



# Web Programming

## Spring 2021



# #12

Chi-Jen Wu

# Topics

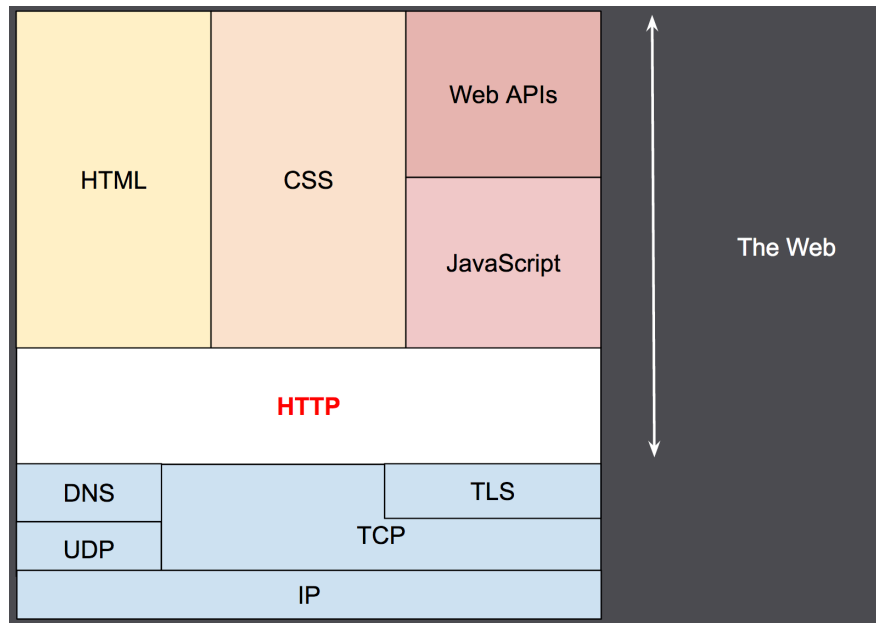
- The concepts of Web Services
- Web data protocols
  - HTTP, WebSocket, WebRTC
  - HTML, CSS
- **Web JavaScript programming**
- Cookies and sessions
- Web Frontend frameworks
- Web Backend frameworks
- RESTful API design



Google Analytics

# Web data protocols

- HTTP, HTTPS
- Web APIs
- HTML, HTML5
- CSS, CSS3
- JavaScript
- Conclusion



# JavaScript

- Introduction
- Basics
- Document Object Model
- Browser Object Model
- jQuery & AJAX
- JavaScript ES6





# 線上練習 quiz#2

<https://codepen.io/pen/>

1. 正妹牆實作練習
2. Commit **quiz2.html**, **quiz2.js** and push to quiz repository

HTML

```
1 <div id="contain"></div>
2 <h1>cgu 正妹牆</h1>
3 <div id="contain"></div>
4 <script type="text/javascript"
  src="https://cdnjs.cloudflare.com/
  ajax/libs/jquery/3.1.0/jquery.min.
  js">
```

JS

100+ unsaved changes X

```
1 var tags = "李知恩";
2 var dataUrl = "https://api.flickr.com/services/feeds/photos_public.gne?tags=" + tags + "&tagmode=any&format=json&per_page=400&jsoncallback=?";
3 var data = $.getJSON(dataUrl);
4
5
6
7
8 data.done( function( msa ) {
```





```
<html>
```

```
<h1>cgu 正妹牆</h1>
```

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

```
<script type="text/javascript"  
src="https://cdnjs.cloudflare.com/  
ajax/libs/jquery/3.1.0/jquery.min.js">
```

```
</html>
```



**<script>**

```
var tags = "李知恩";  
var dataUrl = "https://api.flickr.com/services/feeds/photos\_public.gne?  
tags=" + tags + "&tagmode=any&format=json&per\_page=400&jsoncallback=?";
```

1

```
var data = $.getJSON(dataUrl);
```

2

```
data.done( function( msg ) {  
    $.each(msg.items, function(i,item) {  
        $("#contain").html();  
        $("#contain").append($("#<img/>").attr("src", item.media.m));  
    });  
});
```

3

```
data.fail( function( msg ) {  
    console.log(msg);  
    $("#contain").html("fail getting data");  
});
```

4

**</script>**



```
<script>
```

```
var tags = "李知恩";
```

```
var dataUrl = "https://api.flickr.com/services/feeds/  
photos\_public.gne?tags=" + tags  
+"&tagmode=any&format=json&per\_page=400&jsoncallback=  
?";
```

```
</script>
```



chrome 線上應用程式商店

先給他裝起來  
裝好裝滿

[首頁](#) > [擴充功能](#) > JSON Viewer



JSON Viewer

提供者: teocci

```

https://api.github.com
api.github.com

{
  "current_user_url": "https://api.github.com/user",
  "current_user_authorizations_html_url": "https://github.com/settings/connections/applications{/client_id}",
  "authorizations_url": "https://api.github.com/authorizations",
  "code_search_url": "https://api.github.com/search/code?q={query}{&page,per_page,sort,order}",
  "commit_search_url": "https://api.github.com/search/commits?q={query}{&page,per_page,sort,order}",
  "emails_url": "https://api.github.com/user/emails",
  "emojis_url": "https://api.github.com/emojis",
  "events_url": "https://api.github.com/events",
  "feeds_url": "https://api.github.com/feeds",
  "followers_url": "https://api.github.com/user/followers",
  "following_url": "https://api.github.com/user/following{/target}",
  "gists_url": "https://api.github.com/gists{/gist_id}",
  "hub_url": "https://api.github.com/hub",
  "issue_search_url": "https://api.github.com/search/issues?q={query}{&page,per_page,sort,order}",
  "issues_url": "https://api.github.com/issues",
  "keys_url": "https://api.github.com/user/keys",
  "notifications_url": "https://api.github.com/notifications",
  "organization_repositories_url": "https://api.github.com/orgs/{org}/repositories",
  "organization_url": "https://api.github.com/orgs/{org}",
  "public_gists_url": "https://api.github.com/gists/public",
  "rate_limit_url": "https://api.github.com/rate_limit",
  "repository_url": "https://api.github.com/repos/{owner}/{repo}",
  "repository_search_url": "https://api.github.com/search/repositories?q={query}{&page,per_page,sort,order}",
  "current_user_repositories_url": "https://api.github.com/user/repos?per_page=30",
  "starred_url": "https://api.github.com/user/starred{/owner}/{repo}",
  "starred_gists_url": "https://api.github.com/gists/starred",
  "team_url": "https://api.github.com/teams",
  "user_url": "https://api.github.com/users/{user}",
  "user_organizations_url": "https://api.github.com/user/orgs",
  "user_repositories_url": "https://api.github.com/users/{user}/repos?per_page=30",
  "user_search_url": "https://api.github.com/search/users?q={query}{&page,per_page,sort,order}"
}

```

```

https://api.github.com
api.github.com

object {31}
  current_user_url : https://api.github.com/user
  current_user_authorizations_html_url : https://github.com/settings/connections/applications{/client_id}
  authorizations_url : https://api.github.com/authorizations
  code_search_url : https://api.github.com/search/code?q={query}{&page,per_page,sort,order}
  commit_search_url : https://api.github.com/search/commits?q={query}{&page,per_page,sort,order}
  emails_url : https://api.github.com/user/emails
  emojis_url : https://api.github.com/emojis
  events_url : https://api.github.com/events
  feeds_url : https://api.github.com/feeds
  followers_url : https://api.github.com/user/followers
  following_url : https://api.github.com/user/following{/target}
  gists_url : https://api.github.com/gists{/gist_id}
  hub_url : https://api.github.com/hub
  issue_search_url : https://api.github.com/search/issues?q={query}{&page,per_page,sort,order}
  issues_url : https://api.github.com/issues
  keys_url : https://api.github.com/user/keys
  notifications_url : https://api.github.com/notifications

```

# chrome 線上應用程式商店

首頁 > 應用程式 > Postman

## 專業人士



## Postman

來源網站: [postman.com](https://postman.com)

★★★★★ 8,966

擴充功能

👤 3,000,000+ 位使用者

提供者: teocci

Postman

New Import Runner + Examples Invite

Filter History Collections APIs BETA

+ New API

Swagger Petstore

Swagger Petstore x + ...

Swagger Petstore Draft Show All Versions Refresh Reports Comments Share ...

\*The Chrome App is Deprecated. Download Postman's Native Apps for macOS, Windows, and Linux, and get the latest features!\*

Descriptions support [Markdown](#) Cancel Save

Define Develop Test Observe

Schema OpenAPI 3.0 Generate Collection JSON {} ≡ 🔍

```
4 title: Swagger Petstore
5 license:
6   name: MIT
7 servers:
8   - url: http://petstore.swagger.io/v1
9 paths:
10  /pets:
11    get:
12      summary: List all pets
13      operationId: listPets
14      tags:
15        - pets
16      parameters:
17        - name: limit
18          in: query
19          description: How many items to return at one time (max 100)
20          required: false
```

Bootcamp Build Browse



```
<script>
```

```
var tags = "李知恩";
```

```
var dataUrl = "https://api.flickr.com/services/feeds/  
photos\_public.gne?tags=" + tags  
+"&tagmode=any&format=json&per\_page=400&jsoncallback=  
?";
```

```
</script>
```

```
{  
  "title": "Recent Uploads tagged 李知恩",  
  "link": "https://www.flickr.com/photos/tags/%E6%9D%8E%E7%9F%A5%E6%81%A9/",  
  "description": "",  
  "modified": "2018-12-29T12:37:54Z",  
  "generator": "https://www.flickr.com",  
  "items": [▶ 20 items, 15 KB {9 properties, 795 bytes }, {}, {}, {}, {}, {}, {}, {}, {}, {}, {}, {}, {}, {}, {}, {}, {}, {}, {}]  
}
```

## 裝好後你看到的JSON

## URL encoding後的李知恩

```
2", "link": "https://www.flickr.
```

```
"/unlong/45788478884/",
```

2/45788478884\_44aa21e6e4\_m.jpg"

[flickr.com/people/wuyunlong/](https://www.flickr.com/people/wuyunlong/)">wuyunlong

[aticflickr.com/4862/45788478884](https://www.flickr.com/photos/4862/45788478884)

邪煜")"

# URL encoding

- 百分號編碼
- 為了在 URI 識別字串序列資源
- Percent-Encoding 機制
  - 百分號 % 後跟兩個十六進位數字組成
  - ? → %3F
  - 空白 → %20
- 最大 URL 長度
  - RFC 2616 是沒定長度要求
  - RFC 3986 DNS最大 255

URL encoding  
目前有點混亂  
但是用久了就不混亂了



## 可疑的 JSON Array

```
"title": "Recent Uploads tagged 李知恩",  
"link": "https://www.flickr.com/photos/tags/%E6%9D%8E%E7%9F%A5%E6%81%A9/",  
"description": "",  
"modified": "  
"generator": "  
"items": [  
  {  
    "title": "IMG_2502",  
    "link": "https://www.flickr.  
    {  
      "title": "IMG_2480",  
      "link": "https://www.flickr.com/photos/wuyunlong/45788478884/",  
      "media": {  
        "m": "https://live.staticflickr.com/4862/45788478884_44aa21e6e4_m.jpg"  
      },  
      "date_taken": "2018-12-25T22:38:14-08:00",  
      "description": " <p><a href='\"https://www.flickr.com/people/wuyunlong/\">wu  
title='\"IMG_2480\"'><img src='\"https://live.staticflickr.com/4862/45788478884.  
      "published": "2018-12-29T12:38:10Z",  
      "author": "nobody@flickr.com (\"wuyunlong 邢煜\")",  
      "author_id": "90954585@N03",  
      "tags": "iu 아이유 李知恩"  
    },  
  ],  
}
```





# JSON 解析 items

"items": [▼

```
{▶9 properties, 795 bytes "title": "IMG_2502", "link": "https://www.flickr.com/photos/wuyunlong/45788474924/", "med... },
{▶9 properties, 795 bytes "title": "IMG_2480", "link": "https://www.flickr.com/photos/wuyunlong/45788478884/", "med... },
{▶9 properties, 795 bytes "title": "IMG_2462", "link": "https://www.flickr.com/photos/wuyunlong/46460315242/", "med... },
{▶9 properties, 795 bytes "title": "IMG_2481", "link": "https://www.flickr.com/photos/wuyunlong/45788474714/", "med... },
{▶9 properties, 795 bytes "title": "IMG_2473", "link": "https://www.flickr.com/photos/wuyunlong/45788477624/", "med... },
{▶9 properties, 795 bytes "title": "IMG_2474", "link": "https://www.flickr.com/photos/wuyunlong/45788477504/", "med... },
{▶9 properties, 795 bytes "title": "IMG_2468", "link": "https://www.flickr.com/photos/wuyunlong/45788476204/", "med... },
{▶9 properties, 795 bytes "title": "IMG_2487", "link": "https://www.flickr.com/photos/wuyunlong/31572174077/", "med... },
{▶9 properties, 795 bytes "title": "IMG_2478", "link": "https://www.flickr.com/photos/wuyunlong/45788478334/", "med... },
{▶9 properties, 795 bytes "title": "IMG_2476", "link": "https://www.flickr.com/photos/wuyunlong/45788477814/", "med... },
{▶9 properties, 795 bytes "title": "IMG_2477", "link": "https://www.flickr.com/photos/wuyunlong/31572172307/", "med... },
{▶9 properties, 795 bytes "title": "IMG_2483", "link": "https://www.flickr.com/photos/wuyunlong/45788479304/", "med... },
{▶9 properties, 795 bytes "title": "IMG_2482", "link": "https://www.flickr.com/photos/wuyunlong/45788479034/", "med... },
{▶9 properties, 795 bytes "title": "IMG_2493", "link": "https://www.flickr.com/photos/wuyunlong/46512296571/", "med... },
{▶9 properties, 795 bytes "title": "IMG_2497", "link": "https://www.flickr.com/photos/wuyunlong/32639325368/", "med... },
{▶9 properties, 795 bytes "title": "IMG_2471", "link": "https://www.flickr.com/photos/wuyunlong/45788476724/", "med... },
{▶9 properties, 795 bytes "title": "IMG_2479", "link": "https://www.flickr.com/photos/wuyunlong/45788478634/", "med... },
{▶9 properties, 795 bytes "title": "IMG_2486", "link": "https://www.flickr.com/photos/wuyunlong/46512295671/", "med... },
{▶9 properties, 795 bytes "title": "IMG_2460", "link": "https://www.flickr.com/photos/wuyunlong/46460315002/", "med... },
{▶9 properties, 795 bytes "title": "IMG_2484", "link": "https://www.flickr.com/photos/wuyunlong/45788479624/", "med... }
```



# JSON 解析 items

```
{  
  "title": "IMG_2480",  
  "link": "https://www.flickr.com/photos/wuyunlong/45788478884/",  
  "media": {  
    "m": "https://live.staticflickr.com/4862/45788478884_44aa21e6e4_m.jpg"  
  },  
  "date_taken": "2018-12-25T22:38:14-08:00",  
  "description": " <p><a href='\"https://www.flickr.com/people/wuyunlong/\">wuyunlong  
title='\"IMG_2480\"><img src='\"https://live.staticflickr.com/4862/45788478884_44aa21e6e4_m.jpg\">  
  \"published\": \"2018-12-29T12:38:10Z\",  
  \"author\": \"nobody@flickr.com (\"wuyunlong 邢煜\")\",  
  \"author_id\": \"90954585@N03\",  
  \"tags\": \"iu 아이유 李知恩\"  
},
```

```
"title": "Recent Uploads tagged 李知恩",
"link": "https://www.flickr.com/photos/tags/%E6%9D%8E%E7%9F%A5%E6%81%A9/",
"description": "",
"modified": "2018-12-29T12:37:54Z",
"generator": "https://www.flickr.com",
"items": [▼
  {▶ 9 properties, 795 bytes "title": "IMG_2502", "link": "https://www.flickr.
  {▼
    "title": "IMG_2480",
    "link": "https://www.flickr.com/photos/wuyunlong/788478884/",
    "media": {▼
      "m": "https://live.staticflickr.com/4862/45788478884_44aa21e6e4_m.jpg"
    },
    "date_taken": "2018-12-25T22:38:14-08:00",
    "description": " <p><a href='https://www.flickr.com/people/wuyunlong/'>wuyunlong
    title='IMG_2480'><img src='https://live.staticflickr.com/4862/45788478884_44aa21e6e4_m.jpg'
    'published': "2018-12-29T12:38:10Z",
    "author": "nobody@flickr.com ('wuyunlong 邢煜")",
    "author_id": "90954585@N03",
    "tags": "iu 아이유 李知恩"
  },
]
```

我們要的正妹圖

# 我們要的正妹圖

```
"link": "https://www.flickr.com/photos/wuyunlong/11788478884/"  
"media": {  
  "m": "https://live.staticflickr.com/4862/45788478884_44aa21e6e4_m.jpg"  
},
```

```
"date_taken": "  
"description": "  
title="IMG_2480"  
"published": "2  
"author": "nobo  
"author_id": "9  
"tags": "iu 아미
```

live.staticflickr.com/4862/45788478884\_44aa21e6e4\_m.jpg





1

# 解決 有沒有問題

```
var data = $.getJSON(dataUrl);
```

2

```
data.done( function( msg ) {  
    $.each(msg.items, function(i,item) {  
        $("#contain").html();  
        $("#contain").append($("#<img/>").attr("src", item.media.m));  
    });  
});
```

3

```
data.fail( function( msg ) {  
    console.log(msg);  
    $("#contain").html("fail getting data");  
});
```

4

```
</script>
```



```
<script>
```

```
var data = $.getJSON(dataUrl);
```

```
</script>
```

## Get method

 `jQuery.getJSON( url [, data ] [, success ] )`

version added: 1.0

### url

Type: [String](#)

A string containing the URL to which the request is sent.

### data

Type: [PlainObject](#) or [String](#)

A plain object or string that is sent to the server with the request.

### success

Type: [Function](#)( [PlainObject](#) data, [String](#) textStatus, [jqXHR](#) jqXHR )

A callback function that is executed if the request succeeds.

# jQuery Ajax GetJson method

<script>

```
$.getJSON( "ajax/test.json", function( data ) {  
    var items = [];  
    $.each( data, function( key, val ) {  
        items.push( "<li id='" + key + "'>" + val + "</li>" );  
    });
```

```
$( "<ul/>", {  
    "class": "my-new-list",  
    html: items.join( "" )  
}).appendTo( "body" );  
});
```

</script>



# Get method

 `jQuery.get( url [, data ] [, success ] [, dataType ] )`

version added: 1.0

## url

Type: [String](#)

A string containing the URL to which the request is sent.

## data

Type: [PlainObject](#) or [String](#)

A plain object or string that is sent to the server with the request.

## success

Type: [Function](#)( [PlainObject](#) data, [String](#) textStatus, [jqXHR](#) jqXHR )

A callback function that is executed if the request succeeds. Required if `dataType` is provided, but you can use `null` or [jQuery.noop](#) as a placeholder.

## dataType

Type: [String](#)

The type of data expected from the server. Default: Intelligent Guess (xml, json, script, text, html).





# jQuery Ajax Get method

```
<script>
var jqxhr = $.get( "example.php", function() {
    alert( "success" );
})
    .done(function() {
        alert( "second success" );
    })
    .fail(function() {
        alert( "error" );
    })
    .always(function() {
        alert( "finished" );
    });
</script>
```



# Post method

🔗 `jQuery.post( url [, data ] [, success ] [, dataType ] )`

version added: 1.0

## url

Type: [String](#)

A string containing the URL to which the request is sent.

## data

Type: [PlainObject](#) or [String](#)

A plain object or string that is sent to the server with the request.

## success

Type: [Function](#)( [PlainObject](#) data, [String](#) textStatus, [jqXHR](#) jqXHR )

A callback function that is executed if the request succeeds. Required if `dataType` is provided, but can be `null` in that case.

## dataType

Type: [String](#)

The type of data expected from the server. Default: Intelligent Guess (xml, json, script, text, html).



# jQuery Ajax Post method

```
<script>
var jqxhr = $.post( "example.php", function() {
    alert( "success" );
})
    .done(function() {
        alert( "second success" );
    })
    .fail(function() {
        alert( "error" );
    })
    .always(function() {
        alert( "finished" );
    });
</script>
```

1

# 解決 有沒有問題

2

## 解決 有沒有問題

3

```
data.done( function( msg ) {  
    $.each(msg.items, function(i,item) {  
        $("#contain").html();  
        $("#contain").append($("#<img/>").attr("src", item.media.m));  
    });  
});
```

4

```
data.fail( function( msg ) {  
    console.log(msg);  
    $("#contain").html("fail getting data");  
});
```

</script>



```
<html>
<h1>cgu 正妹牆</h1>
<div id="contain"></div>
</html>
```

## JSON Object

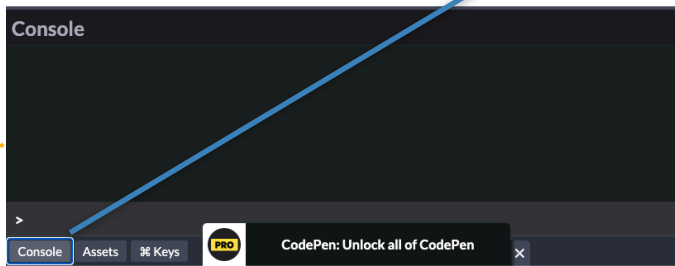
```
<script>
data.done( function( msg ) {
  $.each(msg.items, function(i,item) {
    $("#contain").html();
    $("#contain").append($("#<img/>").attr("src", item.media.m));
  });
});
```

```
data.fail( function( msg ) {
  console.log(msg);
  $("#contain").html("fail getting data");
});
</script>
```

不知道 就印出來看看  
`console.log(msg);`

不知道 就印出來看看

```
console.log(msg);
```





```
{  
  "title": "Recent Uploads tagged 李知恩",  
  "link": "https://www.flickr.com/photos/tags/%E6%9D%8E%E7%9F%A5%E6%81%A9/",  
  "description": "",  
  "modified": "2018-12-29T12:37:54Z",  
  "generator": "https://www.flickr.com",  
  "items": [▶ 20 items, 15 KB {9 properties, 795 bytes }, {}, {}, {}, {}, {}, {}, {}, {}, {}, {}, {}, {}, {}, {}, {}, {}, {}, {}]  
}
```

**JSON Object array**

# JSON Object Array



"items": [▼

```
{▶9 properties, 795 bytes "title": "IMG_2502", "link": "https://www.flickr.com/photos/wuyunlong/45788474924/", "med... },
{▶9 properties, 795 bytes "title": "IMG_2480", "link": "https://www.flickr.com/photos/wuyunlong/45788478884/", "med... },
{▶9 properties, 795 bytes "title": "IMG_2462", "link": "https://www.flickr.com/photos/wuyunlong/46460315242/", "med... },
{▶9 properties, 795 bytes "title": "IMG_2481", "link": "https://www.flickr.com/photos/wuyunlong/45788474714/", "med... },
{▶9 properties, 795 bytes "title": "IMG_2473", "link": "https://www.flickr.com/photos/wuyunlong/45788477624/", "med... },
{▶9 properties, 795 bytes "title": "IMG_2474", "link": "https://www.flickr.com/photos/wuyunlong/45788477504/", "med... },
{▶9 properties, 795 bytes "title": "IMG_2468", "link": "https://www.flickr.com/photos/wuyunlong/45788476204/", "med... },
{▶9 properties, 795 bytes "title": "IMG_2487", "link": "https://www.flickr.com/photos/wuyunlong/31572174077/", "med... },
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```



```
<script>
```

```
data.done( function( msg ) {  
    $.each(msg.items, function(i,item) {
```

 **.each( function )**

version added: 1.0

### function

Type: [Function](#)( [Integer](#) index, [Element](#) element )

A function to execute for each matched element.

```
</script>
```

```
<html>
```

```
<ul>
```

```
    <li>foo</li>
```

```
    <li>bar</li>
```

```
</ul>
```

```
</html>
```

這是什麼？？

```
1 | $( "li" ).each(function( index ) {  
2 |     console.log( index + ": " + $( this ).text() );  
3 | });
```



這是什麼？？

```
<script>
```

```
data.done( function( msg ) {  
    $.each(msg.items, function(i,item) {  
        $("#contain").html();  
        $("#contain").append($("#<img/>").attr("src",  
item.media.m));  
    });  
});
```

```
</script>
```

再說一次

不知道 就印出來看看

```
console.log(i, item);
```



這是什麼？？

```
<script>
```

```
data.done( function( msg ) {  
    $.each(msg.items, function(i,item) {  
        $("#contain").html();  
        $("#contain").append($("#<img/>").attr("src",  
item.media.m));  
    });  
});
```

```
</script>
```

**console.log(i, item);**

i是array index

item是一個json obj

```
{
  "title": "IMG_2480",
  "link": "https://www.flickr.com/photos/wuyunlong/45788478884/",
  "media": {
    "m": "https://live.staticflickr.com/4862/45788478884_44aa21e6e4_m.jpg"
  },
  "date_taken": "2018-12-25T22:38:14-08:00",
  "description": " <p><a href='https://www.flickr.com/people/wuyunlong/'>wuyunlong</a> <br> title='IMG_2480'><img src='https://live.staticflickr.com/4862/45788478884_44aa21e6e4_m.jpg' alt='IMG_2480'></p>
  "published": "2018-12-29T12:38:10Z",
  "author": "nobody@flickr.com (wuyunlong 邢煜)",
  "author_id": "90954585@N03",
  "tags": "iu 아이유 李知恩"
},
```

```
$.each(msg.items, function(i,item) {
  $("#contain").html("");
  $("#contain").append($("#<img/>").attr("src", item.media.m));
});
});
```



# DOM Insertion jQuery

- `.append()`
  - Insert content, specified by the parameter, to the end of each element in the set of matched elements.
- `.prepend()`
  - Insert content, specified by the parameter, to the beginning of each element in the set of matched elements.
- `.html()`
  - Get the HTML contents of the first element in the set of matched elements or set the HTML contents of every matched element.
- `.text()`
  - Get the combined text contents of each element in the set of matched elements, including their descendants, or set the text contents of the matched elements.



# DOM Insertion jQuery

```
<html>
<h2>Greetings</h2>
<div class="container">
  <div class="inner">Hello</div>
  <div class="inner">Goodbye</div>
</div>
</html>
```

```
<script>
$( ".inner" ).append( "<p>Test</p>" );
</script>
```

```
<html>
<h2>Greetings</h2>
<div class="container">
  <div class="inner">
    Hello
    <p>Test</p>
  </div>
  <div class="inner">
    Goodbye
    <p>Test</p>
  </div>
</div>
</html>
```



# DOM html jQuery

```
<html>  
<div class="demo-container">  
  <div class="demo-box">Demonstration Box</div>  
</div>  
</html>
```

```
<script>  
$( "div.demo-container" ).html();  
</script>
```

```
"<div class="demo-box">Demonstration Box</div>"
```



# DOM append img jQuery

```
<script>
$('#div').append($('' {id:'theImg',src:item.media.m}))
</script>
```

```
<script>
var image = new Image();
image.src = item.media.m;
$('#div').append(image);
</script>
```

```
<script>
$(`
```



1

解決 有沒有問題

2

解決 有沒有問題

3

解決 有沒有問題

4

解決 有沒有問題

</script>



# Thanks!

## Open for any questions

**CJ Wu**

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