2D Visualization with the ArcGIS API for JavaScript

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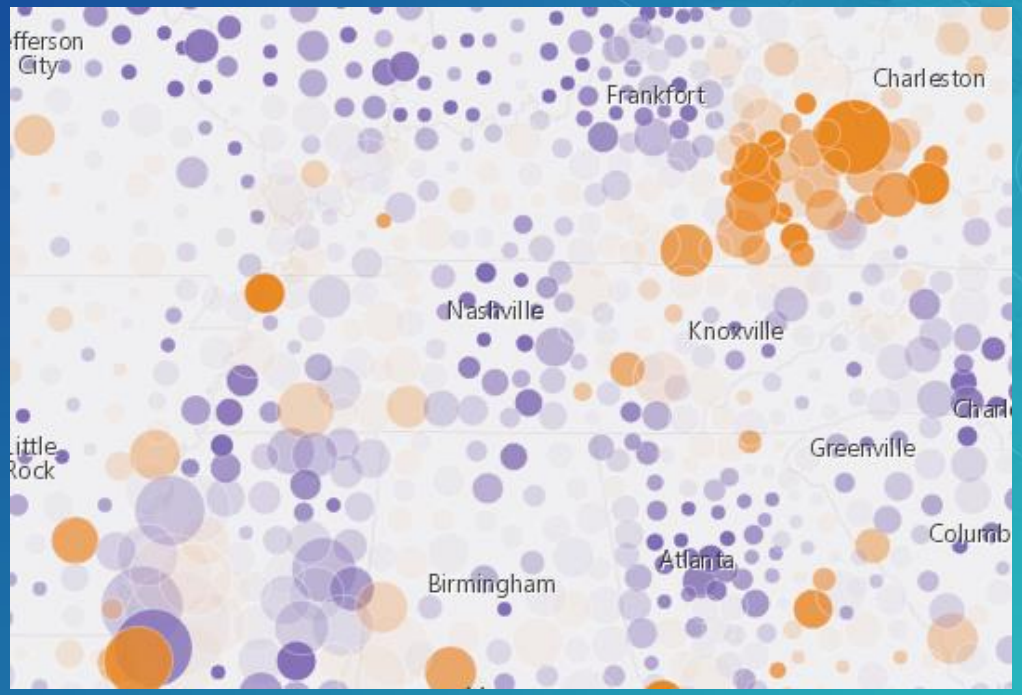
API Overview

Renderers, symbols, etc…

What can we visualize?

- Where?
- What?
- How much?
- When?
- Combinations of the above



FeatureLayer

MapImageLayer

Data

CSVLayer

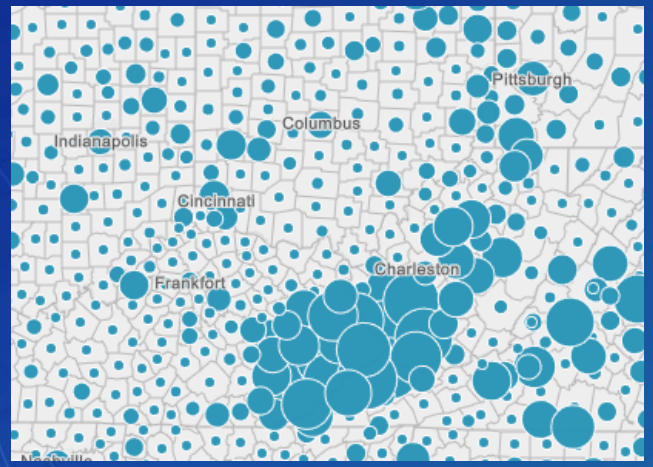
StreamLayer

Symbols

Symbols

based on geometry type

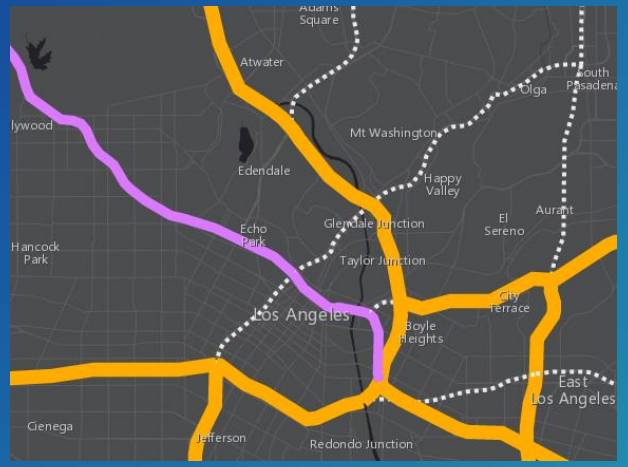
Points



SimpleMarkerSymbol

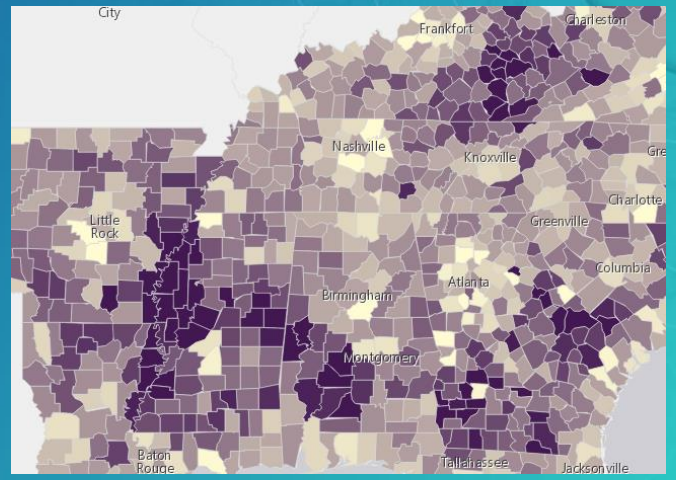
PictureMarkerSymbol

Lines



SimpleLineSymbol

Polygons

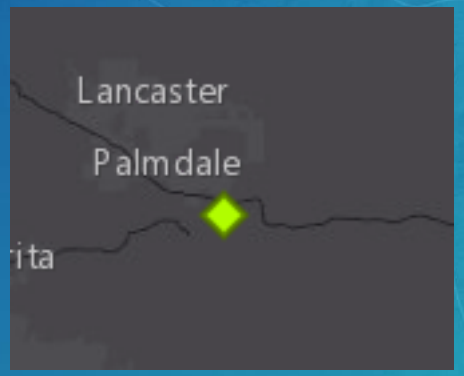


SimpleFillSymbol

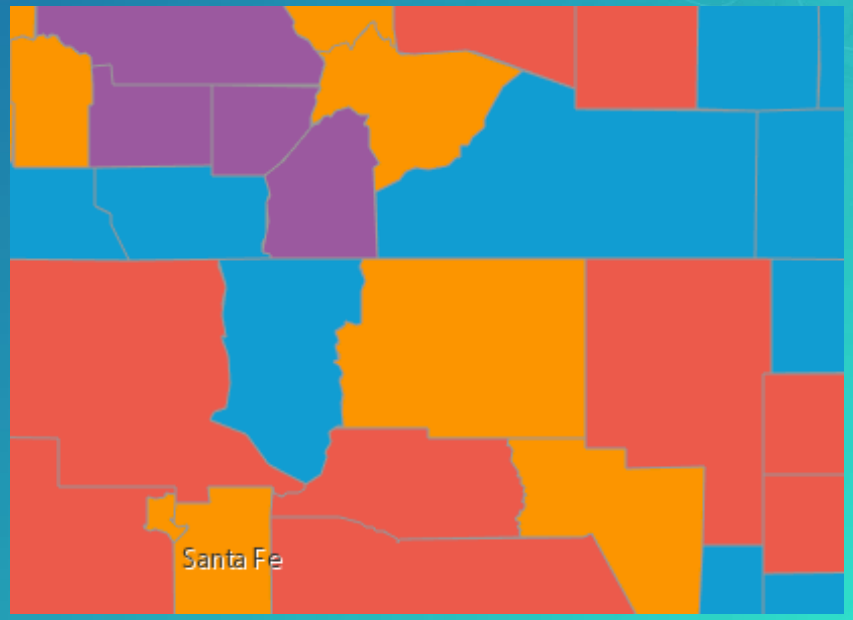
PictureFillSymbol

Symbols

```
var marker = new SimpleMarkerSymbol({
  style: "diamond",
  outline: {
    width: 1.75,
    color: [76, 115, 0, 0.75]
  },
  color: [170, 255, 0, 1]
});
```




```
var fill = new SimpleFillSymbol({
  outline: {
      width: 2.75,
      color: [0, 77, 168, 1]
  },
  color: [115, 178, 255, 0.72]
});
```



Data-driven visualization

- Field value(s)

  TOTAL_POP

- Arcade expression

  Round(($feature.BACHELOR + $feature.MASTER) / $feature.POP_25UP));

- JavaScript function

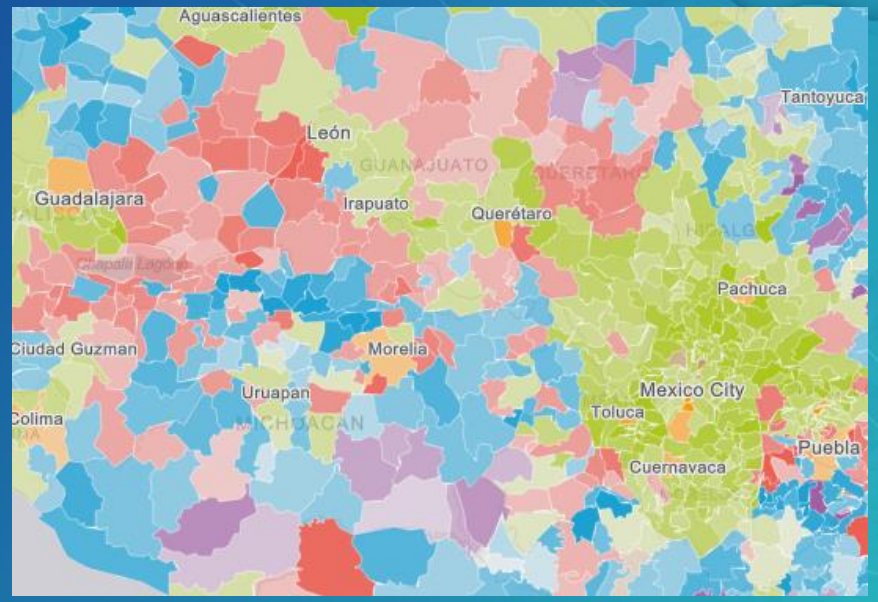
```
function (graphic){
  return graphic.attributes.POP_DENSITY;
}
```

Renderers

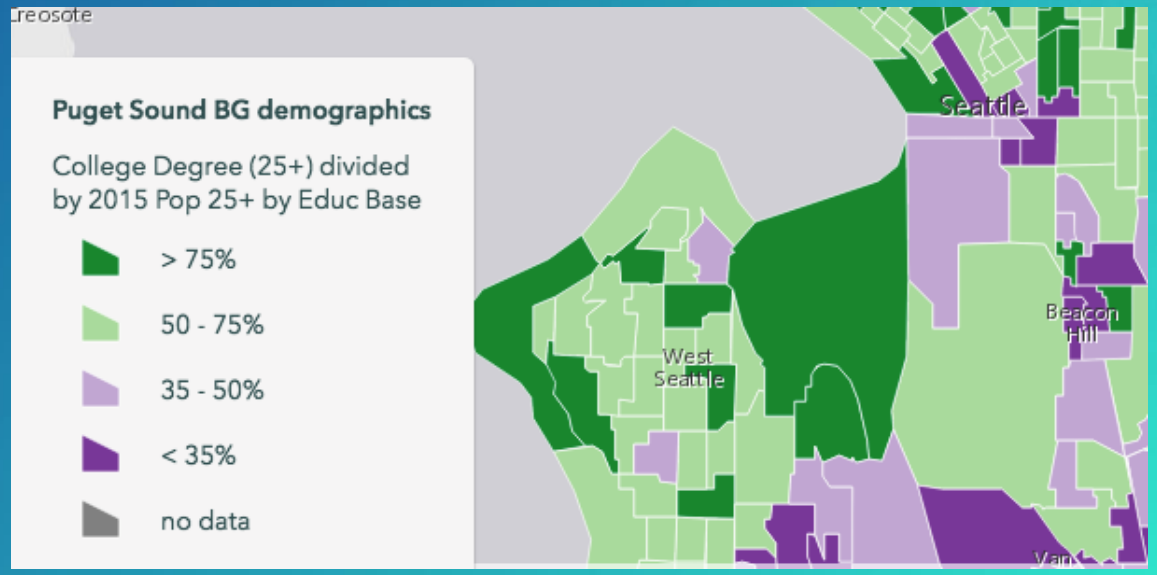
Renderers

SimpleRenderer

UniqueValueRenderer



ClassBreaksRenderer



Renderers

SimpleRenderer

```
layer.renderer = new SimpleRenderer({
  symbol: createSymbol("#ff002e")
});
```

UniqueValueRenderer

```
var renderer = new UniqueValueRenderer({
  valueExpression: "var parties = [$feature.MP06025a_B," +
                   "$feature.MP06024a_B, $feature.MP06026a_B];" +
        "return Decode( Max(parties)," +
        "$feature.MP06025a_B, 'republican'," +
        "$feature.MP06025a_B, 'democrat'," +
        "$feature.MP06025a_B, 'independent'," +
        "'n/a' );",
  valueExpressionTitle: "Winner of the election",
  uniqueValueInfos: [{
    value: "democrat",
    symbol: createSymbol("#00c3ff"),
    label: "Democrat"
  }, {
    value: "republican",
    symbol: createSymbol("#ff002e"),
    label: "Republican"
  }, {
    value: "independent",
    symbol: createSymbol("#faff00"),
    label: "Independent/other party"
  }]
});
```

```
var renderer = new ClassBreaksRenderer({
  field: "population",
  classBreakInfos: [{
    minValue: 0,
    maxValue: 2500,
    symbol: createSymbol("#f8e3c2", 3)
  }, {
    minValue: 2500,
    maxValue: 15000,
    symbol: createSymbol("#e5998c", 6)
  }, {
    minValue: 15000,
    maxValue: 75000,
    symbol: createSymbol("#d86868", 12)
  }, {
    minValue: 75000,
    maxValue: 10000000,
    symbol: createSymbol("#9b3557", 22)
  }]
});
```

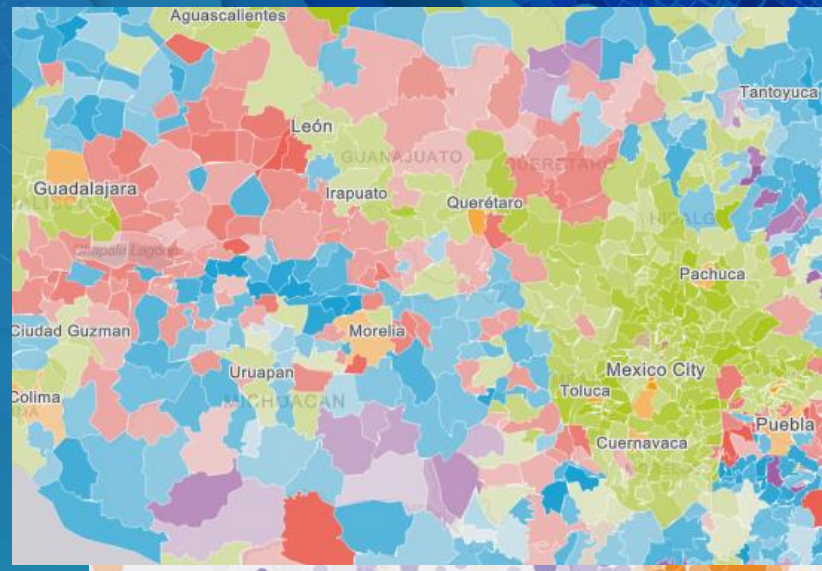
ClassBreaksRenderer

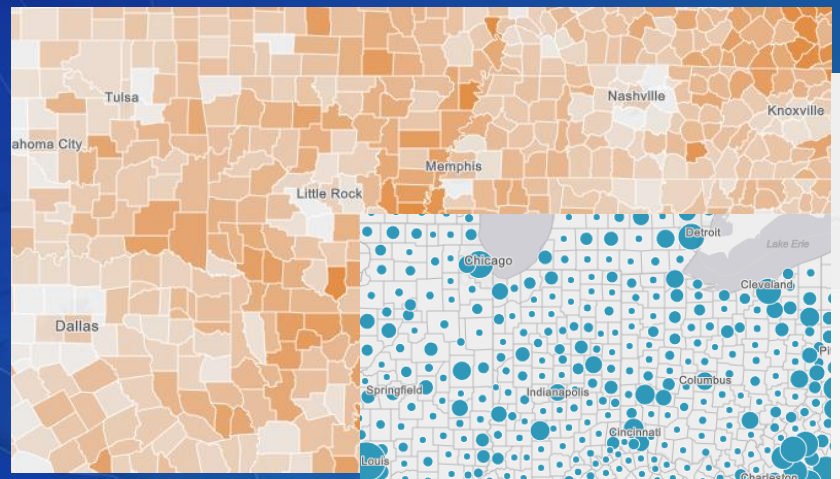
Renderers

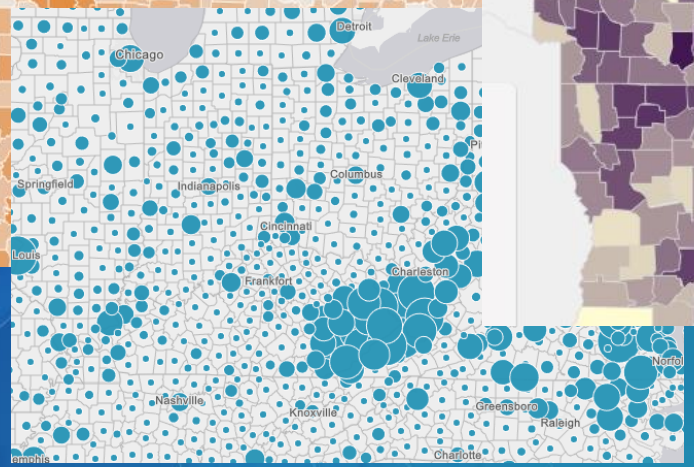
Visual Variables

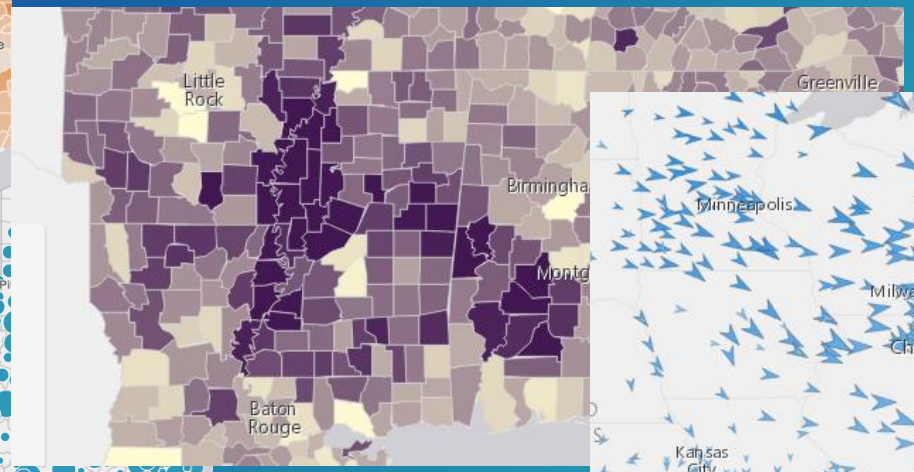
- Color
- Size
- Opacity
- Rotation

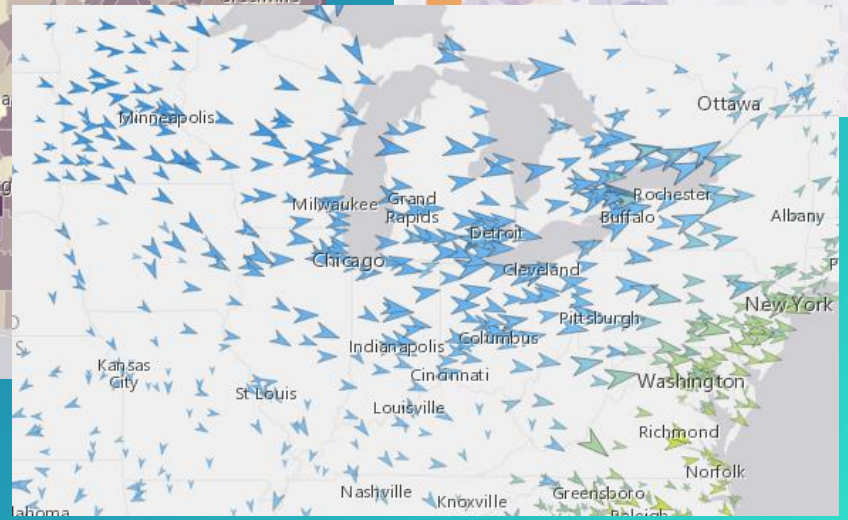
- A property of the renderer
- For numeric data-driven continuous visualizations

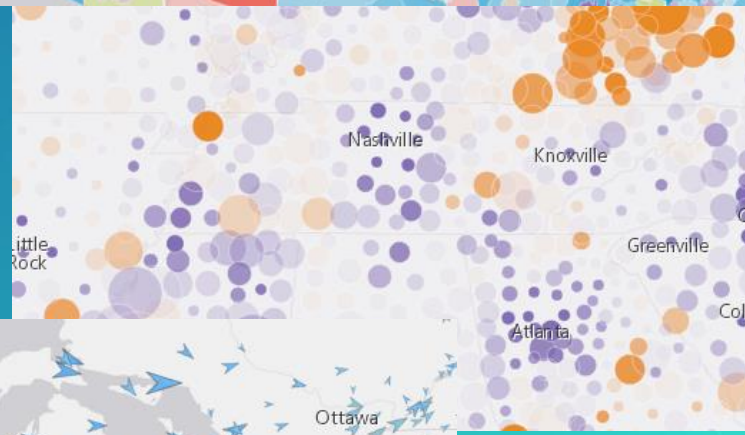










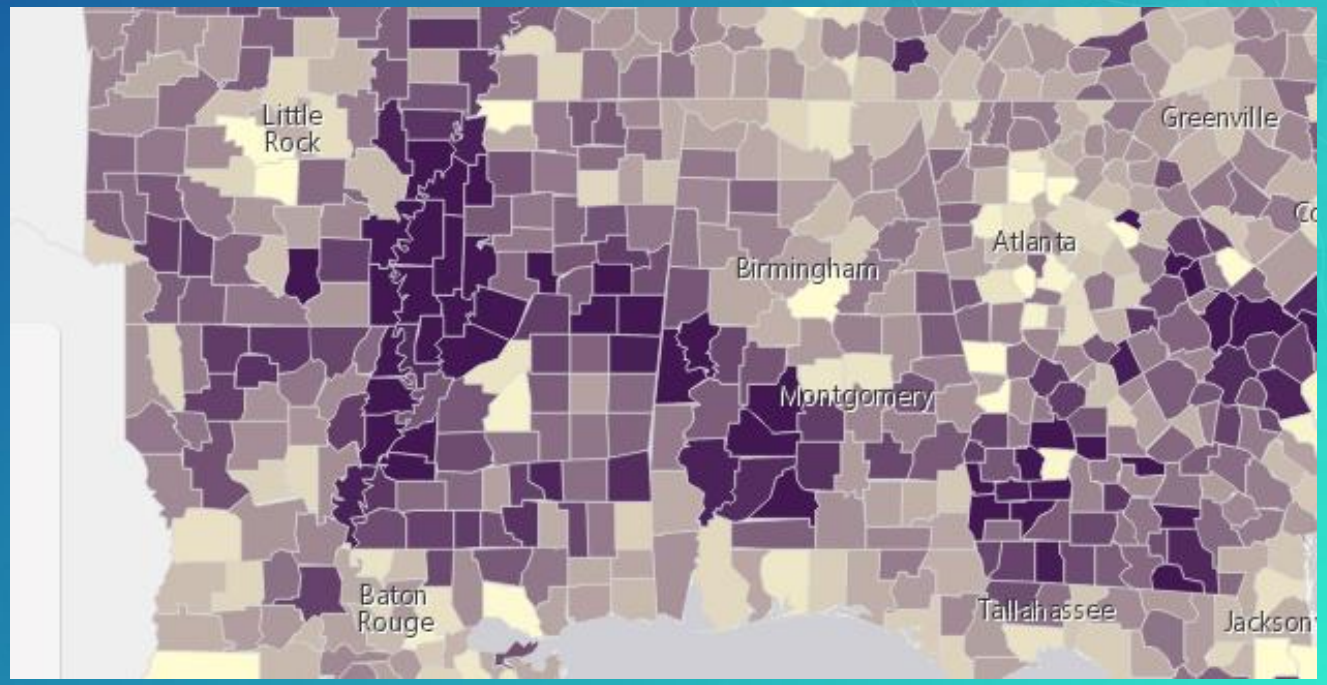


Renderers

Visual Variables

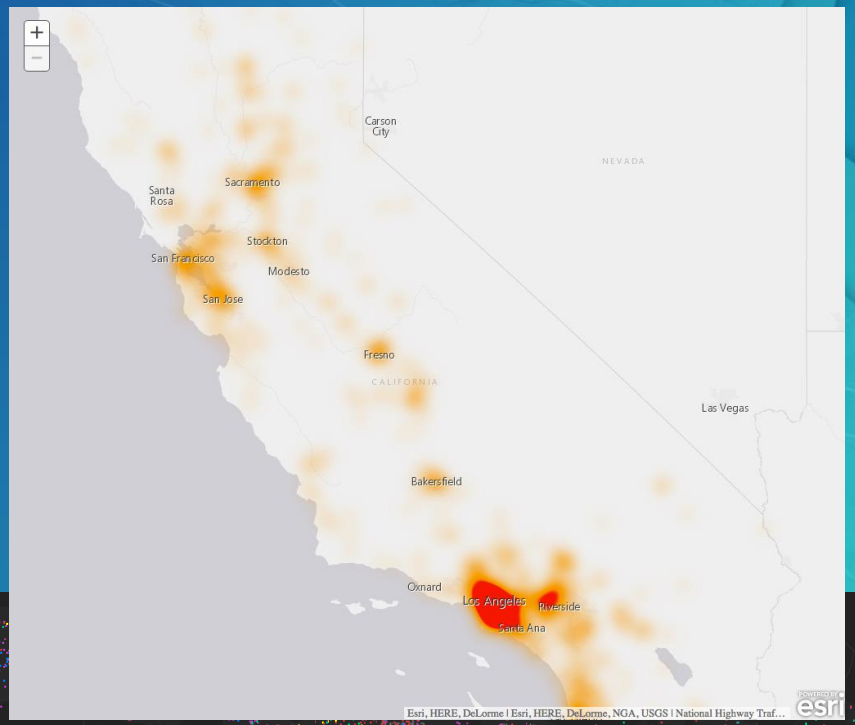
```
var renderer = new SimpleRenderer({
  symbol: new SimpleFillSymbol({
    outline: {
      color: "lightgray",
      width: 0.5
    }
  }),
  label: "% population in poverty by county",
  visualVariables: [{
    type: "color",
    field: "POP_POVERTY",
    normalizationField: "TOTPOP_CY",
    stops: [
    {
      value: 0.1,
      color: "#FFFCD4",
      label: "<10%"
    },
    {
      value: 0.3,
      color: "#350242",
      label: ">30%"
    }]
  }]
});
```

```
var strengthArcade = document.getElementById("strength").text;
renderer.visualVariables = [{
  type: "opacity",
  valueExpression: strengthArcade,
  valueExpressionTitle: "Share of registered voters",
  stops: [
    { value: 33, opacity: 0.05, label: "< 33%" },
    { value: 44, opacity: 1.0, label: "> 44%" }
  ]
}];
```

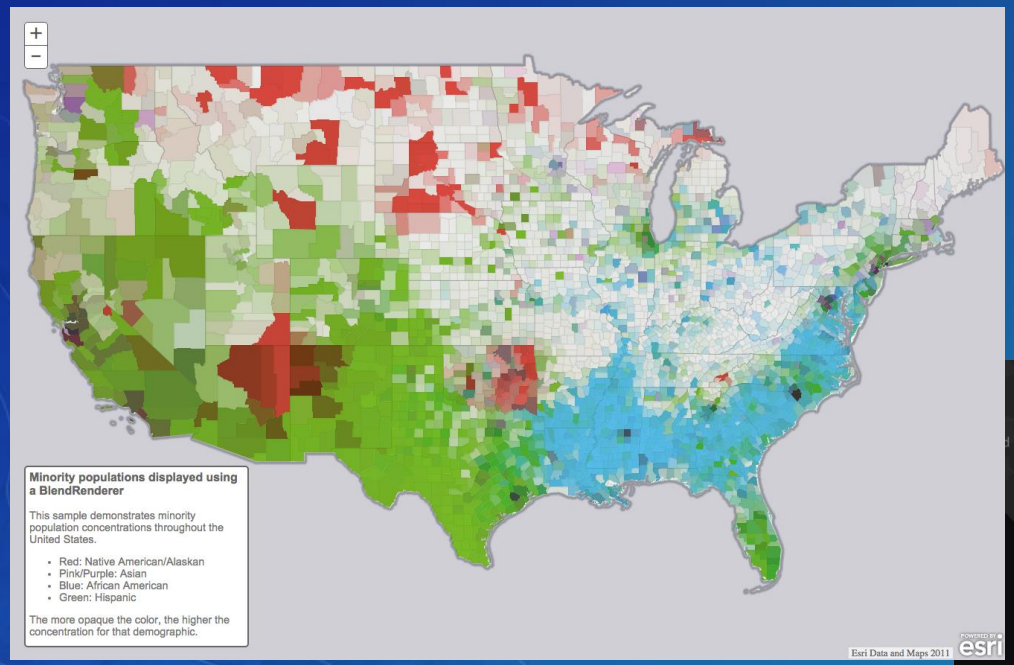


Renderers (3.x only)

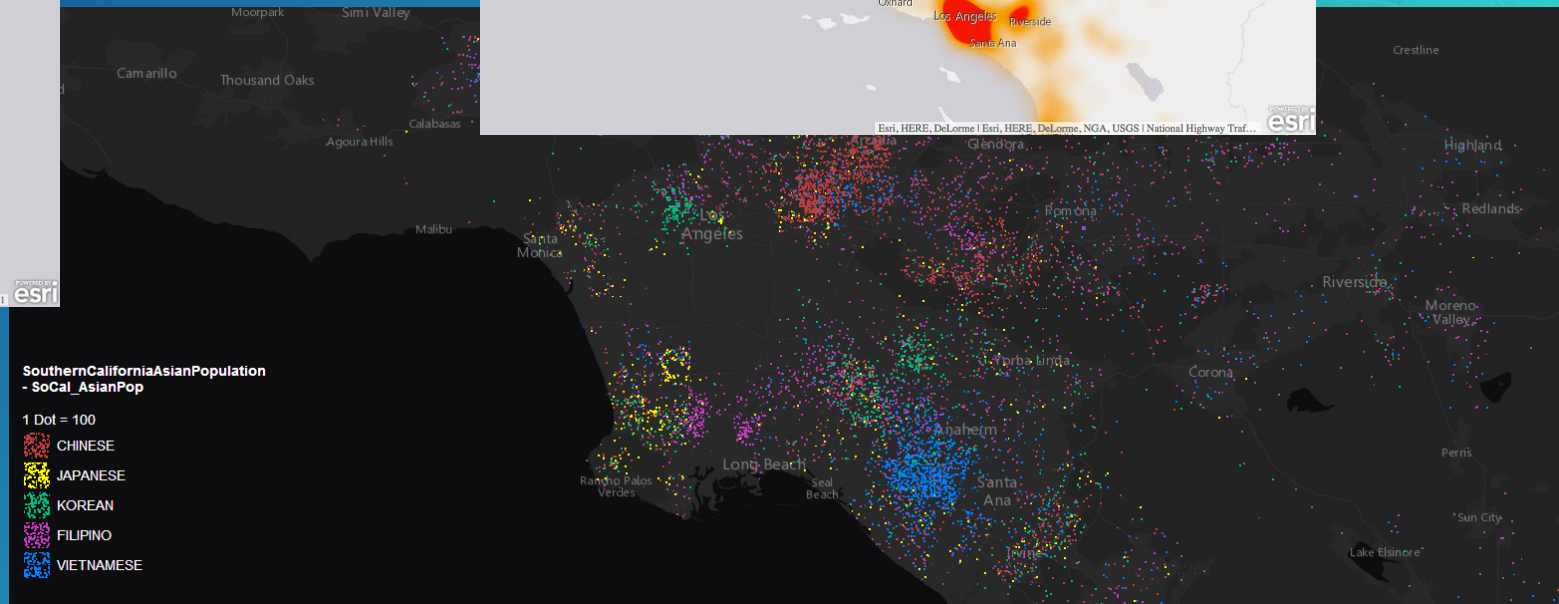
HeatmapRenderer



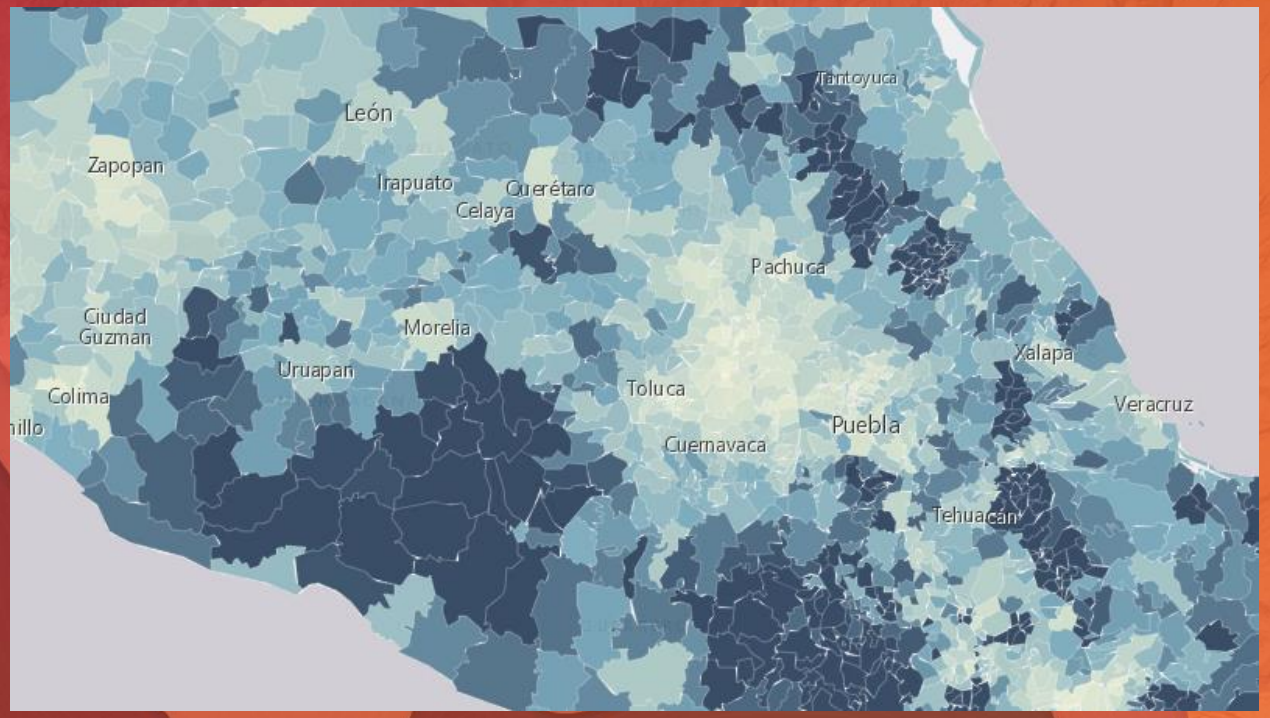
BlendRenderer



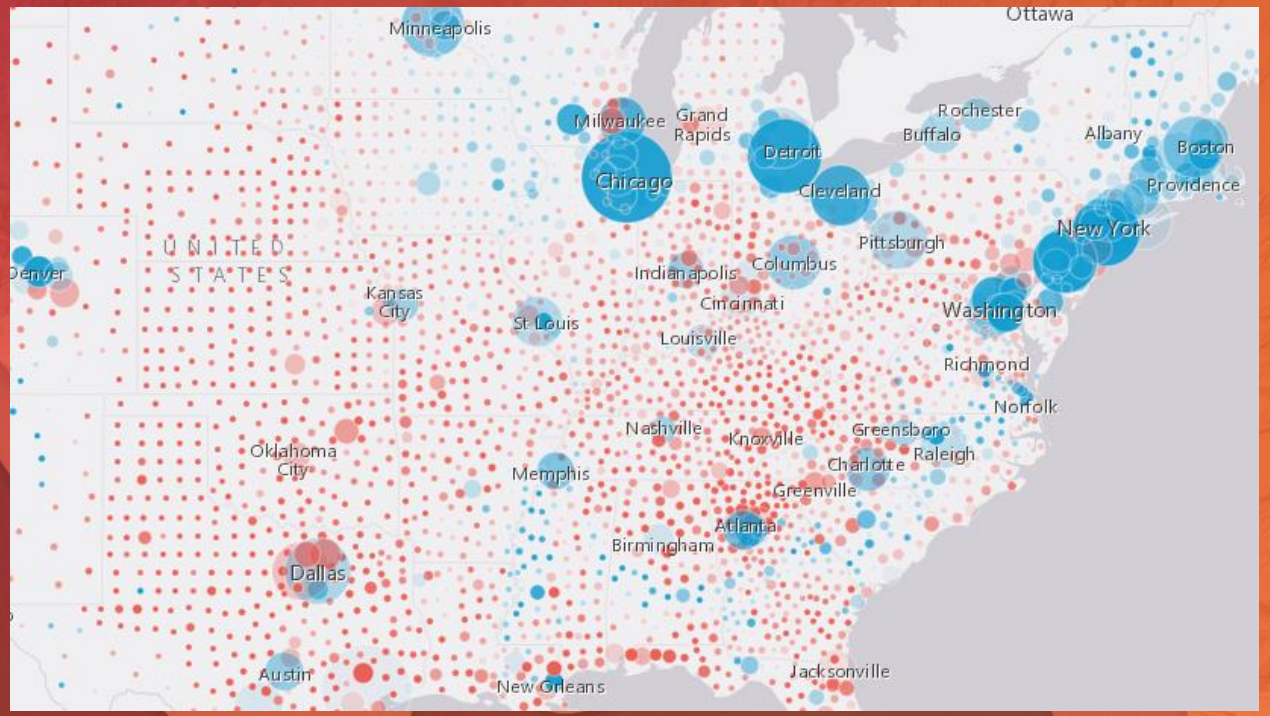
DotDensityRenderer



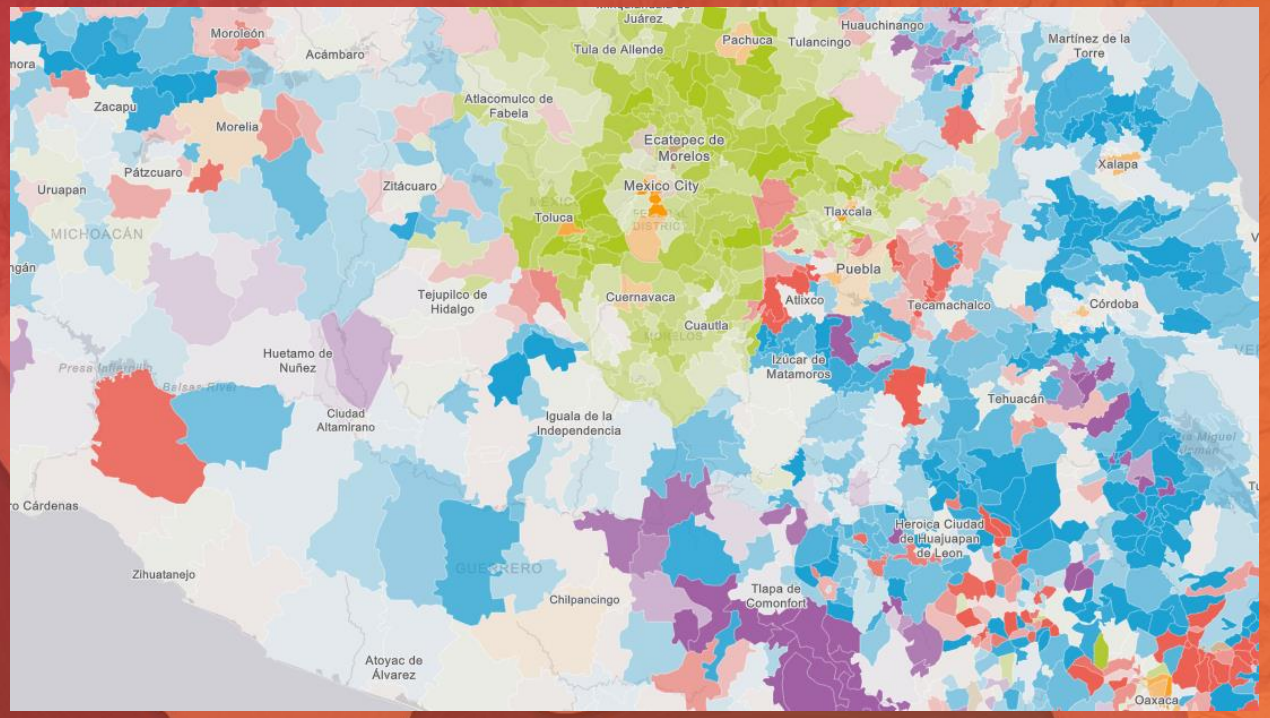
Examples



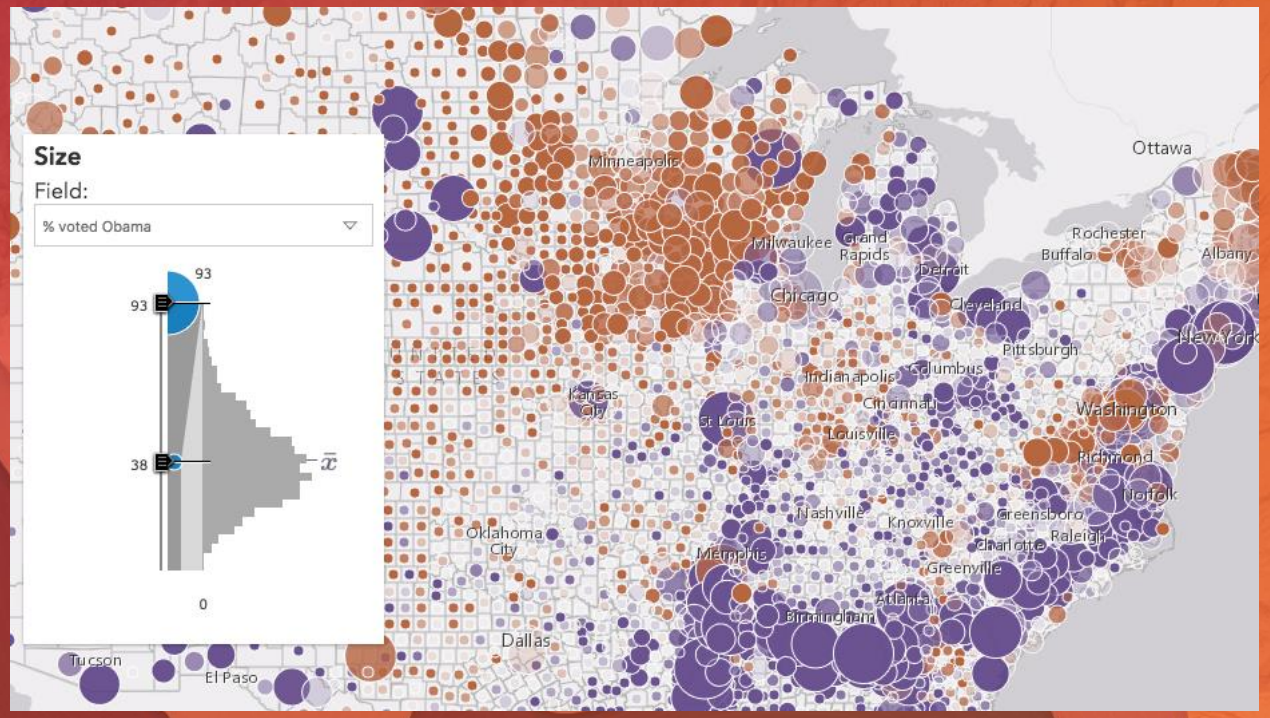
Visual variables



Multivariate visualizations

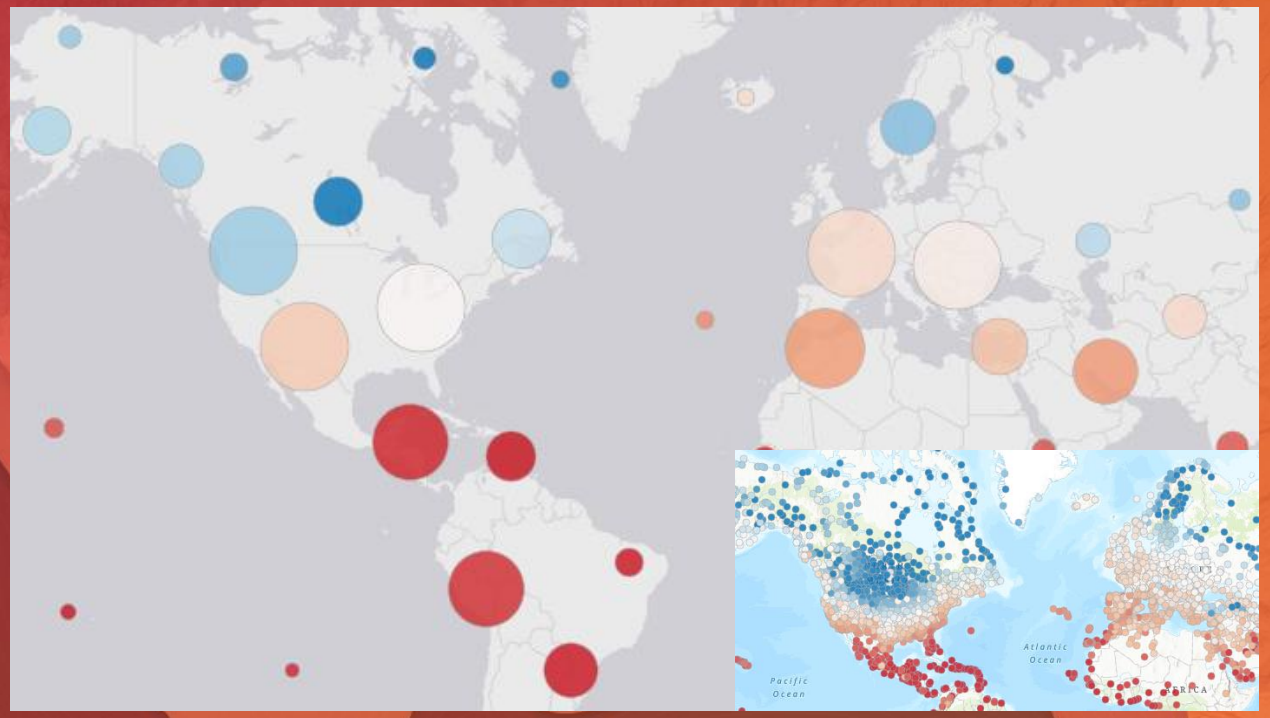


Predominance using Arcade



Data exploration

Smart mapping in custom apps



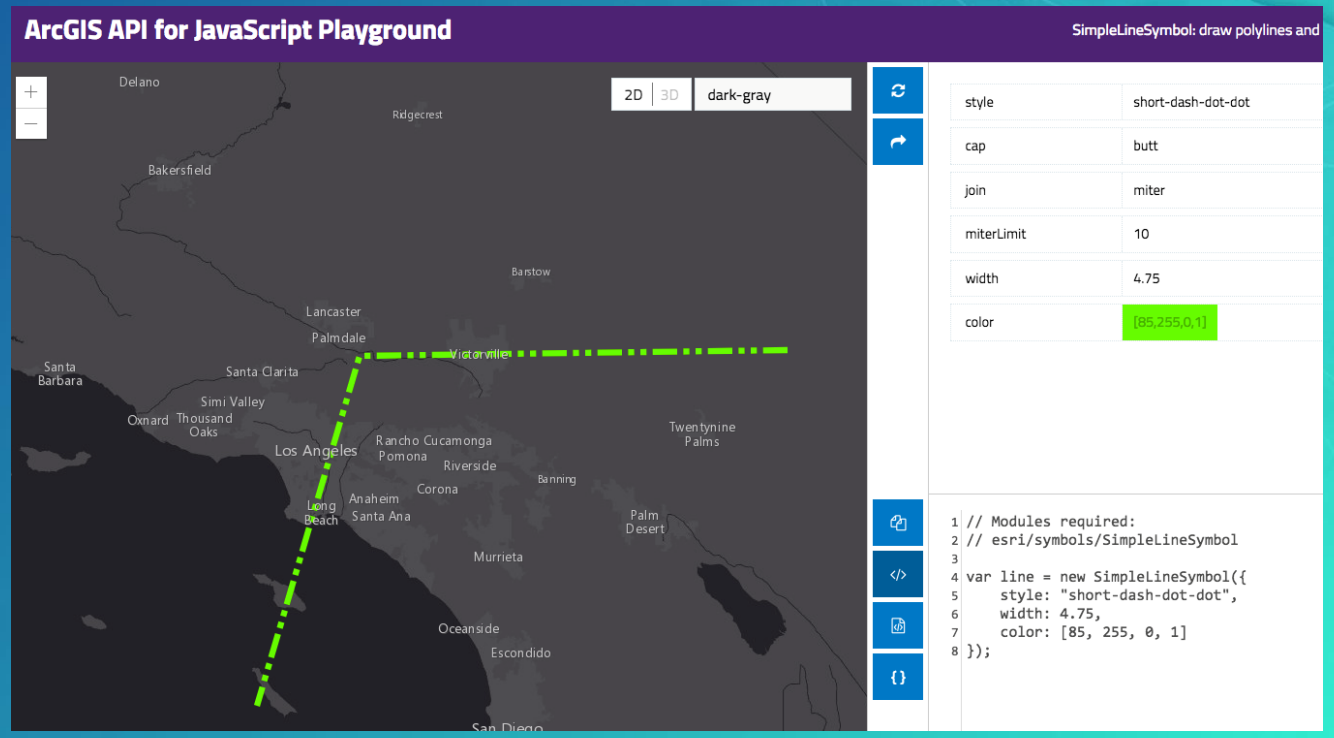
Clustering

Coming in a future release

Resources

- Get started with visualization

- ArcGIS Blog
  - Visualizing data in web apps
  - Predominance visualizations using Arcade
  - Using Arcade expressions in web apps
- Documentation
  - Renderer
  - Symbol



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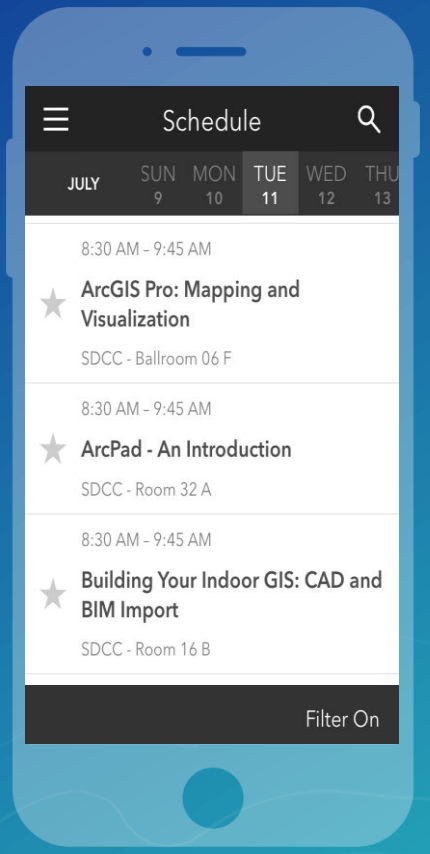
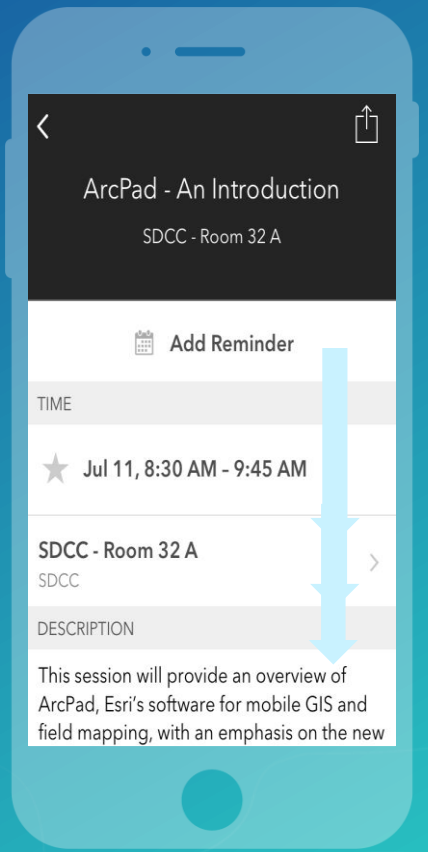
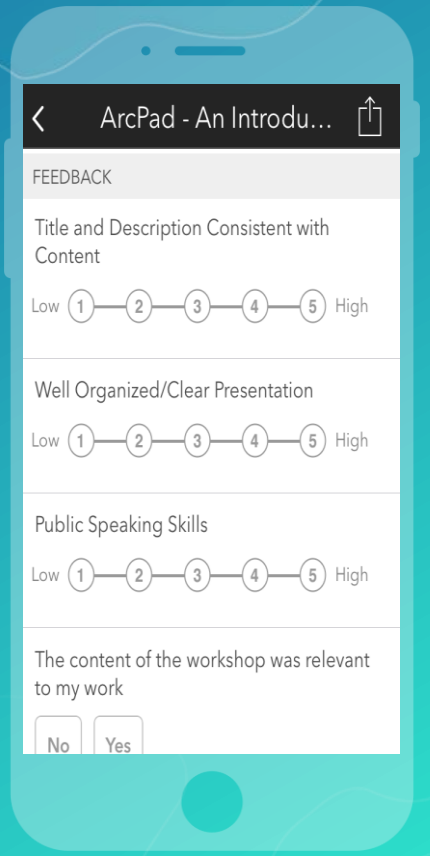
Select the session you attended



Scroll down to find the survey



Complete Answers and Select "Submit"



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