OR2018 DSpace Angular Workshop

This page is for attendees of the OR2018 workshop "Getting Started with the DSpace 7 Angular UI". It provides links to resources, workshop preparation, etc.

(This workshop was based on materials from the OR2017 DSpace Angular Workshop, but slides/materials/exercises have been updated.)

Slides : https://tinyurl.com/or2018-dspace-ui

Learning Objectives

- Learn about the Angular framework, and its main elements (templates, components, services, modules)
- Learn about the TypeScript language and its syntax
- Learn how code is structured in the DSpace Angular UI codebase & current project status
- Learn the basics of how to currently "brand" or "theme" the Angular UI
- Learn about coding in the DSpace Angular UI (creating new pages / adding functionality, etc)

Preparing for the workshop

There are no installation requirements for the workshop. However, as the second half of the workshop is a code walkthrough (of some live development / theme customizations), you can optionally choose to install the Angular UI locally (and perform "hands-on" changes on your laptop).

Please be aware that, as we currently have over 40 workshop attendees, we unfortunately cannot promise any "hands-on" support on an individual basis. But, we still welcome you to turn use this as an opportunity to try some "hands-on" changes.

Optional Installation

During the code walkthrough, we will be working directly with the dspace-angular project (this is the in-development Angular UI for DSpace 7). However, don't worry. It's rather easy to install, and you ***do not need to install DSpace itself*** (as we will be using the public, demo REST API as our backend).

Installing the Angular UI locally

(*These instructions are based on the dspace-angular README*)

- **Git** :You'll want to have Git to simply clone and install our dspace-angular project (this is the in-development Angular UI for DSpace 7). If you don't have Git, you can choose to install either GitHub Desktop (which includes a GUI) or just plain Git. Any version of Git is fine.
- **Node.js** (*version 6.x or 8.x recommended*) : Required to build/run the Angular UI.
  - Note: Node.js will also automatically install npm (Node Package Manager). You shouldn't need to install that separately
- **Yarn** (*version 1.3.x or above*) **:** This is an easier to use, speedier package manager that works similar to npm (Node's package manager). It's currently required to build Angular UI.
- **dspace-angular**: You can now install dspace-angular itself using the command line.
  1. `git clone https://github.com/DSpace/dspace-angular.git` (Pulls down the code into a dspace-angular folder on your local computer)
  2. `cd dspace-angular` (Move into the newly created dspace-angular folder)
  3. `yarn install` (Install all local dependencies via yarn)
  4. `yarn run watch` (Build and startup the DSpace Angular UI, while watching code for new changes.)
     a. Alternatively, you can also run "`yarn start`", but that command requires you restart to pick up local code changes.
  5. Assuming all went well, you should be able to go to http://localhost:3000 in your web browser and see the Angular UI homepage.
- Now, to easily follow along with the workshop code changes step-by-step, you may wish to create a branch for the workshop exercises

That's it! Again, there is *no need* to have DSpace running or install a database, Java, Tomcat or any of the other usual DSpace prerequisites.

Creating a branch for the exercises

To follow along with the exercises run the following git commands in the project directory to get the correct starting point

1. `git remote add workshop https://github.com/DSpace-Labs/dspace-angular-workshops.git`
2. `git fetch --tags workshop` (Pulls down the dspace-angular-workshops code locally, including tags)
3. `git checkout or2018-start` (Checks out the starting point of the workshop, the "or2018-start" tag)

4. `git checkout -b or2018-hands-on  (Creates a local branch named "or2018-hands-on" for you, based on that "or2018-start" tag)`

At certain points during the hands-on part we'll show a git tag that corresponds to the solution so far. If you'd like to sync up to that point, run the following:

1. Revert all existing files to their state at the start:
    - `git reset or2018-start --hard`
2. Remove any newly created files
    - `git clean -f -d`
3. Sync with the solution
    - `git merge $TAG_NAME`

Optional Development Tools

While not required, the following tools may make it easier to do basic development with the Angular UI.

- **Chrome web browser** : When developing an Angular application, all web browsers are *not* created equal. While you obviously should use other browsers to help test your application, Chrome has built in debugging/visualization tools that come in handy when doing Angular development. **Make sure you disable cache in your network tab and keep the inspect element open**.
- **An IDE** : If you wish to do much Angular development, you'll likely want an IDE (Integrated Development Environment) or an editor that understands the TypeScript language. Here's a few we prefer. ***Just choose ONE.****If you have no strong preference, you may want to start with Visual Studio Code.*
    - **Visual Studio Code** (*Free*) : This is a TypeScript IDE from Microsoft (the makers of TypeScript). It's frequently used for Angular development, even by some of the main Angular developers, and provides an excellent debugger for Chrome (which you may also wish to install for easier debugging)
    - Intellij (*Requires a license*) : If you use IntelliJ already for other development work, IntelliJ IDEA Ultimate has TypeScript support. You could also use WebStorm, IntelliJ's Javascript IDE
    - Atom.io (*Free*) : This is an advanced text editor from the makers of GitHub. If you install the Typescript language plugin, it acts a little more like a basic IDE for TypeScript / Angular (providing autocomplete and highlighting). However, be forewarned that it doesn't have the debugging capabilities of Visual Studio Code or IntelliJ.
    - Any other editor or IDE that provides either TypeScript or Angular 2 support.

Solution tags

Click on the commit hashes for each of the tags in the "releases" to see all code changes for each of the steps of the workshop:

https://github.com/DSpace-Labs/dspace-angular-workshops/releases

Additional Resources

- DSpace 7 UI Technology Stack : Technology overview with link to tutorials on Angular, etc
- DSpace 7 - Angular UI Development : How to contribute to Angular UI