Video 3.9

D3 Intro

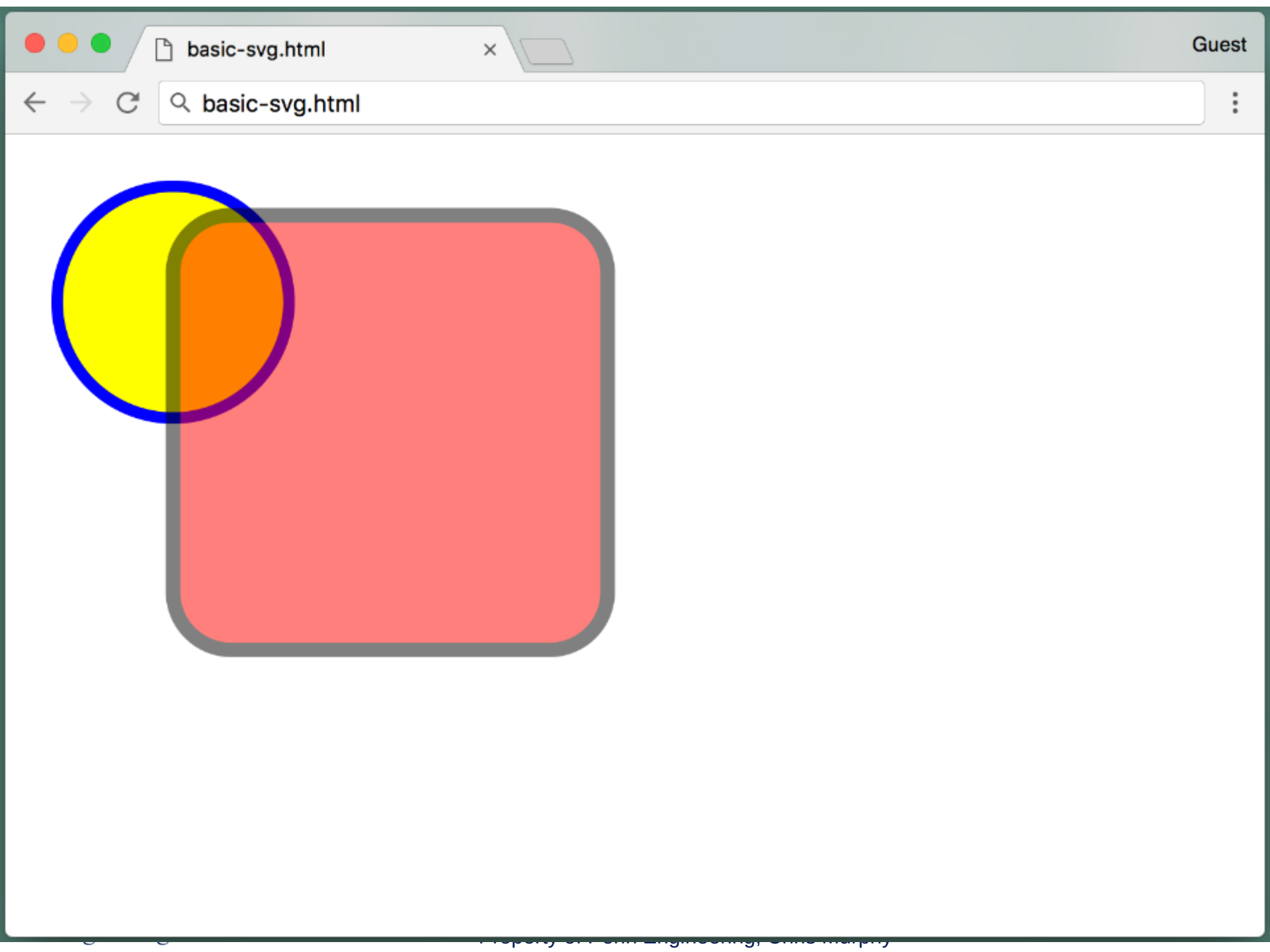
Chris Murphy

Review

- We can use **JavaScript** to dynamically modify/create HTML elements in Web pages
- **jQuery** provides a simpler syntax and other additional features
- **React** allows us to create reusable, modular components

Standard SVG

- We can render basic visual elements in HTML using **Scalable Vector Graphics (SVG)**
- These are HTML elements that are included in the Web page
- They do not lose quality when the page is resized
- SVG elements are part of the DOM, so their attributes can be modified by CSS and JavaScript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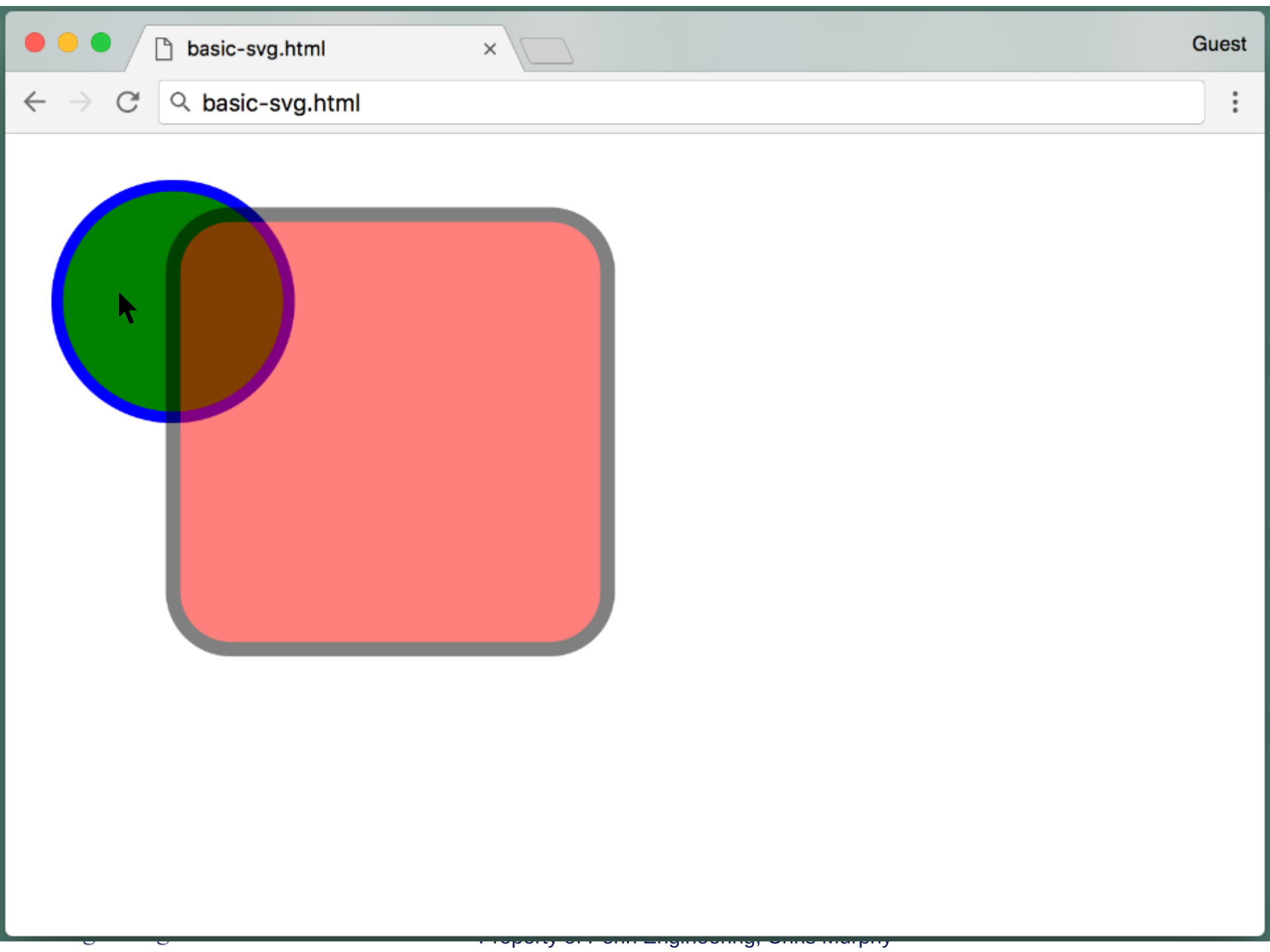
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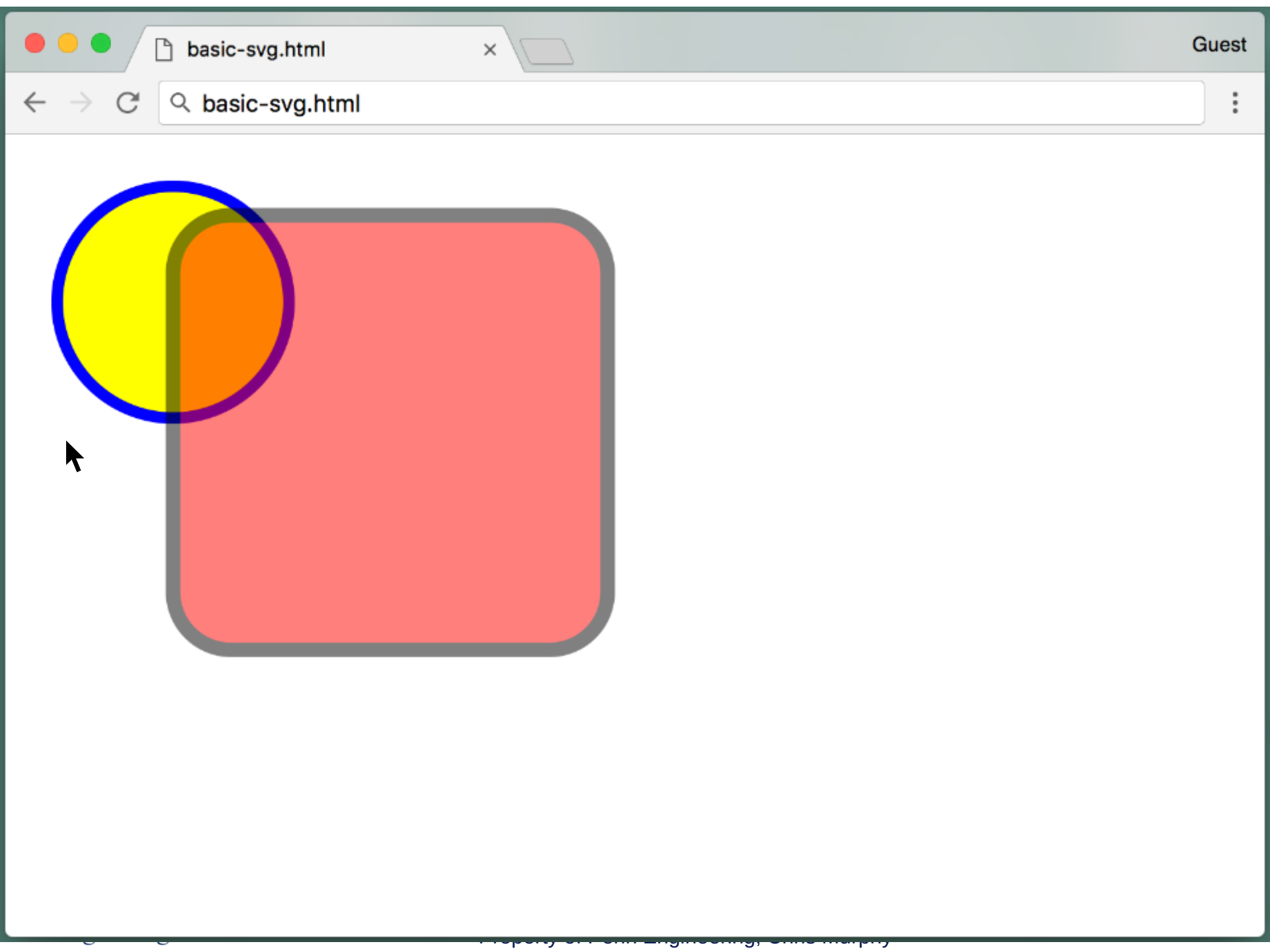
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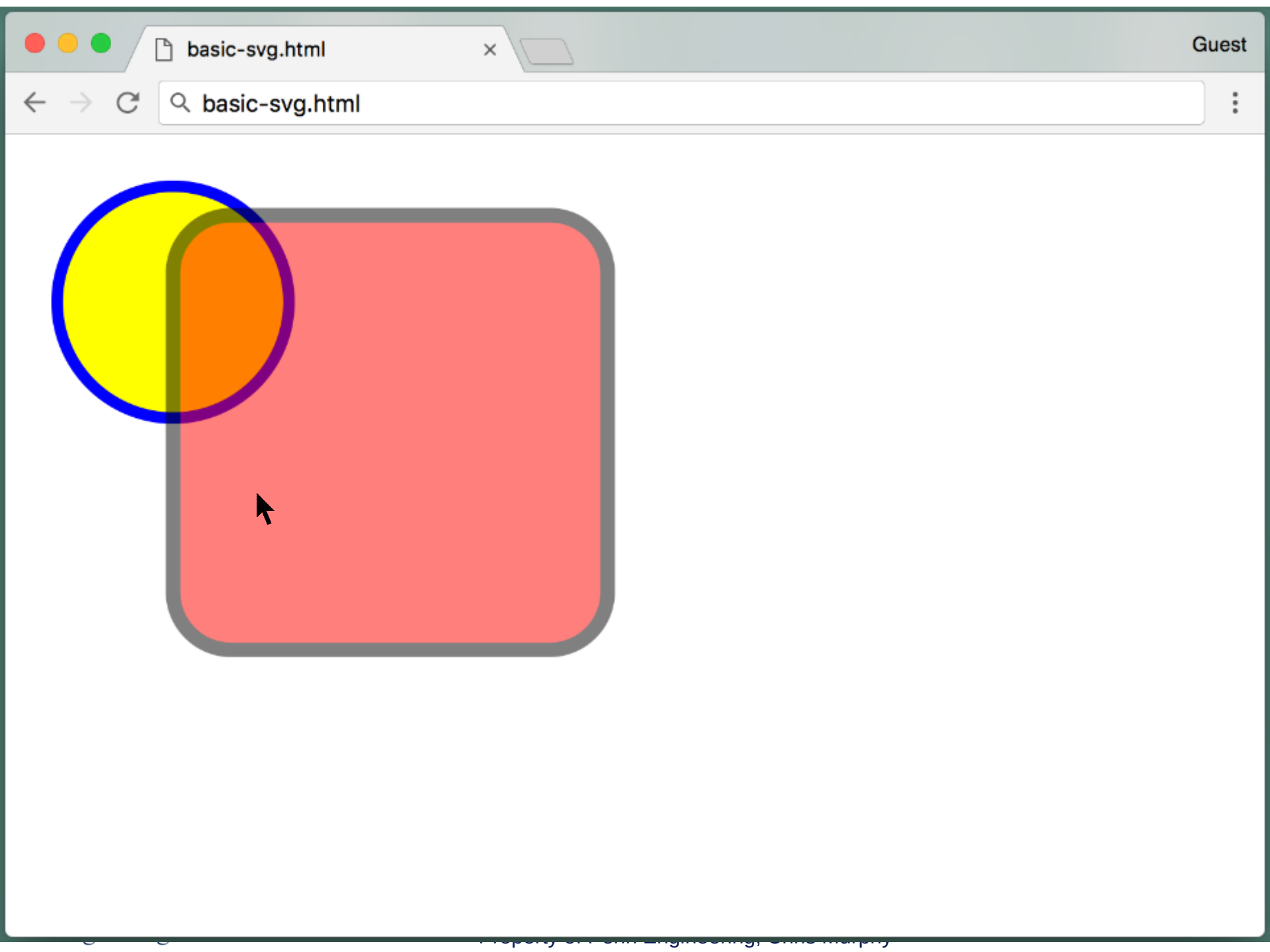
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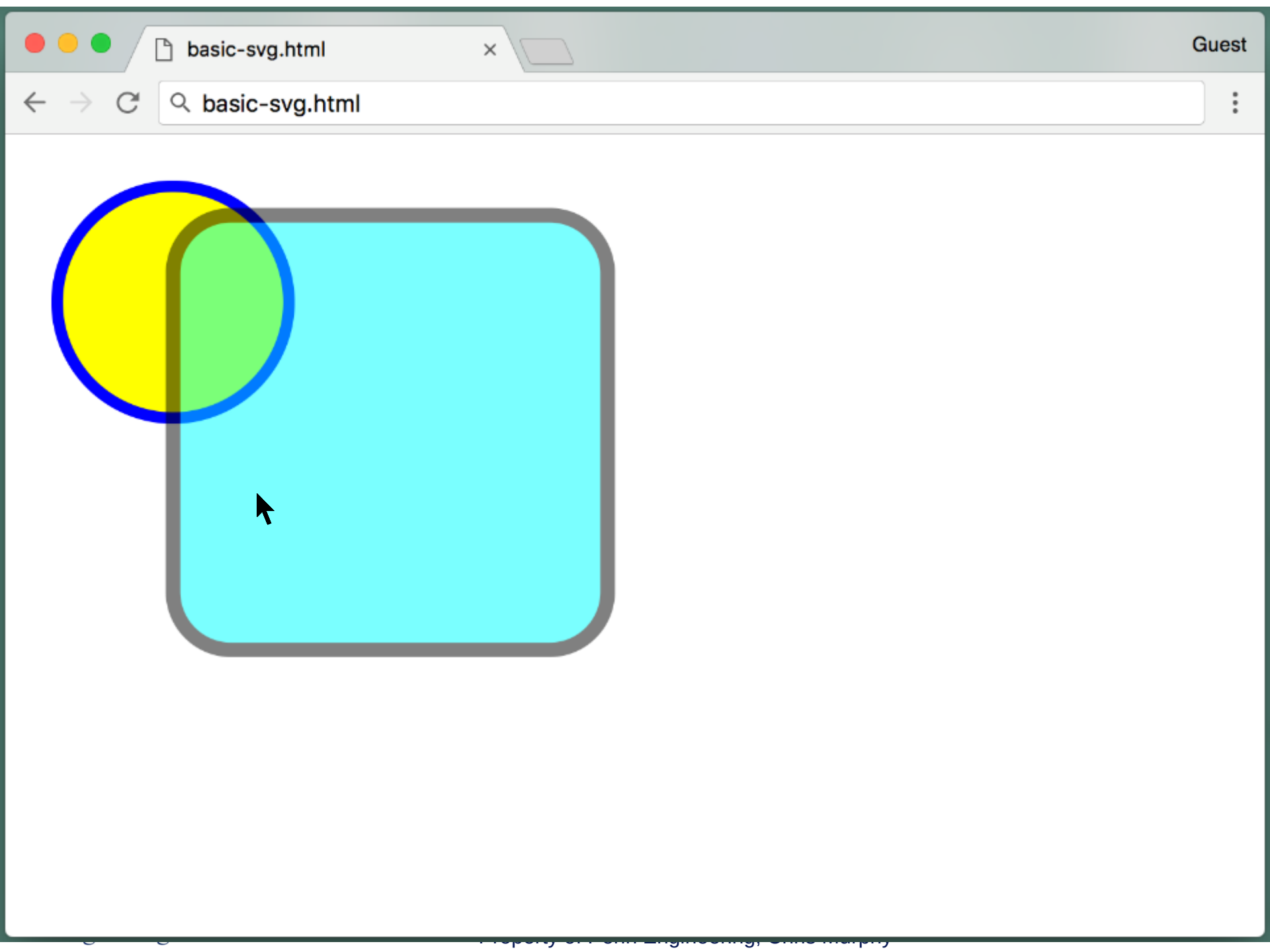
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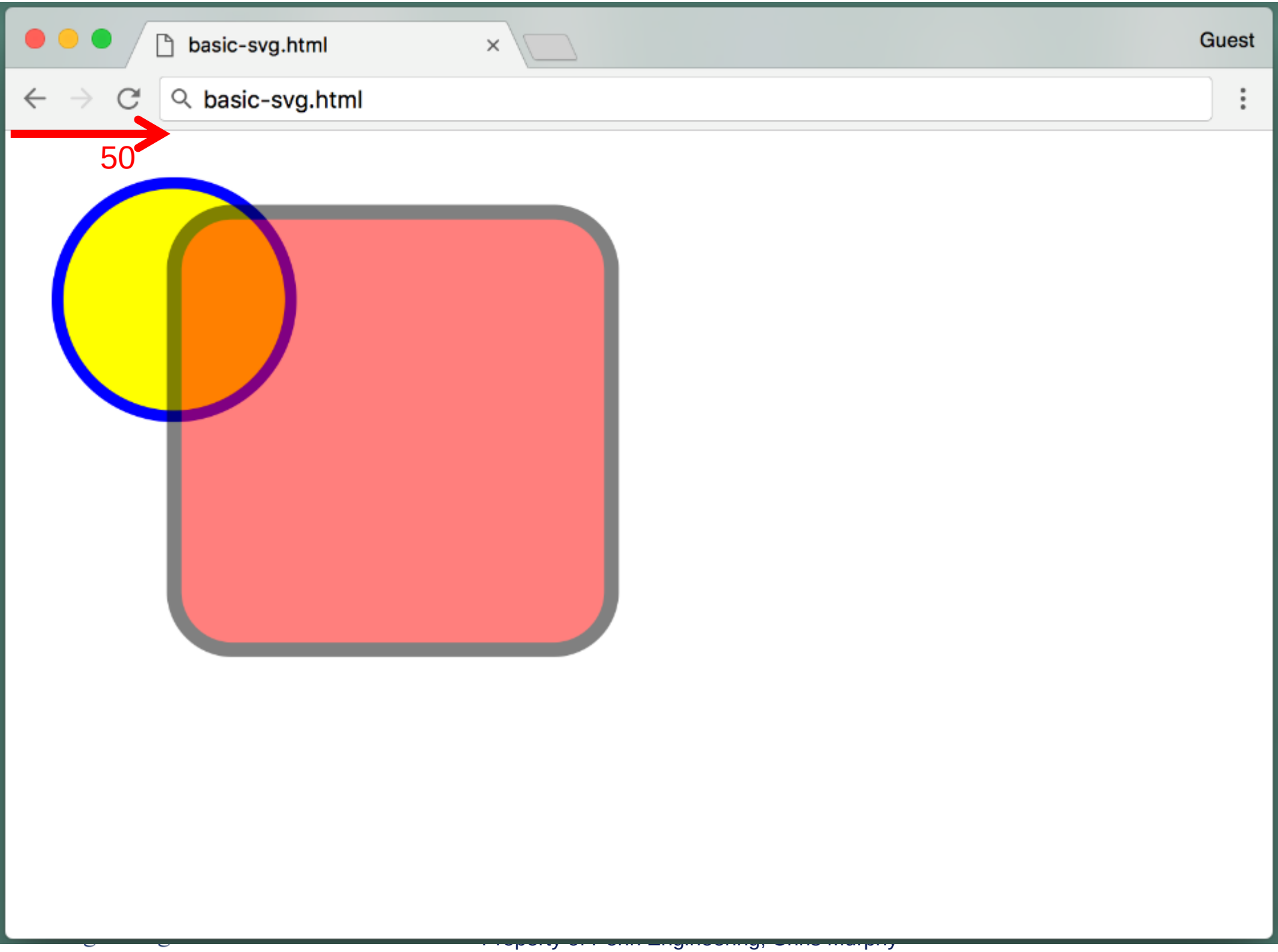
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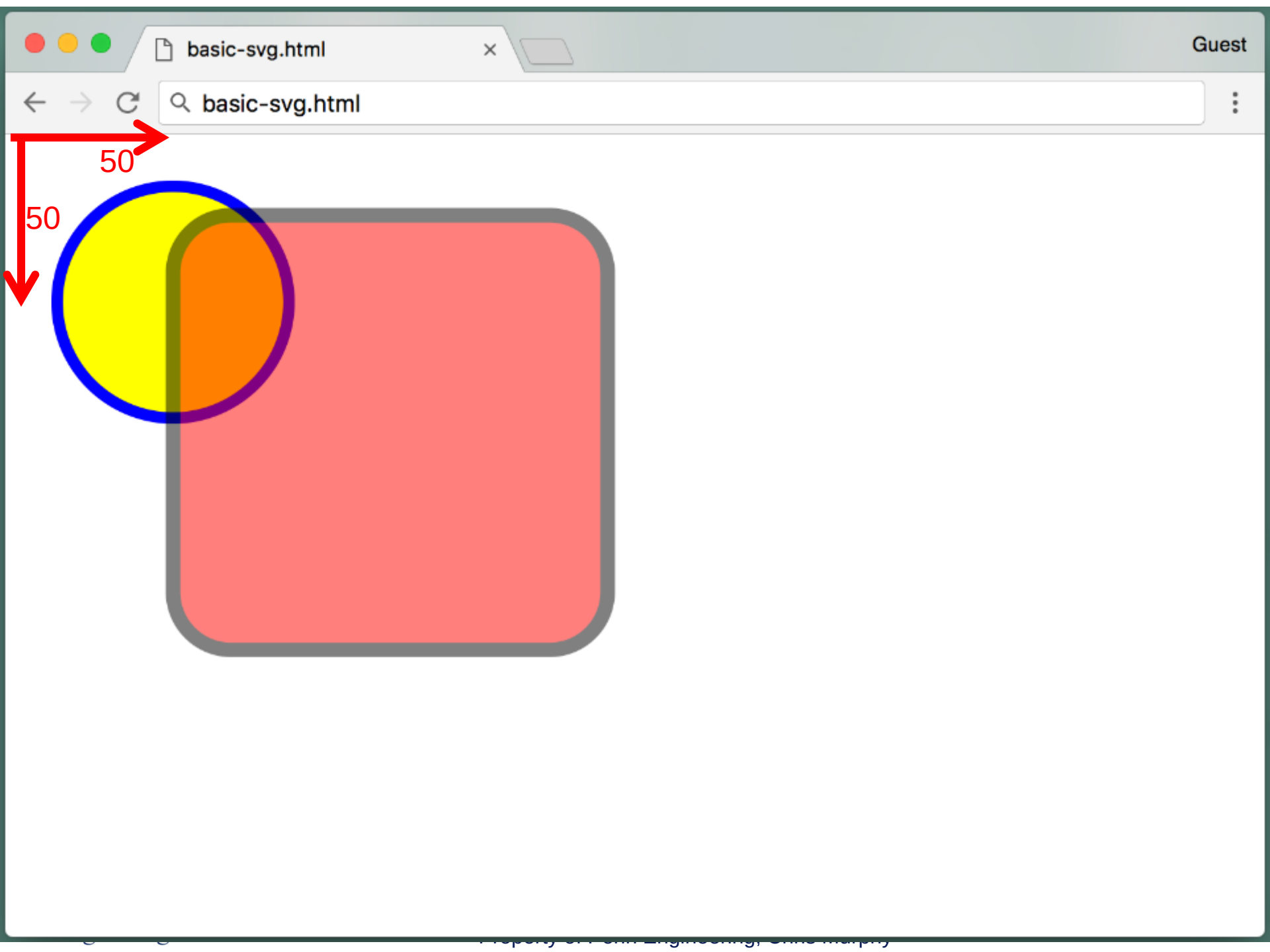
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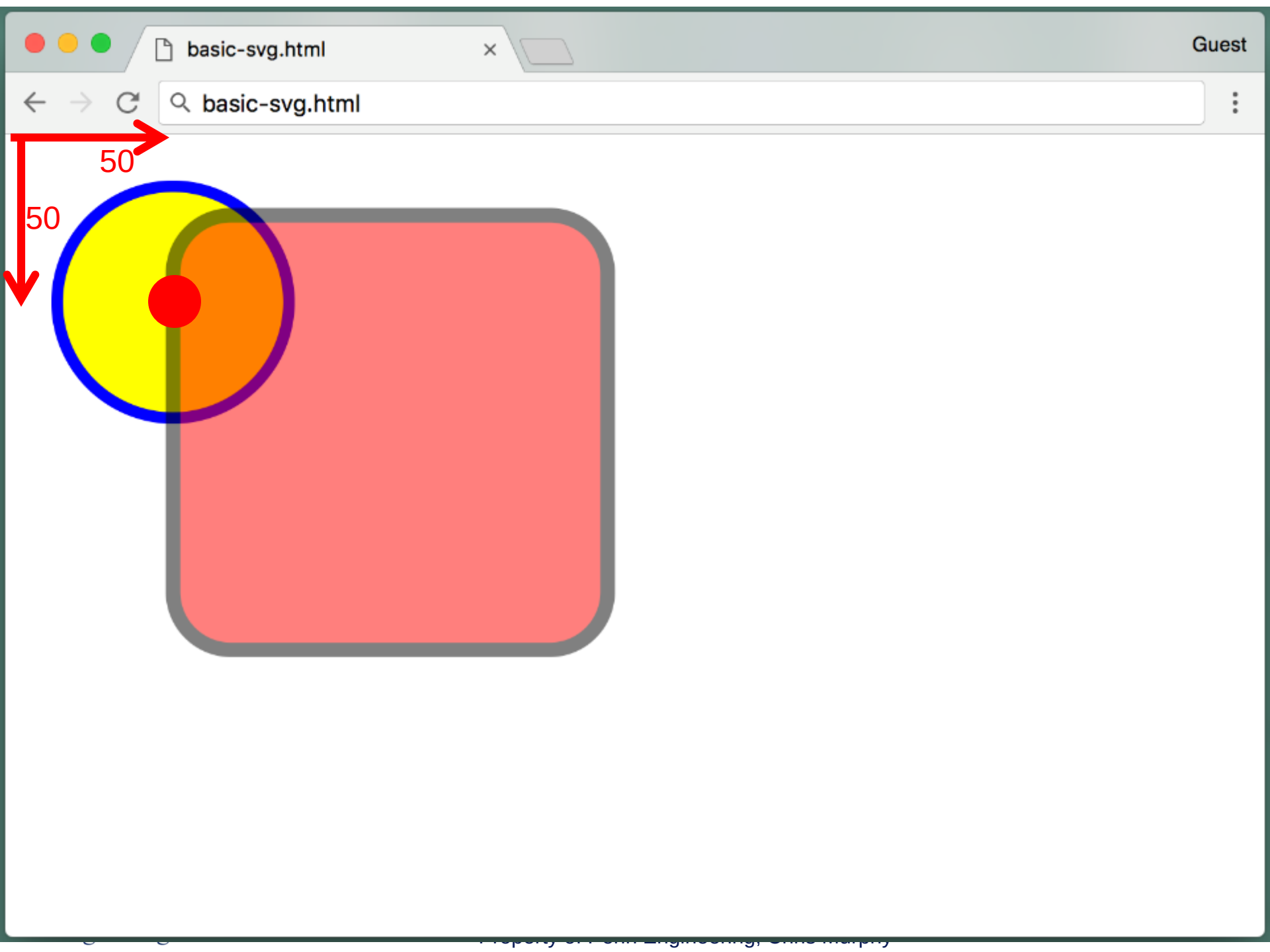
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Dynamic SVG

- Since SVG elements are part of the DOM, we can use JavaScript to manipulate their attributes

- But we may also want to dynamically generate SVG elements based on user actions, data received from an API, etc.

D3: Data-Driven Documents

- **D3.js** is a JavaScript library for manipulating HTML documents based on data

- Data can be bound to DOM elements (HTML, SVG) and then we can programmatically apply data-driven transformations

- This can be used for generating HTML tables, SVG charts and graphs, etc.

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<svg width="400" height="400">
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  x: 50,
  y: 50,
  r: 40,
  stroke: 'blue',
  width: 4,
  fill: 'yellow'
 };

  var svg = d3.select("svg");
  svg.select("circle")
     .attr("cx", circle.x)
     .attr("cy", circle.y)
     .attr("r", circle.r)
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         if (circle.r < 50) return 'yellow';
         else return 'cyan'; })
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Summary

- We can render basic visual elements in HTML using Scalable Vector Graphics (**SVG**)

- We can use **D3.js** to programmatically generate HTML elements (including SVG) based on data