Community Profiles

www.nyc.gov/buildings
build safe | live safe

Analytics Dev Squad
About Community Profiles

- Combine choropleth map and charts

Select Metrics
- Permits
- After Hours Variances
- Sidewalk Sheds
- Complaints
- Violations
- Accidents

- Citywide and Community District at-a-glance
Tools

- Java
- JavaScript
- D3.js  Data access, manipulation, svg rendering
- NVD3  Highly customizable charts and graphs (nvd3.org)
- jQuery  JavaScript-based DOM manipulation, styling...
- Bootstrap  CSS framework

Community Profiles App
Considerations/Challenges

- Open Source
- Multiple Data Sources
- Development Time Frame
Considerations/Challenges

Problem: Outlier Values

Active After Hours Variances (AHVs)
Total: 1721

Active AHVs (Top 10 Community Districts)
Considerations/Challenges

Solution: Calculate Percentiles vs Library built-in Scale

Metrics:
- Permits
- After Hours Variances
- Sidewalk Sheds
- Complaints
- Violations
- Accidents

Active After Hours Variances (AHVs)
Total: 1390

Active AHVs (Top 10 Community Districts)
Considerations/Challenges

Solution: Calculate Percentiles vs Library built-in Scale

```javascript
function getPercentiles(dataArray, measureColumn) {
  let retval = [];
  let varnames="";
  let numPercentiles=7;
  let percentileNames=[];
  let percentileRange = Math.floor(100/numPercentiles);

  //filter() to remove 0s from sorted array
  let sortedData = dataArray.sort(function(a,b){return a[measureColumn] - b[measureColumn]})
    .map( (el) => { return el[measureColumn] } ).filter( function(val) { return val >0 } )

  for (let myctr=percentileRange; myctr <= 100; myctr+=percentileRange) {
    percentileNum = Math.floor(myctr);
    varname="percentile"+percentileNum;
    percentileNames.push(varname)
    this[varname] = d3.quantile(sortedData, percentileNum/100);
    retval.push(this[varname]);
  }

  retval[retval.length-1]=parseFloat(sortedData[sortedData.length-1])
  dataArray.forEach( function(dataRow) {
    dataRow["Percentile"] = function () {
      let percentile=0;
      let foundPercentile=false;
      for (let myctr=0; myctr < percentileNames.length-1; myctr++) {
        if ( dataRow[measureColumn] <= this[percentileNames[myctr]] ) {
          percentile = parseInt(percentileNames[myctr].substring(10));
          foundPercentile=true;
          break;
        }
      }
      return (foundPercentile)?percentile: 100;
    }()
  })
  return retval;
}
```
DATA Flow Engineering

Considerations:
1. Decoupled and modular data service
2. Multiple depending end applications
3. Automation evolved for real time
4. Security

Current Model:
Add middle layer of data service server to distribute data through RESTful web service
Community Profiles Application

https://nycdob.github.io/CommunityProfiles_v2/
Community Profiles App

- Interactive application
  - Choropleth map
  - Associated graphs
  - Metrics
Community Profiles App

- Permits
Community Profiles App

- Permits
- After Hours Variances
Community Profiles App

- Permits
- After Hours Variances
- Sidewalk Sheds
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Community Profiles App

- Permits
- After Hours Variances
- Sidewalk Sheds
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- Violations
- Accidents
Community Profiles App

- Map tooltip
  - Total Value per Community District
  - Breakdown Values per Community District
Community Profiles App

- Map tooltip
  - Total Value per Community District
  - Breakdown Values per Community District
- Chart tooltip
Community Profiles App

- Stacked bar charts have on/off toggles for each value
Active Permits

- NB: New Building
- A1: Major Alterations
Active After Hours Variances (AHVs)

- Reasons for AHVs
  - NYC Construction
Active After Hours Variances (AHVs)

- Reasons for AHVs
  - NYC Construction
  - Minimal Noise
Active After Hours Variances (AHVs)

- Reasons for AHVs
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  - Emergency Work
Active After Hours Variances (AHVs)

- Reasons for AHVs
  - NYC Construction
  - Minimal Noise
  - Emergency Work
  - Public Safety
Active After Hours Variances (AHVs)

- Reasons for AHVs
  - NYC Construction
  - Minimal Noise
  - Emergency Work
  - Public Safety
  - Undue Hardship
Active Sidewalk Sheds

- Construction or Maintenance
- Local Law 11
- Average Age
- Total Linear Feet
Complaints (Past 12 Months)

- After Hours Work
- Elevator
Complaints (Past 12 Months)

- After Hours Work
- Elevator
- Illegal Conversion
Complaints (Past 12 Months)

- After Hours Work
- Elevator
- Illegal Conversion
- Work Without a Permit
Complaints (Past 12 Months)

- After Hours Work
- Elevator
- Illegal Conversion
- Work Without a Permit
- Other
Violations (Past 12 Months)

- Building Maintenance
Violations (Past 12 Months)

- Building Maintenance
- Elevator Maintenance
Violations (Past 12 Months)

- Building Maintenance
- Elevator Maintenance
- Failure to Comply
Violations (Past 12 Months)

- Building Maintenance
- Elevator Maintenance
- Failure to Comply
- Miscellaneous
Violations (Past 12 Months)

- Building Maintenance
- Elevator Maintenance
- Failure to Comply
- Miscellaneous
- Work Without a Permit
Violations (Past 12 Months)

- Building Maintenance
- Elevator Maintenance
- Failure to Comply
- Miscellaneous
- Work Without a Permit
- Other
Construction-Related Accidents (Past 12 Months)

- Accident Types
  - Demolition
  - Material Failure
  - Mechanical Construction Equipment
  - Scaffold/Shoring Installations
  - Worker Fell
  - Other
Construction-Related Accidents (Past 12 Months)

- Injuries
- Fatalities