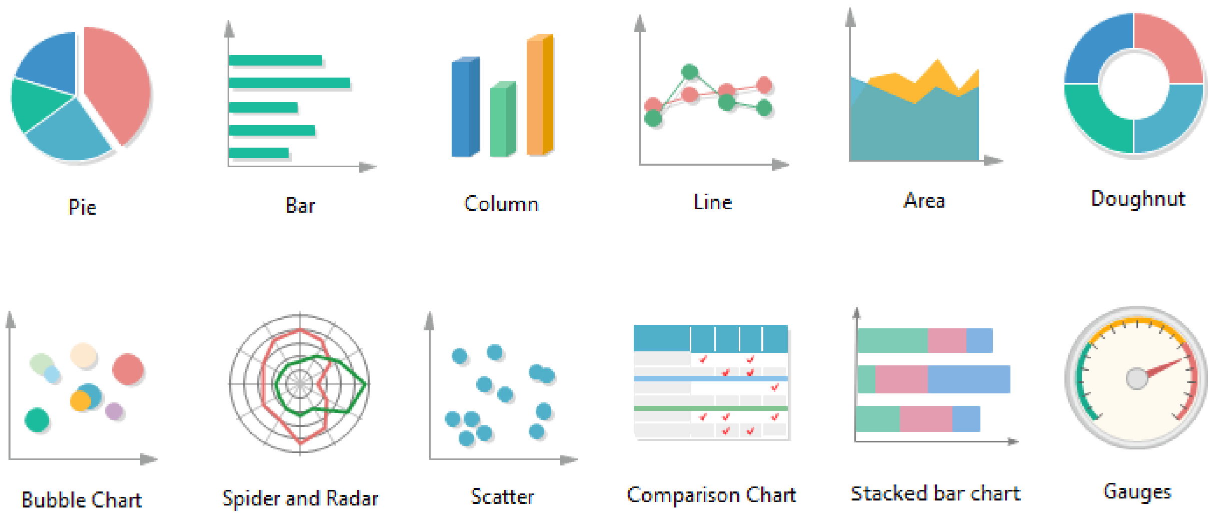
Lab 12 - Graphs and Charts in Razor Pages

Types of Charts



source

Drawing charts with Chart.js

Setup

1. Once you have your project created on Visual Studio, right-click on your project (not solution), and select *Manage client-side libraries*
2. A `libman.json` file will open up. Add the chartjs library to it.

```
{
  "version": "1.0",
  "defaultProvider": "cdnjs",
  "libraries": [
    { //add this block of code
      "library": "Chart.js@4.3.0",
      "destination": "wwwroot/lib/chartjs"
    }
  ]
}
```

3. Hit Ctrl-S to save and Visual Studio will download the package to your destination folder (wwwroot/lib/chartjs in this case).
4. Install the latest version of **Newtonsoft.Json** from NuGet.
5. Go to this Google drive link and download all the files inside the Chart folder. Add them to your project inside a Models folder.
6. Once you have your models in a folder in your project, the next step is to add the JavaScript to the `_Layout.cshtml` as the last line in HTML:

```
<script type="module" src="~/lib/chartjs/chart.umd.js"></script>
```

Using Chart.js inside index.cshtml

1. Create a canvas

```
<div class="chart-container" width="600" height="400">
    <canvas id="barChart"></canvas>
</div>
```

2. Add the script to create the chart.

```
<script type="module">
    document.addEventListener('DOMContentLoaded', (event) => {

        var ctx = document.getElementById('barChart');
        var myChart = new Chart(ctx, @Html.Raw(Model.ChartJson) );
    });
</script>
```

3. To finish this project, we need to write the "code-behind" for the OnGet method.

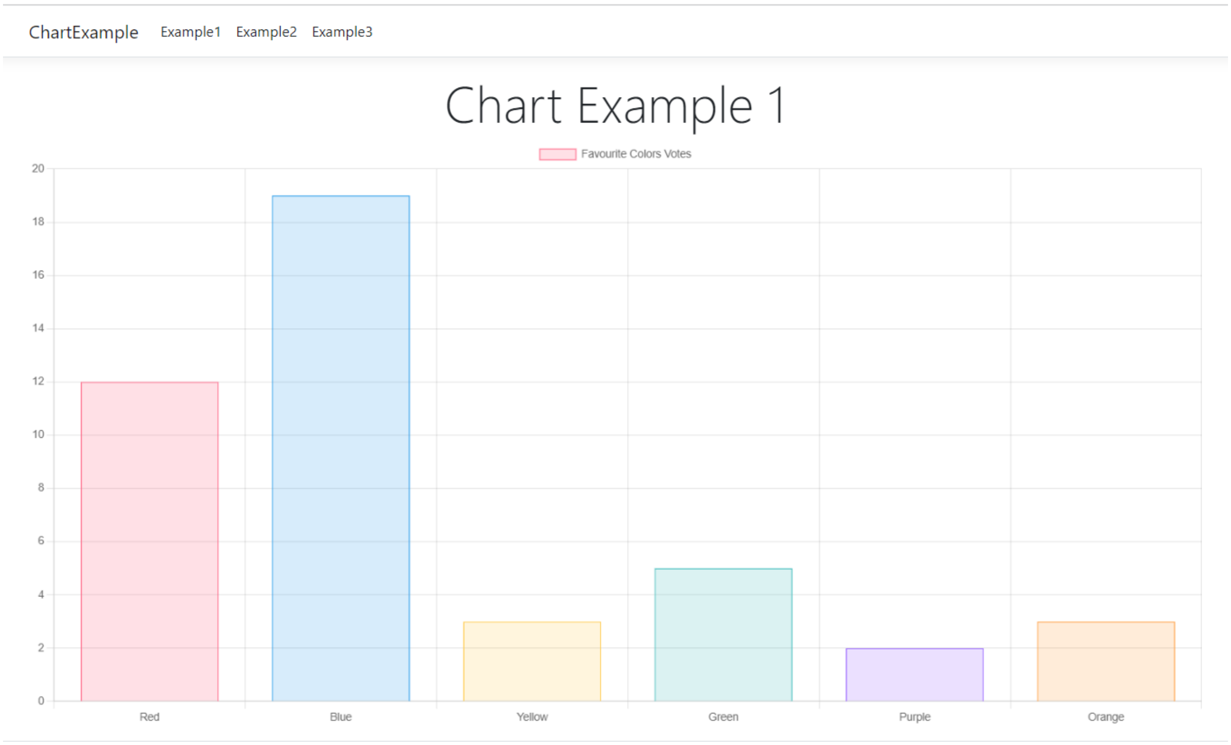
```
public class IndexModel : PageModel
{
    public ChartJs Chart { get; set; }
```

```
        public string ChartJson { get; set; }

        public void OnGet()
        {
            // Ref: https://www.chartjs.org/docs/latest/
            var chartData = @"
            {
                type: 'bar',
                responsive: true,
                data:
                {
                    labels: ['Red', 'Blue', 'Yellow', 'Green', 'Purple', 'Orange'],
                    datasets: [{
                        label: 'Favourite Colors Votes',
                        data: [12, 19, 3, 5, 2, 3],
                        backgroundColor: [
                        'rgba(255, 99, 132, 0.2)',
                        'rgba(54, 162, 235, 0.2)',
                        'rgba(255, 206, 86, 0.2)',
                        'rgba(75, 192, 192, 0.2)',
                        'rgba(153, 102, 255, 0.2)',
                        'rgba(255, 159, 64, 0.2)'
                            ],
                        borderColor: [
                        'rgba(255, 99, 132, 1)',
                        'rgba(54, 162, 235, 1)',
                        'rgba(255, 206, 86, 1)',
                        'rgba(75, 192, 192, 1)',
                        'rgba(153, 102, 255, 1)',
                        'rgba(255, 159, 64, 1)'
                            ],
                        borderWidth: 1
                    }]
                },
                options:
                {
                    scales:
                    {
                        y: [{
                            ticks:
                            {
                                beginAtZero: true
                            }
                        }]
                    }
                }
            }"; //end of chartdata

            Chart = JsonConvert.DeserializeObject<ChartJs>(chartData);
            ChartJson = JsonConvert.SerializeObject(Chart, new JsonSerializerSettings
            {
                NullValueHandling = NullValueHandling.Ignore,
            });
        }   //end of OnGet()
    }   //end of class
```

Output:



Resources and Other Ways of Drawing Charts

- You may look into the Chart Helper, but it only works for .NET Framework projects. It does not work for .NET Core.
- You may also look into Google Charts. It has a fairly similar setup to ChartJs. Here's an article about Integrating Google Charts in ASP.NET Core
- Using Google Charts in ASP.NET Core Web App
- Main Reference: Building charts with razor pages