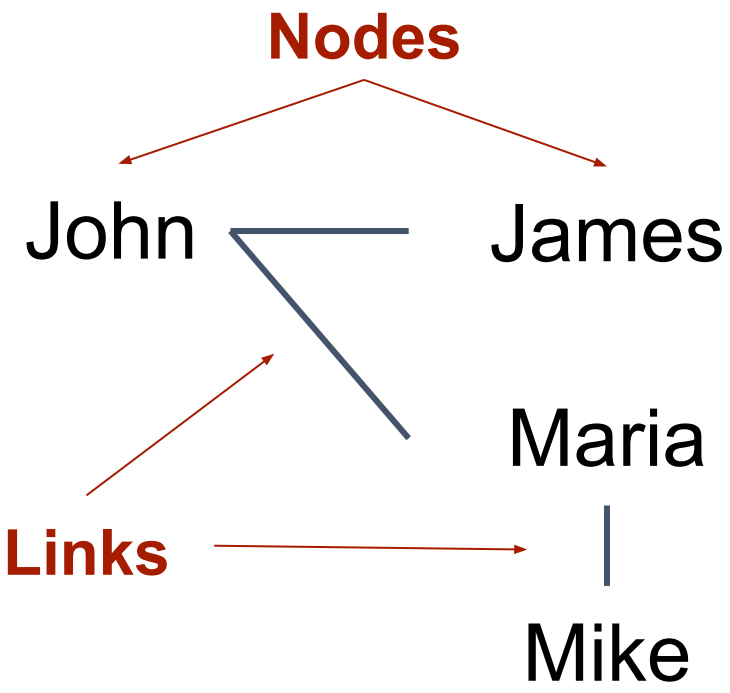
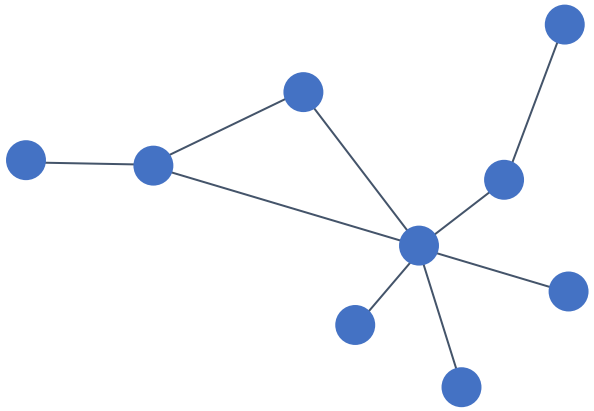
# Visualizing Networks

# Data Structure



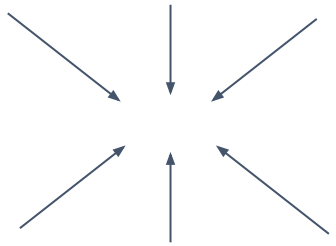
# Node-Link



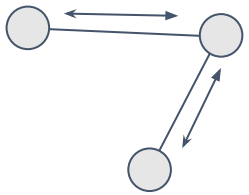
# D3 Layouts

# Force

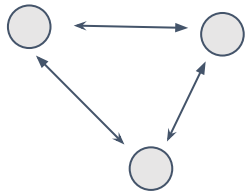
Centering



link



Many-Body



# API | d3.forceSimulation

Syntax:

```
d3.forceSimulation()
```

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```
d3.forceSimulation()
  .force(name, force)
```

# API | d3.forceSimulation

Syntax:

```
d3.forceSimulation()
  .force(name, force)
  .nodes(nodes)
```

# API | d3.forceSimulation

Syntax:

```
d3.forceSimulation()
   .force(name, force)
   .nodes(nodes)
   .on(event,function)
```

# API | d3.forceLink

Syntax:

```
d3.forceLink(links)
  .id((d) => d.id)
```

## Example

```
d3.forceSimulation()
```

## Example

```
d3.forceSimulation()
  .nodes(data.nodes)
```

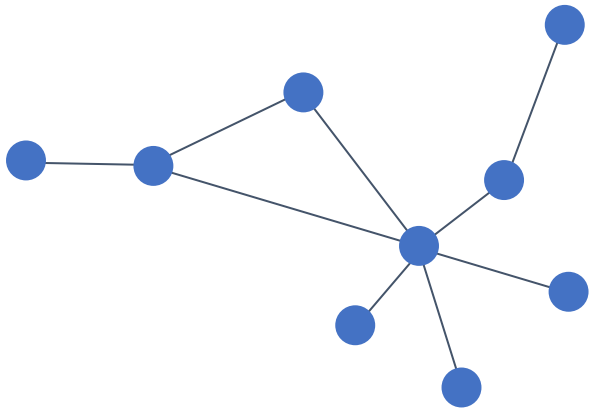
## Example

```
d3.forceSimulation()
  .nodes(data.nodes)
  .force("link",
     d3.forceLink(data.links)
       .id((d) => d.id))
```

## Example

```
d3.forceSimulation()
  .nodes(data.nodes)
  .force("link",
     d3.forceLink(data.links)
       .id((d) => d.id))
  .force("charge", d3.forceManyBody())
```

## Example

```
d3.forceSimulation()
  .nodes(data.nodes)
  .force("link",
     d3.forceLink(data.links)
       .id((d) => d.id))
  .force("charge", d3.forceManyBody())
  .on("tick", updateElements);
```

# Force Layout
# Node-Link