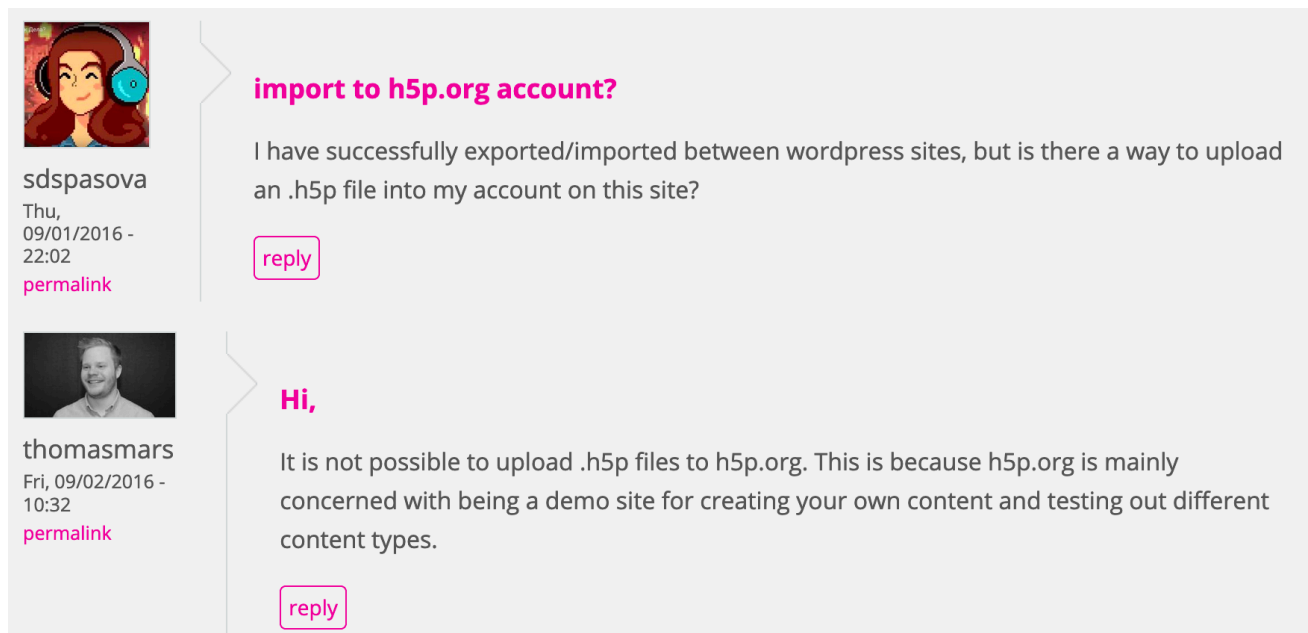# Part 1 – Successful Path Exploration

Step 1: Development Environment Setting

To add our new H5P content type into Canvas, to our best knowledge, we could only embed H5P content (finished edition) into Canvas via iframe code, since the H5P.org doesn't support hosting self-created content type.

Figure 1: Official reply in discussion
https://h5p.org/documentation/for-authors/import-and-export

So, we need self-host site to customise a new parsons puzzle type, then create new contents on the site, embed the new content into Canvas in the end.

There are 3 self-hosters as a plugin for Canvas: Moodle, WordPress, and Drupal. We choose to use Drupal as the H5P official recommended.

1. Setup local environment for Drupal

    Installing Drupal requires that you have a web server and a database server first. For 'local' and 'online' Linux based servers using Apache and MySQL, the software that is needed to run Drupal is known as an "AMP stack": Apache (or another web server), MySQL (or another database server) and PHP. There are several options to setup local environment for Drupal:

    A. Install Acquia (our final approach, Mac and Windows)
    B. Install MAMP (Mac): *https://www.drupal.org/docs/develop/local-server-setup/mac-os-development-environment/howto-create-a-local-environment*
        Errors we got: You need to play a lot of accounts and passwords setting in this approach. We still got a bunch of login errors even we followed the instruction of the tutorial. You need to watch out this if you're using MAMP.

C. Manual setup (macOS 10.15, for **experienced web developers**):
https://getgrav.org/blog/macos-catalina-apache-multiple-php-versions
This approach gave us a horrible experience…we probably shouldn't have tried it as a beginner…

2. Install Drupal 7: *https://www.drupal.org/docs/7/install*

3. Setup H5P development environment
After installing Drupal, we need to setup H5P for Drupal:
https://h5p.org/documentation/setup/drupal7 and setup H5P development environment:
https://h5p.org/development-environment. Especially install the H5P CLI.

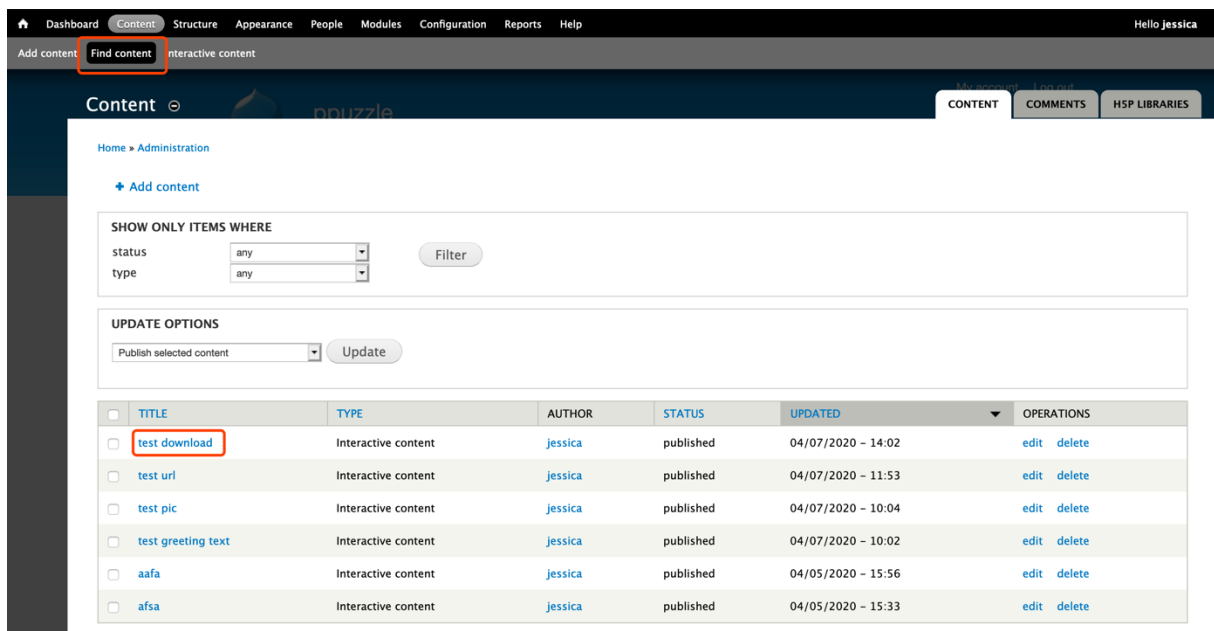## Step 2: Implementation of new H5P content type

We can upload customised content type package - a standard zip file with a specific extension of .h5p to help distinguish it from other zip files to the H5P Content Type Hub in Drupal to test, create contents of the new type and embed the contents into Canvas further.

Tips: The .h5p file is generated using H5P command: h5p pack -r packageName typeName.h5p

We still get a bunch of bugs in this step, either packing or uploading. Need to look into the H5P implement standards further.

Step 3: Embed the contents into Canvas

After we upload the new type and create contents of it, we can embed it into Canvas.

Figure 2: The list of contents in Drupal H5P

Click the content to get the iframe.
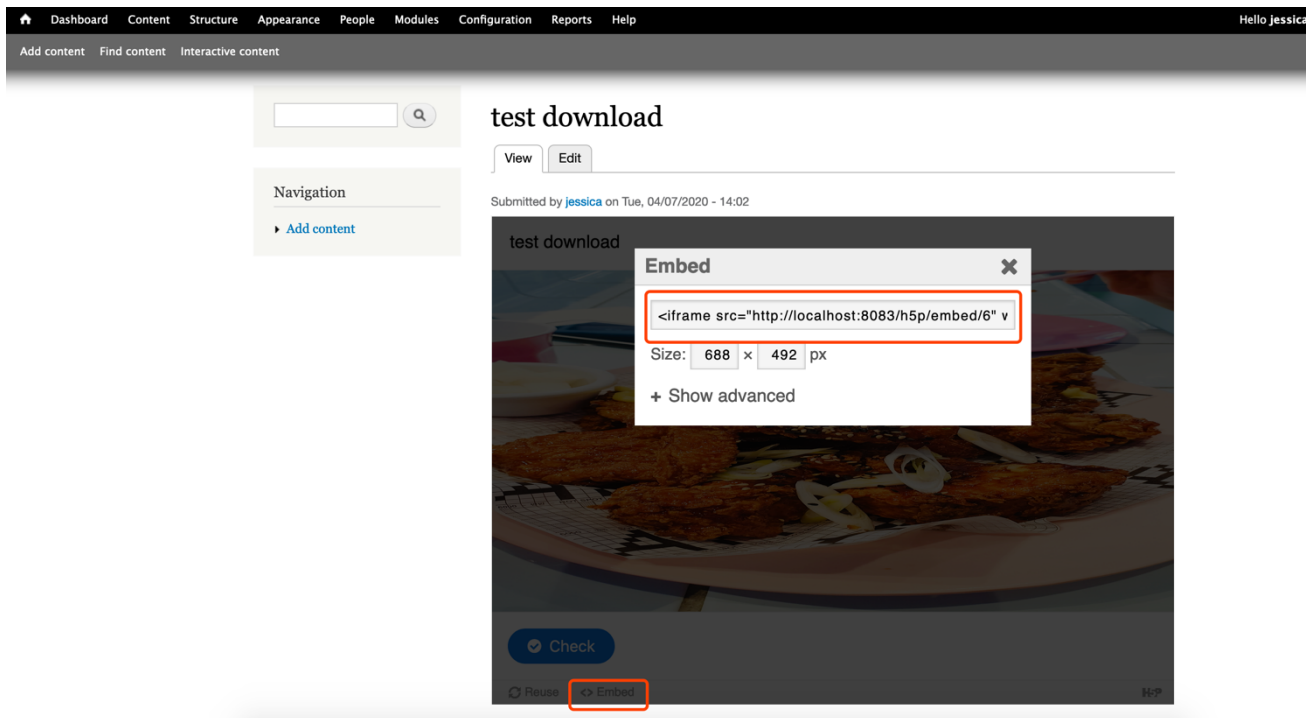
Figure 3: Get the iframe of contents in Drupal

Then add it to Canvas: https://h5p.org/node/284491.

Part 2: Failed Tryout

Canvas LMS setup: https://github.com/instructure/canvas-lms

Tips:

1. When you run the script and come to:

```
> It looks like you're using a Mac. You'll need a dinghy VM. Let's set that up.
OK to create a dinghy VM? [y/n] y
How much memory should I allocate to the VM (in MB)? [8192] 8192
How many CPUs should I allocate to the VM? [4] 4
How big should the VM's disk be (in GB)? [150] 150
```

Ensure the allocated memory is 8192, otherwise will get errors later.

2. Docker related bugs and methods:
The script will create a dinghy VM, if you get some errors, you might want to kill it and start over again...these commands could be useful:

```
docker-machine ls
docker-machine status
docker-machine kill dinghy
docker-machine rm dinghy
docker-machine –help
```

3. My Mac restarted automatically every time when the script goes to
    yarn install v1.19.1
    It stuck at [3/5] Fetching packages...