Logistic Performance Improvements

Sean Keery – skeery@pivotal.io, @seankeery
Johnny Zhu - johnnyzhu@g.harvard.edu, @zhujohnny
Carlos Carpi - cc3065@gmail.com, @krpz

http://harvard-team-pivot.github.io/cs171project
https://github.com/harvard-team-pivot/cs171project

Background and Motivation
What's slowing your package down?
As a first world consumer, I want to know why that widget I ordered is taking so long to get from place A, where it was produced, to me (place b.) As a manufacturer trying to get my widget to market quickly, what factors may influence where I produce it. As a manufacturer, I need to know which politicians to bribe in order to remove barriers to trade or greenlight permits (this is a stretch goal as we would need to correlate some data we haven't reviewed yet.)

Related Work

The Logistics Performance Index overall score reflects assessments of a country's logistics based on efficiency of the customs clearance process, quality of trade- and transport-related infrastructure, ease of arranging competitively priced shipments, quality of logistics services, ability to track and trace consignments, and frequency with which shipments reach the consignee within the scheduled time. The index ranges from 1 to 5, with a higher score representing better performance.
http://data.worldbank.org/data-catalog/logistics-performance-index

Anything that inspired you, such as a paper, a web site, visualizations we discussed in class, etc.

Mike Bostock, Adrian Cockcroft and y'all.

Project Objectives and Goals
Objective
Identify high performing regions and countries
Provide comparison of countries by component
Illustrate how miserable it can be to trade between certain places
What would you like to learn and accomplish?
What's a given countries ability to trade?
With other countries?
Within region?
What direction is the country moving?
Learn to work as a team under a deadline with set goals. Provide an engaging site while exploring the limits of web based visualization
List the benefits.
Benefit 1
Benefit 2
Benefit 3

One anti-goal is to produce reams of documentation. We understand there is more value in producing valuable visualizations than writing detailed plans that will change as soon as the ink is dry.

Tasks
Describe in detail which data manipulations (sort, filter,..) and visual manipulations (zoom, selection,…) you want to implement and how these support the goals.

Data. From where and how are you collecting your data? If appropriate, provide a link to your data
sources.

Data Processing.
Do you expect to do substantial data cleanup? What quantities do you plan to derive from your data? How will data processing be implemented?

Visualization Design.
How will you display your data? Provide some general ideas that you have for the visualization design. Develop three alternative prototype designs for your visualization.

Create one final design that incorporates the best of your three designs. Describe your designs and justify your choices of visual encodings. We recommend you use the Five Design Sheet

Methodology

An agile methodology will be used to manage the project.

Brainstorming session

Initial Designs

Layout, focus, operations, pros & cons, meta

1. Individually write down on sticky-notes their own thoughts
2. Collate all sticky-notes (the ideas) in the group
3. Stack the sticky-notes of similar ideas on top of each other
4. In the group organize the sticky-notes
5. Categorize the idea space by moving the stick-notes into groups of like-ideas
6. Combine and refine the ideas: Use sketching and start to prepare the three main design-sheets
7. Start to discuss the benefits/challenges: or advantages/disadvantages of the categorized ideas

- concept
- Many alternatives are considered
- Design improvements
- Better understanding of requirements
- Iterate 2–4
- Few alternatives considered

- Completed design

Pipeline

1. Target
Choose domain
Define Question
Explore existing solutions
Formulate data analysis tasks
2. Data Wrangling
Find and clean data
EDA (exploratory data analysis)
Transform and summarize data
3. Design
Design visual encoding
design interactions
design layout and storytelling
4. Implement
Rapid prototypes
define data structure
explore efficient algorithms
design system architecture
5. Evaluate
Is the abstract right?
Do encoding and interaction
…support the task?
…provide (new) insights?

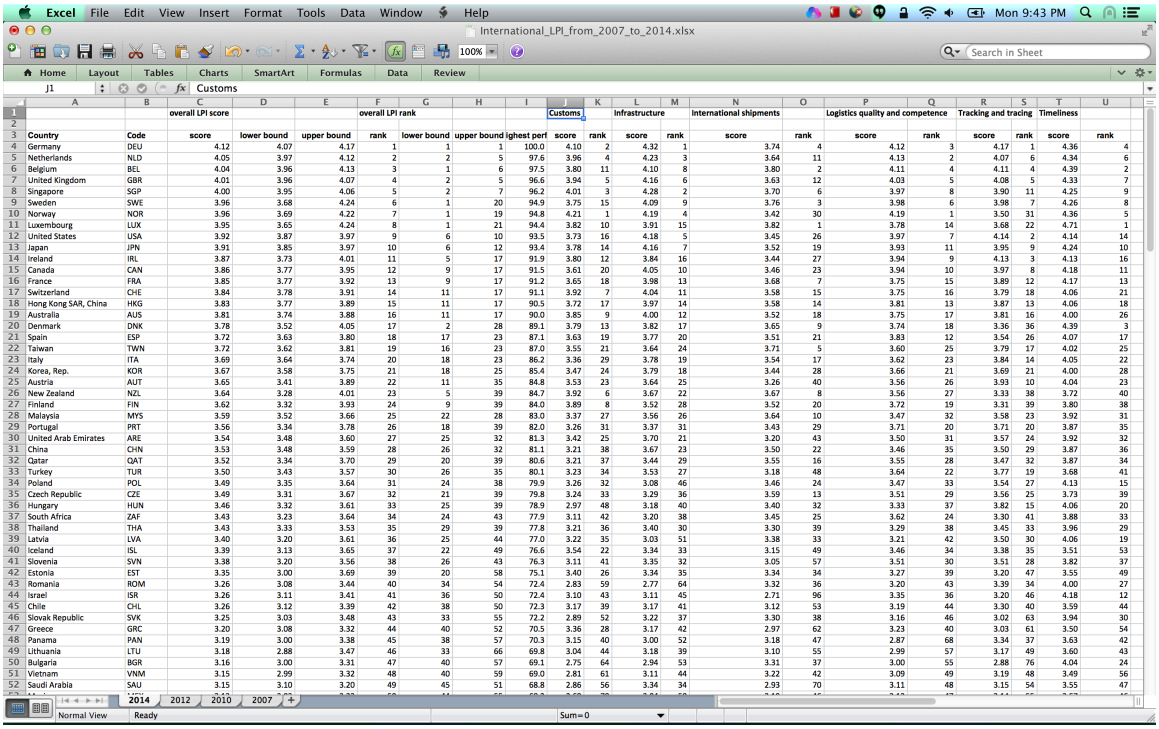
screencast

Interactions storyboard

Project re-design
Project prototypes V1 and V2
Project review with the staff (in studio)
Peer feedback (in studio)
Final project submission (including screen-cast)
Group peer evaluations
Project demos

Must-Have Features. List the features without which you would consider your project to be a failure.
Epic - storyboard
Epic - interaction
Epic - encoding
Epic – poster session
Epic -
Review

Tasks
Implement multiple coordinated (linked) views
One innovative view that is either
a) an extension of an existing visualization type, or
b) a novel visualization type



Data Screenshot

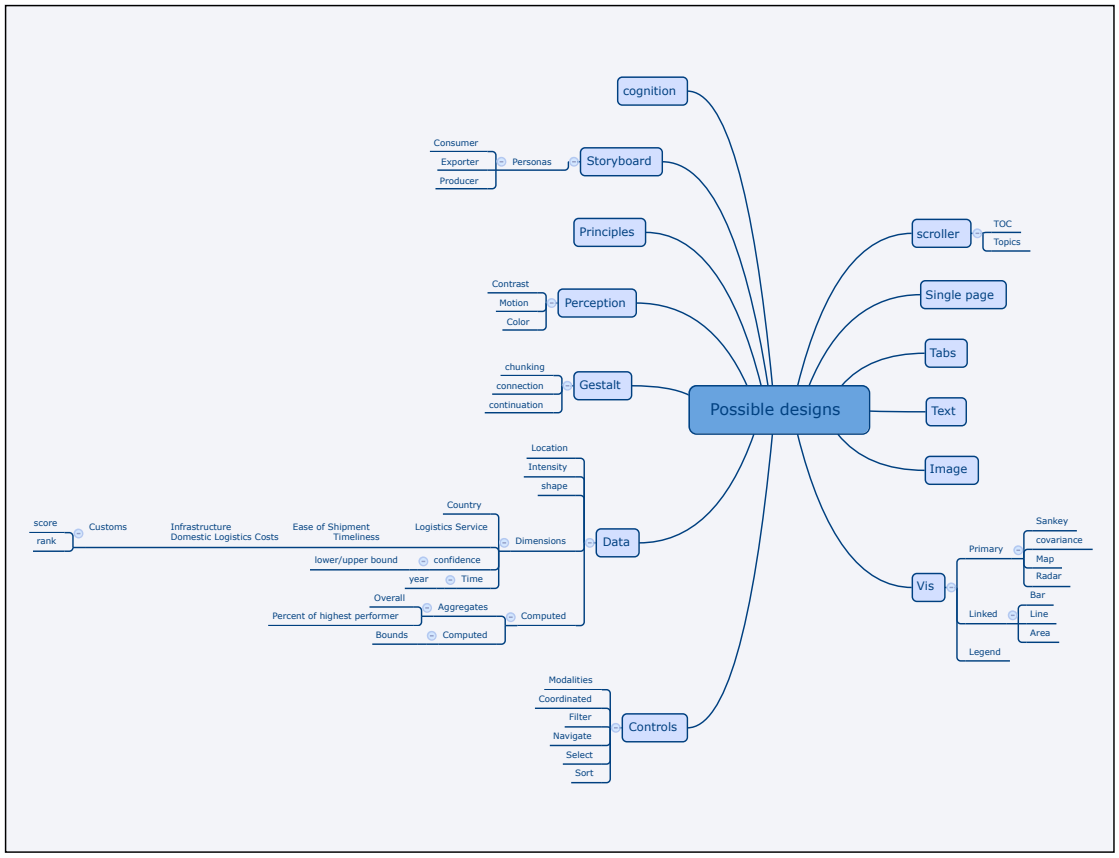
Data Definitions

The international score uses six key dimensions to benchmark countries' performance and also displays the derived overall LPI index. The logistics performance (LPI) is the weighted average of the country scores on the six key dimensions:

1) Efficiency of the clearance process (i.e., speed, simplicity and predictability of formalities) by border control agencies, including customs;
2) Quality of trade and transport related infrastructure (e.g., ports, railroads, roads, information technology);
3) Ease of arranging competitively priced shipments;
4) Competence and quality of logistics services (e.g., transport operators, customs brokers);
5) Ability to track and trace consignments;
6) Timeliness of shipments in reaching destination within the scheduled or expected delivery time.
The scorecards demonstrate comparative performance—the dimensions show on a scale (lowest score to highest score) from 1 to 5 relevant to the possible comparison groups—of all countries (world), region and income groups.

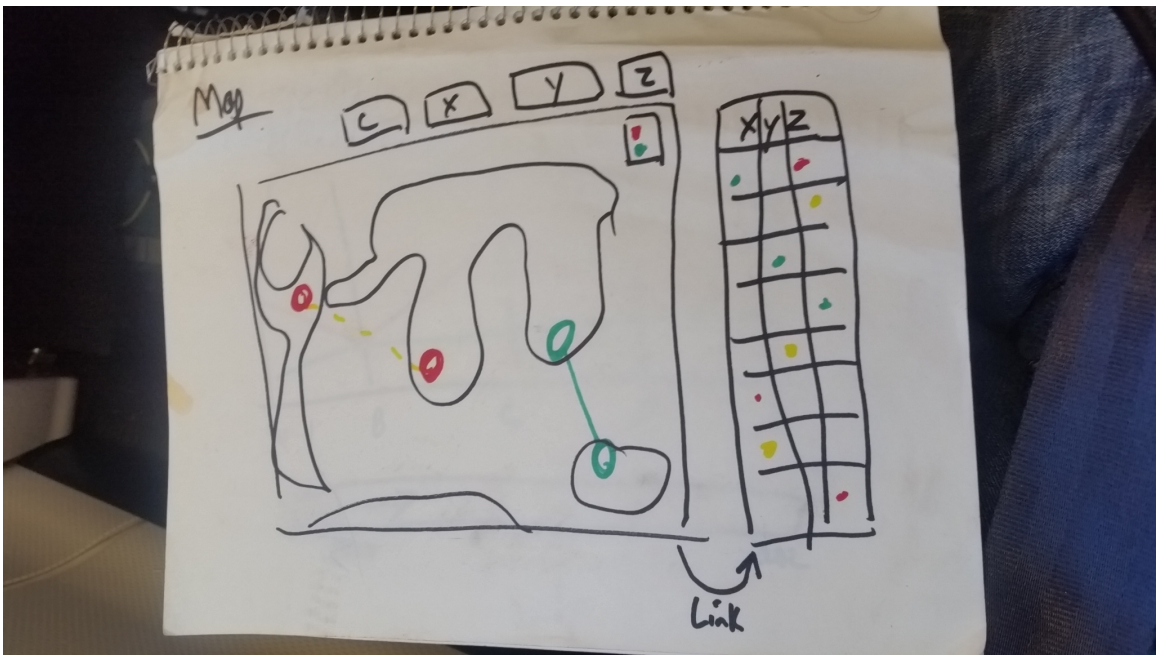
Optional Features. List the features which you consider to be nice to have, but not critical.
Project Schedule. Make sure that you plan your work so that you can avoid a big rush right before the final project deadline, and delegate different modules and responsibilities among your team members.

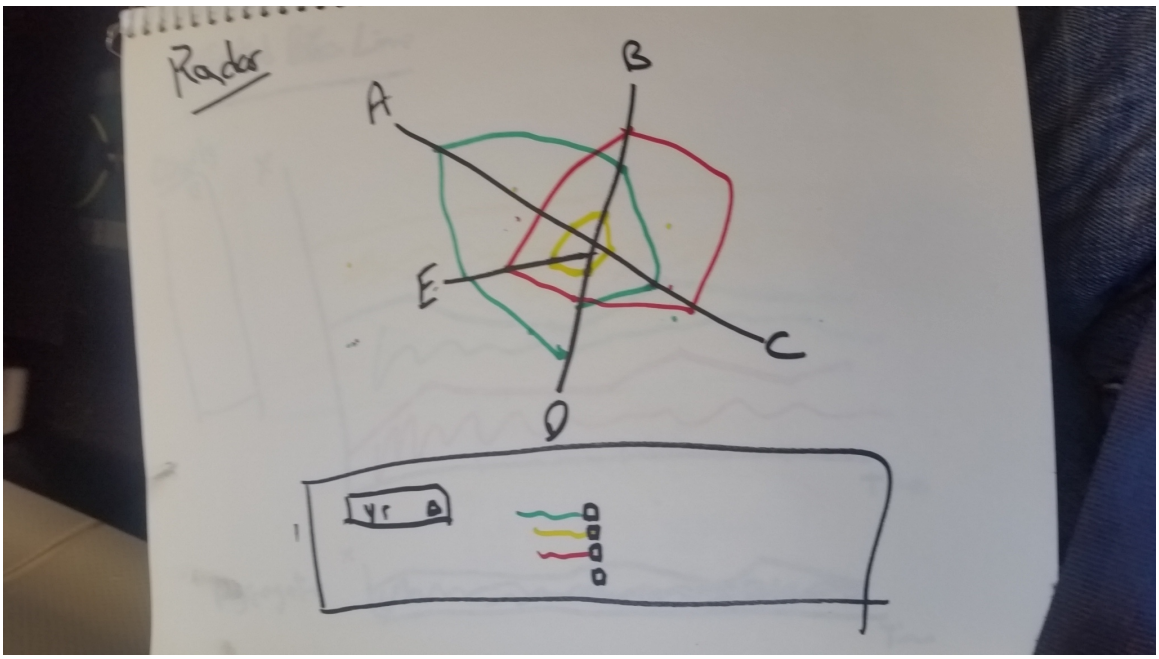
Mindmap



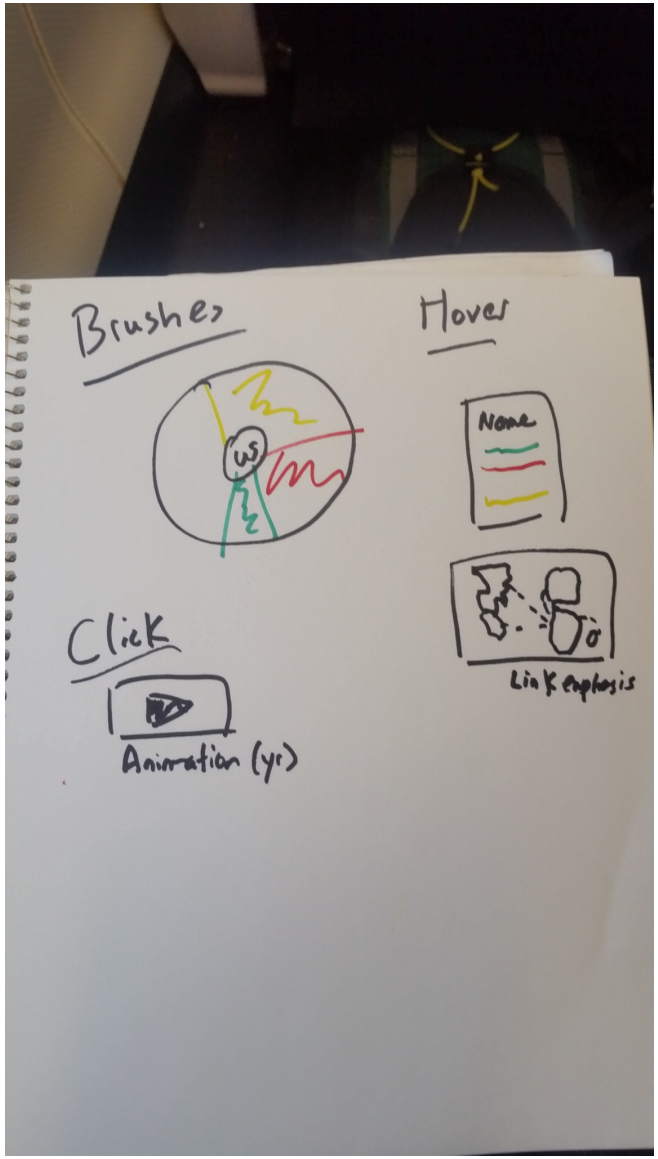
Write your schedule in terms of weekly deadlines.

Week 1 – map vis
Week 2 – linked vis
Week 3 – interactions & final site


Map
C
X
Y
Z
X Y Z
Link


Radar
A
B
C
D
E

Page/site
Title
text
Viz1
Filters
Map = viz2
controls
Linked Viz 3
Rankings
Image
Text 2


Brushes
Hover
None
Click
Animation (yr)
Link explosis