Group: Thomas Laws Lays Down the Law

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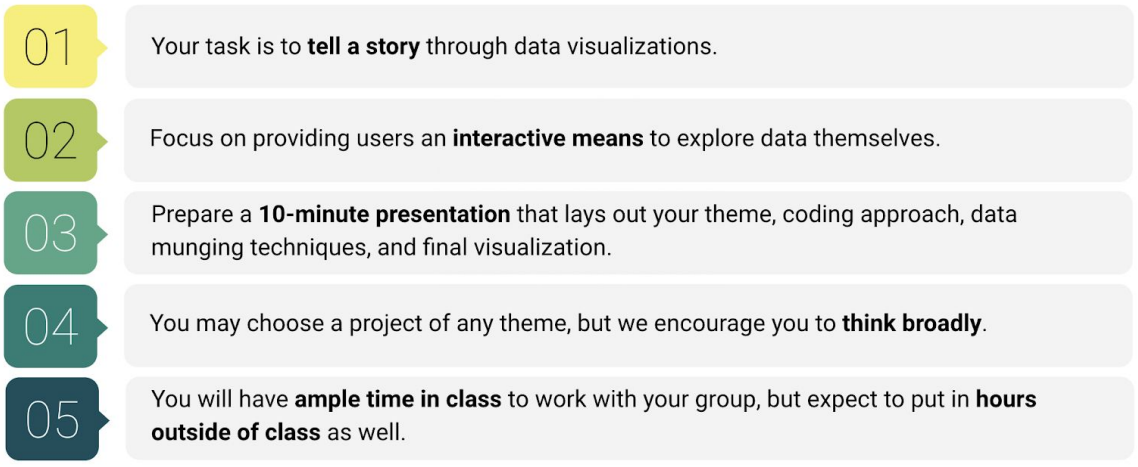
Project Scope

1. Your visualization must include a Python Flask–powered RESTful API, HTML/CSS, JavaScript, and at least one database (SQL, MongoDB, SQLite, etc.).
    - How to - set up Python Flask-powered RESTful API (uses PostreSQL)
2. Your project should fall into one of the below four tracks:
    - A custom “creative” D3.js project (i.e., a nonstandard graph or chart)
    - A combination of web scraping and Leaflet or Plotly
    - A dashboard page with multiple charts that update from the same data
    - ~~A “thick” server that performs multiple manipulations on data in a database prior to visualization (must be approved)~~
3. Your project should include at least one JS library that we did not cover.
    - Leaflet.js
    - GeoJSON
4. Your project must be powered by a data set with at least 100 records.
5. Your project must include some level of user-driven interaction (e.g., menus, dropdowns, textbxtboxes). Your final visualization should ideally include at least three views.
    - JS - Plotly dropdowns

Tasks

- postgreSQL - Thomas
    - joins - state name, address, etc
    - Kaggle population dataset by zipcode
    - Station Name - zipcode - city population
- Leaflet.js - Alicia
    - Overall how-to
    - slider/range of years
- Flask-powered RESTful API - Kellie
- HTML/CSS - Anna

Project Description



Day 1 (Thursday, June 25):
Between now and Saturday, you will need to start brainstorming topics with your group and researching potential data sets. Your focus should center around:

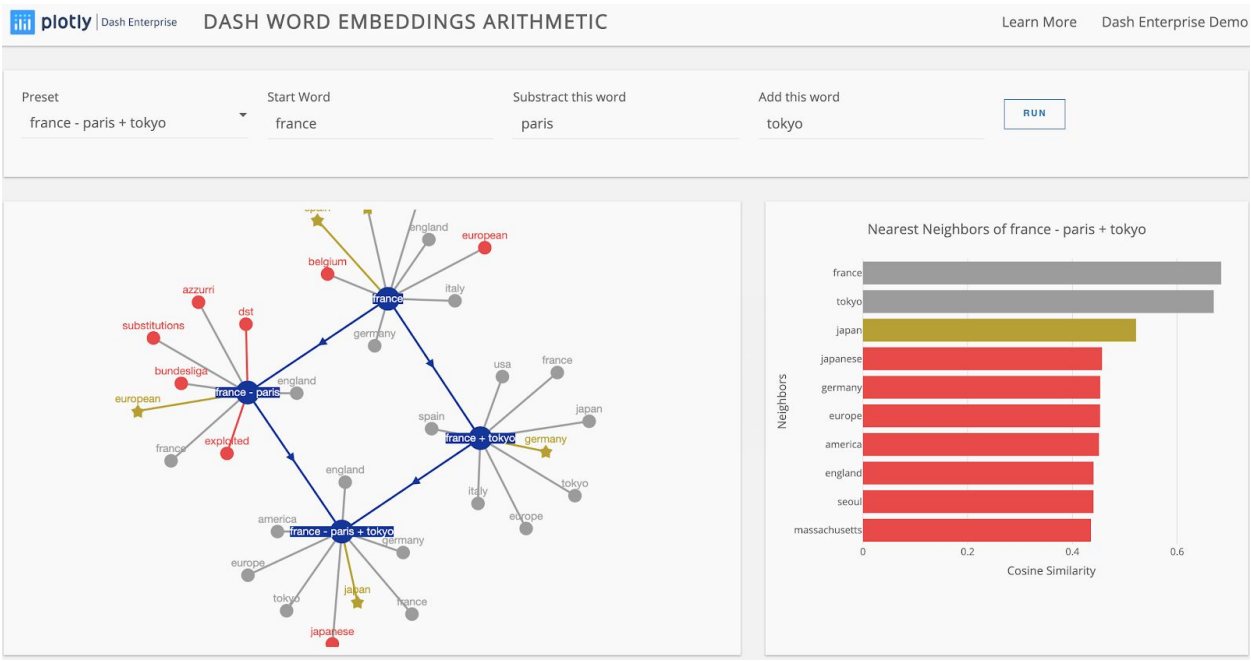
- Selecting a topic
- Finding a data set
- Finding inspiration
- “Sketching” your ideal visuals
- Creating a 1-page proposal

Day 2 (Tuesday, June 30):
You will need to create a 1-page proposal that includes:

- A brief articulation of your chosen topic and rationale
- A link to your data set(s) and a screenshot of the metadata if it exists.
- 3 or 4 screenshots of relevant, “inspiring” visualizations that frame your creative fodder
- A sketch of the final design
- A link to the primary GitHub repository you’ll be housing your work in

Day 3 (Thursday, July 2):
Project Work

Examples & Inspiration



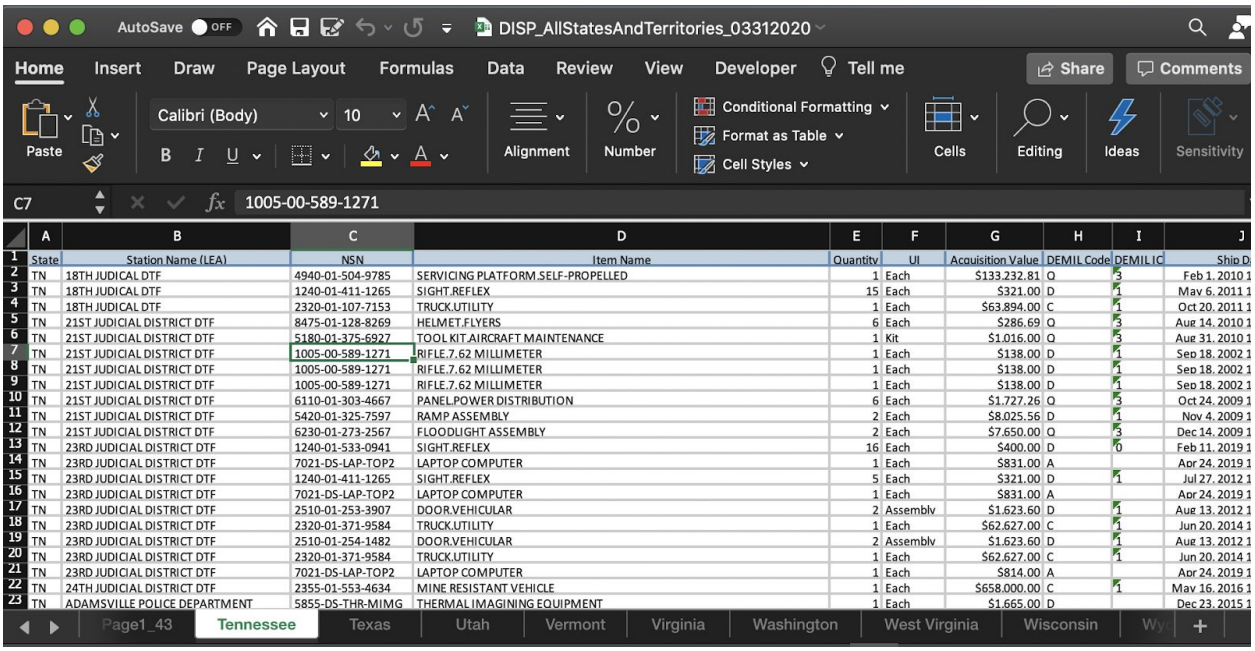
"1033" Program Transfers Since Ferguson

Analyzing the transfers made by the Defense Logistics Agency to local law enforcement since the protests in Ferguson, Missouri in August 2014.

The DLA is a sub-agency of the Department of Defense; it provides equipment to local law enforcement agencies through its Law Enforcement Support Office. The program is commonly referred to as the "1033" program due to the statute that enabled it in 1997.

Data

The data used in this analysis comes from the DLA's LESO Public Information page. The `data/all.xlsx` file contains all property transferred to participating agencies that was held by them as of March 31, 2020. It is updated quarterly.



	A	B	C	D	E	F	G	H	I	J
1	State	Station Name (LEA)	NSN	Item Name	Quantity	UI	Acquisition Value	DEMIL Code	DEMIL IC	Ship D
2	TN	18TH JUDICAL DTF	4940-01-504-9785	SERVICING PLATFORM,SELF-PROPELLED	1	Each	$133,232.81	Q	3	Feb 1, 2010 1
3	TN	18TH JUDICAL DTF	1240-01-411-1265	SIGHT,REFLEX	15	Each	$321.00	D	1	May 6, 2011 1
4	TN	18TH JUDICAL DTF	2320-01-107-7153	TRUCK,UTILITY	1	Each	$63,894.00	C	1	Oct 20, 2011 1
5	TN	21ST JUDICIAL DISTRICT DTF	8475-01-128-8269	HELMET,FLYERS	6	Each	$286.69	Q	3	Aug 14, 2010 1
6	TN	21ST JUDICIAL DISTRICT DTF	5180-01-375-6927	TOOL KIT,AIRCRAFT MAINTENANCE	1	Kit	$1,016.00	Q	3	Aug 31, 2010 1
7	TN	21ST JUDICIAL DISTRICT DTF	1005-00-589-1271	RIFLE,7.62 MILLIMETER	1	Each	$138.00	D	1	Sep 18, 2002 1
8	TN	21ST JUDICIAL DISTRICT DTF	1005-00-589-1271	RIFLE,7.62 MILLIMETER	1	Each	$138.00	D	1	Sep 18, 2002 1
9	TN	21ST JUDICIAL DISTRICT DTF	1005-00-589-1271	RIFLE,7.62 MILLIMETER	1	Each	$138.00	D	1	Sep 18, 2002 1
10	TN	21ST JUDICIAL DISTRICT DTF	6110-01-303-4667	PANEL,POWER DISTRIBUTION	6	Each	$1,727.26	Q	3	Oct 24, 2009 1
11	TN	21ST JUDICIAL DISTRICT DTF	5420-01-325-7597	RAMP ASSEMBLY	2	Each	$8,025.56	D	1	Nov 4, 2009 1
12	TN	21ST JUDICIAL DISTRICT DTF	6230-01-273-2567	FLOODLIGHT ASSEMBLY	2	Each	$7,650.00	Q	3	Dec 14, 2009 1
13	TN	23RD JUDICIAL DISTRICT DTF	1240-01-533-0941	SIGHT,REFLEX	16	Each	$400.00	D	0	Feb 11, 2019 1
14	TN	23RD JUDICIAL DISTRICT DTF	7021-DS-LAP-TOP2	LAPTOP COMPUTER	1	Each	$831.00	A		Apr 24, 2019 1
15	TN	23RD JUDICIAL DISTRICT DTF	1240-01-411-1265	SIGHT,REFLEX	5	Each	$321.00	D	1	Jul 27, 2012 1
16	TN	23RD JUDICIAL DISTRICT DTF	7021-DS-LAP-TOP2	LAPTOP COMPUTER	1	Each	$831.00	A		Apr 24, 2019 1
17	TN	23RD JUDICIAL DISTRICT DTF	2510-01-253-3907	DOOR,VEHICULAR	2	Assembly	$1,623.60	D	1	Aug 13, 2012 1
18	TN	23RD JUDICIAL DISTRICT DTF	2320-01-371-9584	TRUCK,UTILITY	1	Each	$62,627.00	C	1	Jun 20, 2014 1
19	TN	23RD JUDICIAL DISTRICT DTF	2510-01-254-1482	DOOR,VEHICULAR	2	Assembly	$1,623.60	D	1	Aug 13, 2012 1
20	TN	23RD JUDICIAL DISTRICT DTF	2320-01-371-9584	TRUCK,UTILITY	1	Each	$62,627.00	C	1	Jun 20, 2014 1
21	TN	23RD JUDICIAL DISTRICT DTF	7021-DS-LAP-TOP2	LAPTOP COMPUTER	1	Each	$814.00	A		Apr 24, 2019 1
22	TN	24TH JUDICIAL DISTRICT DTF	2355-01-553-4634	MINE RESISTANT VEHICLE	1	Each	$658,000.00	C	1	May 16, 2016 1
23	TN	ADAMSVILLE POLICE DEPARTMENT	5855-DS-THR-MIMG	THERMAL IMAGINING EQUIPMENT	1	Each	$1,665.00	D		Dec 23, 2015 1

Notebooks & Libraries

- Python3
  - Matplotlib
  - Pandas
- JavaScript
  - D3
  - Plotly
  - Leaflet
  - chroma.js
- HTML/CSS
- PostgreSQL

Data Conversion

The `convert_data_to_csv.ipynb` notebook takes the Excel file the DLA produces, reads each of the 52 sheets, and combines them into a single CSV with all the available data. The resulting CSV file is output to `outputs/dla_1033_transfers.csv`.

Analysis

The `analyze_transfers.ipynb` takes the CSV data and analyzes all transfers where the `Ship Date` is after August 25, 2014, which marked the end of the first wave of protests in Ferguson. It walks through a few different pieces of analysis, including:

- Loading the data
- Filtering for transfers post August 25, 2014
- Totaling the transfers
- Highlighting categories of items