WP REST API and AJAX FORMS

Step-By-Step Course

Craig West

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/

DOWNLOAD WORKSHOP PACK

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
<?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.

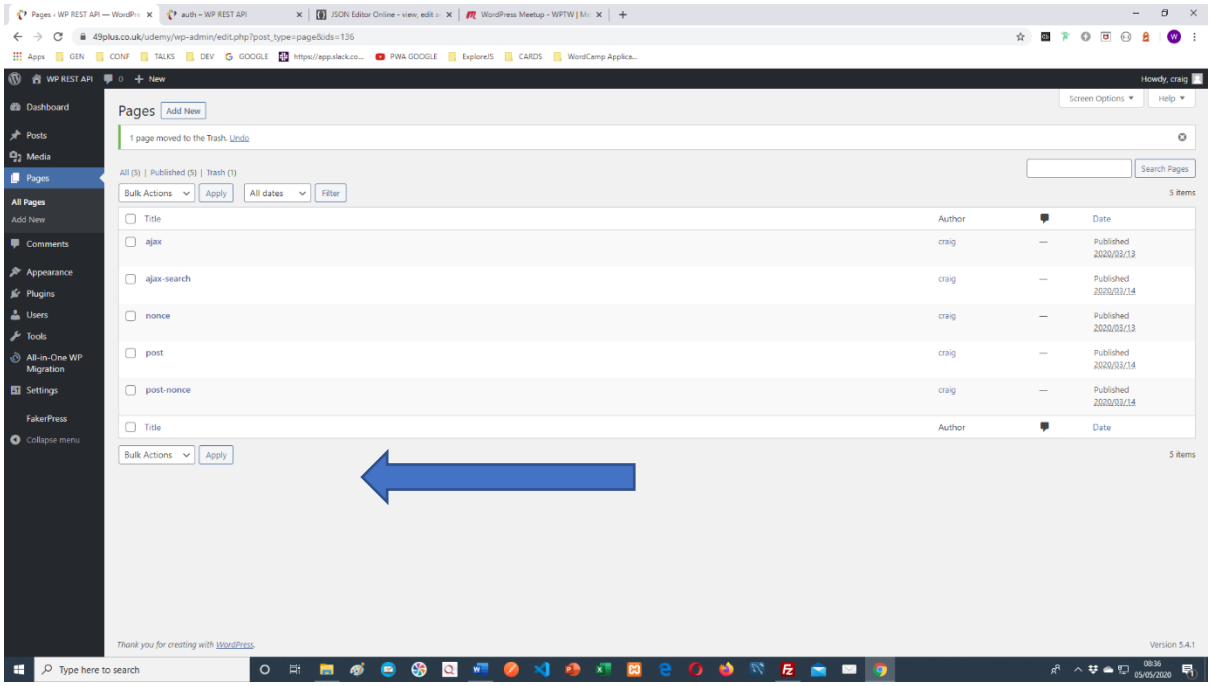
Copy page-xxxx.php files into root of your theme.

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.**



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 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

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
(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/latest-posts/10

(latest posts in category id=10)

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/

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/

Create a new post using a custom endpoint:

https://49plus.co.uk/udemy-rest/post/

Examples of nonces

https://wp-html.co.uk/greece/post/

POST data to create a new post using nonces

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');
```