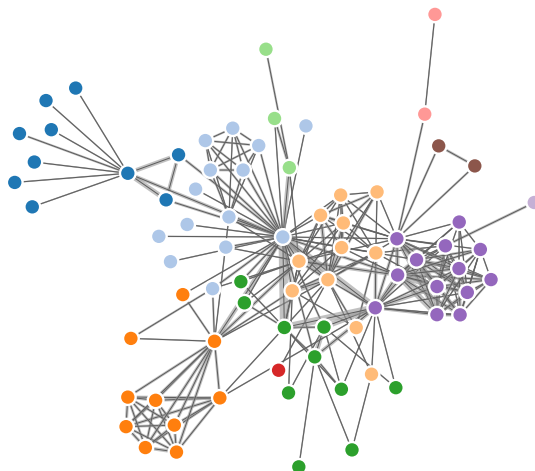


Force-Directed Graph

May 8, 2013



This simple force-directed graph shows character co-occurrence in *Les Misérables*. A physical simulation of charged particles and springs places related characters in closer proximity, while unrelated characters are farther apart. Layout algorithm inspired by [Tim Dwyer](#) and [Thomas Jakobsen](#). Data based on character coappearance in Victor Hugo's *Les Misérables*, compiled by [Donald Knuth](#).

[Open in a new window.](#)

index.html

```
<!DOCTYPE html>
<meta charset="utf-8">
<style>

.node {
  stroke: #fff;
  stroke-width: 1.5px;
}

.link {
  stroke: #999;
  stroke-opacity: .6;
}

</style>
<body>
<script src="http://d3js.org/d3.v3.min.js"></script>
<script>

var width = 960,
    height = 500;
```

```

var color = d3.scale.category20();

var force = d3.layout.force()
  .charge(-120)
  .linkDistance(30)
  .size([width, height]);

var svg = d3.select("body").append("svg")
  .attr("width", width)
  .attr("height", height);

d3.json("miserables.json", function(error, graph) {
  force
    .nodes(graph.nodes)
    .links(graph.links)
    .start();

  var link = svg.selectAll(".link")
    .data(graph.links)
    .enter().append("line")
    .attr("class", "link")
    .style("stroke-width", function(d) { return Math.sqrt(d.value); });

  var node = svg.selectAll(".node")
    .data(graph.nodes)
    .enter().append("circle")
    .attr("class", "node")
    .attr("r", 5)
    .style("fill", function(d) { return color(d.group); })
    .call(force.drag);

  node.append("title")
    .text(function(d) { return d.name; });

  force.on("tick", function() {
    link.attr("x1", function(d) { return d.source.x; })
      .attr("y1", function(d) { return d.source.y; })
      .attr("x2", function(d) { return d.target.x; })
      .attr("y2", function(d) { return d.target.y; });

    node.attr("cx", function(d) { return d.x; })
      .attr("cy", function(d) { return d.y; });
  });
});
</script>

```

miserables.json

```

{
  "nodes": [
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    {"name": "Mlle.Baptistine", "group": 1},
    {"name": "Mme.Magloire", "group": 1},
    {"name": "CountessdeLo", "group": 1},
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    {"name": "Cravatte", "group": 1},
    {"name": "Count", "group": 1},
    {"name": "OldMan", "group": 1},
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    {"name": "Valjean", "group": 2},
    {"name": "Marguerite", "group": 3},
    {"name": "Mme.deR", "group": 2},

```

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