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Graph Library Research
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Sprint 8

Library Options:

amCharts:
- https://www.amcharts.com/demos/tree-chart/
- Creates a top-down tree from a parent node to all the children
- https://www.amcharts.com/docs/v5/charts/hierarchy/tree/

vega:
- Can describe the visual design in JSON format
- Then generates web views using Canvas or SVG
- Example tree:
    - https://vega.github.io/vega/examples/tree-layout/
- Is built on top of D3 to be higher-level visualization
    - Customizable designs
    - More reusable and shareable visualizations
    - Platform flexibility

**** I like this one:
 mermaid:
- https://mermaid.js.org/intro/
- Flowchart
    - https://mermaid.js.org/syntax/flowchart.html?id=flowcharts-basic-syntax
    - Uses markdown within the text to format it
    - Uses A → B to show an arrow on the screen
    - Use — for a line without an arrow
    - TB for a top-to-bottom orientation, LR for a left-right orientation
    - Can format it in CSS
        - With premade class: Class A .className
        - To define a class: classDef someClass stroke:#00f, A:::someClass → B
        - With using style: id1(Start), style id1 fill:#bbf
- Can customizer curve style
    - %%{ init: { 'flowchart': { 'curve': 'stepBefore' } } }%%
- Comment within a flowchart with %% at the beginning
- Example of using within an HTML file
    - Put the flowchart in the <pre> tags
    - In the script, create a config
    const config = {
        startOnLoad: true,
        flowchart: { useMaxWidth: true, htmlLabels: true, curve: 'cardinal' },
        securityLevel: 'loose',

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```
            };
        mermaid.initialize(config);
```

- Click A callback function() or "quote"

Google charts:
- https://developers.google.com/chart/interactive/docs/gallery/orgchart
- Organization charts
    - Allow parent-child relationship with nodes
    - Graphs the hierarchy like a tree
- To load package:
    - google.charts.load('current', {packages: ['orgchart']});
    - Load the visualization
    - var visualization = new google.visualization.OrgChart(container);
- Implementing
- Put in a script tag:
    - Initialize a chart
        - var data = new google.visualization.DataTable();
    - Add column names
        - data.addColumn('string', 'Name');
    - Fill in rows
        - Add one for each column
        - data.addRows([
                ['Alice', 'Mike', ''],
                ['Bob', 'Jim', 'Bob Sponge'],
                ['Carol', 'Bob', '']
             ]);
    - Then, create the chart
        - var chart = new google.visualization.OrgChart(document.getElementById('chart_div'));
        - Draws the chart, setting the allowHtml option to true for the tooltips.
        - chart.draw(data, {'allowHtml':true});
    - Body tag
        - Div with id "chart_div"

UPON RESEARCH, FOUND THEY CAN EACH ONLY HAVE ONE PARENT NODE, SO THIS WON'T WORK AS TWO COURSES WILL BE A PREREQUISITE TO ONE.
Other sources:
https://www.wearedevelopers.com/magazine/top-javascript-charting-libraries