Seattle Food Inspections

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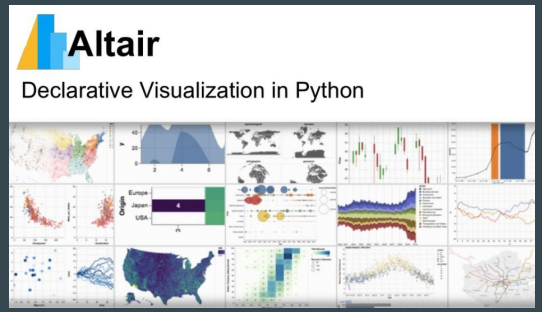
Background

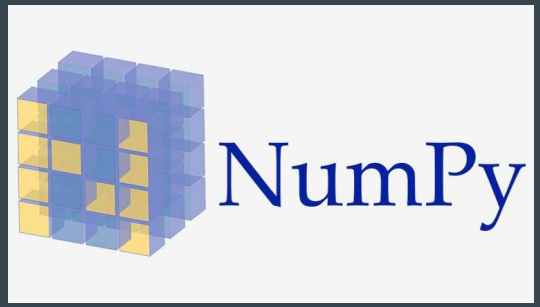
- Starting 2012, jurisdictions across the country including King County have begun publishing **health inspection scores** using a standardized scoring system called LIVES.
- This open data allowed restaurant consumers to make informed decisions based on **where they want to eat** and motivated a lot of restaurant establishments to **improve their inspection score** in the hopes of attracting a bigger customer base.

Brief overview

1. **Location Specific Contributions**: Where are the specific regions in Seattle that have the most high risk violations? How much do those regions contribute in terms of total high risk violations in Seattle?
2. **Interactive Map**: showing health inspection ratings in Seattle.
3. Then overlay these ratings with demographic information in the areas around restaurants.
4. Users will be able to explore **correlations** between the demographics and health inspection ratings to help make decisions about where to eat.

Package Dependency





Dataset

1. Food Establishment Inspection Data - **King County Open Data**

   https://data.kingcounty.gov/Health-Wellness/Food-Establishment-Inspection-Data/f29f-zza5

2. Median Income 5-Year Estimates (S1903) - **American Community Survey**

   https://data.census.gov/cedsci/table?q=S1903&table=S1903&tid=ACSST1Y2018.S1903&lastDisplayedRow=0

3. Marital Status (S1201) - **American Community Survey**

   https://data.census.gov/cedsci/table?q=S1201&table=S1201&tid=ACSST1Y2018.S1201&lastDisplayedRow=0

Data Cleaning

1. Detecting missing values
2. Extracting desired rows, columns
3. Modifying the data (i.e. type, caps, etc.)
4. Joining the census data by zip codes

```
SEATTLE          136455
BELLEVUE          19689
KENT              13705
RENTON            11805
FEDERAL WAY       11695
REDMOND           11159
KIRKLAND          10654
AUBURN             7752
ISSAQUAH           5846
SHORELINE          5185
Name: City, dtype: int64
```

Data Cleaning

1. Size: (**274970**, **22**) >>> (**8413**, **12**)
2. Type

```
RangeIndex: 274970 entries, 0 to 274969
Data columns (total 22 columns):
Name                            274970 non-null object
Program Identifier              274970 non-null object
Inspection Date                 274423 non-null object
Description                     274970 non-null object
Address                         274970 non-null object
City                            274970 non-null object
Zip Code                        274970 non-null object
Phone                           192911 non-null object
Longitude                       274959 non-null float64
Latitude                        274959 non-null float64
Inspection Business Name        274423 non-null object
Inspection Type                 274423 non-null object
Inspection Score                274369 non-null float64
Inspection Result               274423 non-null object
Inspection Closed Business      274423 non-null object
Violation Type                  156246 non-null object
Violation Description           156246 non-null object
Violation Points                274970 non-null int64
Business_ID                     274970 non-null object
Inspection_Serial_Num           274423 non-null object
Violation_Record_ID             156246 non-null object
Grade                           215640 non-null float64
dtypes: float64(4), int64(1), object(17)
```

```
Int64Index: 8413 entries, 134890 to 208625
Data columns (total 12 columns):
Name                            8413 non-null object
Inspection Date                 8413 non-null datetime64[ns]
Description                     8413 non-null object
Zip Code                        8413 non-null int64
Inspection Type                 8413 non-null object
Inspection Score                8413 non-null float64
Inspection Result               8413 non-null object
Inspection Closed Business      8413 non-null object
Violation Type                  3853 non-null object
Violation Description           3853 non-null object
Violation Points                8413 non-null int64
Grade                           8413 non-null float64
dtypes: datetime64[ns](1), float64(2), int64(2), object(7)
```

Use Case

BMC Public Health

BMC

BMC Public Health. 2014; 14: 571.
Published online 2014 Jun 7. doi: 10.1186/1471-2458-14-571
PMCID: PMC4057591
PMID: 24908104

Factors affecting food handling Practices among food handlers of Dangila town food and drink establishments, North West Ethiopia

Ayehu Gashe Tessema,[1] Kassahun Alemu Gelaye,[1] and Daniel Haile Chercos[1]

At least in NW Ethiopia, certain demographic information of the workers is associated with food handling practices.

Users can see visually if such correlation between restaurant locations and some of the same demographic information (median income and various marital statuses) in Seattle.

Users can use these demographic statistics to find what zip codes in Seattle to explore for new restaurants.

Demo

(transition to JupyterLab for demonstration)

Design

Data collection from URLs (inspections, census and geographic)

Cleaning datasets (remove null/NaN etc, erroneous locations ...)

Merging datasets (merge on restaurant zip code)

Visualizing (chloropleth of census data with interactive histograms, associated trend analysis charts)

Checklist

- ❑ Finalize design decisions
  - ❑ Compromise ideals with implementation feasibility
  - ❑ aesthetic review
- ❑ Implement final visualization touches
- ❑ Specifications for setup files
- ❑ Edit for PEP8 style
- ❑ Finalize unit tests
- ❑ Verification

Questions for Professors

Setup.py and/or requirements.txt?

Is the virtual environment requirement the same as setup.py?