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November 27, 2015 By Abhisek Jana (https://www.adeveloperdiary.com/author/adeveloperdiarygmail-com/) — Leave a Comment (https://www.adeveloperdiary.com/d3-js/create-simple-pie-chart-using-d3-js/#respond) (Edit) (https://www.adeveloperdiary.com/wp-admin/post.php?post=491&action=edit)

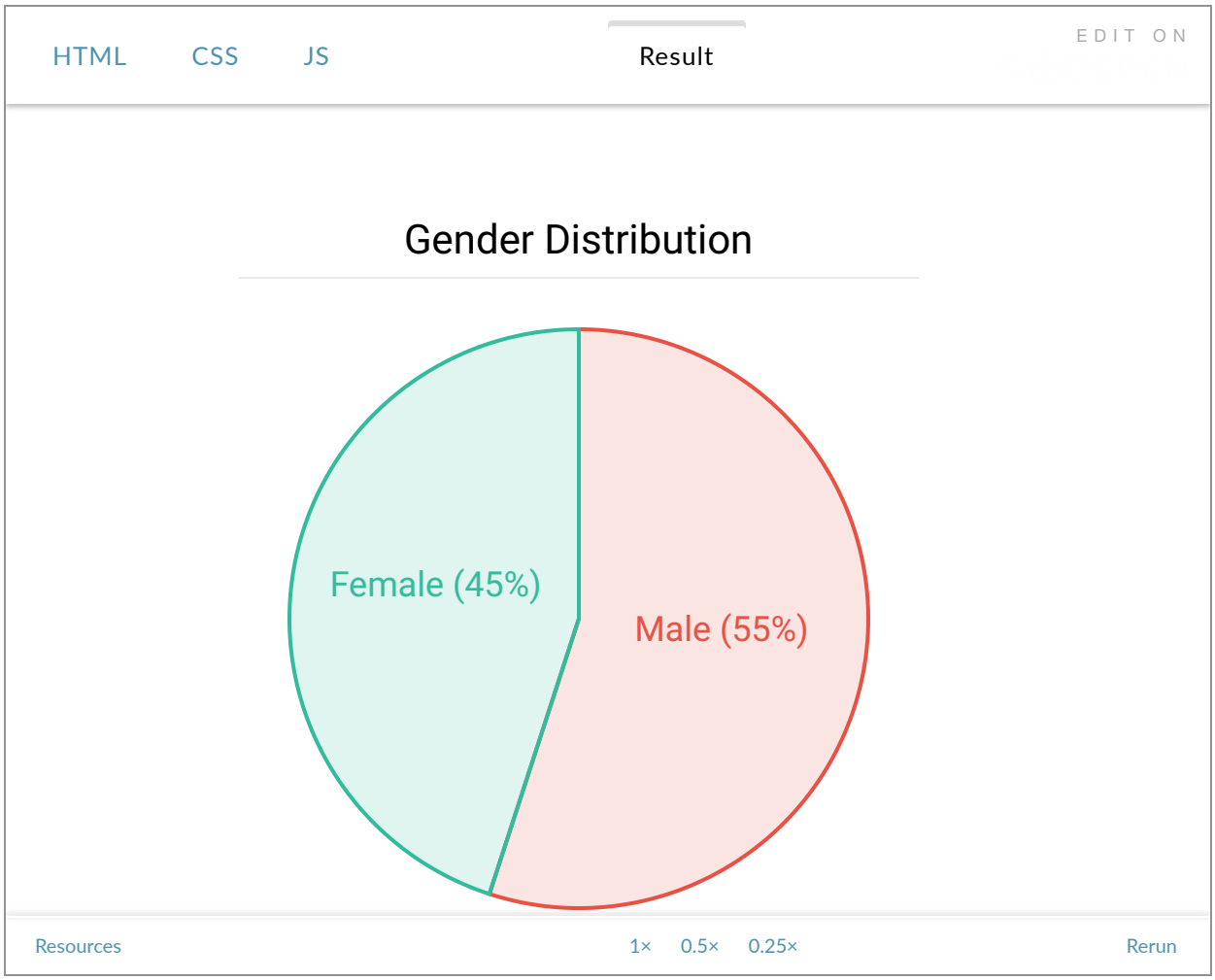
Create a Simple Pie Chart using D3.js

This is the first tutorial of the Create Pie Charts using D3.js (https://www.adeveloperdiary.com/d3-js/create-pie-charts-using-d3-js/) series. We will Create a Simple Pie Chart using D3.js and build our foundation so that we can create more unique and useful charts.

I am using the latest version of the d3.js. Lets look at the HTML code. We are having a `div` named `widget`. It has two div, one for the header and another for the chart.

```
Gender Distribution
```

Lets first take a look at our chart.



We will use a very simple dataset to display the gender distribution.

```
var dataset = [
        { name: 'Male', percent: 55 },
        { name: 'Female', percent: 45 }
    ];
```

Lets set the width and height of the chart to 300. Then the Outer Radius to half of the width. I have deducted 2 from the width before calculating the Radius so that the stroke of the shape gets rendered correctly.

```
var w=300,h=300;
var radius=(w-2)/2;
```

Now create the pie layout using `d3.layout.pie()`. In our `dataset` object the `percent` field has the actual data so lets return that in the `value()` function. We are not going to use any sorting function so set `null` there.

Use `d3.svg.arc()` function to create the arc. Set the `innerRadius` to 0 and `outerRadius` to our `radius` variable.

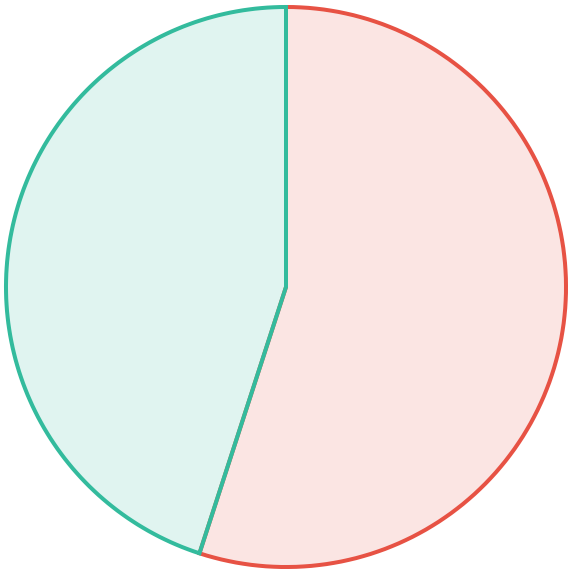
```
var pie=d3.layout.pie()
        .value(function(d){return d.percent})
        .sort(null);

var arc=d3.svg.arc()
        .innerRadius(0)
        .outerRadius(radius);
```

Next we will use `d3.scale.ordinal()` scale function to create our own color scale. In case you have not seen this before, we can always use our custom color scale instead of using `d3.scale.category10()`.

```
var color = d3.scale.ordinal()
        .range([ '#e75244','#33bb9d']);
```

Let's first analyze the structure of the svg element.We have a group element then have the `path` elements. Each path element represents one `arc`. Now we will use D3 to create similar structure.



Create the `svg` element inside the `#chart div`. We will add a group element and move that to the middle of the svg.

```
var svg=d3.select("#chart")
        .append("svg")
        .attr({
                width:w,
                height:h,
                class:'shadow'
        })
        .append('g')
        .attr({
                transform:'translate('+w/2+','+h/2+')'
        });
```

Now we will add the `path` elements with the proper attributes and styles. Set the `pie(dataset)` in `data()` function. Use the `color` scale to fill the arc.

```
var path=svg.selectAll('path')
        .data(pie(dataset))
        .enter()
        .append('path')
        .attr({
                d:arc,
                fill:function(d,i){
                        return color(i);
                }
        })
        .style({
                'fill-opacity':.15,
                stroke: function(d,i){
                        return color(i);
                },
                'stroke-width': '2px'
        });
```

Use the below code to set the text. Use `arc.centroid(d)` method to get the center of the arc, then transform the text to that point. Set the `text-anchor` to `middle`.

```
var text=svg.selectAll('text')
       .data(pie(dataset))
       .enter()
       .append("text")
       .attr("transform", function (d) {
               return "translate(" + arc.centroid(d) + ")";
       })
       .attr("text-anchor", "middle")
       .text(function(d){
               return d.data.name+" ("+d.data.percent+"%)" ;
       })
       .style({
               fill:function(d,i){
                       return color(i);
               },
               'font-size':'18px',
       });
```

In case you are just learning D3.js please follow the book of Scott Murray (http://chimera.labs.oreilly.com/books/1230000000345).

Here is the full code:

```
Gender Distribution
```

```
body {
    background-color: #ccc;
    width: 100%;
    font-family: 'Roboto', sans-serif;
    height: 100%;
}

.widget {
    margin: 0 auto;
    width:350px;
    margin-top:50px;
    background-color:#fff;
    border-radius: 5px;
    box-shadow: 1px 1px 4px 0px rgba(0,0,0,0.3);

}

.header{
    background-color: #eee;
    height:40px;
    color:#555;
    text-align: center;
    line-height: 40px;
    border-top-left-radius: 7px;
    border-top-right-radius: 7px;
    font-weight: 400;
    font-size: 1.5em;
    text-shadow: 1px 1px #fff;
    border-bottom: 1px solid #eaeaea;
}

.chart-container{
    padding:25px;
}
```

```
var dataset = [
    { name: 'Male', percent: 55 },
    { name: 'Female', percent: 45 }
];


var w=300,h=300;

var radius=(w-20)/2;

var pie=d3.layout.pie()
        .value(function(d){return d.percent})
        .sort(null);

var arc=d3.svg.arc()
        .innerRadius(0)
        .outerRadius(radius);

var color = d3.scale.ordinal()
        .range([ '#e75244','#33bb9d']);

var svg=d3.select("#chart")
        .append("svg")
        .attr({
            width:w,
            height:h,
            class:'shadow'
        }).append('g')
        .attr('transform','translate('+(w/2)+','+(h/2)+')');

var path=svg.selectAll('path')
        .data(pie(dataset))
        .enter()
        .append('path')
        .attr({
            d:arc,
            fill:function(d,i){
                return color(i);
            }
        })
        .style({
            'fill-opacity':.15,
            stroke: function(d,i){
                return color(i);
            },
            'stroke-width': '2px'
        });


var text=svg.selectAll('text')
        .data(pie(dataset))
        .enter()
```

```
        .append("text")
        .attr("transform", function (d) {
            return "translate(" + arc.centroid(d) + ")";
        })
        .attr("text-anchor", "middle")
        .text(function(d){
            return d.data.name+" ("+d.data.percent+"%)" ;
        })
        .style({
            fill:function(d,i){
                return color(i);
            },
            'font-size':'18px',

        });
```

Now you know how to Create a Simple Pie Chart using D3.js. In next lession we will learn more on how to customize the pie charts.

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