Basic Info

Project Title: JourNetwork

Team Members:

- Brian Philip
  - u1138890
  - u1138890@utah.edu
- Michael Paskett
  - u1144000
  - michael.paskett@utah.edu
- Taylor Hansen
  - u0642850
  - taylor.c.hansen@utah.edu

https://github.com/mpaskett/dataviscourse-pr-journetwork

Background and Motivation

Scientists publish in journals to disseminate their findings. However, there are so many journals that finding the right one for their papers is now an arduous task. Here, we visualize different journals by interest, citations, number of times cited, and other relevant bibliometric indicators to help researchers find the right journal for their research.

Our motivation for this project stems from the fact that the three of us are prospective Ph.D. candidates in the Biomedical Engineering department. As we continually research existing publications and pursue publications of our own, an interactive resource for exploring scientific journals would be in great demand. We feel that this project would not only serve our own interests but those of the scientific community at large.

Project Objectives

1. Questions
   a. What journal should one publish to?
   b. What journals should one research in order to learn about one's field?
   c. Are their subspecialties in each field?
   d. What are the trends of those subspecialties?
2. Benefits
   a. Intuitively visualize changes in journal trends in order to publish papers in more impactful journals
   b. Tailor the presentation of research to the appropriate audience while adhering to the trends in a given specialty

c. Government institutes can analyze trends to better reappropriate funding for the sciences

Data

Our data will come from *InCites*™ and similar .csv files containing high-level metrics for scientific journals. "*InCites*™ is a customised, citation-based research evaluation tool that enables you to analyze institutional productivity and benchmark your output against peers worldwide. It is produced by Thomson Reuters and uses bibliographic record and citation data generated from *Web of Science* and *Journal Citation Reports*." The University of Utah has an active subscription to *InCites*™, facilitating our use of this resource for our project. The bibliometric indicators with *InCites*™ are divided into various categories:

- Journal Citation Reports Indicators (e.g. Journal Impact Factor, Cited Half-Life, Article Influence®)
- Impact Indicators (e.g. Citation Impact, H-Index)
- Percentile and Percentage Indicators (e.g. Average Percentile, % Documents Cited)
- Collaboration Indicators (e.g. International Collaborators, % of Industry Collaborations)
- ESI Indicators (e.g. Highly Cited Papers, Hot Papers)

From the additional .csv files, we expect to also glean total number of citations (could be journal specific), total number of cited, and changes in these indicators over time (at least between the years of 2014 to 2017).

Data Processing

Our data is preformatted as .csv files containing the journal in question, a list of other journals, number of citations/cited per year from at least 2014 to 2017. Most of our resources will be spent on filtering, sorting, and generally reorganizing the data to fit our different models. Given these features, we plan on extracting weighted links between citations in order to find which journals are topologically close to each other over time.

Visualization Design

Brainstorm:

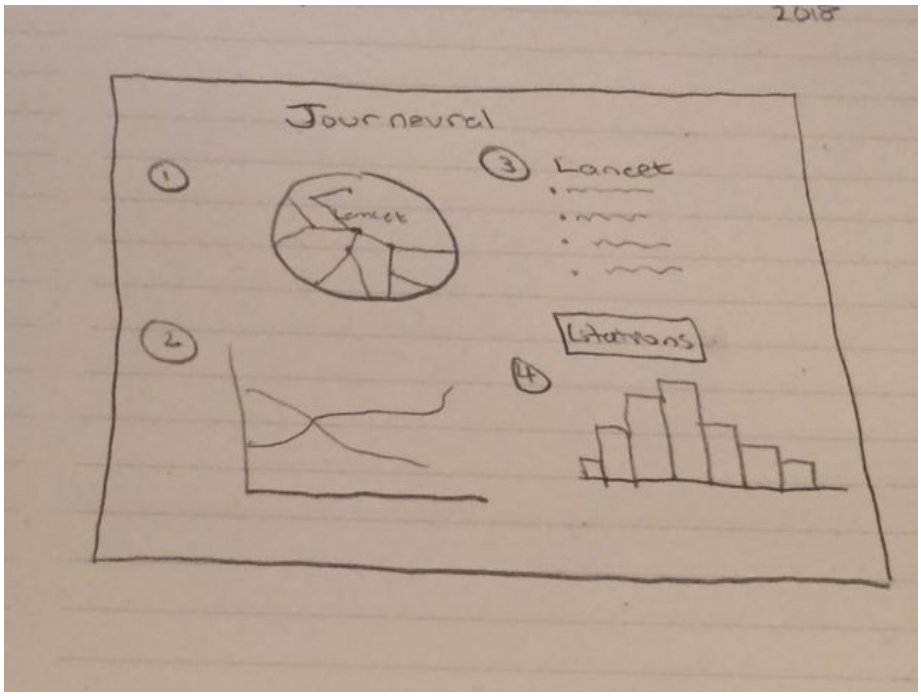
1. Features of Our Data:
    a. Time Changes
    b. Connections to Other Journals
    c. Impact
    d. Others described above in Data section
2. Potential Visuals:
    a. Time Changes
        i. Line Plots

ii. Small Multiples

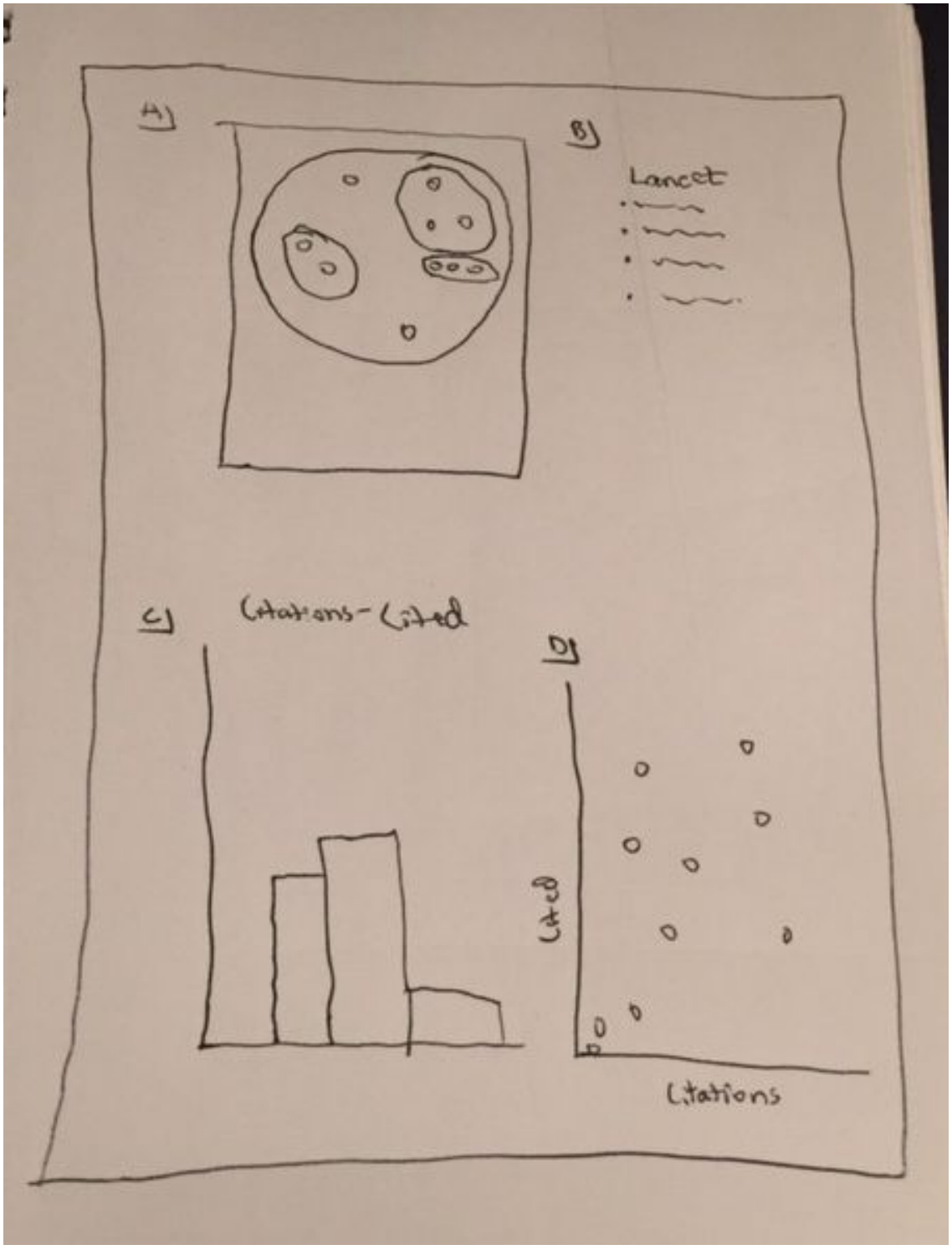
b. Connections
   i. Force-Directed Graphs
   ii. Q-Q Plots / SPLOM
   iii. Radial Node-Link Diagrams/Cartesian Node-Link Diagrams
   iv. Nested Circle Diagrams

c. Interactions
   i. Brushes
   ii. Tooltips
   iii. Radio Buttons
   iv. Dropdown Menu

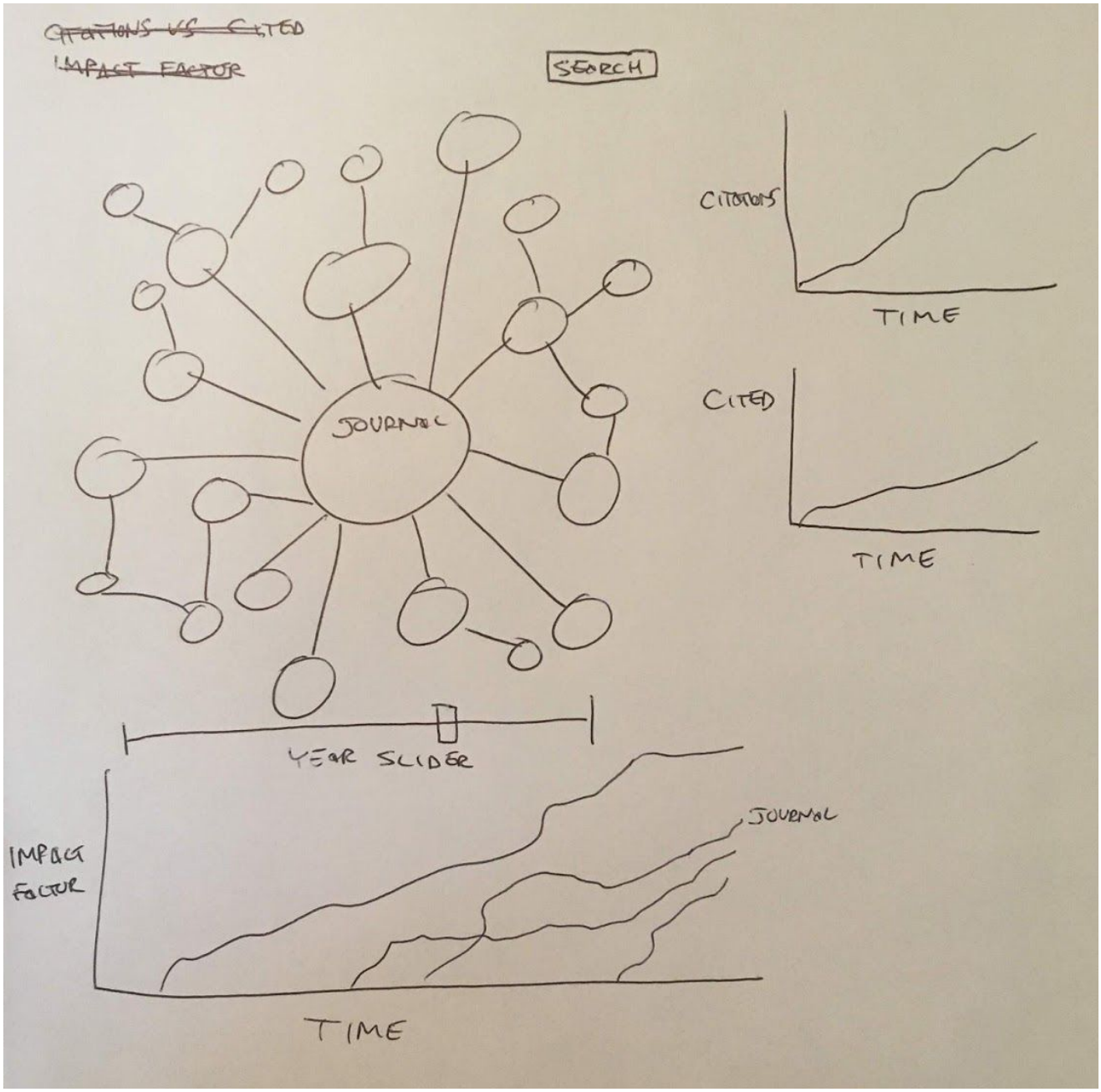
Brainstorm Designs:



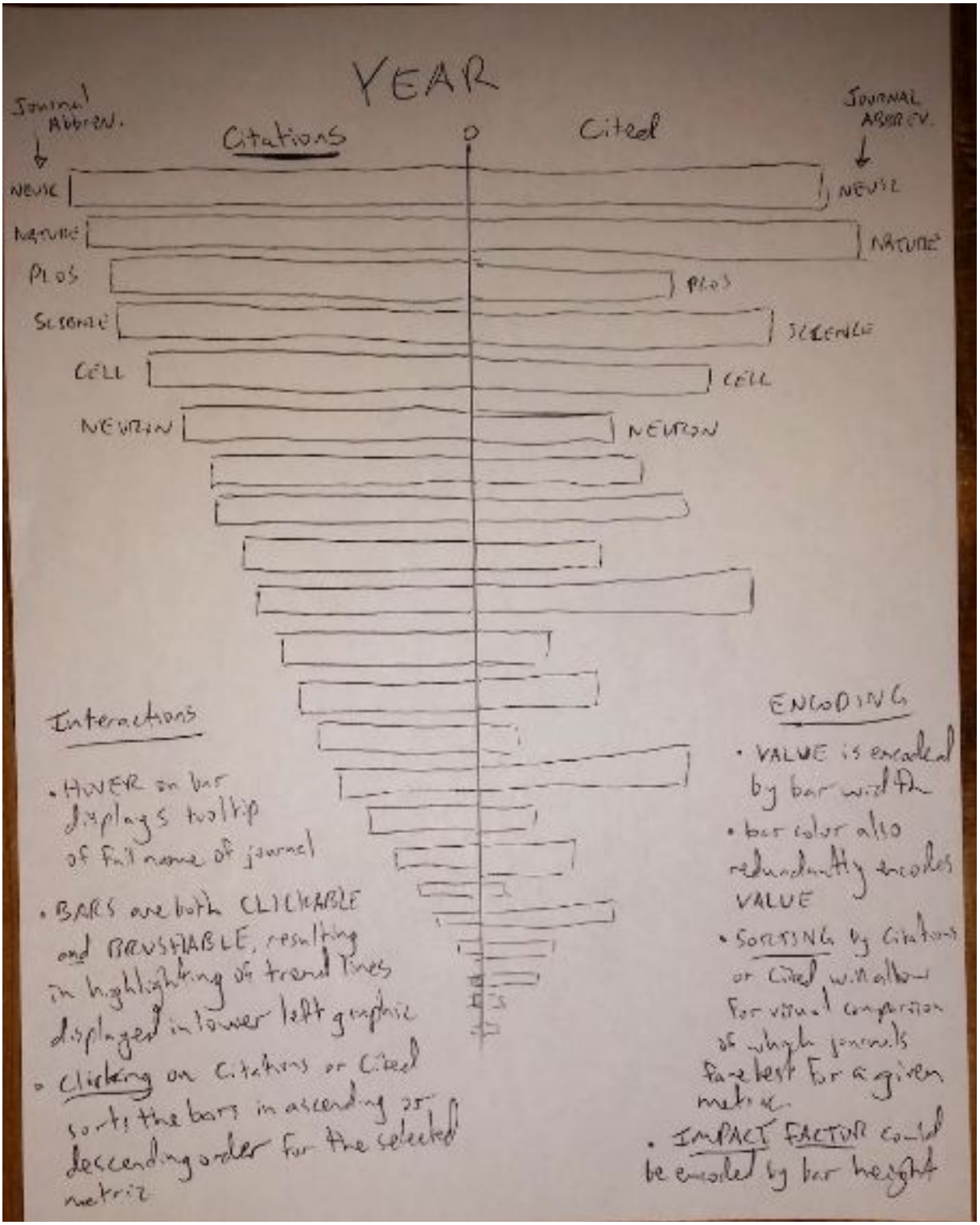
Second Design:



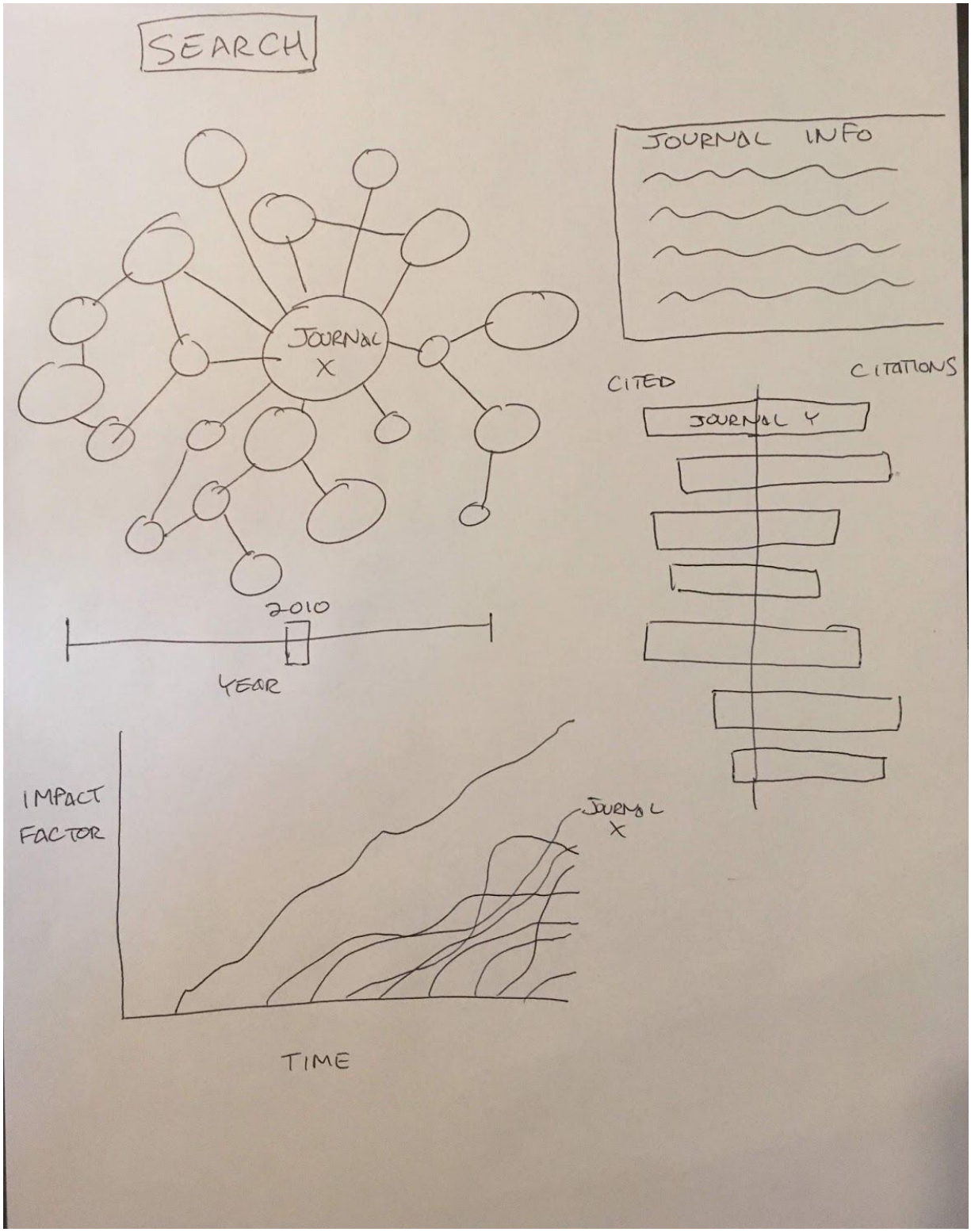
Third Design:



Fourth Design:



Realization Design:



Must-Have Features

1. Find at least the top ten connections for each journal and how close they are to each other
2. Interactivity between visualization objects - changing/highlighting one should change another/the rest
3. Comparisons between two journals
4. A visual network to easily view cluster relationships

Optional Features

1. Comparisons between multiple journals
2. Transitions
3. Journal recommender based on past publications and interest

Project Schedule

Week of:	Team Deadlines:	Class Deadlines:	Notes:
10/29 - 11/2	11/1 - Adjust the model based upon peer feedback and discuss potential visualizations 11/2 - Meet to discuss how to interactively load in the data; assign visuals	10/30 Peer Feedback (in class)	
11/5 - 11/9	11/5 - Assign visualization modules to each team member and begin coding 11/8 - 11/9 Meet to work on project milestone	11/9 Project Milestone	Hand in code and process book
11/12 - 11/16	11/15 - Review work. Go over each other's assigned designs and fix bugs and/or add features to develop the visual	Project Feedback with Instructors (time TBD)	20 minute time-slot
11/19 - 11/23	11/19 - Finalize code and begin working on 2 minute screen-cast 11/23 - Meet to finalize screen-cast		
11/26 - 11/30	11/26 - Create README and project website	11/30 Final Project Due	