**WP REST API and AJAX FORMS**

**Step-By-Step Course**

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**DESIRED OUTCOME:**

* To understand WP REST API.
* How to use FETCH API to get and handle JSON data.
* How to use to get data and to display data using JavaScript.
* How to create new endpoints and edit existing ones in the built in REST API for GET and POST requests.
* Create forms that use AJAX to WP REST API.
* Secure FORMS with WP NONCE.
* How to create our own WP REST APIserver for other sites.
* Using external APIs.
* Demo WP-HTML plugins for use in any HTML page ina ny framework.

**Final project** is a form that creates a new post using a custom WP REST API endpoint that we will create that validates data types and has a NONCE to provide security from Cross Site Request Forgery.

Live site

[**https://wp-html.co.uk/greece/**](https://wp-html.co.uk/greece/)

**DOWNLOAD WORKSHOP PACK**

[**https://github.com/iwswordpress/WordCampGreece**](https://github.com/iwswordpress/WordCampGreece)

**The cloned site has an admin of:**

**user: greece**

**pwd: wordcampGREECE2021**

The pack contains all the code necessary to replicate the final project, the slides for the talk and a resource list.

**Chrome Extension - JSON Formatter**

Let us look at the ‘hello world’ of the REST API:

<https://wp-html.co.uk/greece/wp-json/wp/v2/posts>

It is useful to have a JSON formatter in the browser. Search for *Chrome Extensions JSON Formatter* and install.

<https://chrome.google.com/webstore/detail/json-formatter/bcjindcccaagfpapjjmafapmmgkkhgoa?hl=en>

Or use <https://jsoneditoronline.org/> which we will need later anyway.

**Inspiration**

*Much inspiration was drawn from the following playlist on YouTube, particularly lessons 14 onwards:*

<https://www.youtube.com/watch?v=c_piVnQrJuY&list=PLT9miexWCpPU3TtDIVxA765dh2MaJY5X3>

*I highly recommend watching these tutorials.*

**SET UP**

**Installing a clone: (preferred method for workshop)**

With a new empty installation of WP, add the ALL\_IN\_ONE plugin.

Import the WordCampAthens.wpress file. This should reproduce all of the site except for the custom MySQL table we use. (It won’t matter if you don’t have it).

Load the 01\_tblTest.sql script into your WP database.

You can log in as admistrator:

**user: greece**

**pwd: wordcampGREECE2021**

**server.php** is and include that has the site URL as a variable so that do not need to specify your own site root url:

<?php

    //$SITE = "https://49plus.co.uk/udemy-rest/";

    $SITE = site\_url().'/';

?>

**Step by step**

**PHP** has two folders:

1. Code – html,js,mu-plugins,php folders
2. sql – MySql script to custom test table.

**mu-plugins** has files that contain functions which will be automatically loaded like plugins but cannot be turned on or off unless removed.

**js** has a test js file for use with qp\_localise

**php** hs phg files for root of theme

**html** has some html files for lesson on the fetch api

You can use the functions to make a plugin or insert into theme functions.php but if not in a child theme they can be overwritten on a theme update.

I use a free template called generatepress and create a child theme using the attached plugin.

Copy page-xxxx.php files into root of your theme.

**Create blank pages for the following:**

ajax, ajax-search, post, nonce and post-nonce

and add to menu if you wish…

The functions.php contains just code to generate a child theme called **child** from theme **generatepress.**

A screenshot of a computer screen

Description automatically generated

Test yourWPsite/ajax gives you the same page as me.

**Enable <post name> in Settings > Permalinks**

**server.php** is and include that has the site URL as a variable so that you can change to your server in just one place.

<?php

    //$SITE = "https://49plus.co.uk/udemy-rest/";

    $SITE = site\_url().'/';

?>

If we have a file page-ajax.php and a blank page in WP ajax, then [www.site.com/ajax](http://www.site.com/ajax) will render that page.

**SQL** folder has one MySQL script for 01\_tblTest as sample data

**What are REST/AJAX/JSON?**

FETCH pages…

**result[id] === result.id shorthand**

**Back ticks are template literals**

Roy Fielding propose REST as a guiding practice in his thesis in 2000:

<https://www.ics.uci.edu/~fielding/pubs/dissertation/rest_arch_style.htm>

By its nature, HTTP is very RESTful.

We will look at the wp-json object that is the REST API for WP.

Open <https://jsoneditoronline.org/>

In browser <https://wp-html.co.uk/greece/wp-json/> and copy and paste this into JSON EDITOR.

We can now see what the REST API contains…

Let us look at the ‘hello world’ of the REST API:

<https://wp-html.co.uk/greece/wp-json/wp/v2/posts>

We can now see what the REST API provides.

I will now go into detail…

* author
* authorName (added field)
* title.rendered

ACF fields needs ACF to REST plugin.

**ENDPOINTS**

**HTTP VERB (GET/POST/DELETE…) + URL = ENDPPOINT**

One URL can have two endpoints if it is used as GET and POST.

The URLs below can be two endpoints 1) GET 2) POST

**wp-html.co.uk/greece/wp-json/wp/v2**/**posts**

**wp-html.co.uk/greece/** is the WP site

**wp-json/** is the WP REST APi (like wp-admin is ADMIN)

**wp/v2**/ is the name space and wp is reserved to WP and v2 is a good practice so that we do not break previous versions

**posts** is the ROUTE

We will use wordcamp/v1 or v2 in our site, e.g.

[**https://wp-html.co.uk/greece/wp-json/wordcamp/v2/districts**](https://wp-html.co.uk/greece/wp-json/wordcamp/v2/districts)

A selection of useful endpoints, shaded ones most useful:

[**https://wp-html.co.uk/greece/wp-json/wp/v2/posts**](https://wp-html.co.uk/greece/wp-json/wp/v2/posts?_fields=authorName,id,excerpt,title,link,acf)

[**https://wp-html.co.uk/greece/wp-json/wp/v2/posts?\_fields=authorName,id,excerpt,title,link,acf**](https://wp-html.co.uk/greece/wp-json/wp/v2/posts?_fields=authorName,id,excerpt,title,link,acf) (underscore before fields)

https://wp-html.co.uk/greece/wp-json/wp/v2/posts?search=json

https://wp-html.co.uk/greece/wp-json/wp/v2/posts?order=asc

https://wp-html.co.uk/greece/wp-json/wp/v2/categories

https://wp-html.co.uk/greece/wp-json/wp/v2/categories/10

https://wp-html.co.uk/greece/wp-json/wp/v2/posts/?per\_page=2

https://wp-html.co.uk/greece/wp-json/wp/v2/posts?categories=10

https://wp-html.co.uk/greece/wp-json/wp/v2/users

https://wp-html.co.uk/greece/wp-json/wp/v2/users/14

**We can have our own custom endpoints:**

[**https://wp-html.co.uk/greece/wp-json/wordcamp/v2/districts**](https://wp-html.co.uk/greece/wp-json/wordcamp/v2/districts)

[**https://wp-html.co.uk/greece/wp-json/wordcamp/v2/latest-posts/10**](https://wp-html.co.uk/greece/wp-json/wordcamp/v2/latest-posts/10)

(latest posts in category id=10)

[**https://wp-html.co.uk/greece/wp-json/wordcamp/v2/totalusers**](https://wp-html.co.uk/greece/wp-json/wordcamp/v2/totalusers)

(total number of users)

<https://jsoneditoronline.org/> to format it.

Look in Dev Tools > Console and you can see the output of an array of posts.

These are in rest-custom.php in mu-plugins.

Let’s look at then now…

**Advanced Custom Fields:**

To get the ACF fields to show in rest we need the additonal plugin ACF to RESTAPI.

REST is neabled by default in ACF. In the early days it had to be added to the parameter set.

<https://wp-html.co.uk/greece/wp-json/wp/v2/posts?_fields=id,acf>

is a reduced REST response.

If we disable the ACT to REST API plugin we will not get the ACR field.

**Custom Post Types:**

We have one already installed WORDCAMPS.

When we examine wp-json we will see a namespace for the endpoint associated with the cutom post type:

<https://wp-html.co.uk/greece/wp-json/wp/v2/wordcamps>

**CREATING ENDPOINTS IN WP REST API**

**Sample page of GET requests for POSTS and DATA:**

[**https://wp-html.co.uk/greece/ajax/**](https://wp-html.co.uk/greece/ajax/)

We will look at this file to see how to process returned JSON data and render to the page…

**SEARCH FORM:**

[**https://wp-html.co.uk/greece/ajax-search/**](https://wp-html.co.uk/greece/ajax-search/)

**Create a new post using a custom endpoint:**

[**https://49plus.co.uk/udemy-rest/post/**](https://49plus.co.uk/udemy-rest/post/)

**Examples of nonces**

[**https://wp-html.co.uk/greece/post/**](https://wp-html.co.uk/greece/post/)

**POST data to create a new post using nonces**

[**https://wp-html.co.uk/greece/post-nonce/**](https://wp-html.co.uk/greece/post-nonce/)

### **DISABLING ENDPOINTS**

<http://juha.blog/dev/wordpress/disable-wordpress-rest-api-endpoints-example-user-endpoint/>

### **How to disable user endpoint**

Easy way to solve this is to disable user endpoint (if you don’t need it in your application). This can be done using rest\_endpoints filter in your functions.php. Following filter will disable user endpoints. You can user same logic to any endpoint you want to close.

add\_filter( 'rest\_endpoints', function( $endpoints ){

if ( isset( $endpoints['/wp/v2/users'] ) ) {

unset( $endpoints['/wp/v2/users'] );

}

if ( isset( $endpoints['/wp/v2/users/(?P<id>[\d]+)'] ) ) {

unset( $endpoints['/wp/v2/users/(?P<id>[\d]+)'] );

}

return $endpoints;

});

### **How to disable entire REST API**

If you don’t need Rest API at all and you want to disable it for some reason you can use this snippet in your functions.php.

add\_filter('rest\_enabled', '\_return\_false');

add\_filter('rest\_jsonp\_enabled', '\_return\_false');