RedBiome Development Process

A close up of text on a whiteboard

Description automatically generated

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Framework

* Web development: Vue.js
  + Tutorial: <https://www.youtube.com/watch?v=4deVCNJq3qc>
* Interactive Graph: D3.js / vega-lite

Preparations:

* Vue interactive graph: <https://vuejs.org/v2/examples/svg.html>
* Vega: <https://vega.github.io/vega-lite/>

Assumptions:

* Majority of our users know the structures of Metadata/BiomTable/TaxonTable

Filter

* Numerical – see vue polygon example
* Categorical – Drop down menu/ search/ Able to add multiple criteria
* <https://codesandbox.io/s/github/vuejs/vuejs.org/tree/master/src/v2/examples/vue-20-svg-graph?from-embed>
* Vue-d3-chart <https://saigesp.github.io/vue-d3-charts/#/barchart>

Map

* Static figure
* Color code by EMPO2 <https://www.nature.com/articles/nature24621/figures/1>
* Only one point for each representative location, and hover to show number of samples
* <https://vega.github.io/vega/tutorials/airports/>

Next Steps

* Connect to backend for searching/filtering/result display
* Decide the naming of the *Sample, Where, Feature* structure
* Design visualization for each filtering options
  + Should be interactive
  + Should consider the possibly noisy data
* Using sample data from real studies to assess the feasibility of color code
  + If the map is too small to see the colors
  + If in denser areas, there are severe overlaps of colored points
* Enable regional stats when hovering
  + Now only borders of countries would be outlined when hovering. Considering the size of the map, smaller geo units may not be visible enough to point to.
  + Decide how big or small the unit of geo area should be for stats report