Project: Endanged Species World Wide

Group Members:

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*Git Repository:*jadonwagstaff/**dataviscourse_iucnredlist**

Data source: http://www.iucnredlist.org/about/summary-statistics (iucn Red List)

Background & Motivation

Dart Risley II:

I have worked with computer networking data for over five years and am competent multiple programming languages, but prefer python over others. My motivation for choosing this project stems from both curiosity of subject matter and a desire to gain a new perspeective on data analysis by working with data different from my normal workload.

Jadon Wagstaff:

I find the work that the iucn does to be important for the well-being of the biodiversity of the earth. I hope to raise awareness of the importance of this work by creating a visualization that is interesting and engaging to the audience. The audience will be able to view statistics about red list for a selected country and then compare those statistics with other countries. Hopefully the user will be able to assess the effectiveness of their countries conservation efforts using this information.

Data Processing

We expect there to be minimal data processing as are is already in a clean and readable format (csv). As we intend to design displays that will allow users to compare data from multiple countries, we expect there to be mutiple aggregation functions. However, our data is small and will be implemented using a html5, javascript, and D3.

Prototype Design Descriptions

Prototype 1: (primary design choice)

Prototype 1 centers on the use of a map to enable users to explore their data. This choice reflects the organiztion of our data which divded into regions around the world and then further cataloged by country. Recognizing that some users may already have a specific country in mind we have added a list and a query box to allow them to either manually select a country or type their choice in and search.

Additionally, there is a line graph appended below the map that will display a users selection. The choice of a line graph is only a working decision at this point, but it allows use to accurately represent the rates of endanged species from country to country and allows use to fluidly add addtional optional features such as multiple country selection.

Prototype 2:

Prototype 2 removes the map and centers the layout on the line graph. Utilizing two lists to select countires and attributes, this allows the user to still explore the data. The lack of map centers the users attention on the graph which is at the main visualiztion for articulating what species are endangered rather than get caught up in the location of animals.

Prototype 3:

Prototype 3 primarily uses a graph to interpret the information. The size of the vertices would reflect the number of species on the red list for a given country, and the paths would indicate which countries border that country. This would allow for an overview of the earth and the user would be able to easily see which countries or regions have problems with red list species. All aspects of prototype 1 would be present but the map would be replaced by the graph.

Features

Must-Have:

-List, sort, and search field: These three elements allow the user to see what is avaiable and navigate quickly if they already have an area in mind.

-Multiple country selection: Displaying one country at a time would be tedious for any user attempting to make a comparison, therefore the line graph must be able to show multiple countries. This will be accomplished by selecting multiple countries on the list or making a selection on the map using a brush.

-Map: While there is a prototype without a map, the map gives the designers many optional features that can be utilized and allows the user to find trends based upon geography.

-Comparison of selections: A way to compare information about selected countries. The form of this will be determined by the data but will likely take the form of bar charts or line graphs.

Optional:

-Bio diversity: The user will have the choice of viewing information on just Mammals or Amphibians. The percentage of species assessed by the iucn in each of these categories is over 80%. This means that the percentage of mammals or amphibians on the list are a better reflection of a regions red list percentage.

-Tool tips: Hovering over country names or countries on the map will show all information about that country in a tool tip.

Project Schedule

schedule is subject to change

November 3: GeoJson found, Lists accurately dsiplay data

November 11: Have working display - Map, list are funcional. Line graph work in progress

November 17: Line graph working

November 24: Finalize and polish

December 2: Completed

responsibilities subject to change

Dart: line graph, lists and overall html display

Jadon: map, data aggregation

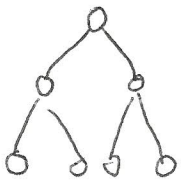
1. Ideas

map

– Zoom to region

list

Tree



2. Filter

Map (must have)

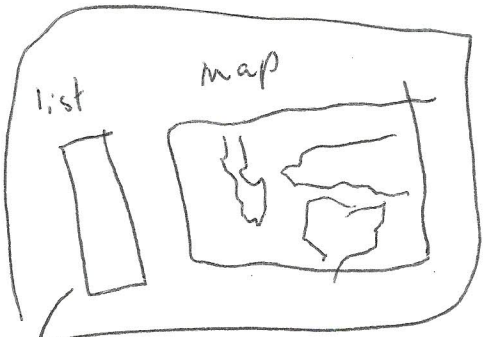
list (maybe)

3. Categorize

Map – primary explore

list – secondary explore

4. Combine and Refine



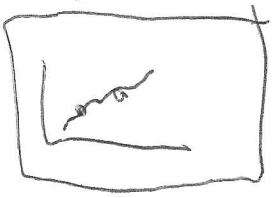
5. Question

what places are high threat to species?

list will contain countries

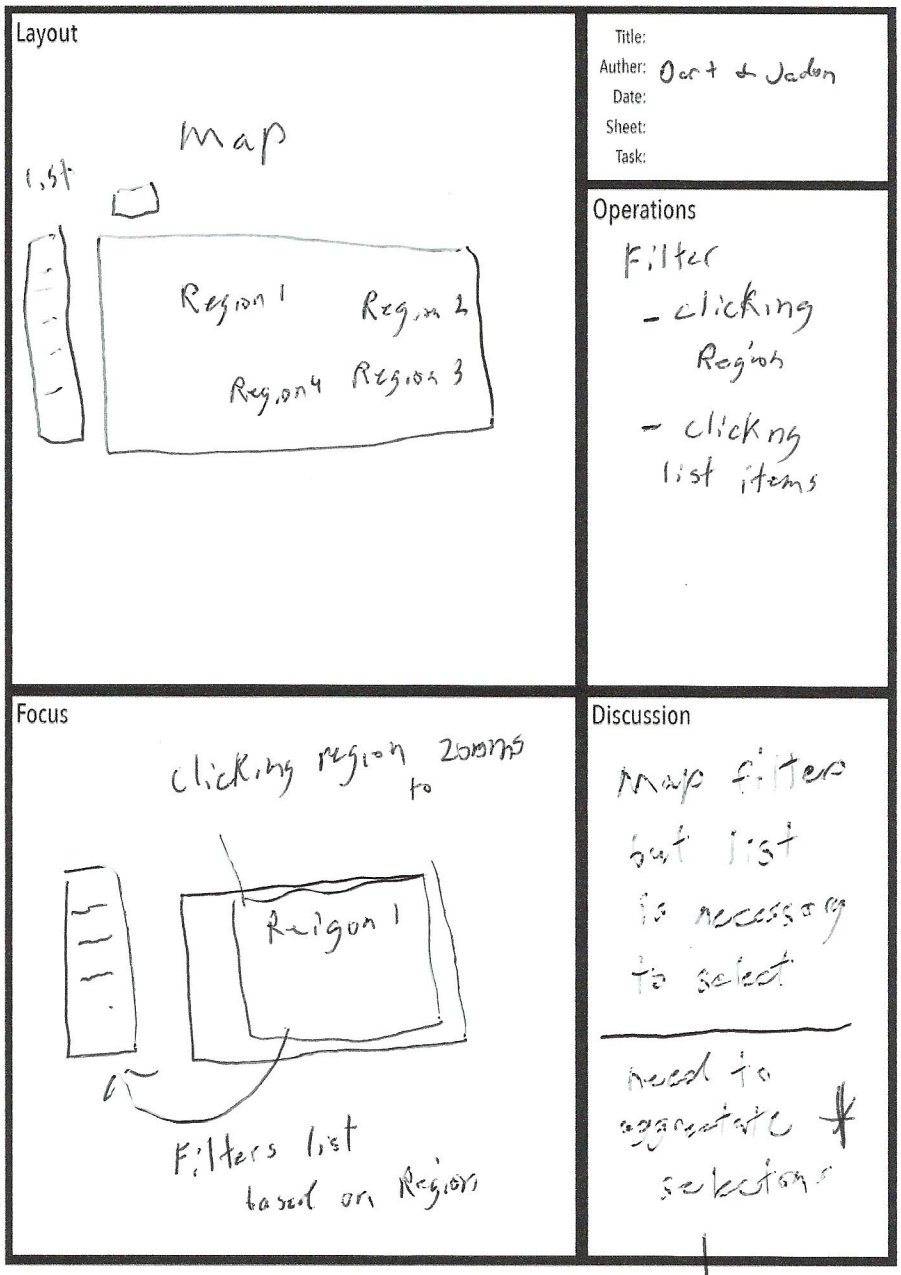
— Data has a heavy region focus

— will need addion graphs to display content scatterplot?



— allow awareness of ones own region

Main prototype



note! all data on species is categorized into types

- mamals
- plants
- amphibian

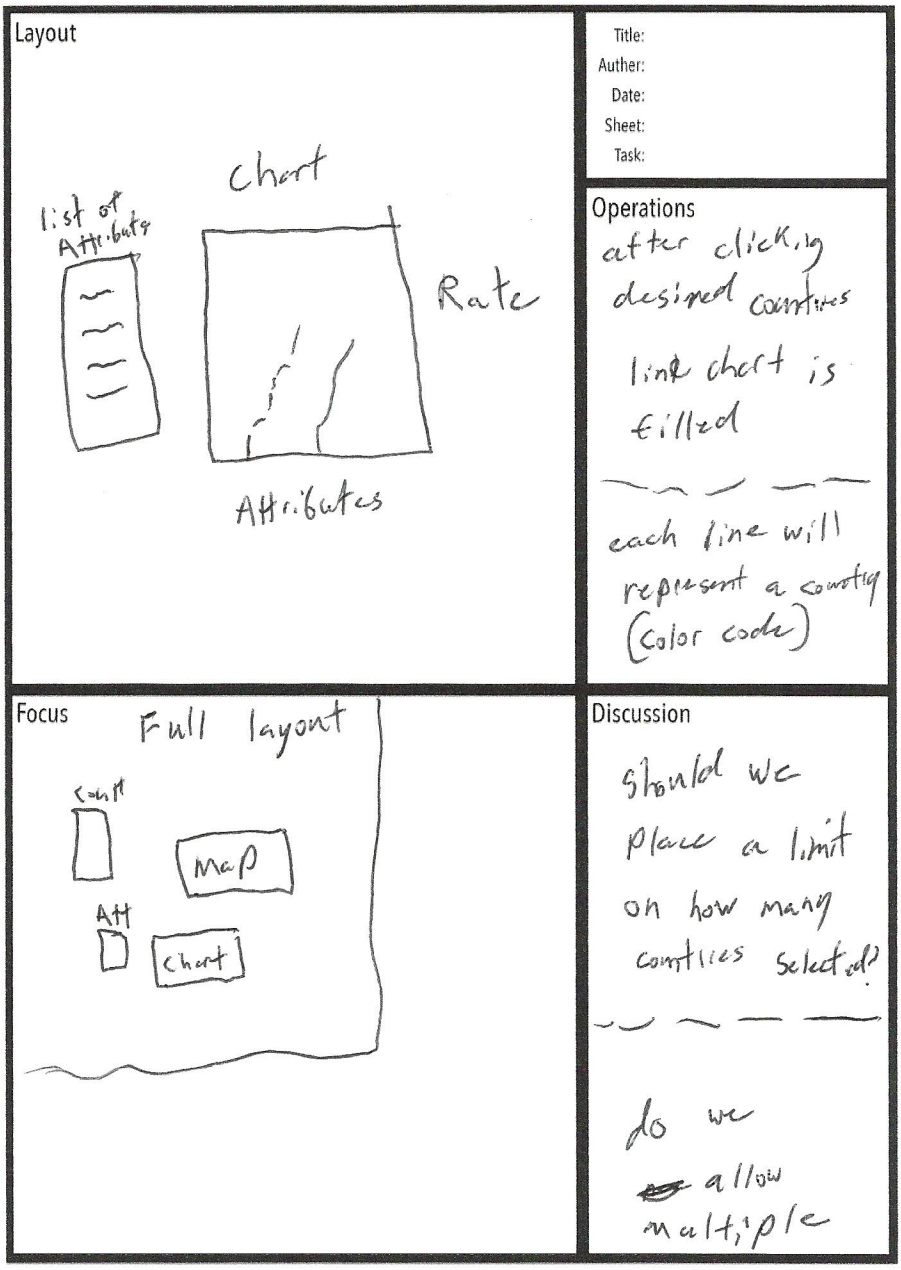
each country contains all types

each type

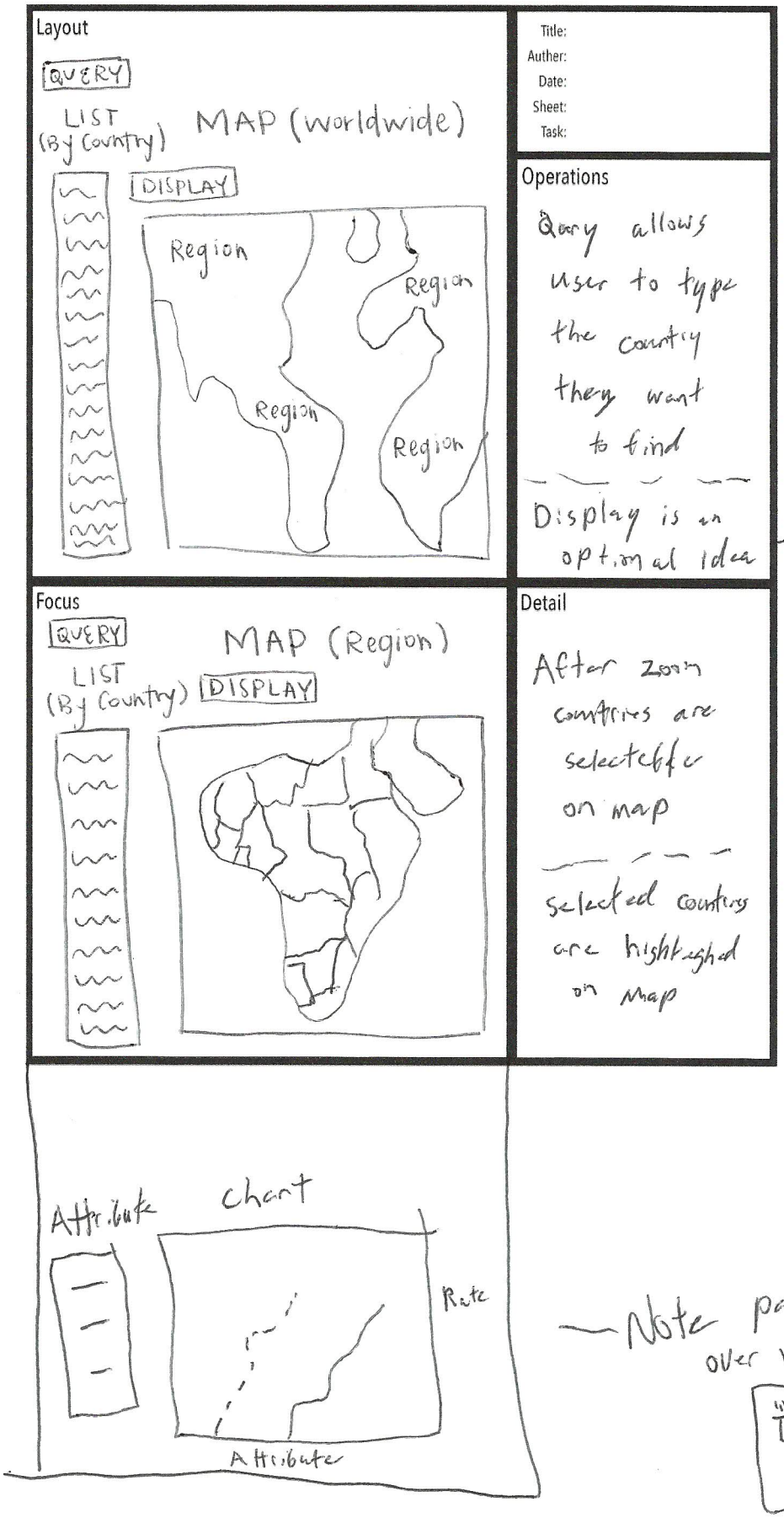
numeric data on extinction Rates

endangered rates

how to display



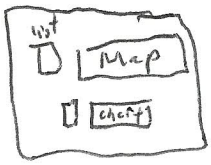
— This sheet looks at data aggregation display

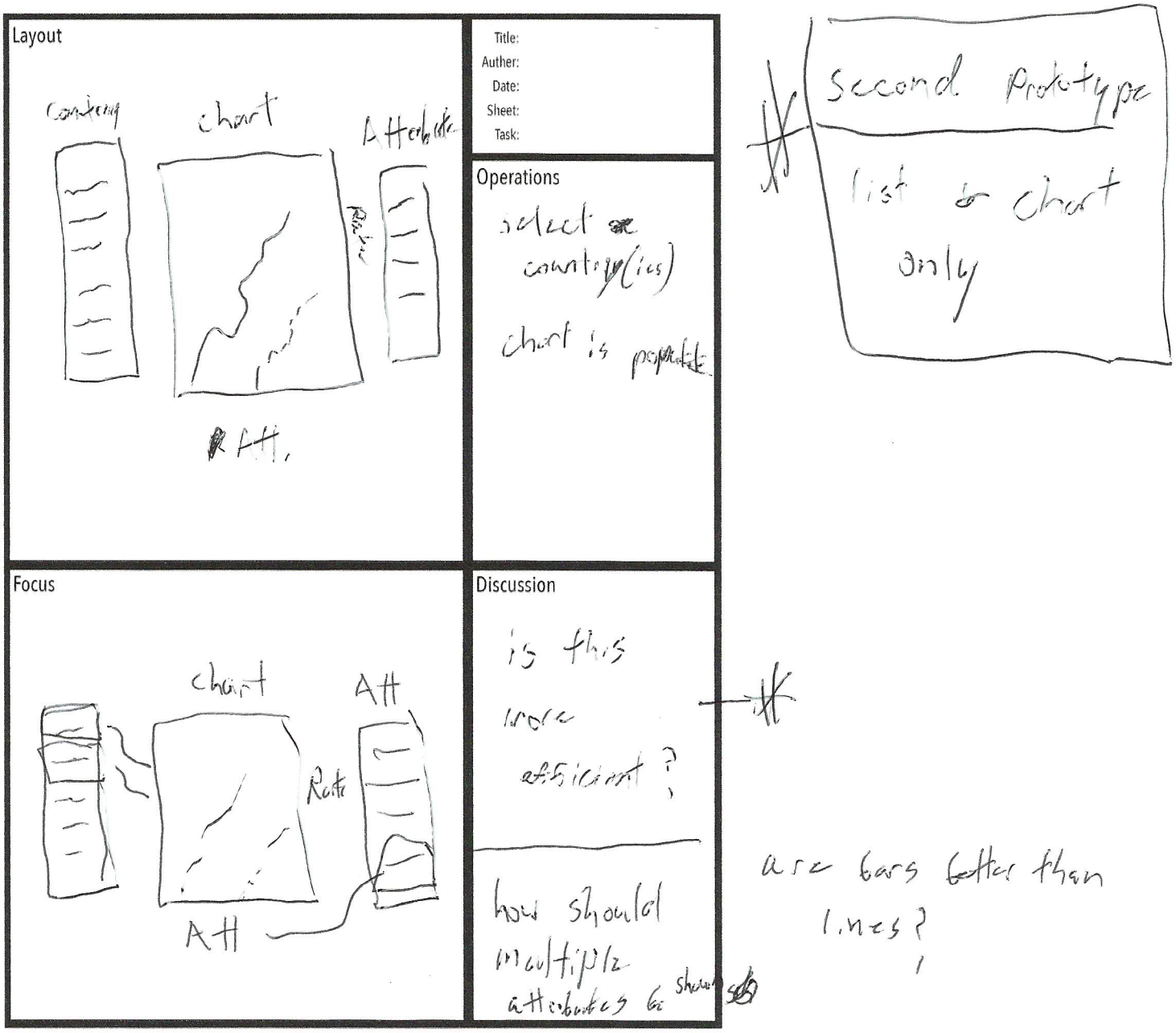


— that will hide map and list, in case user wants only to see chart

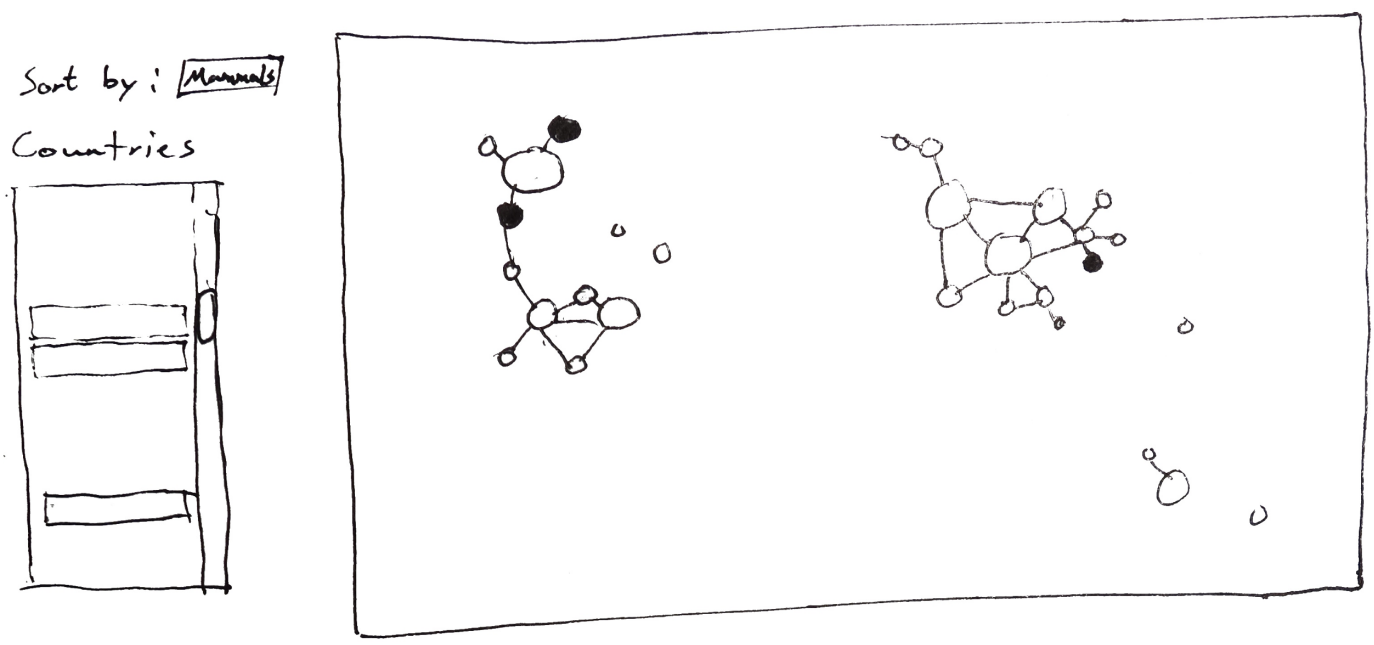
— for countries list selected countries are moved to top of list and highlighted

— Note part of both over view and Focus

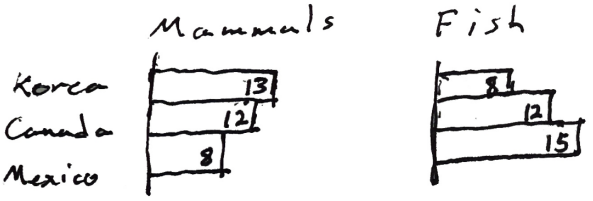



Layout
Title:
Auther:
Date:
Sheet:
Task:
Operations
select attribute
chart is popup
Focus
chart
Discussion
is this more efficient?
how should I multiple attributes to show
Second Prototype
list to chart only
are bars better than lines?

Prototype 3



Selection Statistics: Number on red list by ~~category~~ species category.



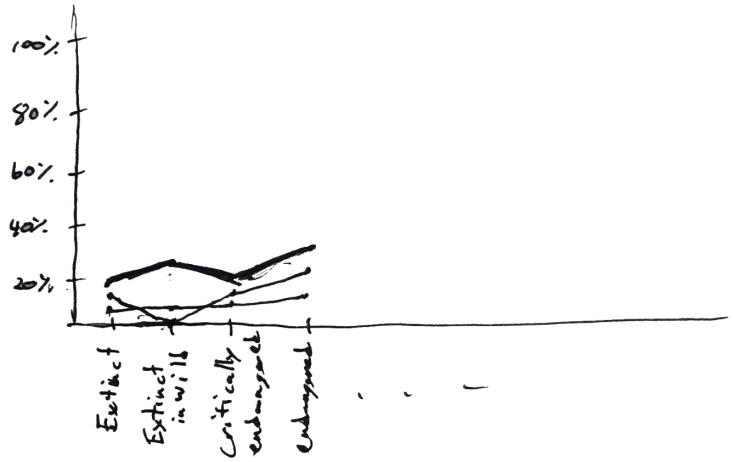
Notes:

Selections will show up as a different color on the graph, could also apply to a map.

Sorting could be done by numbers in the case of categories like mammals, fish, etc. or percentages in categories like threatened, extinct, etc.

Prototype 3 (continued)

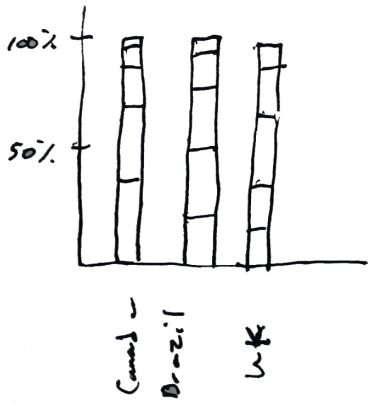
Selection statistics: Breakdown of red list by ~~list category~~ assessment category



Selection
Brazil

note: selecting a line will list the country and make the line bold.

(Alternate) 8



key: ☐ Extinct
☐ endangered
⋮

Note: each key will be different color hue.