
Lesson 7	Oct	19th	Online
Lesson 8	Oct	26th	Online

Student Id:	<input type="text" value="3333"/>
Student Name:	<input type="text" value="John"/>

<input type="button" value="Enter"/>	<input type="button" value="Store"/>	<input type="button" value="Clear Screen"/>	<input type="button" value="Retrieve"/>	<input style="background-color: black; color: white; border: none; width: 100px; height: 30px; font-size: 10px; border-radius: 5px;" type="button" value="Delete All"/>
--------------------------------------	--------------------------------------	---	---	---

### Student List

## Section 2

## Article 2

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## Section 2

## Article 1

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Lesson 5	Oct	5th	Online
Lesson 6	Oct	12th	Online
Lesson 7	Oct	19th	Online
Lesson 8	Oct	26th	Online

Student Id:

Student Name:

Enter Store Clear Screen Retrieve

### Student List



Screenshot of the Chrome DevTools Application panel.

The Application panel shows the following sections:

- Manifest:** Shows a manifest file.
- Service Workers:** Shows a service worker for "http://127.0.0.1:5502".
- Clear storage:** A button to clear local storage.
- Storage:** A section with two expandable items:
  - Local Storage:** Expanded, showing a key-value pair for "http://127.0.0.1:5502".
  - Session Storage:** Collapsed.
- Console:** A link to the developer console.
- What's New:** A link to the latest news.

The Local Storage table has columns for Key and Value. A red box highlights the Local Storage section and the "Value" column of the table.

A message "Select a value to preview" is displayed below the table.

## **Use of LocalStorage**

- Remember status from previous session (e.g. points).
- Save variables that are used repeatedly (e.g. email address and password).
- Minimize constant communication with the server to reduce performance load.
- Require synchronisation with server to maintain consistency between server and local information
- There are many ways to store variables locally.  
LocalStorage is only one of them, perhaps the easiest.

# **WHAT IS RESPONSIVE DESIGN ?**

1. **3 key elements of responsive design.**
2. **Float, CSS Grid, CSS Flexbox, and Bootstrap framework for layout composition in responsive design.**
3. **Wire-framing and prototyping in Figma**

**RESPONSIVE DESIGN = VIEW PORT + MEDIA QUERY + MAX/MIN  
WIDTH SETTING**

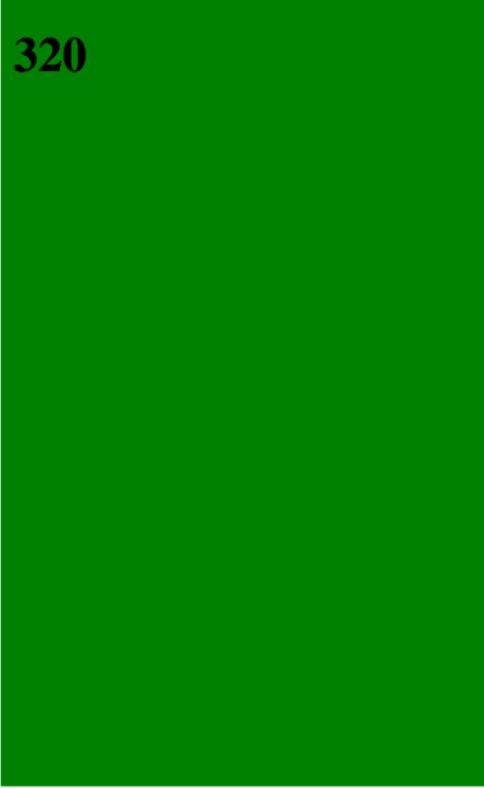
# **EXAMPLE**

# Higher than 960

960

768

550



320

# VIEW PORT

```
<meta name="viewport" content="width=device-width, initial-scale=1.0, user-scalable=0">
```

# mq\_demo.css

```
body {  
    background-color: grey;  
}  
  
@media screen and (max-width: 960px) {  
    body {  
        background-color: red;  
    }  
}  
  
@media screen and (max-width: 768px) {  
    body {  
        background-color: orange;  
    }  
}  
  
@media screen and (max-width: 550px) {  
    body {  
        background-color: yellow;  
    }  
}  
  
@media screen and (max-width: 320px) {  
    body {  
        background-color: green;  
    }  
}
```

## MEDIA QUERY + MAX/MIN WIDTH SETTING

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
<meta charset="utf-8">
```

```
<meta name="viewport" content="width=device-width, initial-scale=1.0, user-scalable=0">
```

```
<title>Workshop</title>
```

```
<link href="mq_demo.css" rel="stylesheet" type="text/css">
```

```
<script src="https://ajax.googleapis.com/ajax/libs/jquery/1.12.4/jquery.min.js"></script>
```

```
<script>
```

```
$(document).ready(function() {
```

```
    $(window).resize(function() {
```

```
        if ($(window).width() >= 960) {
```

```
            $(".showview").html('<h1>Higher than 960</h1>');
```

```
    }
```

```
        if ($(window).width() < 960) {
```

```
            $(".showview").html('<h1>960</h1>');
```

```
    }
```

```
        if ($(window).width() < 768) {
```

```
            $(".showview").html('<h1>768</h1>');
```

```
    }
```

```
        if ($(window).width() < 550) {
```

```
            $(".showview").html('<h1>550</h1>');
```

```
    }
```

```
        if ($(window).width() < 320) {
```

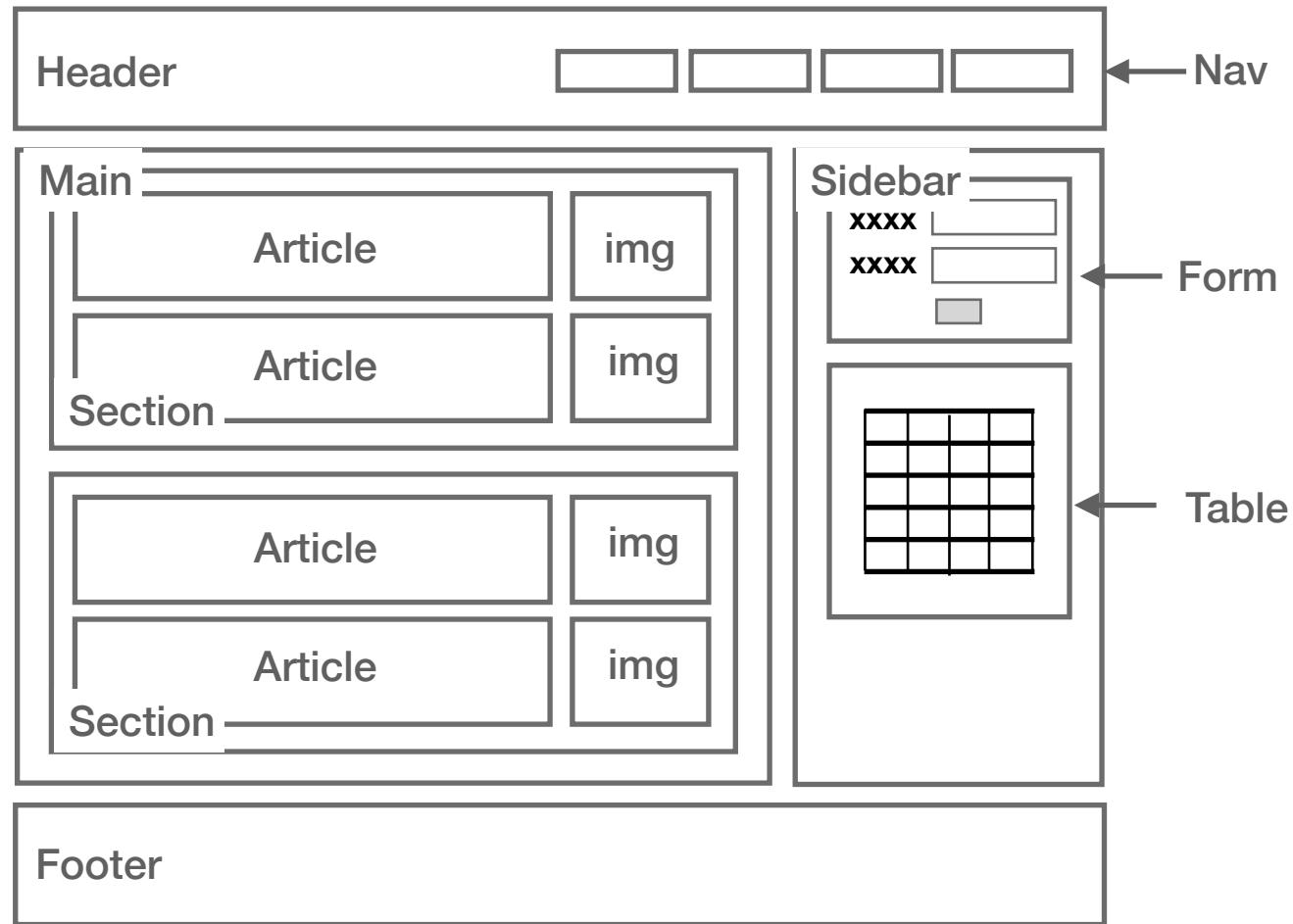
```
            $(".showview").html('<h1>320</h1>');
```

# media\_query\_demo.html

VIEW PORT

```
<script>
$(document).ready(function() {
    $(window).resize(function() {
        if ($(window).width() >= 960) {
            $(".showview").html('<h1>Higher than 960</h1>');
        }
        if ($(window).width() < 960) {
            $(".showview").html('<h1>960</h1>');
        }
        if ($(window).width() < 768) {
            $(".showview").html('<h1>768</h1>');
        }
        if ($(window).width() < 550) {
            $(".showview").html('<h1>550</h1>');
        }
        if ($(window).width() < 320) {
            $(".showview").html('<h1>320</h1>');
        }
    });
});
</script>
</head>
<body>
<div class="showview">
```

## Wireframe



## Section 1

### Article 1

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### Article 2

Vestibulum ullamcorper nisl elit non semper nunc viverra eu

User Name:

Password:

Event	Month	Day	Venue
Lesson 5	Oct	5th	Online
Lesson 6	Oct	12th	Online
Lesson 7	Oct	19th	Online
Lesson 8	Oct	26th	Online

```
<div id='main'>
  <div class='section'>
    <h1><center>Section 1</center></h1>
    <br>
    <h2>Article 1</h2>
         |
| Password:                           | <input type="password"/> |
| <input type="button" value="Send"/> |                          |

| Event    | Month | Day  | Venue  |
|----------|-------|------|--------|
| Lesson 5 | Oct   | 5th  | Online |
| Lesson 6 | Oct   | 12th | Online |
| Lesson 7 | Oct   | 19th | Online |
| Lesson 8 | Oct   | 26th | Online |

```
<div id='sidebar'>
  <form id='login'>
    <div class='form-group'>
      <label>User Name:</label>
      <input type='text' name='username'>
    </div>
    <div class='form-group'>
      <label>Password:</label>
      <input type='password' name='password'>
    </div>
    <div class='form-group'>
      <input type='button' value='Login'>
    </div>
  </form>
</div>
```

```
#main {  
    float:left;  
    width:69.5%;  
    box-sizing:border-box;  
    border:0px;  
}
```

ogs

## Action 1

### Article 1

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### Article 2

Vestibulum ullamcorper nisl elit non semper nunc viverra eu

User Name:

Password:

Event	Month	Day	Venue
Lesson 5	Oct	5th	Online
Lesson 6	Oct	12th	Online
Lesson 7	Oct	19th	Online
Lesson 8	Oct	26th	Online

```
#sidebar {  
    float:right;  
    width:29.5%;  
    box-sizing:border-box;  
    border:0px;  
}
```

# Bootstrap

Build responsive, mobile-first projects on the web with the world's most popular front-end component library.

Bootstrap is an open source toolkit for developing with HTML, CSS, and JS. Quickly prototype your ideas or build your entire app with our Sass variables and mixins, responsive grid system, extensive prebuilt components, and powerful plugins built on jQuery.

[Get started](#)[Download](#)

Currently v4.3.1

2



<https://getbootstrap.com/>

# **Bootstrap Components for Responsive Web Page Layout and Composition.**

Source: <https://getbootstrap.com/docs/4.0/components/forms/>

Email address

Enter email

We'll never share your email with anyone else.

Password

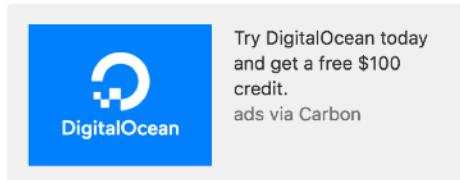
Password

Check me out

Submit

# Buttons

Use Bootstrap's custom button styles for actions in forms, dialogs, and more with support for multiple sizes, states, and more.



## Examples

<https://getbootstrap.com/docs/4.0/components/buttons/>

Bootstrap includes several predefined button styles, each serving its own semantic purpose, with a few extras thrown in for more control.

Primary   Secondary   Success   Danger   Warning   Info   Light   Dark   Link

```
<button type="button" class="btn btn-primary">Primary</button>
<button type="button" class="btn btn-secondary">Secondary</button>
<button type="button" class="btn btn-success">Success</button>
<button type="button" class="btn btn-danger">Danger</button>
<button type="button" class="btn btn-warning">Warning</button>
<button type="button" class="btn btn-info">Info</button>
<button type="button" class="btn btn-light">Light</button>
<button type="button" class="btn btn-dark">Dark</button>

<button type="button" class="btn btn-link">Link</button>
```

[Getting started](#)[Layout](#)[Overview](#)[Grid](#)[Utilities for layout](#)[Content](#)[Components](#)[Utilities](#)[Extend](#)

# Grid system

Use our powerful mobile-first flexbox grid to build layouts of all shapes and sizes thanks to a twelve column system, five default responsive tiers, Sass variables and mixins, and dozens of predefined classes.

## How it works

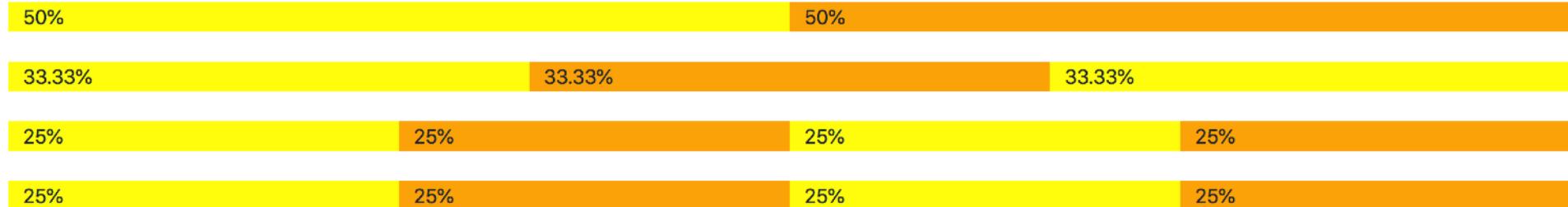
Bootstrap's grid system uses a series of containers, rows, and columns to layout and align content. It's built with [flexbox](#) and is fully responsive.

# Basic Grid Structure

Resize the browser window to see the effect.

The first, second and third row will automatically stack on top of each other when the screen is less than 576px wide.

**Use CDN link to access remote CSS and JS libraries for Bootstrap 4.5.2.**



```
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap.min.css">
</head>
```

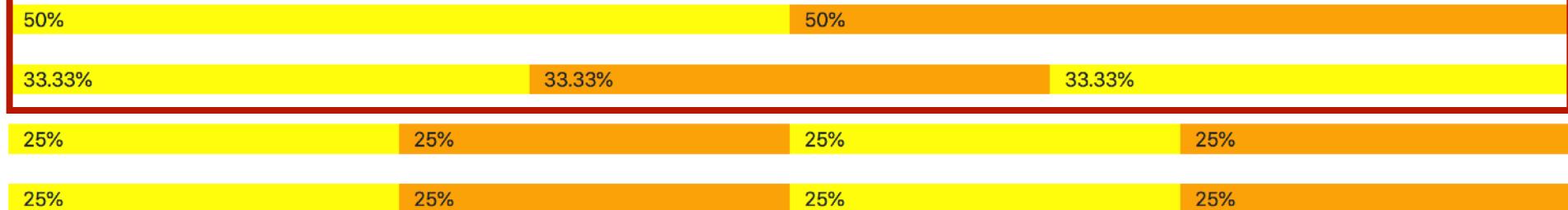
Source: [https://www.w3schools.com/bootstrap4/tryit.asp?filename=trybs\\_grid\\_ex\\_structure&stacked=h](https://www.w3schools.com/bootstrap4/tryit.asp?filename=trybs_grid_ex_structure&stacked=h)

# Basic Grid Structure

Resize the browser window to see the effect.

The first, second and third row will automatically stack on top of each other when the screen is too small.

**Number of columns add up to 12  
then auto resize.**



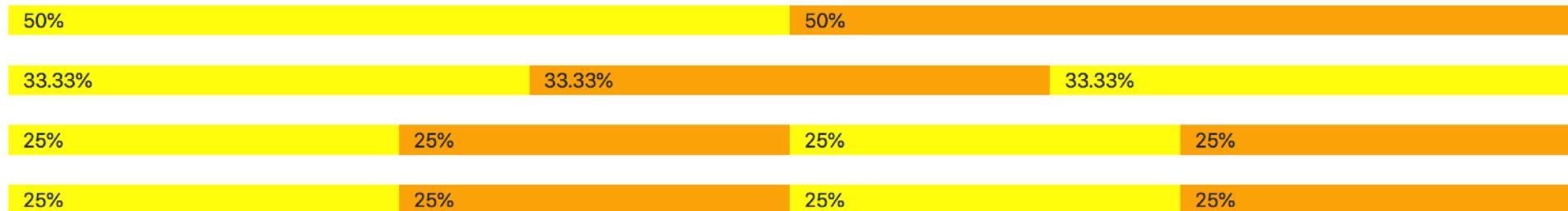
```
<div class="container-fluid">
  <!-- Control the column width, and how they should appear on different devices -->
  <div class="row">
    <div class="col-sm-6" style="background-color: #yellow;">50%</div>
    <div class="col-sm-6" style="background-color: #orange;">50%</div>
  </div>
  <br>

  <div class="row">
    <div class="col-sm-4" style="background-color: #yellow;">33.33%</div>
    <div class="col-sm-4" style="background-color: #orange;">33.33%</div>
    <div class="col-sm-4" style="background-color: #yellow;">33.33%</div>
  </div>
  <br>
```

# Basic Grid Structure

Resize the browser window to see the effect.

The first, second and third row will automatically stack on top of each other when the screen is less than 576px wide.



```
<div class="row">
  <div class="col-sm" style="background-color: #yellow;">25%</div>
  <div class="col-sm" style="background-color: #orange;">25%</div>
  <div class="col-sm" style="background-color: #yellow;">25%</div>
  <div class="col-sm" style="background-color: #orange;">25%</div>
</div>
<br>

<div class="row">
  <div class="col" style="background-color: #yellow;">25%</div>
  <div class="col" style="background-color: #orange;">25%</div>
  <div class="col" style="background-color: #yellow;">25%</div>
  <div class="col" style="background-color: #orange;">25%</div>
</div>
```



**Auto resize disabled  
without column  
specification.**

```
<div class="row">
  <div class="col-sm" style="background-color: #yellow;">25%</div>
  <div class="col-sm" style="background-color: #orange;">25%</div>
  <div class="col-sm" style="background-color: #yellow;">25%</div>
  <div class="col-sm" style="background-color: #orange;">25%</div>
</div>
<br>

<div class="row">
  <div class="col" style="background-color: #yellow;">25%</div>
  <div class="col" style="background-color: #orange;">25%</div>
  <div class="col" style="background-color: #yellow;">25%</div>
  <div class="col" style="background-color: #orange;">25%</div>
</div>
```

# **Common Bootstrap Components**

# Components

Over a dozen reusable components built to provide iconography, dropdowns, input groups, navigation, alerts, and much more.

## Glyphicons

### Available glyphs

Includes over 250 glyphs in font format from the Glyphicon Halflings set. [Glyphicons](#) Halflings are normally not available for free, but their creator has made them available for Bootstrap free of cost. As a thank you, we only ask that you include a link back to [Glyphicons](#) whenever possible.

 glyphicon glyphicon-asterisk	 glyphicon glyphicon-plus	 glyphicon glyphicon-euro	 glyphicon glyphicon-eur	 glyphicon glyphicon-minus	 glyphicon glyphicon-cloud	 glyphicon glyphicon-envelope	 glyphicon glyphicon-pencil
 glyphicon glyphicon-glass	 glyphicon glyphicon-music	 glyphicon glyphicon-search	 glyphicon glyphicon-heart	 glyphicon glyphicon-star	 glyphicon glyphicon-star-empty	 glyphicon glyphicon-user	 glyphicon glyphicon-film
 glyphicon glyphicon-th-large	 glyphicon glyphicon-th	 glyphicon glyphicon-th-list	 glyphicon glyphicon-ok	 glyphicon glyphicon-remove	 glyphicon glyphicon-zoom-in	 glyphicon glyphicon-zoom-out	 glyphicon glyphicon-off

Glyphicons  
Dropdowns  
Button groups  
Button dropdowns  
Input groups  
Navs  
Navbar  
Breadcrumbs  
Pagination  
Labels  
Badges  
Jumbotron  
Page header  
Thumbnails  
Alerts  
Progress bars  
Media object  
List group  
Panels  
Responsive embed  
Wells

<https://getbootstrap.com/docs/3.3/components/#nav>

[Getting started](#)[Layout](#)[Overview](#)[Grid](#)[Utilities for layout](#)[Content](#)[Components](#)[Utilities](#)[Extend](#)

# Overview

Components and options for laying out your Bootstrap project, including wrapping containers, a powerful grid system, a flexible media object, and responsive utility classes.

## Containers

Containers are the most basic layout element in Bootstrap and are **required when using our default grid system**. Choose from a responsive, fixed-width container (meaning its `max-width` changes at each breakpoint) or fluid-width (meaning it's `100%` wide all the time).

## Components

[Alerts](#)[Badge](#)[Breadcrumb](#)[Buttons](#)[Button group](#)[Card](#)[Carousel](#)[Collapse](#)[Dropdowns](#)[Forms](#)

# Alerts

Provide contextual feedback messages for typical user actions with the handful of available and flexible alert messages.

## Examples

Alerts are available for any length of text, as well as an optional dismiss button. For proper styling, use one of the eight **required** contextual classes (e.g., `.alert-success`). For inline dismissal, use the [alerts jQuery plugin](#).

Search...

Input group

Jumbotron

List group

Media object

Modal

Navs

Navbar

Pagination

Popovers

Progress

Scrollspy

# Alerts

Provide contextual feedback messages for typical user actions with the handful of available and flexible alert messages.

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[Popovers](#)[Progress](#)[Scrollspy](#)[Spinners](#)[Toasts](#)[Tooltips](#)[Utilities](#)[Extend](#)[Migration](#)[About](#)

Bootstrap “spinners” can be used to show the loading state in your projects. They’re built only with HTML and CSS, meaning you don’t need any JavaScript to create them. You will, however, need some custom JavaScript to toggle their visibility. Their appearance, alignment, and sizing can be easily customized with our amazing utility classes.

For accessibility purposes, each loader here includes `role="status"` and a nested `<span class="sr-only">Loading...</span>`.

## Border spinner

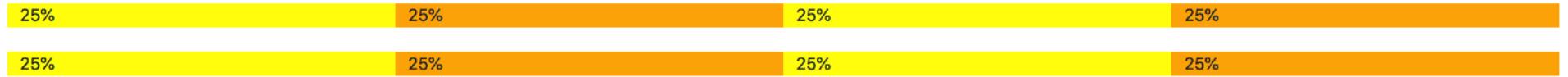
Use the border spinners for a lightweight loading indicator.



# **Popular Components**

- a. Container
- b. Navbar
- c. Gliphicons
- d. Grid/Row/Column
- e. Thumbnail
- f. Button
- g. Form
- h. Panel/Wells/Jumbotron
- i. Carousel/Collapse
- j. Tabs
- k. Table
- l. Pagination
- m. Badges/List Group/Cards
- n. Modal/Tooltip/Popover

<https://www.w3schools.com/bootstrap4/default.asp>



**John Doe**

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

[See Profile](#)

- First item
- Second item
- Third item

```
<div class="row">
  <div class="col" style="background-color: yellow;">25%</div>
  <div class="col" style="background-color: orange;">25%</div>
  <div class="col" style="background-color: yellow;">25%</div>
  <div class="col" style="background-color: orange;">25%</div>
</div>

</div><!-- end container fluid-->
<div class="card" style="width:20rem; margin:20px 0 24px 0">
  
  <div class="card-body">
    <h4 class="card-title">John Doe</h4>
    <p class="card-text">Some example text some example text. John Doe is an architect and engineer</p>
    <a href="javascript:void(0)" class="btn btn-primary">See Profile</a>
  </div>
</div>

<ul class="list-group">
  <li class="list-group-item">First item</li>
  <li class="list-group-item">Second item</li>
  <li class="list-group-item">Third item</li>
</ul>
```

50%

33.33%

25%

25%

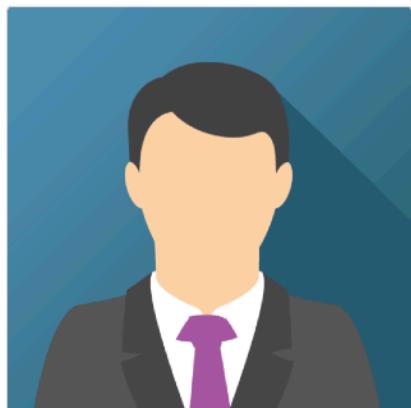
33.33%

50%

33.33%

25%

25%



**John Doe**

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

[See Profile](#)

First item

Second item

Third item



# Bootstrap themes, templates, and more to help you start your next project!

Start Bootstrap creates free, open source, MIT license, Bootstrap [themes](#), [templates](#), and [code snippets](#) for you to use on any project, [guides](#) to help you learn more about designing and developing with the Bootstrap framework, and premium Bootstrap products.



<https://startbootstrap.com/>

## **URL REFERENCES FOR UNDERSTANDING BOOTSTRAP RESPONSIVE WEB FRAMEWORK**

1. <https://bootstraptaste.com/>
2. <https://startbootstrap.com/template-categories/all/>
3. <http://blacktie.co/>
4. <https://adminlte.io/blog/10-Free-Responsive-Bootstrap-Templates-For-2016>

# **Understanding JSON (JavaScript Object Notation) as a Standard for Data Exchange**

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](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": "<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", "Ancillary\_facilities\_cn": "<li>男、女更衣室及洗手間<br><li>1個收費停車場 (設有1個殘疾人士專用車位)<br><li>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<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", "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": "<li>Men's and ladies' toilets<br><li>Other facilities include 2 hard-surface 5-a-side soccer, a children's playground and elderly fitness equipment.<br><li>Barrier Free Facilities: Accessible Toilet, Tactile Guide Path, Braille Directory Map\\Floor Plan", "Ancillary\_facilities\_cn": "<li>男、女洗手間<br><li>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<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", "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": "<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"}]

JSON Viewer☆

Save & Share

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": "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"  
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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", "Remarks\_en": "", "Remarks\_cn": ""}]

**Result mode:**

**view** ▾

---

**Load Url**

---

**Browse**

---

**Tree Viewer**

---

2 Tab Space ▾

---

**Beautify**

---

(i) X

# Website Designer Near You

Stallions SEO LLC

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businesses phone ring!

---

**OPEN**

---

**Minify**

---

**Validate**

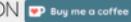
```
array > 0 >
▼ array [228]
  ▼ 0 {18}
    District_en : Kowloon City
    District_cn : 九龍城區
    Name_en : Carpenter Road Park
    Name_cn : 賈炳達道公園
    Address_en : Carpenter Road, Kowloon City, Kowloon.
    Address_cn : 九龍城賈炳達道
    GIHS : 9G5i7NFpXL
    Court_no_en : 4
    Court_no_cn : 4
    Ancillary_facilities_en : <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、1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
```

<https://codebeautify.org/jsonviewer>

District_en	District_cn	Name_en	Name_cn	Address_en
Kowloon City	九龍城區	Carpenter Road Park	賈炳達道公園	Carpenter Road, Kowloon City, Kowloon.
Kowloon City	九龍城區	Ho Man Tin Park	何文田公園	No.1 Chung Yee Street, Ho Man Tin, Kowloon.
Kowloon City	九龍城區	Hoi Sham Park	海心公園	Yuk Yat Street, Tokwawan, Kowloon.
Kowloon City	九龍城區	Junction Road Park	聯合道公園	195 Junction Road, Kowloon City.
Kowloon City	九龍城區	Kam Shing Road Recreation Ground	金城道遊樂場	Kam Shing Road, Kowloon.
Kowloon City	九龍城區	Kau Pui Lung Road Playground	靠背壘道遊樂場	Kau Pui Lung Road, Kowloon.
Kowloon City	九龍城區	Kent Road Garden	根德道花園	Kent Road, Kowloon.
Kowloon City	九龍城區	King Wan Street Playground	景雲街遊樂場	King Wan Street, To Kwa Wan, Kowloon.
Kowloon City	九龍城區	King's Park High Level Service Reservoir Playground	京士柏上配水庫遊樂場	Chung Hau Street, Ho Man Tin, Kowloon.
Kowloon City	九龍城區	Kowloon Tsai Park	九龍仔公園	13 Inverness Road, Kowloon City, Kowloon.
Kowloon City	九龍城區	Lung Cheung Road Playground	龍翔道遊樂場	Beacon Hill Road, Kowloon.
Kowloon City	九龍城區	Ma Tau Wai Road Playground	馬頭圍道遊樂場	Ma Tau Wai Road, Tokwawan, Kowloon.
Kowloon City	九龍城區	Oxford Road Playground	牛津道遊樂場	Oxford Road, Kowloon.
Kowloon City	九龍城區	Peace Avenue Playground	太平道遊樂場	Peace Avenue, Ho Man Tin, Kowloon.
Kowloon City	九龍城區	Perth Street Sports Ground	巴富街運動場	Shek Ku Street , Ho Man Tin, Kowloon.
Kowloon City	九龍城區	Pui Ching Road Playground	培正道遊樂場	Pui Ching Road, Ho Man Tin, Kowloon.
Kowloon City	九龍城區	Rutland Quadrant Children's Playground	律倫街兒童遊樂場	Rutland Quadrant, Kowloon.
Kowloon City	九龍城區	Sung Wong Toi Playground	宋王臺遊樂場	Sung Wong Toi Road, Kowloon.
Kowloon City	九龍城區	Tai Wan Road Playground	大環道遊樂場	Tai Wan Road, Hung Hom, Kowloon.
Kowloon City	九龍城區	Tai Wan Shan Park	大環山公園	Wan Hoi Street, Hung Hom, Kowloon.
Kowloon City	九龍城區	To Kwa Wan Recreation Ground	土瓜灣遊樂場	66 Ha Ha Ling Road, To Kwa Wan, Kowloon

## 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,QceapQm6x,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,Toilets and changing rooms are provided in the Playground.<br><lb>1 Barrier Free Facilities: Accessible North,北面,Po Wo Road Basketball Court,百和路藍球場,"Chi Wa Lane, Fanling, N.T.",新界粉嶺華環里,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 2816,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,RzNsmQXn2J,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 - 12pm, Sai Kung,西貢區,Sheung Ning Playground,常寧遊樂場,"Sheung Ning Road, Tsing Kwan O",將軍澳常寧路,KsTjAOvK9,3,3,<lb>1 Changing rooms and toilets</lb><lb>1 Floodlights<br><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>1 Toilets, changing rooms with lockers and outdoor storage cages are provided in the Recreation Ground.</lb><lb>1 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,pQcG3zwId,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 Leng, Sheung Shui , N.T.",新界上水唐公徑,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,114-8-9,22-4

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>

- Convert JSON (popular format used in API data delivery) to CSV file (<https://codebeautify.org/jsonviewer>)
- Convert CSV data to JSON file (<https://www.convertcsv.com/csv-to-json.htm>)
- Import CSV into Excel, Google Sheet, Numbers, or SQL/NoSQL database.

# **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_6RnpLP1wMjqcwsUvotNATB8Np30nt1xb7066ULcAHI9oqqRhuctFifPTYNd7DRNR56c
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>

# **Pivot Table in Google Sheet**

covid\_data\_sample

File Edit View Insert Format Data Tools Add-ons Help Last edit was yesterday at 15:30

Working...

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	district	building	case_no												
2	沙田	新田圍邨	716												
3	東區	城市花園 1座	717												
4	觀塘	安達邨達樓	718												
5	南區	貝沙灣南灣四期 1座	719												
6	大埔	逸瓊灣二期 10座	720												
7	中西區	瀚然	721												
8	南區	香港瑞思酒店	722												
9	東區	嘉亨灣 1座	723												
10	西貢	清水灣半島 7座	724												
11	西貢	清水灣半島 7座	725												
12	沙田	雅景臺 3座	726												
13	南區	石排灣邨碧雲樓	727												
14	南區	香港瑞思酒店	728												
15	元朗	蘿村市	729												
16	元朗	Park Yoho Genova 3	730												
17	觀塘	觀塘帝盛酒店	731												
18	深水埗	泓景臺 6座	732												
19	油尖旺	尖沙咀香港華麗酒店	733												
20	離島	逸東(二)邨悅逸樓	734												
21	灣仔	藍塘道 12-22號友誼	735												
22	東區	柏匯	736												
23	中西區	殷輝花園 1期	737												
24	中西區	恒麗閣	738												
25	中西區	譽皇居	740												
26	葵青	長宏邨宏毅樓	741												
27	灣仔	怡富大廈 A座	742												
28	離島	東環 2B座	743												
29	九龍城	嘉樂閣	745												
30	九龍城	差館里 35號	746												
31	離島	東環 1A座	747												
32	南區	海怡半島美華閣	748												
33	離島	藍天海岸 3期影岸·紅	749												

total cases cases\_by\_district

Transferring data from apis.google.com...

covid\_data\_sample

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Share

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

200 澳門 嘉香軒

201 中西區 德輔道西 288號

202 西貢 坑口村

203 西貢 早禾居

204 荃灣 豪景花園 2座

205 屯門 富泰村健泰樓

206 北區 海禧華庭 2座

207 離島 藍天海岸 6座

208 中西區 明珠台 D座

209 澳門 柏寧酒店

210 油尖旺 帝國酒店

211 油尖旺 恒豐酒店

212 元朗 蕃田村

213 中西區 細城峰 2座

214 東區 新翠花園 6座

215 元朗 大井圍村

216 屯門 海景花園 8座

217 東區 華裕閣

218 東區 華裕閣

219 荃灣 荃灣絲麗酒店

220 觀塘 油塘工業城 B1座

221 油尖旺 華寶大廈

222 東區 太古城金殿台漢宮閣

223 東區 華美達盛景酒店

224 九龍城 新德園

225 中西區 禧福道 1號新德園

226 油尖旺 瑩璽 6B座

227 中西區 文咸東街 127號萬和

觀塘 濱景花園 2座

229 葵青 荃灣帝盛酒店

230 離島 愉景灣朝暉徑

231 油尖旺 漆咸道南 83-85號金

232 中西區 皇后大道中 273-277

Sort sheet by column A, A → Z

Sort sheet by column A, Z → A

Sort range by column A, A → Z

Sort range by column A, Z → A

Sort range

Create a filter

Filter views

Slicer

Data validation

Pivot table

Randomise range

Named ranges

Protected sheets and ranges

Clean-up suggestions

Column stats

Split text to columns

Remove duplicates

Trim whitespace

Group Option+Shift+→

Ungroup Option+Shift+←

Sum: 223495

Explore

total\_cases cases\_by\_district

covid\_data\_sample Saved to Drive

File Edit View Insert Format Data Tools Add-ons Help Last edit was seconds ago

100% £ .0 .00 123 Default (Arl... 10 B A

A B C D E F G H I J K L

1 Rows Columns

2 Values

3

4

5

6

7

8

9

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33

Pivot Table 5 cases\_by\_district

Pivot table editor

total\_cases!A1:C263

Suggested

Count of building for each district

Rows

district

Columns

building

Values

case\_no

Filters

# covid\_data\_sample

File Edit View Insert Format Data Tools Add-ons Help Last edit was seconds ago

Share

A B C D E F G H I J K L

1 district

2 中西區

3 九龍城

4 元朗

5 北區

6 南區

7 大埔

8 屯門

9 東區

10 沙田

11 油尖旺

12 深水埗

13 灣仔

14 荃灣

15 葵青

16 西貢

17 觀塘

18 離島

19 黃大仙

20 Grand Total

21

22

23

24

25

26

27

28

29

30

31

32

33

total\_cases!A1:C263

Suggested

Rows

district

Order Ascending Sort by district

Show totals

Columns

Values

Add Calculated Field

district building case\_no

Filters

Pivot table editor

+ total\_cases Pivot Table 5 cases\_by\_district

Rows: district  
Columns: None  
Values: None  
Filters: None

# covid\_data\_sample

File Edit View Insert Format Data Tools Add-ons Help Last edit was seconds ago

Share

	A	B	C	D	E	F	G	H	I	J	K	L
1	district	COUNTA of building										
2	中西區	39										
3	九龍城	23										
4	元朗	17										
5	北區	7										
6	南區	16										
7	大埔	5										
8	屯門	9										
9	東區	14										
10	沙田	15										
11	油尖旺	22										
12	深水埗	2										
13	灣仔	28										
14	荃灣	7										
15	葵青	13										
16	西貢	16										
17	觀塘	13										
18	離島	12										
19	黃大仙	4										
20	Grand Total	262										
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
32												
33												

## Pivot table editor

total\_cases!A1:C263

Suggested

Rows

district

Order

Sort by

Ascending

district

Show totals

Columns

Values

building

Summarise by

Show as

COUNTA

Default

Filters

## covid\_data\_sample ★ Saving...

File Edit View Insert Format Data Tools Add-ons Help Last edit was seconds ago

Share



	A	B	C	D	E	F	G	H	I	J	K	L
1	district	COUNTA of building										
2	中西區	39										
3	九龍城	23										
4	元朗	17										
5	北區	7										
6	南區	16										
7	大埔	5										
8	屯門	9										
9	東區	14										
10	沙田	15										
11	油尖旺	22										
12	深水埗	2										
13	灣仔	28										
14	荃灣	7										
15	葵青	13										
16	西貢	16										
17	觀塘	13										
18	離島	12										
19	黃大仙	4										
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
32												
33												

Pivot table editor

total\_cases!A1:C263

Suggested

Rows

district

Order Ascending Sort by district

Show totals

Columns

building

Summarise by COUNTA Show as Default

Values

Filters

File Edit View Insert Format Data Tools Add-ons Help Last edit was seconds ago

Share

New

Open

Import

Make a copy

Email

Download

Version history

Rename

Move

Add a shortcut to Drive

Move to bin

Publish to the web

Document details

Spreadsheet settings

Print

total\_cases!A1:C263

Suggested

Rows

district

Order Ascending Sort by district

Show totals

Columns

Values

building

Summarise by COUNTA Show as Default

Filters

covid\_data\_sample

total\_cases

Pivot Table 5

cases\_by\_district

Sum: 262

covid\_data\_sample

File Edit View Insert Format Data Tools Add-ons Help Last edit was seconds ago

Pivot table editor

total\_cases!A1:C263

Suggested

Rows

district

Order Ascending Sort by district

Show totals

Columns

Values

building

Summarise by COUNTA Show as Default

Filters

A B C D E F G H I J K L

district COUNTA of building

district	COUNTA of building
中西區	39
九龍城	23
元朗	17
北區	7
南區	16
大埔	5
屯門	9
東區	14
沙田	15
油尖旺	22
深水埗	2
灣仔	28
荃灣	7
葵青	13
西貢	16
觀塘	13
離島	12
黃大仙	4

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Entire Document Web page

total\_cases

Pivot Table 5

cases\_by\_district

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+ total\_cases Pivot Table 5 cases\_by\_district Sum: 262

covid\_data\_sample

File Edit View Insert Format Data Tools Add-ons Help Last edit was seconds ago

Pivot table editor

district	COUNTA of building
中西區	39
九龍城	23
元朗	17
北區	7
南區	16
大埔	5
屯門	9
東區	14
沙田	15
油尖旺	22
深水埗	2
灣仔	28
荃灣	7
葵青	13
西貢	16
觀塘	13
離島	12
黃大仙	4

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Pivot Table 5 ▾

Web page

Comma-separated values (.csv) (selected)

Tab-separated values (.tsv)

PDF document (.pdf)

Microsoft Excel (.xlsx)

OpenDocument spreadsheet (.ods)

**Published content**

cases\_by\_district ▾

**Publish**

Stop publishing

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total\_cases!A1:C263

Suggested

Rows

district

Order Ascending Sort by district

Show totals

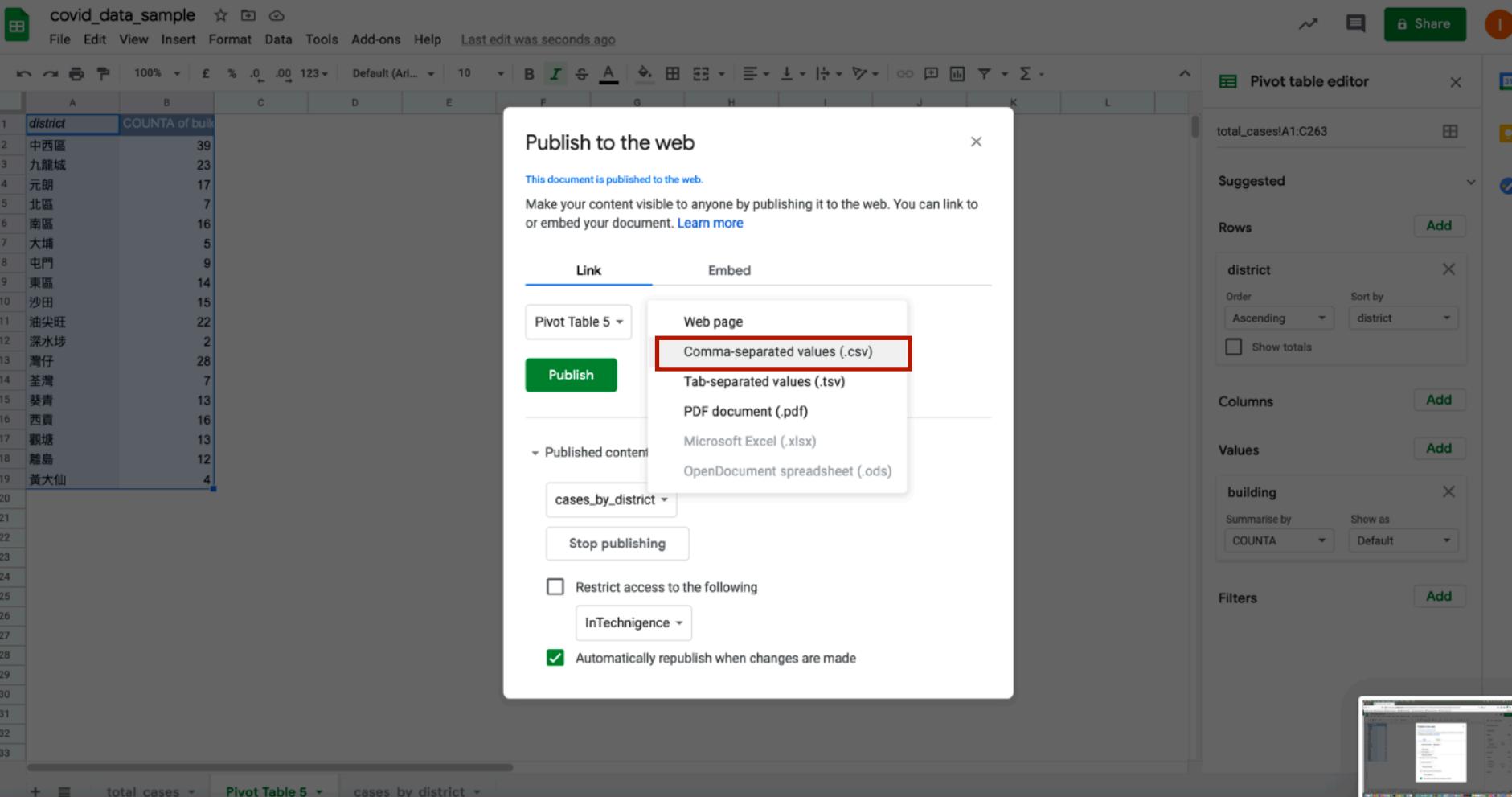
Columns

Values

building

Summarise by COUNTA Show as Default

Filters



covid\_data\_sample

File Edit View Insert Format Data Tools Add-ons Help Last edit was seconds ago

Pivot table editor

total\_cases!A1:C263

Suggested

Rows

district

Order Ascending Sort by district

Show totals

Columns

Values

building

Summarise by COUNTA Show as Default

Filters

A B C D E F G H I J K L

1 district COUNTA of building

2 中西區 39

3 九龍城 23

4 元朗 17

5 北區 7

6 南區 16

7 大埔 5

8 屯門 9

9 東區 14

10 沙田 15

11 油尖旺 22

12 深水埗 2

13 蘇屋 28

14 荃灣 7

15 葵青 13

16 西貢 16

17 觀塘 13

18 離島 12

19 黃大仙 4

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Pivot Table 5 Comma-separated values (.csv)

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cases\_by\_district

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+ total\_cases Pivot Table 5 cases\_by\_district Sum: 262

covid\_data\_sample

File Edit View Insert Format Data Tools Add-ons Help Last edit was seconds ago

A B C D E

district COUNTA of building

district	COUNTA of building
中西區	39
九龍城	23
元朗	17
北區	7
南區	16
大埔	5
屯門	9
東區	14
沙田	15
油尖旺	22
深水埗	2
灣仔	28
荃灣	7
葵青	13
西貢	16
觀塘	13
離島	12
黃大仙	4

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Pivot Table 5 Comma-separated values (.csv)

lkflSJ0R0XbrR6qrqqvg9pxzgn/pub?gid=1032203427&single=true&output=csv

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Published content and settings

Pivot Table 5, cas... Stop publishing

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Pivot table editor

total\_cases!A1:C263

Suggested

Rows

district

Order Ascending Sort by district

Show totals

Columns

building

Summarise by COUNTA Show as Default

Filters

Sum: 262

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_6RnpLP1wMjqcwsUvotNATB8Np30ntLxb7066ULcAHI9oqqRhuctFifPTYNd7DRNR56a
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>
```



Paste the published URL link here.

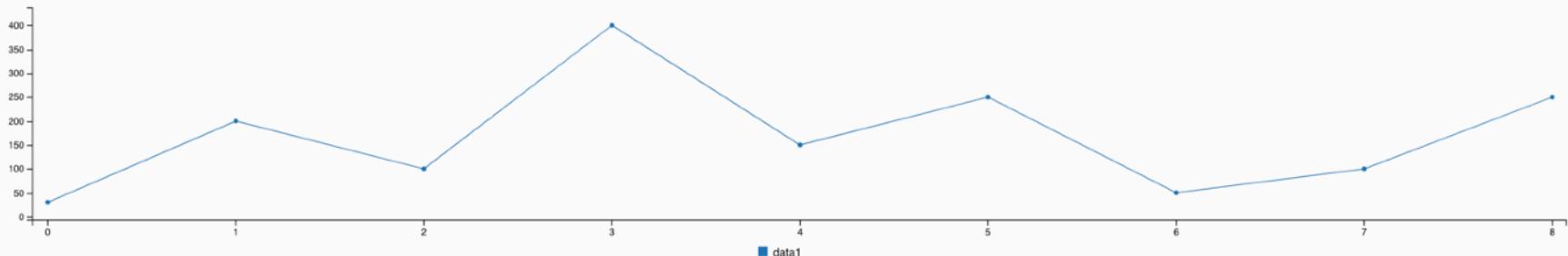
<https://github.com/jsoma/tabletop/blob/master/examples/simple/no-tabletop.html>

```
1  <!DOCTYPE html>
2  <html>
3  <body>
4  <p id="food"></p> 1
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_6RnpLP1wMjqcwsUvotNATB8Np30ntlXb7066ULcAHI9oqqRhuctFifPTYNd7DRNRE56oTdt/pub?output=csv'
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) 3
19
20   function showInfo(results) {
21     var data = results.data 6
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" and run the command<br/>
32 </body>
33 </html>
```

1. Define the selector with an id “food”.
2. Define the Google Spreadsheet URL.
3. Respond to DOM load event by downloading the spreadsheet in CSV format.
4. Retrieve the CSV file and convert it into JSON format.
5. Show the result by reading the JSON data into a data array.
6. Assign the var name “data” to the array.
7. Display the array element at the location specified by the selector.

# **Using Google Spreadsheet Data in JSON Format for Data Visualization**

# 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.

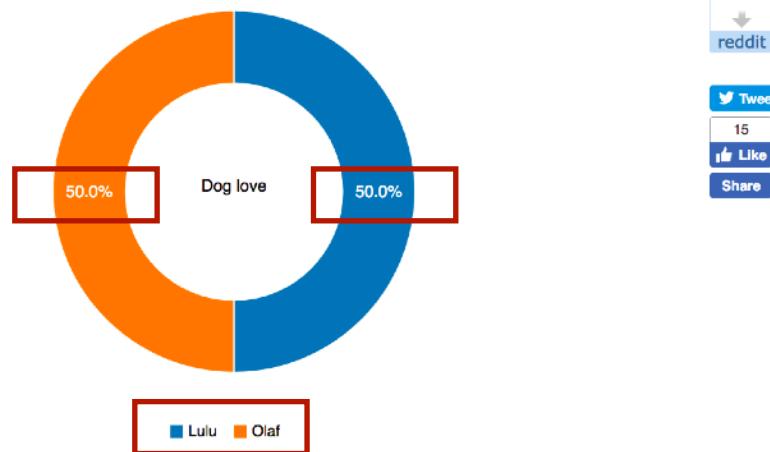
<https://c3js.org/>

# Jocellyn's Blog

## Simple charts with C3 - in 5 minutes!

This article aims to explain how to use a cool library called [C3](#) for building simple charts. C3 is a javascript library which builds on top of [famous D3](#). You can find plenty of good sources (online or printed) on how to learn D3 and make complex visualizations with it, but for many people, these would be too advanced. Often you just need to add a [simple graph to a webpage](#) to show some statistics - a scatter plot or a bar chart.

C3 allows you to do just that without knowing all the complexity of D3 because it wraps all you need into a simple API. You do not need to handle the SVG elements manually, nor the hover effects, etc. The final result could look like this:



<http://jocellyn.cz/2014/07/25/simple-charts-with-c3.html>

```
<div id="chart"></div>
```

```
var chart = c3.generate({  
    data: {  
        columns: [ [ 'Lulu', 50 ], [ 'Olaf', 50 ] ],  
        type : 'donut'  
    },  
    donut: {  
        title: "Dogs love:",  
    }  
});
```

## C3 is an object of objects

Some objects have array based value pairs (e.g. **columns** as key to array of array)



# # 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 »](#)

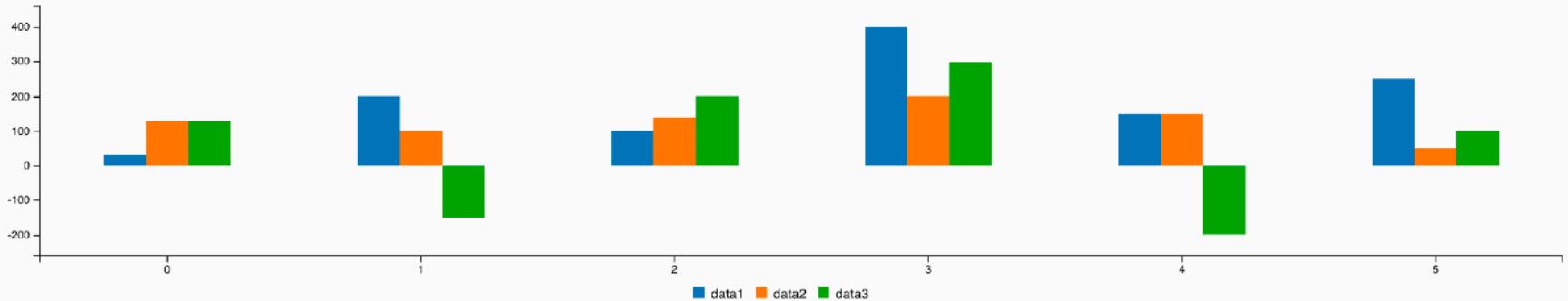
## Scatter Plot

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
    }
  }
})
```

[https://c3js.org/samples/chart\\_bar.html](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!

Choose Wix to Build Your Site

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

OPEN



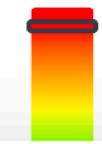
HEX #FF5733

RGB 255, 87, 51

HSL 11, 80%, 60%



1 2 3 4 5 6 7 8 9 10



#### HELPFUL TIPS



Picking



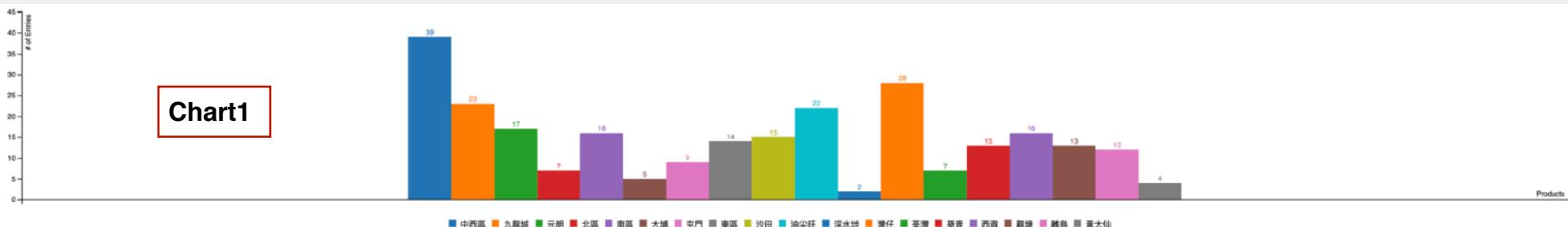
Saving



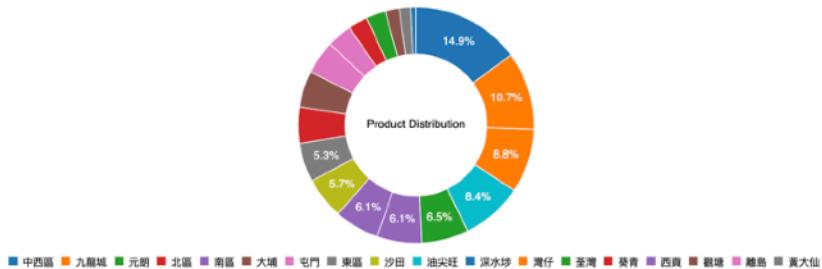
Exporting

<https://htmlcolorcodes.com/>

**Chart1**



**Chart2**



# **Using Google Spreadsheet Data in JSON Format for Data Visualization**

```
var chart = c3.generate({
    data: {
        columns:dataSet,
        type : 'bar',
        labels:true,
        colors: {
            radio: '#FB3D5',
            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'
}); // end c3.generate
```

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

```
console.log(data);
```

```
var public_spreadsheet_url = 'https://docs.google.com/spreadsheets/d/e/2PACX-1vTzAUVeFq2IQR7aDC  
  
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  
}  
3
```

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>
```

at <a target='\_new' href=''" + public\_spreadsheet\_url + "'>" + public\_spreadsheet\_url + "</a>");

```
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**

# **Geodata Mapping**

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



google map



All

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Settings

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SafeSearch on

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

## Google Maps

<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

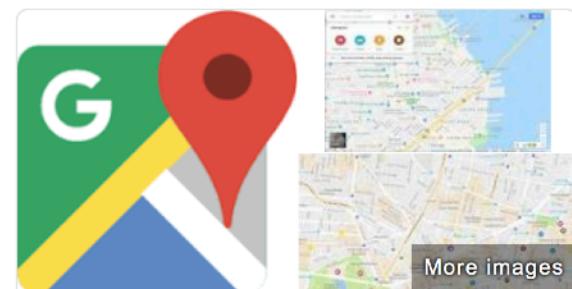
Discover the world with Google Maps. Experience Street View ...

[More results from google.com »](#)

## Google Maps

<https://www.google.com.hk> ▾ maps

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



## Google Maps

[Website](#)

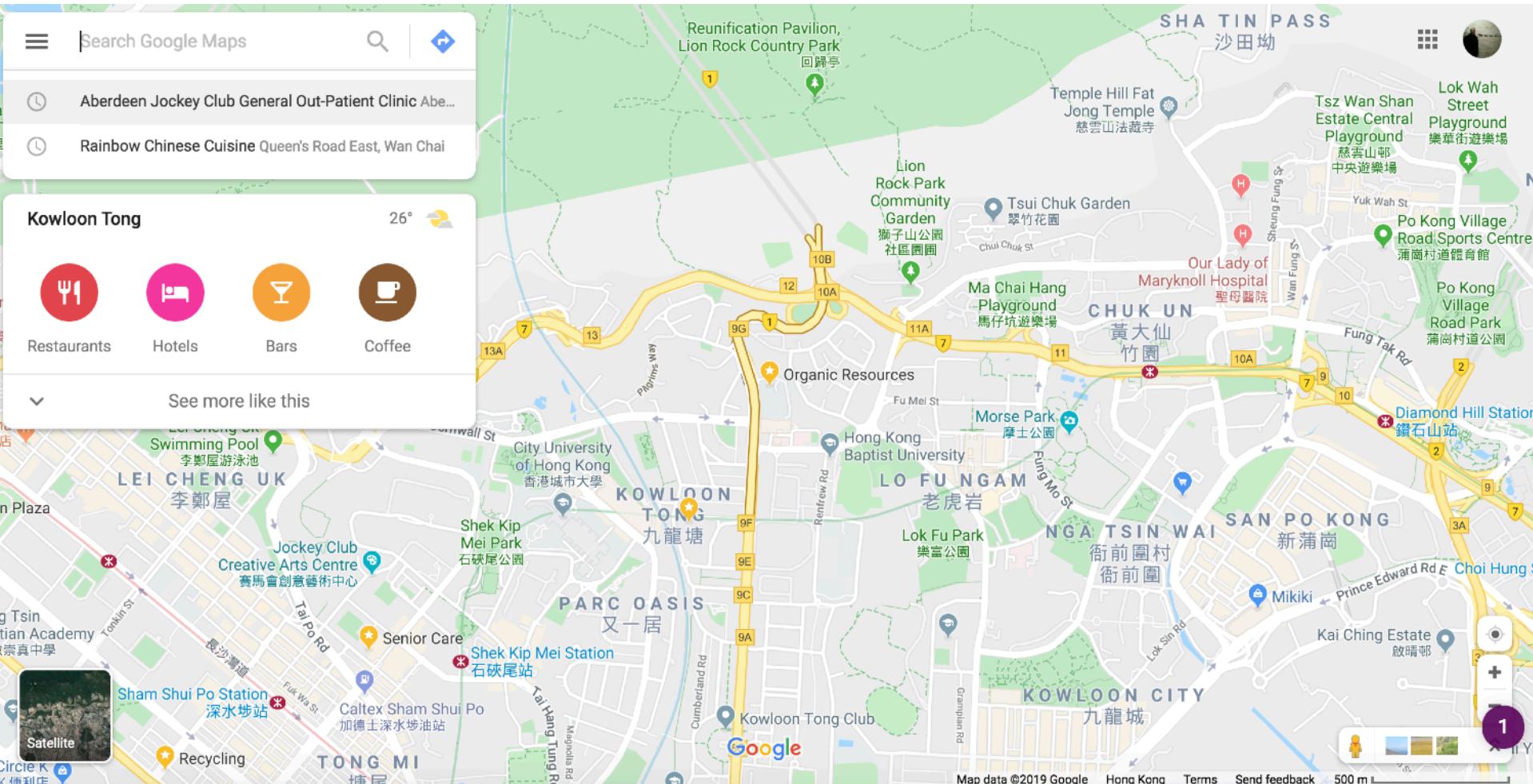
Google Maps is a web mapping service developed by Google. It offers satellite imagery, aerial photography, street maps, 360° panoramic views of streets, real-time traffic conditions, and route planning for traveling by foot, car, bicycle and air, or public transportation.

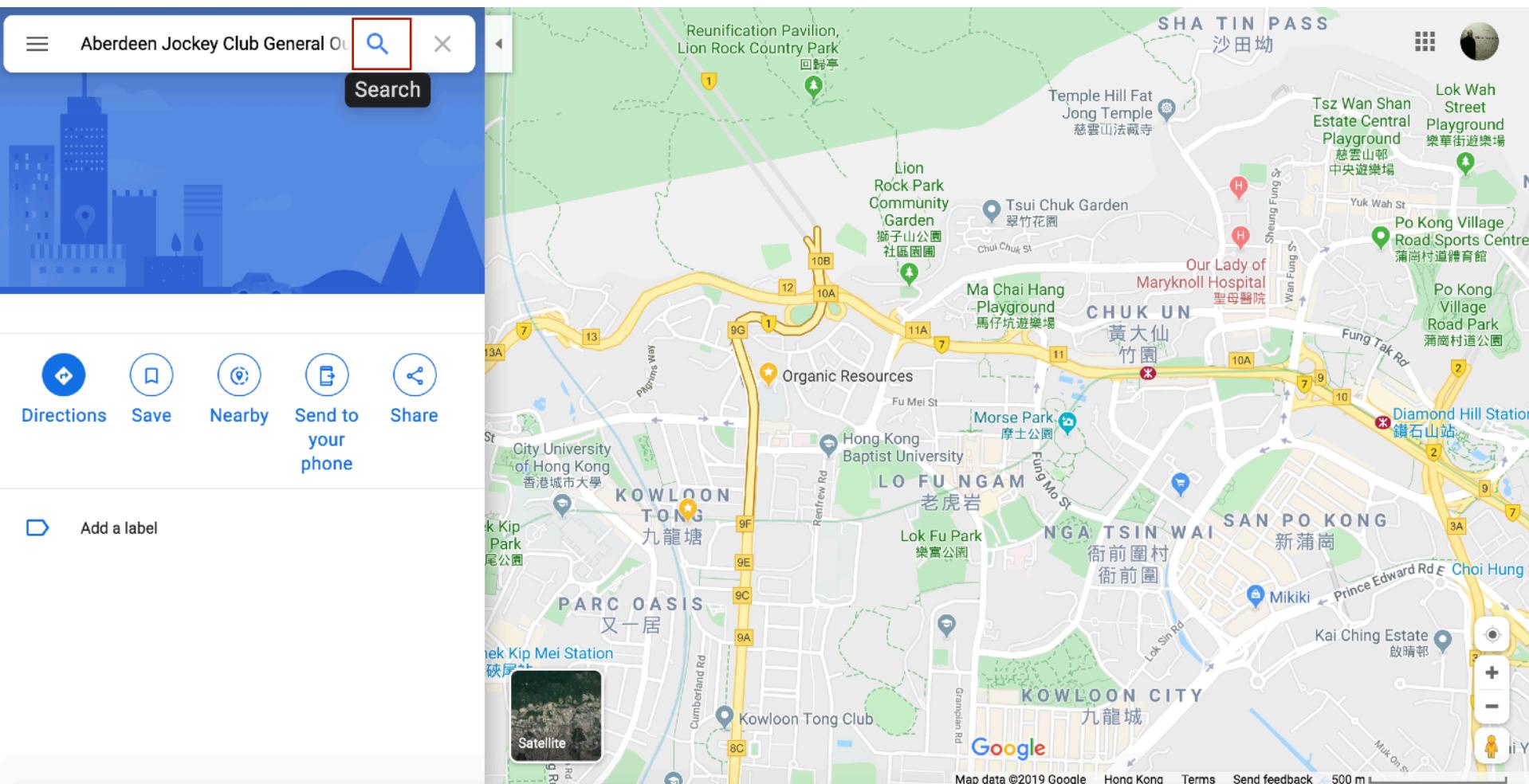
[Wikipedia](#)

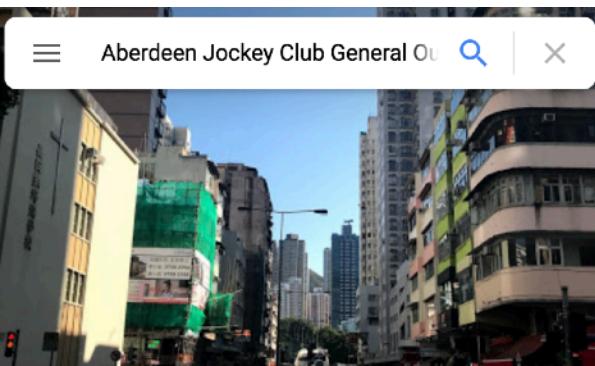
**Date launched:** February 8, 2005

**Owner:** Google

0







## Aberdeen Jockey Club General Out-Patient Clinic

香港仔賽馬會普通科門診診所

4.3 ★★★★★ (7)

Medical clinic



Directions



Save



Nearby



Send to  
your  
phone



Share



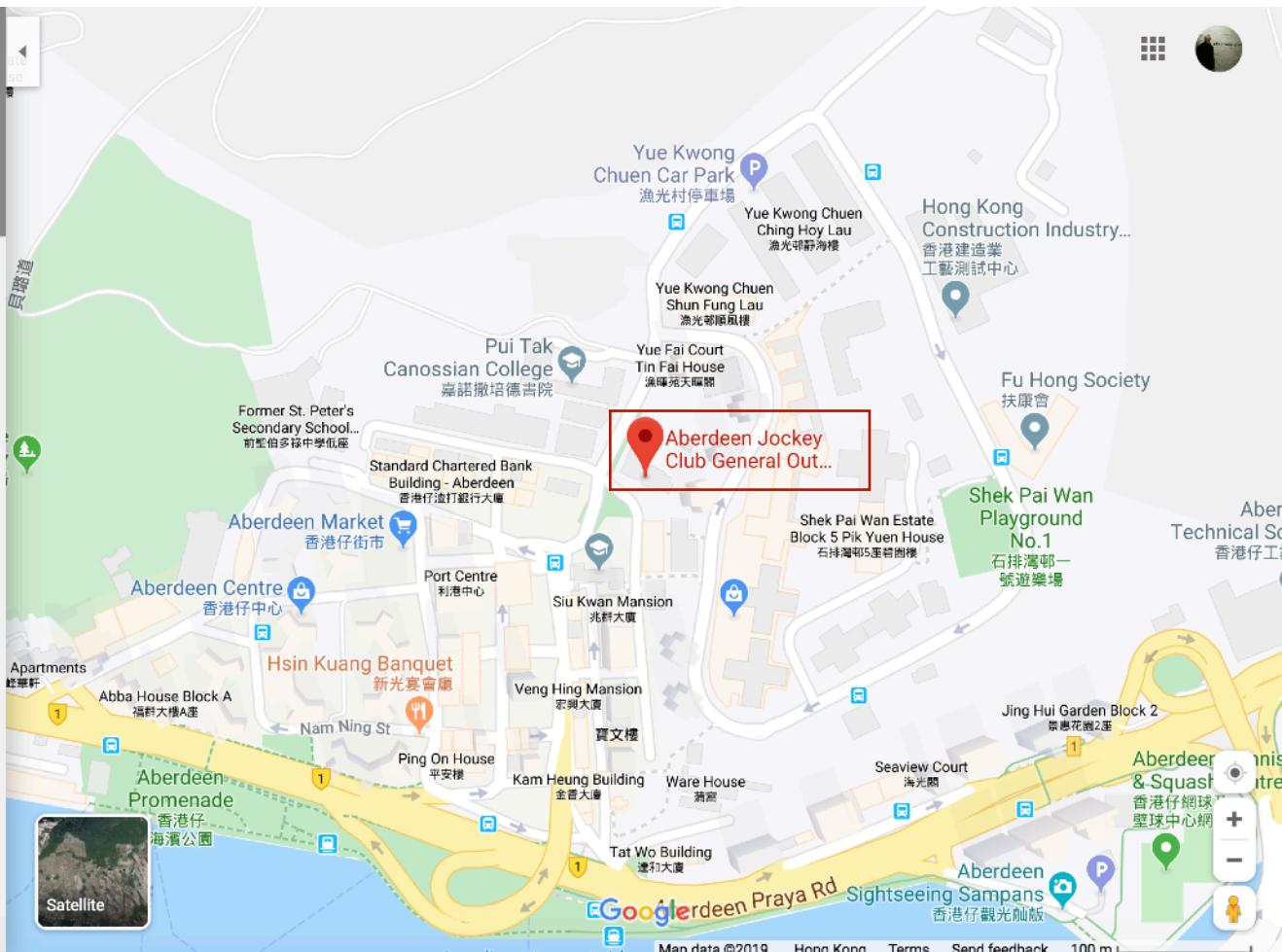
10 Aberdeen Reservoir Rd, Aberdeen



65X4+VH Hong Kong



ha.org.hk



Aberdeen Jockey Club General Out-Patient Clinic

香港仔賽馬會普通科門診診所

4.3 ★★★★★ (7)

Medical clinic

Directions Save Nearby Send to your phone Share

10 Aberdeen Reservoir Rd, Aberdeen  
65X4+VH Hong Kong  
ha.org.hk

Map showing the location of Aberdeen Jockey Club General Out-Patient Clinic in Aberdeen, Hong Kong. The map highlights several landmarks and buildings, including:

- Former St. Peter's Secondary School...
- Pui Tak Canossian College
- Standard Chartered Bank Building - Aberdeen
- Aberdeen Market
- Port Centre
- Siu Kwan Mans
- Hsin Kuang Banquet
- Veng Hing Mansion
- Kam Heung Building
- Abba House Block A
- Nam Ning St
- Ping On House
- Aberdeen Promenade
- Jing Hui Garden Block 2
- Aberdeen Ding Sampan
- Fu Hong Society
- Yue Kwong Chuen Shun Fung Lau
- Yue Kwong Chuen Ching Hoy Lau
- Yue Fai Court Tin Fai House
- Hong Kong Construction Industry...
- Wan Chai Road

The map also includes a "What's here?" button, a search bar for nearby locations, and various other options like Print, Add a missing place, Add your business, Report a data problem, and Measure distance.

Aberdeen Jockey Club General Office

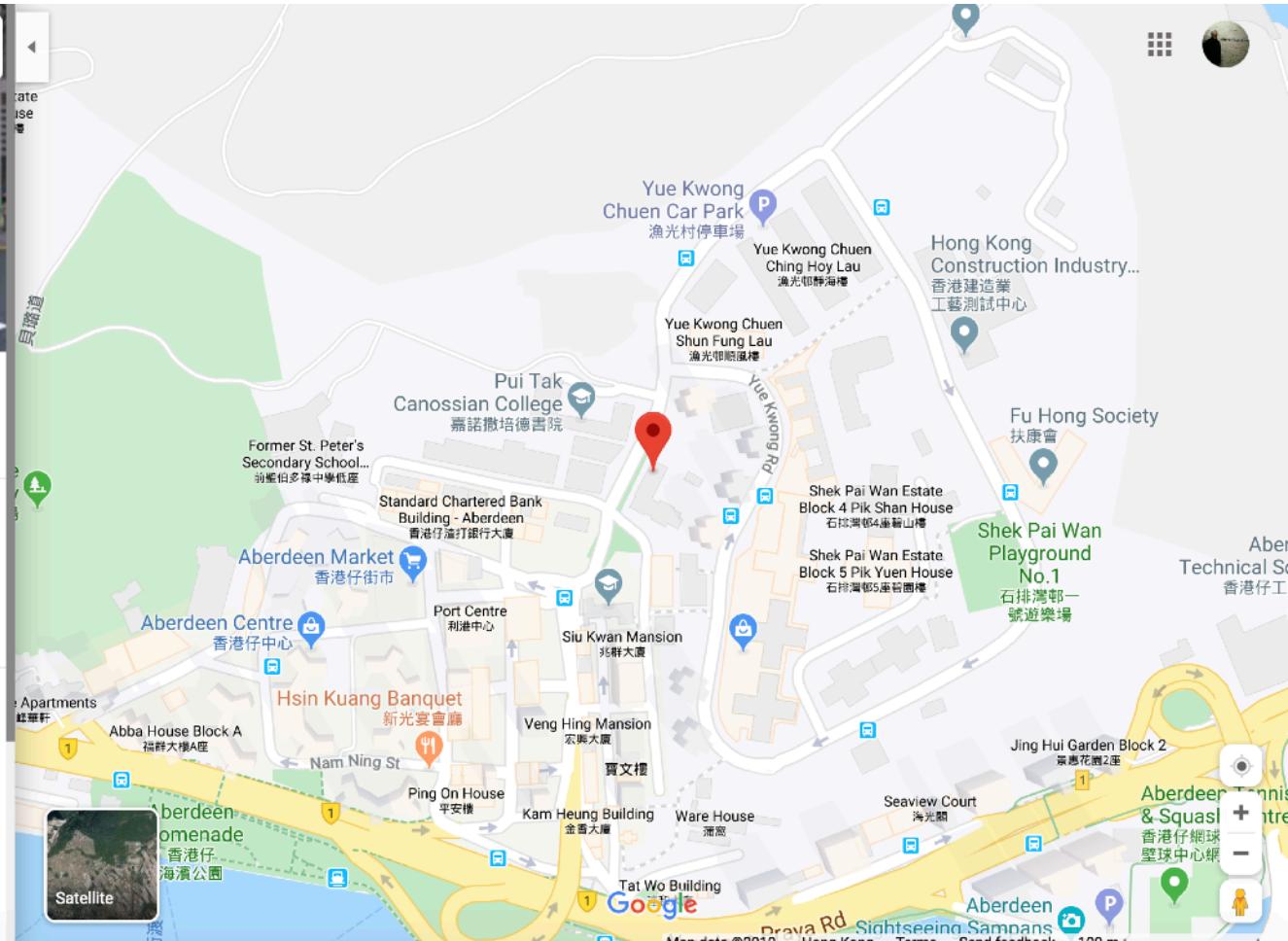
Aberdeen

Directions Save Nearby Send to your phone Share Add a label

Photos

Yue Kwong Chuen Car Park 漁光村停車場  
Yue Kwong Chuen Ching Hoy Lau 漁光邨新海樓  
Yue Fai Court Tin Fai House 漁富苑天暉閣  
Pui Tak Canossian College 嘉諾撒培德書院  
Former St. Peter's Secondary School 前聖伯多祿中學低座  
Standard Chartered Bank Building - Aberdeen 香港仔渣打銀行大廈  
Aberdeen Market 香港仔街市  
Aberdeen Centre 香港仔中心  
Hsin Kuang Banquet 新光宴會廳  
Veng Hing Mansion 宏興大廈  
Kam Heung Building 金興大廈  
Ware House 貨倉  
Apartments 座  
Abba House Block A 福群大樓A座  
Nam Ning St.  
Ping On House 平安樓  
Jing Hui Garden Block 2 景惠花園2座  
Seaview Court 海光閣  
Aberdeen & Squash 香港仔網球壁球中心網  
Aberdeen Ding Sampans 香港仔網球壁球中心網  
Hong Kong Construction Industry... 香港建造業工藝測試中心  
Fu Hong Society 扶康會  
Shek Pai Wan Estate Block 4 Pik Shan House 石排灣邨4座碧山樓  
Shek Pai Wan Estate Block 5 Pik Yuen House 石排灣邨5座碧園樓  
Shek Pai Wan Playground No.1 石排灣邨一號遊樂場  
Aberdeen Technical School 香港仔工業學院  
Aberdeen Promenade 香港仔海濱公園  
Satellite

16-10 Aberdeen Reservoir Rd  
Aberdeen  
22.250197, 114.156396



# **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](#).

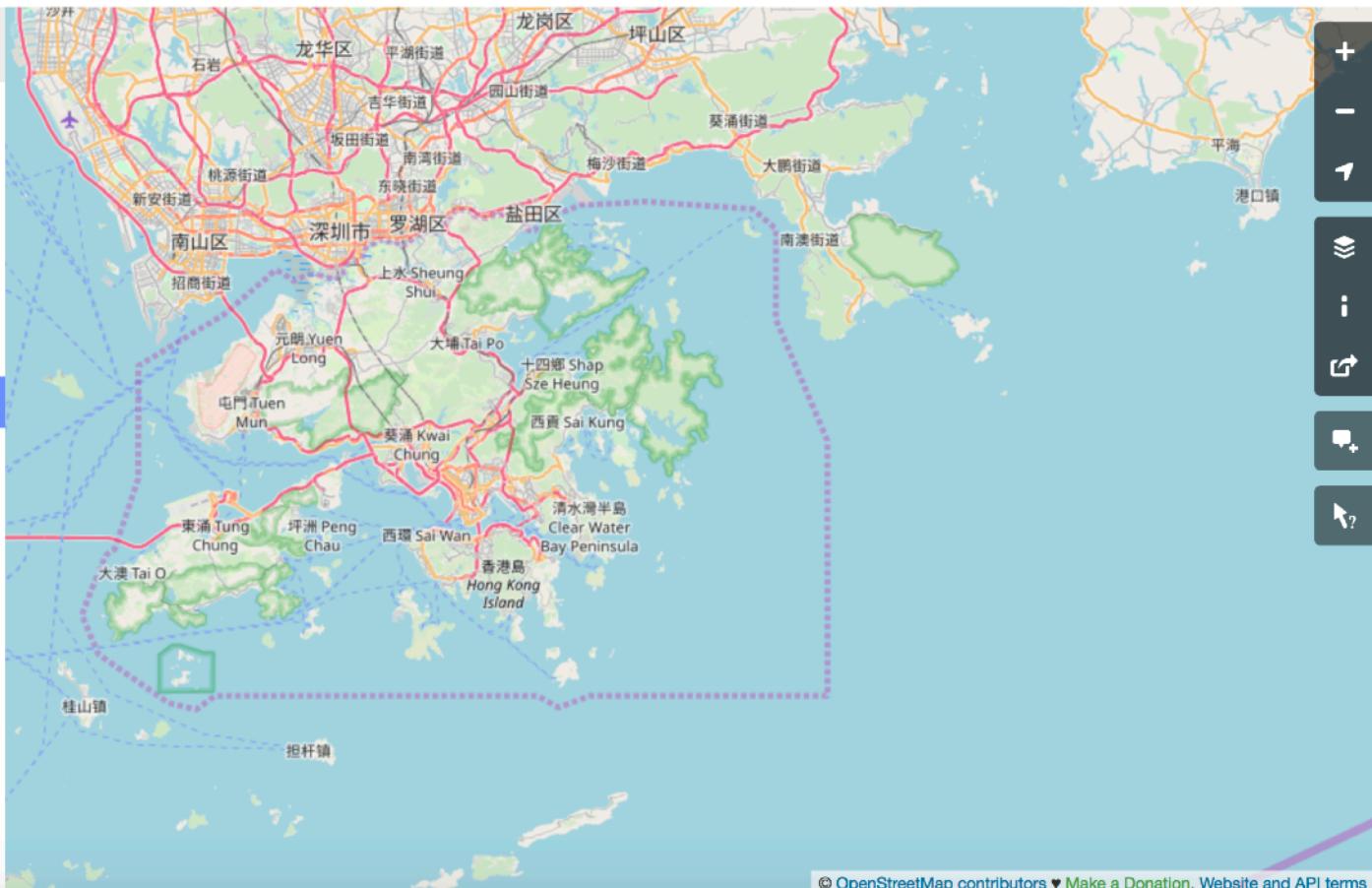
[Learn More](#)[Start Mapping](#)

# SOTM



Dhaka, Bangladesh 2019

10 km  
5 mi



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<https://www.openstreetmap.org>



## Leaflet Tips and Tricks

[Buy on Leanpub](#)

## 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://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)

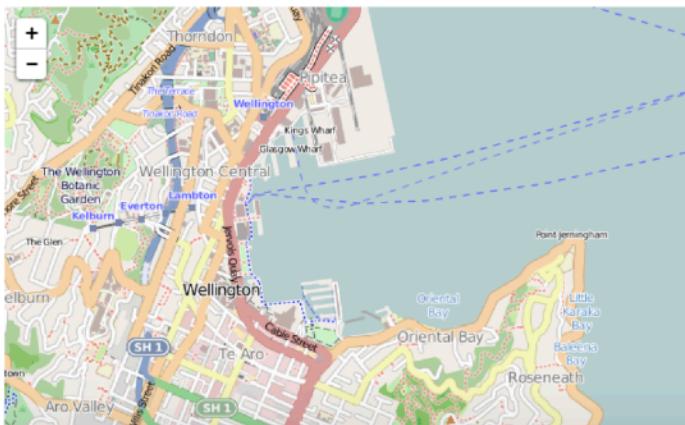
```

<!DOCTYPE html>
<html>
<head>
    <title>Simple Leaflet Map</title>
    <meta charset="utf-8" />
    <link
        rel="stylesheet"
        href="http://cdn.leafletjs.com/leaflet-0.7/leaflet.css" <-- 1
    />
</head>
<body>
    <div id="map" style="width: 600px; height: 400px"></div>
    <script
        src="http://cdn.leafletjs.com/leaflet-0.7/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;



<http://cdn.leafletjs.com/leaflet-0.7/leaflet.css>

<http://cdn.leafletjs.com/leaflet-0.7/leaflet.js>

1

2

3

1. Define the selector
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

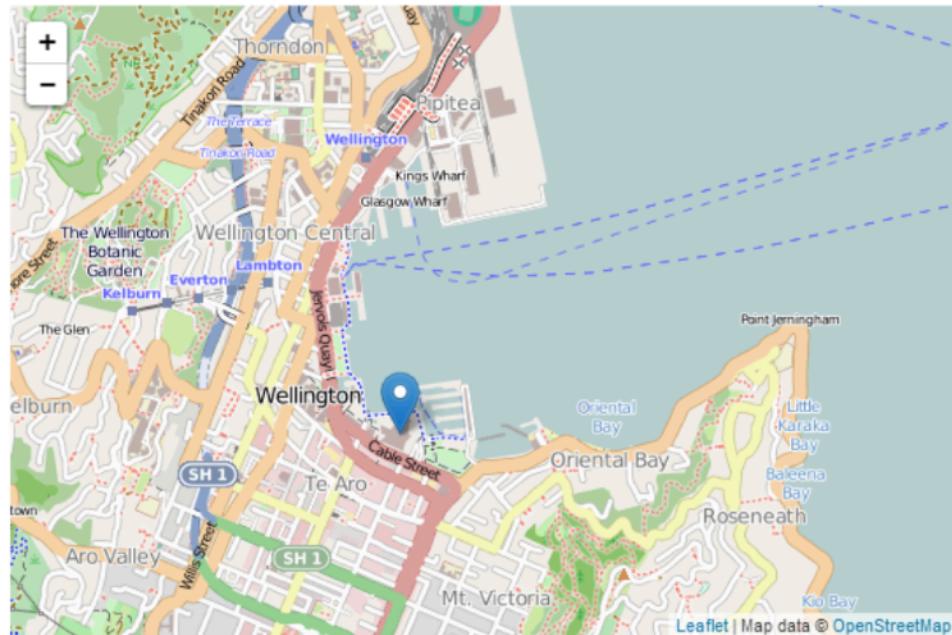
1. Define the selector
2. Initialize view and tile layer.
3. Source of the map tiles (e.g. Open Street Map).
4. Add a marker to the map view.

[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

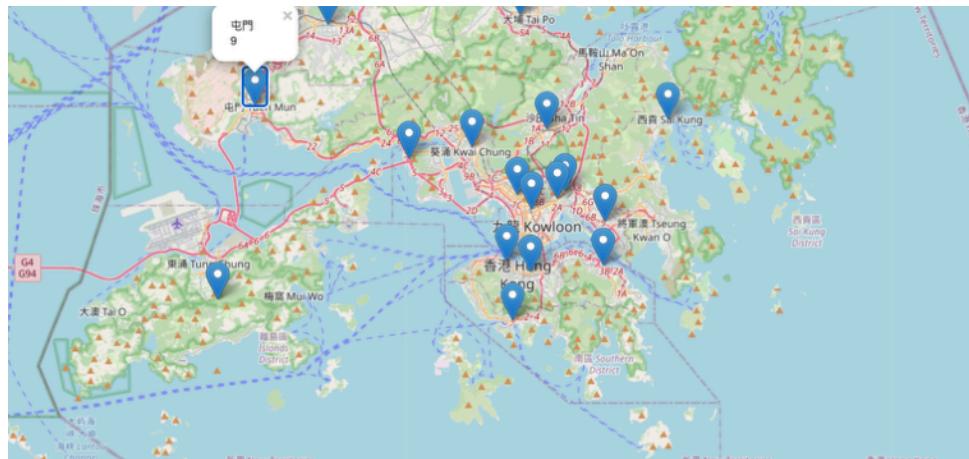
```

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.

# **Integration with Google Spreadsheet**



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

JS

```

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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; <a href="https://openstreetmap.org">OpenStreetMap</a>', 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);
  }
}

```

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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
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7. Marker popup

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.**

# Airtable GetJSON

## Airtable API Demo

Using jQuery getJSON and Airtable API for fun!

Airtable is a wonderful spreadsheet-like database with many useful features for data modeling and basic analysis. It can be a great tool for rapid prototyping.

[Table](#) [Charts](#) [Remove](#)

## Leaflet Example

North Point  Destinations [Reset](#) [Remove](#)

# Airtable GetJSON

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Using jQuery getJSON and Airtable API for fun!

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[Table](#) [Charts](#) [Remove](#)

## Leaflet Example

Happy Valley  Destinations [Reset](#) [Remove](#)

# Airtable GetJSON

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## Leaflet Example

North Point  Destinations [Reset](#) [Remove](#)

# Airtable GetJSON

## Airtable API Demo

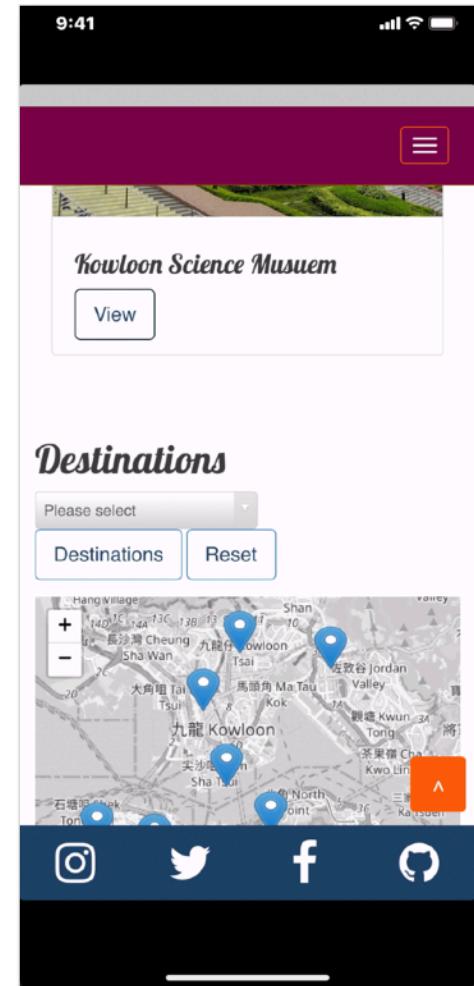
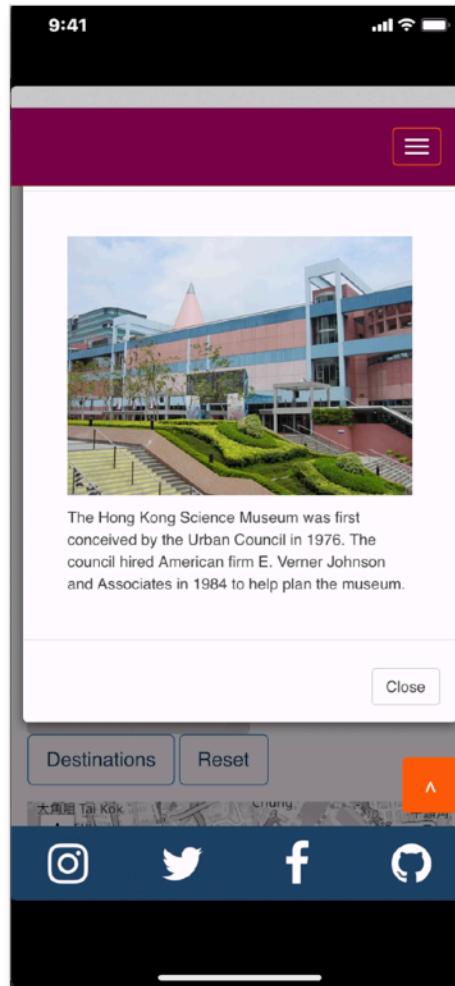
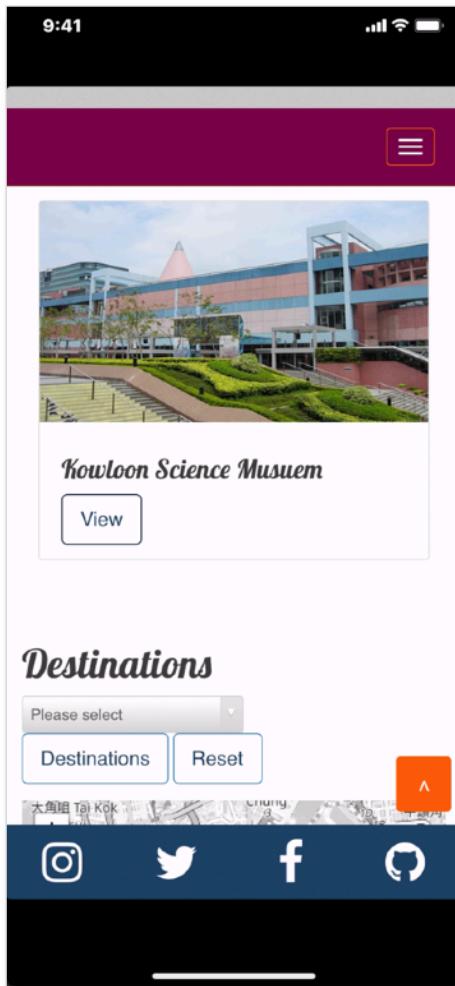
Using jQuery getJSON and Airtable API for fun!

Airtable is a wonderful spreadsheet-like database with many useful features for data modeling and basic analytics. When used with other data visualization libraries, it can be a great tool for rapid prototyping.

[Table](#) [Charts](#) [Remove](#)

## Leaflet Example

Happy Valley  Destinations [Reset](#) [Remove](#)



**Use JS Fetch to access RESTful API Endpoints of a WordPress site.**

## JavaScript libraries and frameworks used in the demo.

1. **PapaParse** (<https://github.com/jsoma/tabletop/blob/master/examples/simple/no-tabletop.html>)
2. **Bootstrap** (<http://getbootstrap.com/>)
3. **C3** (<http://c3js.org/>)
4. **Leaflet** (<http://leafletjs.com/>)

# **Students' Projects.**

**Thank you for your time!**