DonVis: An Interactive Tool for Donation Information Visualization

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OUTLINE

- **Background and Domain**
- **Methodology**
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  - Visual Encoding Techniques
  - Implementation
- **DonVis Video**
- **Critiques**
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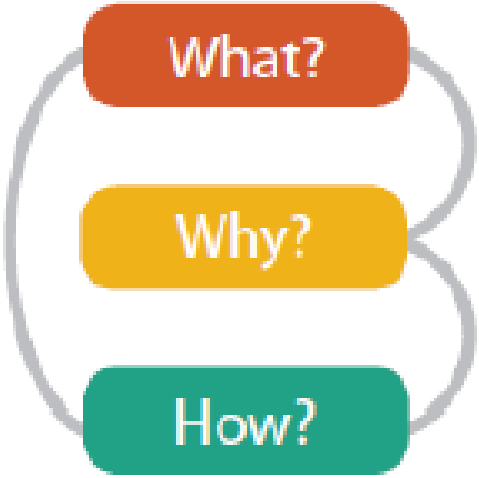


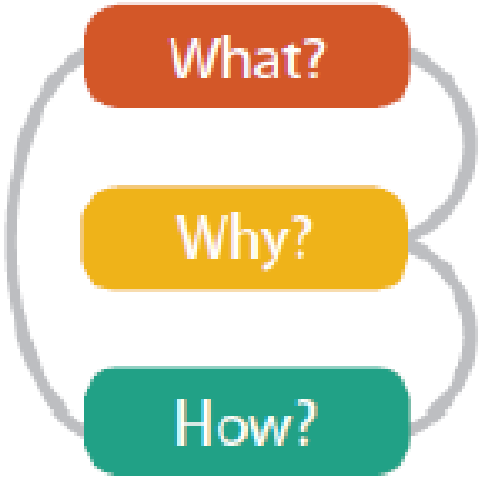
Background – Public Donation

Background – Public Donation

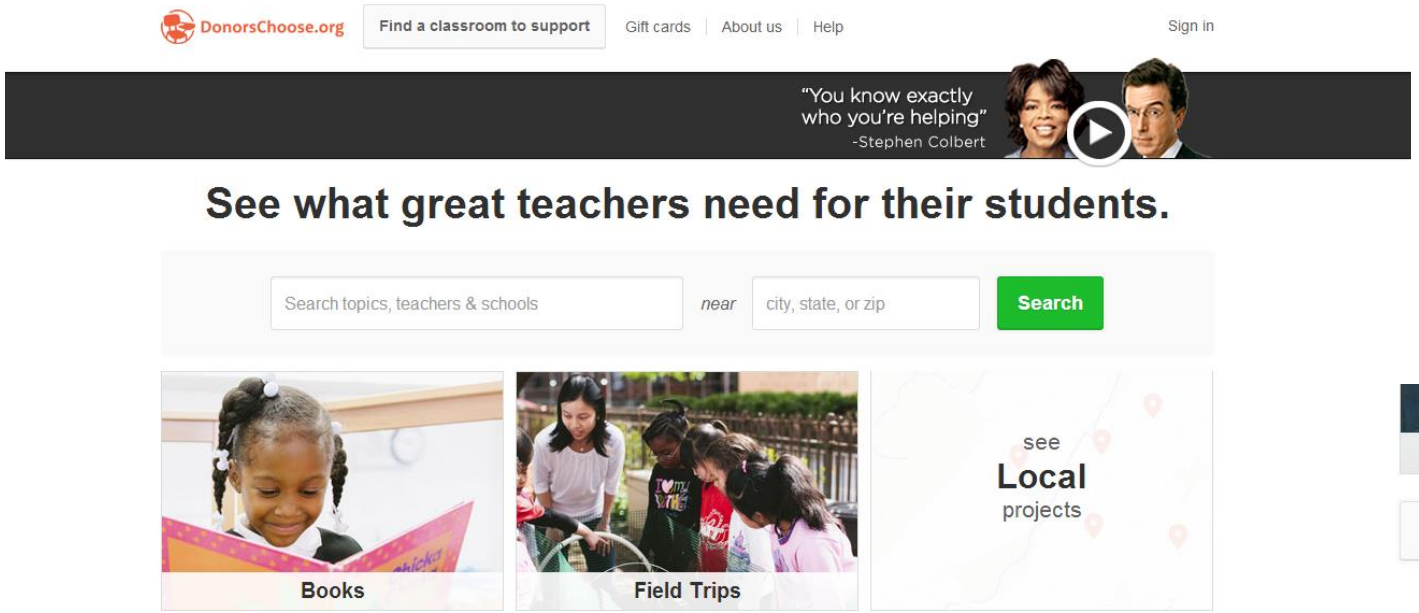
Domain – Classroom Donation

Methodology

- Data and Task Abstraction
- Visual Encoding Techniques
- Implementation



Data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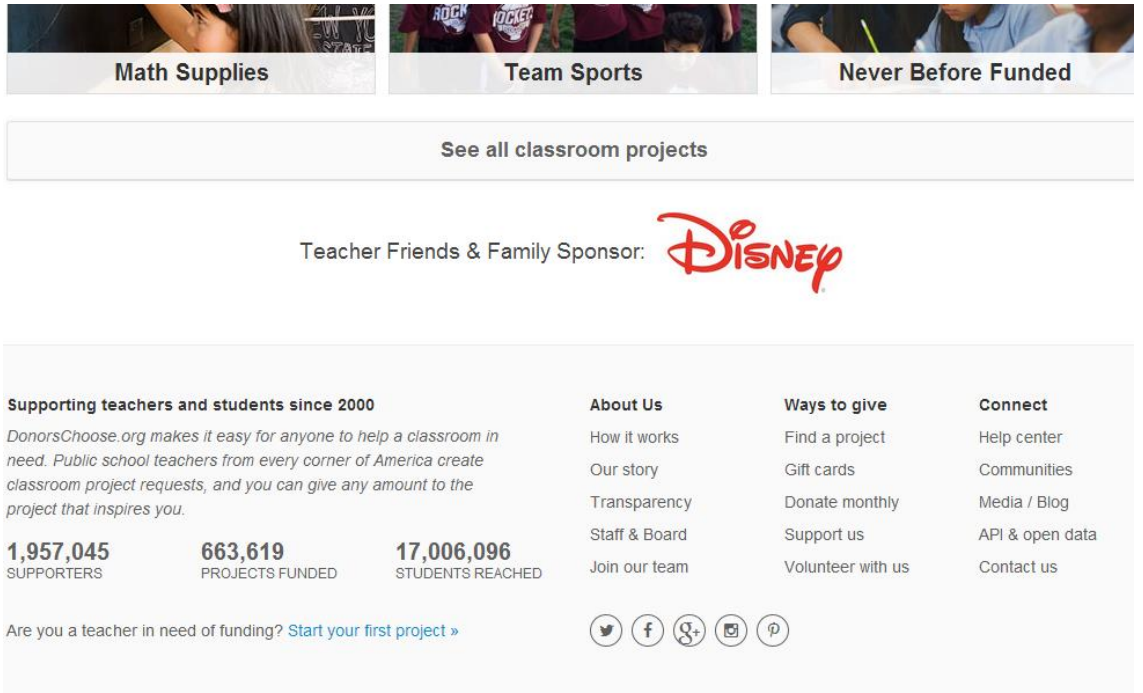
city, state, or zip
Search
Books
Field Trips
see
Local
projects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Data

- **Dataset**: A dataset called classroom dataset, a table with 43 key attributes and 1,048,576 items which is more than 500MB in size
- **Data Abstraction**

- 9,000 items out of 1,048,576 items

- 7 key attributes out of 43 attributes

- **School State**: California(CA), Illinois(IL), North Carolina(NC), South Carolina(SC), New York(NY), Texas(TX)
- **Resource Type**: Book, Supplies, Technology, Organized Trips, Other
- **Poverty Level**: Low, Moderate, High, Highest
- **Year**: 2002,2003,2004,2005,2006,2007,2008 → Granularity- By Day
- **Funding Status**: Expired, Completed
- **Grade Level**: PreK-2, Grade 3-5, 6-8, 9-12
- **Donation Amount**: Counted in K US Dollars

Tasks

- Enjoy classroom donation statistics and visualizations;
- Discover a specific state's donation amount of different attributes: year, resource type, poverty level, and funding status;
- Compare donation distribution differences of a specific attribute among these states;
- Present general and specific donation trend;

Tasks

- Give user recommendation on donation state;
- Explore appropriate information visualization portfolio for donation dataset visualization;
- Implement a front-end and back-end system with less real-time processing delay.

Visual Encoding Techniques

How: Encode	Multiple linked bar chart, multiple linked donut chart, histogram the range of the original grade level into bins, color hues, color luminance
How: Manipulate	Navigate with pan/scroll/click, select and highlight
How: Facet	Multiple linked highlighting and shared attribute aggregation. overview-detail with selection in overview then populate detail view, superimpose line charts
How: Reduce	Filtering, Dynamic Aggregation

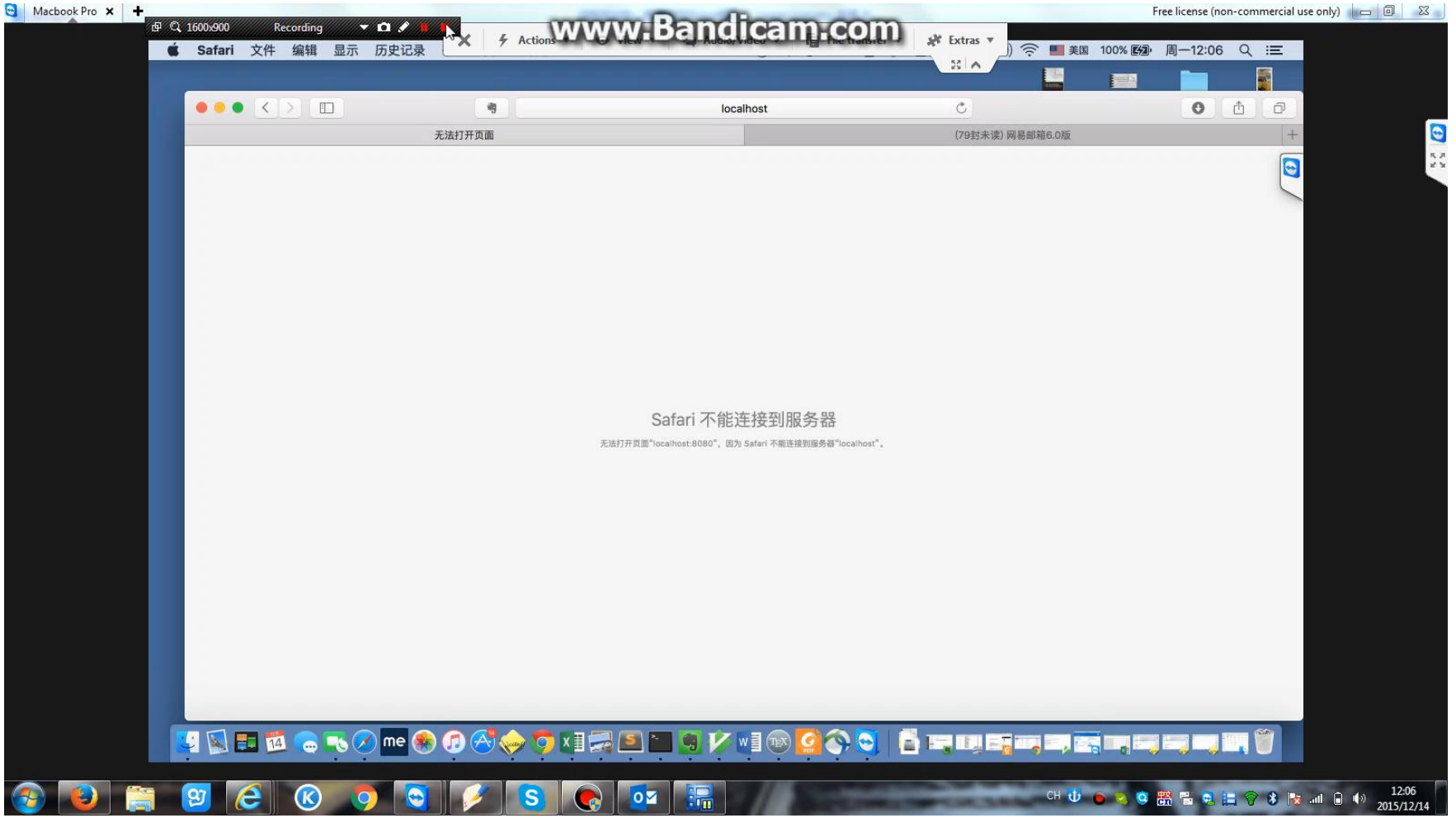
Implementation

Crossfilter

Fast Multidimensional Filtering for Coordinated Views

Queue.js

Video Time!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Safari 文件 编辑 显示 历史记录
美国 100% 周一12:06
localhost
无法打开页面
(79封未读) 网易邮箱6.0版
Safari 不能连接到服务器
无法打开页面"localhost:8080"，因为 Safari 不能连接到服务器"localhost"。
12:06
2015/12/14

Critiques

Data:

- The dataset is not up-to-date and there are only 6 states available;
- Better if we take the population of each state into account;

Visual Encoding Techniques:

- Although time granularity is by day, but we do not know the exact date we select;
- Better if we can superimpose on every single view;
- Computing and displaying the differences of every attribute directly instead of looking at several different visualizations placed side by side to identify the differences between several states can be much better.

Future Work

- 1. Extend data import amount to 10K and find up-to-date donation dataset;
- 2. Introduce more complex decision-making visualization technique to help user to make more personalized donation decision;
- 3. Use a granularity selection tool when choosing the time range we are interested in;
- 4.Map to be introduced to show geographical location of states for better visualization;
- 5.Use superimpose on every single view;

THANK YOU!

Any questions or Comments?