**Running the VDJbase backend under PyCharm**

Requirements:

* Pycharm
* npm
* Angular 10

The front end is written in Angular, currently Angular 10. Note that this is not the same as Angular JS, which was essentially ‘Angular 1’.

If you would like to learn Angular, I strongly recommend the online Udemy course by Maximilian Schwarzmüller. It is a long course but well worth the investment in time: Angular can be a confusing and complex environment, but is very productive once you understand the basics. However you should not need Angular knowledge to develop reports, or to run the client against a debug backend.

To install Angular, follow the instructions at <https://www.freecodecamp.org/news/how-to-install-angular-on-windows-a-guide-to-angular-cli-node-js-and-build-tools/> which will take you through the installation of npm and the subsequent installation of the angular/cli package and dependencies. Or on Ubuntu:

sudo apt update

sudo apt install nodejs

sudo apt install npm

npm install @angular/cli

Now clone the digby repo:

git clone <https://github.com/williamdlees/digby>

At this point, you should be able to cd to the digby directory, build and start the environment:

cd digby  
npm install  
ng build digby-swagger-client  
ng build  
ng serve

This is all you need to do, if you just want to use the front end to drive your local backend, for example to run reports: browse to localhost:4200 to find the client. If you want to debug the front end, open Pycharm and configure a project as below. You can then launch a debugging instance by pressing the ‘debug application’ button in PyCharm. A new instance of Chrome will open at the VDJbase front page. You can set breakpoints in the code within Pycharm and the code should break there. Be sure to keep an eye on the console for errors, either in Pycharm or in the browser (press F12).

If you keep ng serve running, it will automatically rebuild and re-serve if you make any code changes. Digby-swagger-client is code generated by Swaggerhub to call the backend api. Don’t make any changes to it, as they will be overwritten the next time the code is generated.

