

Introductory Information

Intro to Javascript and Data Visualization with D3

DHSI 2023 — June 5–9
Clearihue A030

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Welcome to the Intro to Javascript and Data Visualization class at DHSI 2023 (5-9 June)! Here is your obligatory omnibus introduction document, intended to help all of us hit the ground running. Important info here, including links.

1. COURSE MATERIALS

Although there are some older reading materials from an earlier year on HSS Commons <<https://hsscommons.ca>>, we won't be using them this year. The most current version of all our course materials will always be on Harvey's Google Drive: <<https://drive.google.com/drive/folders/1AbgCfwfqSzIpykSqT1NGF0xpKvm3w2Gb?usp=sharing>>. If that folder has not been shared with you yet, please let us know!

2. WHERE TO MEET

After the opening day's DHSI welcome session, our class will convene in Clearihue A030. Here's a map and some info about our room: <<https://www.uvic.ca/systems/labs/rooms-drops/find-space/labs/cle-a030.php>>. It's a computer lab with some Windows PCs, but we encourage you to bring your laptops.

3. WHEN TO MEET

The DHSI Daily Timetable is here: <<https://dhsi.org/timetable/>>. We'll generally meet from 9:00 to noon and 1:00 to 4:00. Jon and Harvey like to break about 15 minutes early for lunch so that we can all get in the food queues before the rampaging hordes arrive. And then if we

could start again about 12:45, that would be grand. (Note: Afternoon on Day One will end at 2:30 pm for the Institute Lecture by Andie Silva.)

4. A) FEEL FREE TO BRING A PROJECT, OR B) BUILD ONE FROM A TUTORIAL

A) The gist of our class is about visualizing data sets interactively so that users of your data can see interesting patterns and dynamics. We'll do many "code-alongs" in class and will show lots of examples, but you'll probably want something to work on that's your own. If you happen to have a particular project that you'd like to work on, feel free to bring it along. You can consult with us about your data and, as a class, we can brainstorm ideas about each others' projects too.

Are you bringing data? Which format for your data? Almost anything will do. If you have an Excel spreadsheet (or, what amounts to the same thing, a CSV file), that'll be great. Word documents or HTML tables are spiffy too. The general workflow, though, will be to move from those formats into something readable and editable by one of those plain text editors listed above.

B) But if you'd like to use a pre-cleaned dataset and work along with Quamen's step-by-step tutorial, look in the folder called **scatterplot** and work along with his videos on YouTube: https://www.youtube.com/playlist?list=PLHb1PuX_236PUpowpbMMWyCVqsEXPBZ0c. It's a project built totally from scratch, but the **scatterplot** folder contains the finished project.

5. BRING YOUR LAPTOPS

We encourage everybody to work from their own laptops during the course. That way, all your work will automatically travel with you when you leave. If you don't have access to a laptop, there are, as mentioned, Windows desktop machines in our room. Bring a USB key for them.

6. SOFTWARE TOOLS (specific details in notes 7–8 below)

We'll spend some time downloading and installing tools on Day One, but you're free to get a head start if you wish. Our three most important tools will be a **web browser** (any kind), a good, professional-caliber **text editor** (see #7 below for suggestions), and, to help solve one recurrent problem starting mid-week (data loading in D3), we will use **a one-line Python command** (see #8 below). *Note: you don't need to know any Python for this class!*

If you'd like to wait for Day One at DHSI to load these tools, that's fine. If you'd like to get a head start, though, continue to the next page and read on.

7. DOWNLOAD A GOOD TEXT EDITOR

We'll be working all week with HTML, CSS, Javascript, and data files. The best tool for all those formats is a good, professional-caliber, programming text editor. We prefer the free ones, and if you don't already have one you like, here are a few we recommend:

Sublime Text (all platforms) — It's a purchase product but they never actually make you pay for the license: <<http://www.sublimetext.com/>>. Sublime Text is the most popular text editor among our students and if you can tolerate the occasional "would you like to purchase a license?" pop-up windows, it's a terrific editor.

BBEdit (Mac only) — It used to be called TextWrangler, but it has been absorbed into the more full-featured BBEdition. Free download at <<http://www.barebones.com/products/>>. You'll download the free BBEdition, but then after 30 days or so, you'll lose a few features, but you can continue using the software forever with the reduced feature set (we won't use any of those extra tools anyway!).

Visual Studio Code (all platforms) — A full-featured, free code editor. Download at <<https://code.visualstudio.com/>>. This is a more full-featured integrated development environment (IDE), so has some extra bells and whistles, but we won't use any of them.

Notepad++ (Windows only) — A free upgrade to Windows' built-in Notepad editor. Download at <<http://notepad-plus-plus.org>>. The dumb, stupid, old Notepad is loaded on the Windows machines in our classroom. But if you want to use Notepad on your laptop, and you can, please upgrade. You won't regret it.

8. PYTHON

Remember: you don't need to know any Python for this course.

But if you want to learn, Harvey teaches Python every fall and all his lectures are on YouTube: https://www.youtube.com/playlist?list=PLHb1PuX_236Pt9y2GHOPdyGog9IoOW049

If installing things make you nervous and you would rather wait until DHSI to work on this step, we'll walk you through everything.

If you'd prefer to start now, read on. And if you know that you're running a current version of Python already (that means version 3.x), just skip this step and do nothing. You're done.

The easiest way to get (or to upgrade) Python is to install the outstanding Anaconda package. It's (almost) your one-stop shop for all DH-related Python needs. The steps are listed below.

WAIT, WHY?

Why are we using Python? For very good reasons that we will discuss, Javascript can't access files on your hard drive. Consequently, data loading in web browsers has been a problem since, well, the Fred Flintstone Age of the Internet. In the olden days (you know, five years ago), we used to have some spiffy shortcuts to help us cheat, but those doors have all been closed now. Fortunately, the Python community has invented a solution and so we'll use their convenient and tiny one-line command to help us. Feel free to thank the Python community through either a few moments of silent reflection or a ritual sacrifice, whichever you prefer.

Windows users do not have Python pre-loaded, so if you have never installed it, you'll need to install it now.

Most **Macs** (the older ones, we can't confirm right now for the new M1 processors) come with an archaic version of Python (version 2.x), so you should do a fresh install to get version 3.x. However, before installing, Mac users should first figure out if you're running an older Intel machine or a spiffy, new M1 machine:

Apple Menu > About this Mac > look at the "Processor" line for Intel or M1

STEPS:

1. Download the proper Anaconda package from <<https://www.anaconda.com/download/>>. Ignore all the nonsense up top on this page and scroll down to the purple section at the bottom of the page. You'll see download packages for Windows, Mac, and Linux.
2. Find the proper package for you. We're all loading Python 3.10. Here are your choices:

WINDOWS: Download **64-Bit Graphical Installer (786 MB)** — it's your only choice.

MACINTOSH:

Check **Apple > About This Macintosh > Processor** to see whether you are **Intel** or **M1**. Download accordingly:

Older, Intel-based Macs: download **64-Bit Graphical Installer (599 MB)**

New, M1-based Macs: download **64-Bit (M1) Graphical Installer (564 MB)**

LINUX: You'll need to select your package according to the processor you're running.

3. When downloaded, double-click to execute the installation (Windows will see an **.exe** file and Macs will see a **.pkg** file).

During installation, if you ever see a checkbox (probably under “Advanced Options”) that says, “Add Anaconda to my PATH environment variable,” click it. No harm if you miss it, but it may make your Python life easier later on.