



TOOLING, WEB DEV, LINE AND PIE CHARTS WITH GOOGLE SHEETS AND GOOGLE CHARTS.

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TOOLING: CHROME, NODE, VS CODE

INSTALL GOOGLE CHROME

Download and install from https://www.google.com/chrome

Make Chrome the default browser for assignments & labs

INSTALL NODE

Download and install node LTS from https://nodejs.org

INSTALL VISUAL STUDIO CODE

Download and install from https://code.visualstudio.com Install code:

View > Command Palette... > Shell command: Install 'code' command in PATH

 \mathbb{P} Learn most used keyboard shortcuts: Windows, macOS, Linux



CREATE A GITHUB ACCOUNT WITH YOUR USC USERNAME!

Serignments from non USC accounts will not be graded!

INSTALL GIT

- Mac (in terminal install xcode dev): xcode-select --install
- Windows: download and install from https://git-scm.com

INSTALL GITHUB DESKTOP

Download and install from https://desktop.github.com

In Windows use GitBash to run shell commands or the terminal in VS Code

GETTING STARTED WITH ASSIGNMENTS

Accept the assignment from the course home-page or Blackboard under Content > Week 1
 Get assignment GitHub link:



3. Clone repository:

a.GitHubDesktop (preferred): File → Clone Repository

- b. VS Code: Git Clone command
- c. Command line (create a personal access token first):

```
$ mkdir hw
$ cd hw
$ git clone https://github.com/DSCI554/al-lnocera-1.git
```

4. Open the folder in VS Code:

```
$ cd al-lnocera-1
$ code -n .
```

M STARTER CODE TOUR

```
ASSIGNMENT.md #assignment rubric in markdown
README.md #repository README in markdown
index.html
lab/ #lab files
 ex1.html #lab exercise file
 ex2.html
  simple_exe/
    faithful.csv
    node modules
    package-lock.json
    package.json
    simple-exe
  simple-html/
    index.html
    node modules
    package-lock.json
    package.json
  simple-vue/
    README.md
    babel.config.js
    node modules
    package-lock.json
    package.json
    public
    src
    vue.config.js
  style.css
node modules #node modules created when running npm install
package-lock.json
package.json #package.json file
```

SIMPLE-EXE: NODE COMMAND LINE INTERFACE (CLI)

Node.js (JavaScript runtime environment)

```
$ node
> console.log('hello JavaScript')
> a = [1, 'b', 'c', 2]
> a.concat(a)
```

This is how to generate files for a CLI executable using npm (JavaScript package manager):

If you cut-and-paste the commands below do not copy the comments starting with #

```
$ npm init
$ npm install commander csv-parse #fetch libs in node_modules and adds references in package.json
$ cat > mycli #create mycli executable
#!/usr/bin/env node
console.log('hello mycli');
$ chmod +x mycli
$ ./mycli
$ code -n . #open current folder in VS Code
```

Pebug with console.log() and VS Code debugger (launch.json file)

SIMPLE-HTML: WEB PAGE

P Debug in Chrome with DevTools

In Windows use GitBash to execute or VS Code terminal

To debug in Chrome:

- 1. Open index.html in Chrome
- 2. Open DevTools: View → Developer → Javascript Console

DevTools shortcuts:

Action	Мас	Windows / Linux
Open whatever panel you used last	Command+Option+I	F12 or Control+Shift+I
Open the Console panel	Command+Option+J	Control+Shift+J
Open the Elements panel	Command+Shift+CorCommand+Option+C	Control+Shift+C



Run the Vue.js (JavaScript framework) app in VS Code:

```
$ cd simple-vue
$ code -n . #open simple-vue project
$ npm install #only when updating package.json with new packages
$ npm run serve #use vue cli (see in package.json)
```

Debug with console.log() or Vue DevTools extension and Chrome

To create a new Vue.js app:

```
$ npm install -g @vue/cli #install vue CLI globally
$ vue --version
$ vue create my-app #choose default vue 2!
```

To debug in Chrome update the devtool property inside vue.config.js:

```
$ cat > vue.config.js
module.exports = {
   configureWebpack: {
      devtool: 'source-map'
   }
}
```

GRAPHING WITH GOOGLE SHEETS

1. Read the documentation:

- Types of charts & graphs in Google Sheets
- Add & edit a chart or graph
- Line charts
- Pie charts
- Edit your chart's axes
- Create & use pivot tables
- 2. Format the data
- 3. Generate the graph

LAB EXERCISES

- **X** EX1: LINE CHART IN GOOGLE SHEETS USING CCSE COVID-19 DATASET
- Follow the instructions in ex1.html

X EX2: IMPLEMENT A GOOGLE CHARTS PIE CHART

- Follow the instructions in ex2.html
- **V** Implemented and test one step at the time then **commit & push**!
- Make sure to commit & push by the deadline (15% of grade)

DSCI 554: plotting with Google Sheets

REFERENCE SLIDES

GIT BASICS

 \bigcirc You will use git to store and version your code

ho git snapshots are tracked using a SHA-1 hash

The git repository is located in .git/

EXAMPLE SHA-1 HASH

<mark>ca412e3a</mark>7968b81b247fa7ae40c2fd5bf7fb3308

COMMANDS TO KNOW

- $\circ~$ clone: fetch copy of remote
- **checkout:** create working copy
- add/rm: mark files to add
- **commit:** save changes
- **pull:** fetch changes from remote
- **push:** upload changes to remote



MARKDOWN BASICS

Vulse Markdown to document your work

Warkdown files have .md extension, e.g., README.md

Visual Studio Code let's you preview the Markdown

README.md is rendered as HTML by GitHub

MARKDOWN

Title ## Subtitle

__HTML__ `inline` code:

```html <h1 style="color: red">Header 1</h1> <h2>Header 2</h2> <h3>Header 3</h3>

A list:

- [hyperlink text](https://guides.github.com/)
- list item
- list item

RENDERING OF MARKDOWN

Title

Subtitle

HTML inline code:

```
<h1 style="color: red">Header 1</h1>
<h2>Header 2</h2>
<h3>Header 3</h3>
```

A list:

- hyperlink text
- list item
- list item

HTML BASICS

 \mathbb{P} Only the contents of the body tag are visible!

Spaces, tabs and newlines outside of html elements are not rendered!

BODY

```
<hl>Header</hl>
<hl>Header</hl>
<hl>and some more text directly in the body
 some text with a <a href="some_url">hyperlink</a>
```

RENDERING OF BODY

HEADER

SUB-HEADER

paragraph with text

and some more text directly in the body

Some text with a hyperlink

UN DATA FOR THE ASSIGNMENT

A1 is modeled after Cairo's example from this week reading so it might help if you read that first.

The goal is to create a toy dataset we can use for the rest of the class.

Find a UNData dataset to use from the Datamarts page:

Datasets	Sources	Topics				
Com	modity Tr ade of goo	ade Stati ds , US\$,	stics Data HS 1992,	abase United	Nations Statistics Division (UNSD) 👔 ITIES 🔍 Preview 亘 View data	
Tr	ade of goo	ods , US\$,	HS 1992,	01 Live anima	Commodity Trade Statistics Database	×
Tr	ade of goo ade of goo	ods , US\$, ods , US\$,	HS 1992, HS 1992.	02 Meat and (03 Fish, crust	Source: United Nations Statistics Division	
Tr Tr	ade of goo ade of goo	ods , US\$, ods , US\$,	HS 1992, HS 1992, HS 1992,	04 Dairy prod 05 Products o	The United Nations Commodity Trade Statistics Database (UN Comtrade) stores more than 1 billion trade data records from 1962. Over 140 reporter countries provide the United Nations Statistics Division with their annual international trade statistics detailed by commodities and	
Tr Tr	ade of goo ade of goo	ods , US\$, ods , US\$,	HS 1992, HS 1992, HS 1992,	07 Edible veg 08 Edible fruit	partner countries. These data are subsequently transformed into the United Nations Statistics Division standard format with consistent coding and valuation using the UN/OECD CoprA internal processing system.	
	ade of goo ade of goo ade of goo	ods , US\$, ods , US\$, ods , US\$, ods , US\$,	HS 1992, HS 1992, HS 1992, HS 1992,	09 Coffee, tea 10 Cereals 11 Milling pro	View country notes Last update in UNdata: 2021/06/09 Next update in UNdata: 2021/09/01	
	ade of goo ade of goo ade of goo	ods , US\$, ods , US\$, ods , US\$, ods , US\$,	HS 1992, HS 1992, HS 1992, HS 1992,	13 Lac, gums, 14 Vegetable 15 Animal,veg	 Online data Homepage Metadata & Reference 	
Tr Tr Tr	ade of goo ade of goo ade of goo	ods , US\$, ods , US\$, ods , US\$,	HS 1992, HS 1992, HS 1992,	16 Meat, fish 17 Sugars and 18 Cocoa and	 Reporting country notes Contact 	
Tr Tr Tr	ade of goo ade of goo ade of goo	ods , US\$, ods , US\$, ods , US\$,	HS 1992, HS 1992, HS 1992,	19 Cereal, flor 20 Vegetable, 21 Miscellaneo	Explore datamart Truit, nut, etc rood preparations M Preview M View data pus edible preparations Preview View data	
	🚬 of goo	🔨, US\$,	HS 1992,	22 Beverages,	spirits and vinegar 🛛 Preview 亘 View data	

