Rochester Institute of Technology
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College of Imaging Arts and Sciences

INTERACTIVE DISPLAY OF COMPLEX POLITICAL DATA IN AN EFFORT TO PROMOTE SOCIAL CHANGE

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Rochester Institute of Technology
College of Imaging Arts and Sciences
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INTERACTIVE DISPLAY OF COMPLEX POLITICAL DATA IN AN EFFORT TO PROMOTE SOCIAL CHANGE

03. ABSTRACT

Despite the fact that hard and fast data on politicians, such as voting records and campaign funding, is readily available on the Internet it is under-utilized in decision-making during the voting process. This may be due to how the data is presented. This project explores ways to make that data accessible and interactive through a Flash application/website, in a way that truly engages the user.

Available Online: http://www.makeminecount.com

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04. INTRODUCTION

According to the Gallup Poll, as of June of 2008, 81% of respondents indicated that they disapproved of the way Congress was doing its job, compared to only 53.3% disapproving ten years earlier[1]. Similarly, the presidential approval rating was steadily decreasing from 90% in September of 2001 to 28% as of June 2008[2]. These decreases are despite the fact that the U.S. Census Bureau indicated an increase of 5% in the number of people who voted over the past two elections.[3] These statistics indicate that although more people are voting, they are less satisfied with those whom they elect. While there are a number of factors that likely influence a constituency's satisfaction with its elected officials, a contributing factor may be that voters are mis- or poorly-informed when they cast their vote. Thus, they elect someone who does not do the job the way they want it to be done.

Voters may be ill-informed for a variety of reasons. Muckraking television campaign commercials often make the truth difficult to decipher, as they come from various political action committees and corporate interests. The media certainly has a huge role in swaying public opinion by shaping how the candidates are presented. Rumors circulate on blogs across the internet. How does a voter really know who they are voting for? How do they determine whether the information they are presented with is biased or accurate?

Despite the fact that hard and fast political data such as voting records and campaign funding is readily available to the public on websites such as Vote-Smart.org, OpenSecrets.org, and GovTrack.us; it is often presented in a traditional "point and click" format that is uninteresting and overwhelming.* Thus, this important information may not be utilized by voters to make decisions in the voting process. In the today's media environment, where much of the information we consume is highly visual and largely interactive, this is both problematic and counterproductive to being a truly informed voter. As we neared an election, arguably one of the most important Presidential elections in the history of our nation, I felt it important that voters were armed with accurate information with which to make their decisions.

[1]From The Gallup Poll "Presidential Job Approval In Depth" available at: http://www.galluppoll.com content/default.aspx?ci=1723

[2]From The Gallup Poll "Congress and the Public" available at: http://www.galluppoll.com/ content/default.aspx?ci=1600

[3]From the U.S. Census Bureau "Voting and Registration in the Election of November 2004" available at: http://www.census.gov prod/2006pubs/p20-556.pdf

*It is important to note that since the preliminary research for this project was conducted, VoteSmart.org and OpenSecrets.org have updated their designs.

With that in mind, this thesis project attempted to answer the following question:

Can interactivity be used to display complex political data in a way that both engages and entertains the user, without distracting from the seriousness of the content while appealing to age and experience-varied audiences?

Due to the immense national interest in the 2008 Presidential campaign, I have developed a Flash-based web application that integrates a large amount of complex political data about the election candidates into a user-experience-driven interactive environment.

My goals for the project were to:
- Create an engaging user experience;
- Make important, complex information more accessible and less boring; and
- Develop a more informed voter and a more responsible citizen

I also hope that if this model proves to be successful, it can be applied to future elections or expanded to include elections at various levels of government.

My personal goals for this project were to:

- Demonstrate my ability to effectively design and develop an interactive application;
- Highlight my analytical and creative thinking skills through the creation of a design solution to displaying complex data; and
- Demonstrate my well-roundedness by creating a utility of societal importance.

05. RESEARCH

The research for this project is sweeping in both breadth and depth. Because this project incorporates many areas of design, it required research in a number of areas. Main research areas included: political data web sites, interactive political websites and information/interactive design.

A. Political Data Web Sites

For my preliminary research, I focused on investigating existing websites that managed complex political data. I chose to do so in order to understand what already existed and apply best practices to my own project. Additionally, understanding what others had already done, would allow me to create a better experience. It didn't take long to amass a list of several websites that dealt displaying such data. Interestingly, most of the sites pulled data from one another to provide their various features.

VoteSmart.org

The primary source of inspiration for this project is the political web site Project Vote-Smart web site (www.vote-smart.org). Project Vote-Smart is a non-profit organization that has had more than 6,000 people volunteer over the past 16 years to develop an extensive database of political information. Vote-Smart is one of the most in-depth political websites on the Internet. Their database includes biographical, voting record, campaign finance, issue stances, and many other categories of information for major elected officials. These officials include the President and presidential candidates, Vice President and vice presidential candidates, U.S. Representatives, Senators, Governors and Lt. Governors, State Legislators, and several other statewide positions. The Project Vote-Smart web site allows users to enter their zip code and see a list of these officials. The user can then click on name of each official to access the aforementioned data.

While the data on this web site is extremely useful, its presentation is "dry" and arguably difficult to sift through due to its largely "point and click," text-based design. The user is presented with very complex information in ways that, by today's web standards, are very primitive, as it lacks any interactivity (*figure 5A-1*). Motivated or concerned users are most likely to benefit from the information available on this site, however, because of the "dry" presentation of this data, this site fails to engage the casual user. Additionally, one of the biggest drawbacks to the

data available on this site is that the "Issue Positions" category relies on a voluntary survey returned by the politician. A large number of candidates choose not to take or return the survey.

Figure 5A-1 (Project Vote Smart Candidate Page)
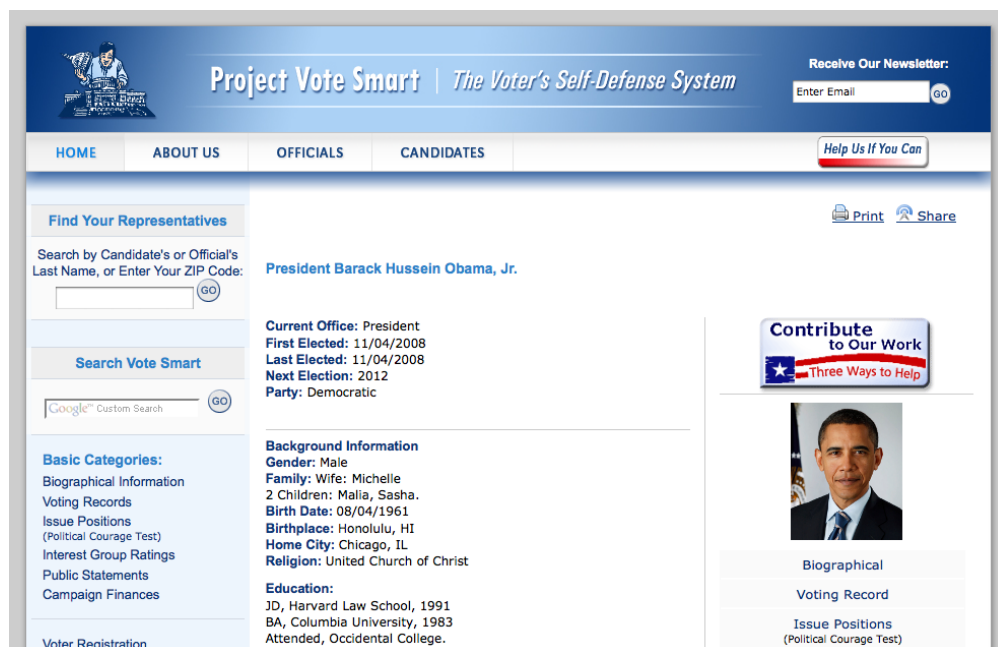
OpenSecrets.org

Similarly, OpenSecrets.org provides a wide array of political data, that is readily available to the public. OpenSecrets is the leading source of information on the campaign finances of politicians and lobbying. The online home of the Center for Responsive Politics, OpenSecrets.org "aims to create a more educated voter, an involved citizenry and a more responsive government," through "inform[ing] citizens about how money in politics affects their lives; empower[ing] voters and activists by providing unbiased information; and advocat[ing] for a transparent and responsive government."[4]

Unlike Project Vote-Smart, OpenSecrets.org moves incorporates some interactive elements into their pages, such as graphs to quantify data, a meter to illustrate Quality of Disclosure, a "money web" to illustrate a politicians connections to lobbies and donors, and several interactive maps. While this site does incorporate interactive elements, the user must still click page to page to obtain the information and the overall style of the information is still very "dry" (figures 5A-2, 5A-3, 5A-4).

[4] From OpenSecrets.org available at: http://www.opensecrets.org about/

Figure 5A-2 (OpenSecrets.org Graphs, Meter)

Total Raised by Quarter

Source of Funds

Individual contributions	$656,357,572	88%
PAC contributions	$1,830	0%
Candidate self-financing	$0	0%
Federal Funds	$0	0%
Other	$88,626,223	12%

How complete are this candidate's campaign finance reports?

QUALITY OF DISCLOSURE

Full Disclosure	$378,216,383	(90.2%)
Incomplete	$15,611,429	(3.7%)
No Disclosure	$25,289,671	(6.0%)
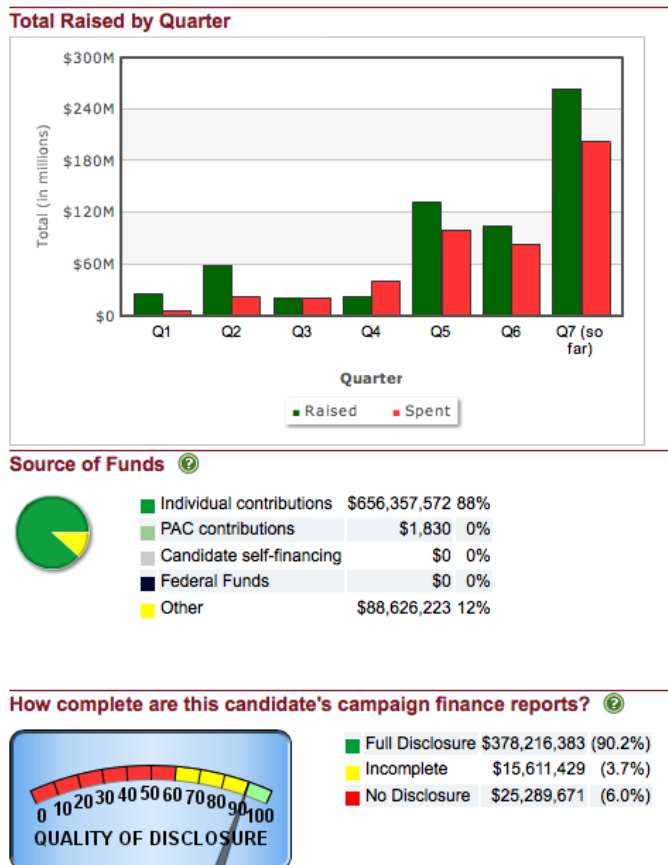
Figure 5A-3 (OpenSecrets.org Money Web)

Total Raised: $138,231,595
Total Spent: $113,291,435
Cash on Hand: $24,940,159
Debts: $1,104,693
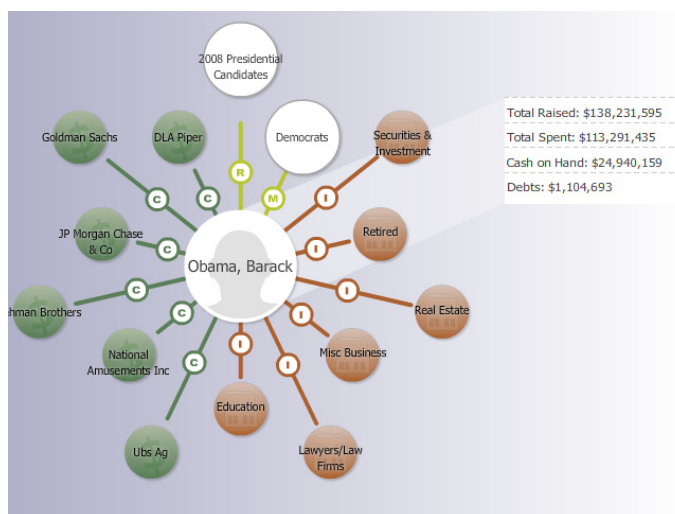
Figure 5A-4 (OpenSecrets.org Interactive Map)

■ Below $1M   ■ $1M - $10M   ■ $10M+
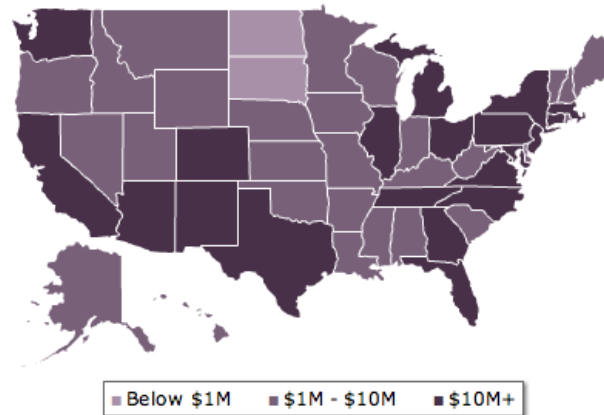
FactCheck.org

FactCheck.org is maintained by Annenberg Public Policy Center at the University of Pennsylvania. FactCheck.org is "...a nonpartisan, nonprofit 'consumer advocate' for voters that aims to reduce the level of deception and confusion in U.S. politics." They exist to, "...monitor the factual accuracy of what is said by major U.S. political players in the form of TV ads, debates, speeches, interviews and news releases," in order to, "...apply the best practices of both journalism and scholarship, and to increase public knowledge and understanding."[5]

Their data is topic-centric, in that they do fact checking based on a particular event (speech, interview, etc.), and is presented in the form of an article. These articles are text heavy, with very few images and no interactive elements aside from an occasional video or social media sharing tools.

GovTrack.us

GovTrack.us is largely a research tool for those wishing to track legislation through the political process. It uses an automated process using the Library of Congress official legislation tracking web site (THOMAS) to generate its information. In addition, it maintains a database on congressional members including voting records and congressional committees.

This site serves as a primary database for many of the other sites mentioned in this section. As such, it's interface is lacking. Again, it is a standard point-and-click approach with little to no visual design ele-

ments. However, this site does point people to "interactive" applications that use their data in their tools section (*figure 5A-5*), including several mobile and Facebook applications and provides widgets for use on your personal web site.

Figure 5A-5 (GovTrack.us tools)
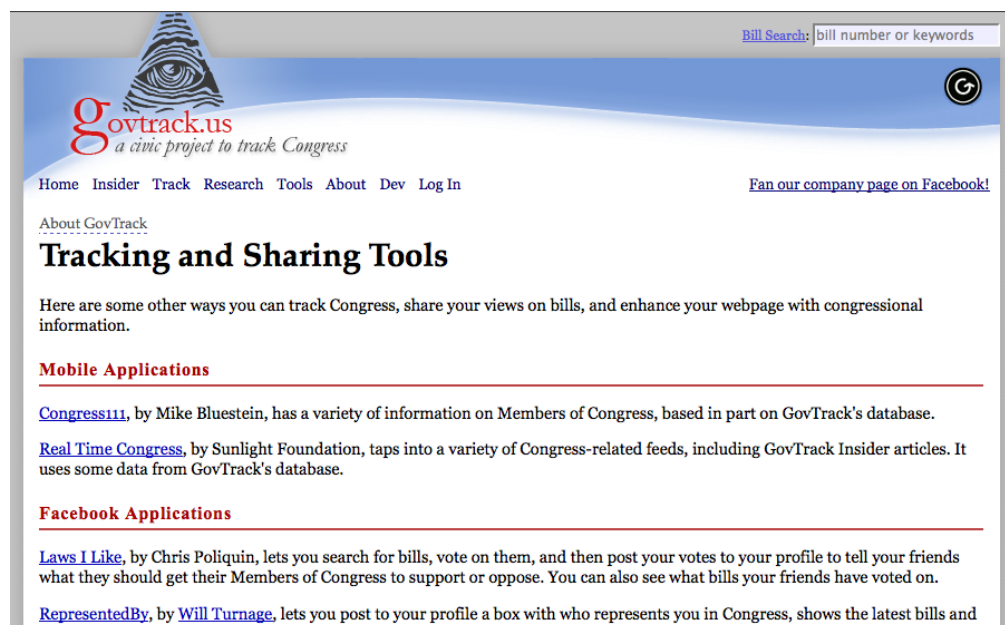
OpenCongress.com

OpenCongress.com is a free, open-source, non-profit, and non-partisan resource run by the Participatory Politics Foundation (PPF). It aims to address the issues of a lack of voter apathy, and governmental transparency, "...by merging official government data with news and blog coverage, social networking, and public participation tools to give you the real story behind what's happening in the Congress."[6]

OpenCongress.com uses the data from GovTrack.us and presents it in a much more appealing and accessible format. The design and usability of OpenCongress.com far exceeds that of the sites previously mentioned (*figure 5A-5*). In addition to its solid visual design, it provides compelling methods to drill down to the information the user is seeking (*figure 5A-6*). The site separates content into various top-level categories (Bills, Senators, Representatives, Votes, Issues, Committees, The Money Trail) that allow the user to browse for content based on their particular interest. From there, the user is able to track particular bills, senators, representatives, etc. within their OpenCongress.com account. The required

user account is OpenCongress.com's biggest drawback, as it may be a detriment for some users.

Figure 5A-6 (OpenCongress.com design)
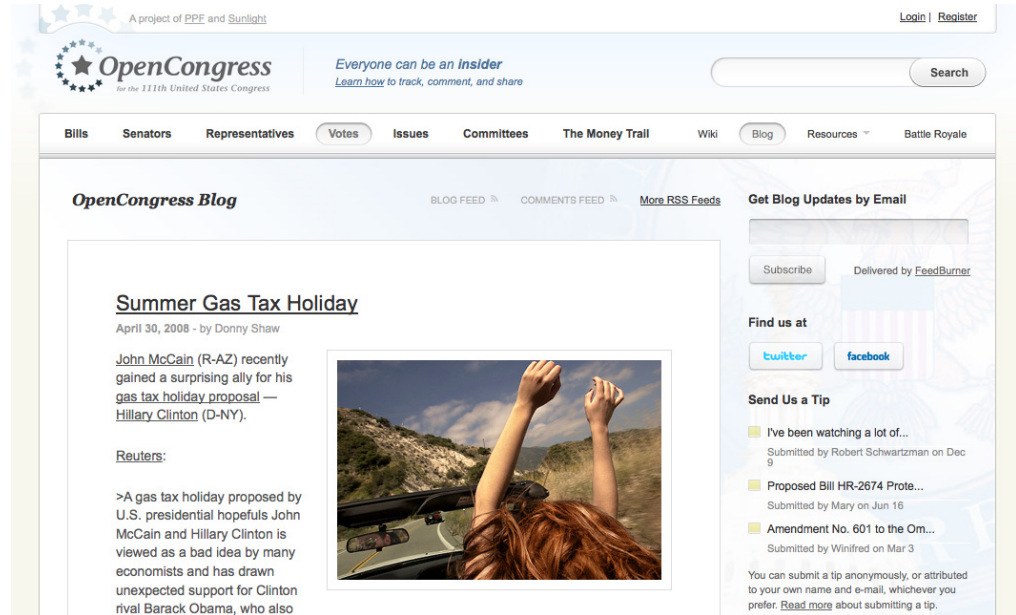
Figure 5A-7 (OpenCongress.com Issue Selector)
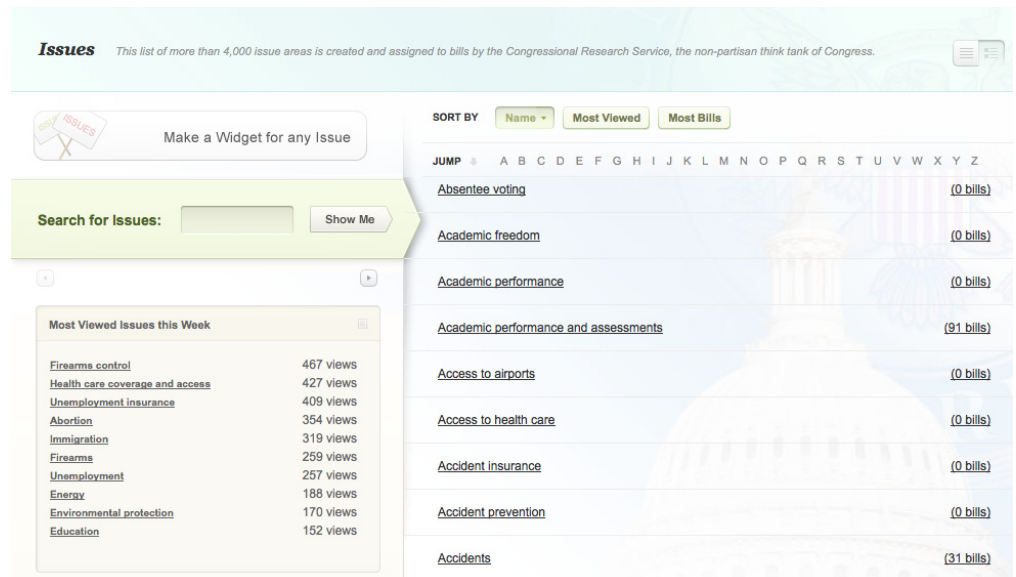
While these sites provide great information, the process to access the information was uninteresting and often boring. There was no interactivity, and thus little engagement. However, researching these websites provided a great deal of insight as to how to organize my content and to

the type of information that was available to use for my application.

B. Interactive Political Sites

There are a few websites that host interactive features that allow candidate comparison, particularly around the 2008 presidential election. A comprehensive list can be found on the Organized Shopping blog[7]. Rather than complete overviews of the candidates, most of these interactive features are candidate matching tools that match a user with a candidate based on a series of questions related to the candidate's issue positions. Three of the more interesting games are pictured in the figures below.

[7]From OrganizedShopping.com. Available at: http://www.organizedshopping.com/blog/archives/2008/02/comparison_shopping_for_political_candidates_overview.html

Figure 5B-1 PriceGrabber.com Candidate Match
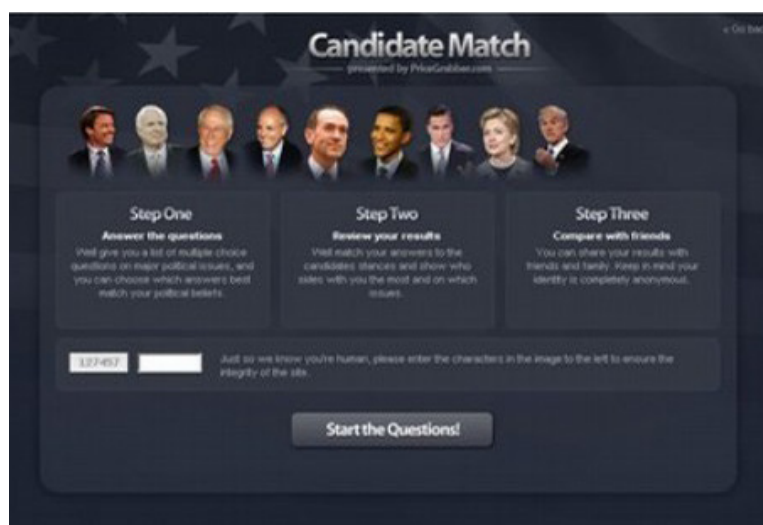
Figure 5B-2 USA Today Candidate Match Game
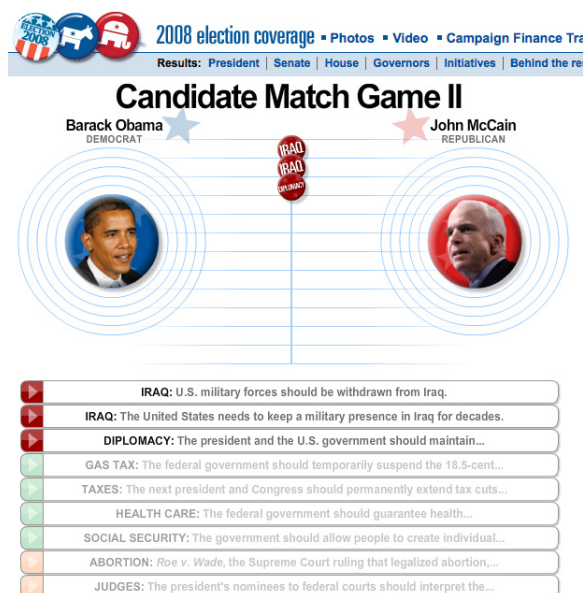
Figure 5B-3 ABC/USA Today Match-o-Matic Game

While these sites were all more visually interesting and more engaging than the sites mentioned in the previous section, none pushed the inter-activity to the level I desired. Additionally, they all provided only a one dimensional approach to learning about the candidates (issues only). In order to be a truly informed voter, a user would need more information than strictly where the candidates stand on specific issues. That said, these sites did provide a lot of inspiration and helped to shape the direc-tion of my project.

C. Information/Interactive Design

Because of the large amount of data that I knew would be required for this project, I felt it was important to understand the methods of in-formation design in order to best organize and assemble the data for my application. Once I had an understanding of how the information should be organized, I felt it was also important to study how it should be displayed in order to create a great user experience. Though I spent countless hours reading on these subjects, I have chosen to discuss a few key articles that shaped the course of this project. Further readings are documented in section 7A Works Consulted.

Information Design = Complexity + Interdisciplinarity + Experiment
This brief article written by Gerlinde Schuller and posted on the AIGA web site provided a solid overview of what the practice of information design embodies. Though information design is important and a critical

part of this project, the field is still relatively young. As Gerlinde points out in her article, due to its youth as a practice, there are few hard and fast principles of information design. She despite that fact, she argues that complexity is at the heart of the practice, stating:

> "Information design is the transfer of complex data to, for the most part, two-dimensional visual representations that aim at communicating, documenting and preserving knowledge.
> It deals with making entire sets of facts and their interrelations comprehensible, with the objective of creating transparency and eliminating uncertainty."[8]

[8]From "Information Design = Complexity + Interdisciplinarity + Experiment", Schuller, 2007. Available at:
  http://www.aiga.org/content.cfm/complexity-plus-interdisciplinarity-plus-experiment

This quote essentially sums up what I hoped to achieve with my project. Meaning, at it's core, this project was an information design project, because it asked the question, "how can I take really complex data and make it more accessible?" With this in mind, I needed to find some guiding principles for information design that would allow me to achieve this goal.

It Depends

Written in 2007 by Pettersson, Ph. D. Professor of Information Design at Mälardalen University, Eskilstuna, Sweden, this extensive paper provides 150 key principles for information design. This document was crucial in shaping the structure of my data. Pettersson agrees with Schuller in that there are four key principles to information design:

1. ID is multi-disciplinary.
2. ID is multi-dimensional.
3. Theory and practice cooperate in ID.
4. There are no firm rules in ID.

He divides his 150 principles into four categories: Functional Principles, Administrative Principles, Aesthetic Principles, and Cognitive Principles, based on 12 key principles of message design:[9]

[8]From "It Depends", Pettersson, 2007.

1. Introduce novel or unexpected events at the start of instruction.
2. Inform learners of expected outcomes.
3. Recall relevant prerequisite information.
4. Present only relevant information.
5. Organize content and present "organizers".
6. Progress from simple to complex.
7. Provide prompts and cues.

8. Vary the information presented.
9. Present examples and non-examples.
10. Provide appropriate practice.
11. Provide immediate feedback or knowledge of results.
12. Review and repeat.

Because there are no firm rules, Pettersson points out that his 150 principles (based on the twelve principles above) may or may not apply (hence the title of his article "It Depends.") and that it is up to the discretion of the designer to apply them. Keeping this in mind, I chose several of his principles to guide my project. They are:[8]

1. Define the message and the receivers.
2. Provide the structure
   • Develop a clear structure for the content.
   • Limit the number of levels in the structure.
   • Show the hierarchy and structure of the content in the graphic design.
3. Legibility of Text on Screens
   • Use typefaces designed for screen display.
4. Legibility of Pictures
   • Use picture elements that are bold and large enough.
   • Use a style guide for picture elements in schematic pictures.
   • Set words in images and pictures bold and large enough to read.
5. Legibility of Symbols
   • Use distinct colors and simple graphical elements to design symbols that will function in any size.
   • Design solid figures with a distinct contrast to the background.
   • Use characters and graphical elements that are bold, distinct and large enough.
6. Providing Unity
   • Use style and terminology in a consistent way in each specific information material.
   • Use layout and typography in a consistent way.

Human to Human Design

Shifting to design, I sought readings that would inform my design process. "Human to Human Design" by Sharon Lee really caught my eye. Speaking from a user perspective, Lee identifies a few fundamental concepts to keep in mind for interaction design on the web (Respect Me, Tell Me A Story, Engage Me, Inspire Me, Enchant Me).

Key takeaways from this article were:

- Tailor you message to suit your audience/user.
- Tell a story. "By telling a story through user interaction, you enable users to choose their own path according to their preferences or needs."[10]
- Immerse users in an experience. "By attending to the entire user experience, designers can create a rich, sensory experience, which helps to immerse users and encourage them to become fully involved in the site and its message. When a site is intended to educate, immersion is particularly important, as it can increase learning speed and overall understanding—especially when a site's main users are children."[10]
- Make it beautiful. "A beautiful design will give the user the impression that the site is easy to use, whether it is or not. Also, it is more probable that the design will be used because the human psyche is inexorably drawn towards beauty."[10]

[10]From "Human to Human Design", Lee, 2007. Available at: http://www.alistapart.com/articles/humantohuman/

Information Design for the New Web

Despite its title this article, written by Ellyssa Kroski in 2007, is actually a study of qualities of modern web applications. In a section titled "Simplicity of Design", she discusses the several qualities that were important to this project such as: browser centered design; large fonts; simple navigation; bold logos; strong, complementary colors; subtle 3D; simple icons; and whitespace. All of these design principles would prove to be critical parts of this project. The article also discusses social features, advanced (web) interfaces, and alternate navigation; which did not apply in this project.

C. Research Summary

All of this research led to several conclusions. First, the opportunity to do something interesting in the interactive space with political data was great. Though many websites exist that manage an abundance of political data, few sites find a way to display the information in a way that is interesting or engaging. The few sites that do include interactive

elements are not comprehensive. Instead, their interactivity is limited to rollover maps or small games or quizzes.

Secondly, due to the amount of data that the project would require, I needed to ensure that the data was well organized and presented in a way that is easy to understand. This is achieved through adhering to information design principles.

Finally, the end result of this project needs to be a cohesive experience in which users can immerse themselves. Most importantly, it needs to tell a story, not only with the data presented, but also through bold colors, strong typography and imagery, and interesting interactions.

06. PROCESS

There is still a considerable amount of debate over an appropriate process for web/interactive development. I have found that Kelly Goto's process, illustrated in her book "Web ReDesign 2.0: Workflow that Works", works well for me and seems to follow industry practices. Kelly defines five key steps (phases) of a project:

- Step 1 - Defining the Core Process: discovery, planning, and clarification;
- Step 2 - Developing site structure: content-view, site-view, and page-view;
- Step 3 - Visual design and testing: creating, confirming, and handing off;
- Step 4 - Production and QA: prepping, building, and testing;
- Step 5 - Launch and beyond: delivery, launch, and maintenance.[11]

[11]Goto, Kelly et al. Web ReDesign 2.0: Workflow that Works. Peachpit Press, 2004

For the purposes of this project, I've tweaked that creative workflow to fit my own needs:
- Planning
- Data collection
- Design
- Development
- Launch / Testing

The remainder of this section is organized around that workflow.

A. Planning

Armed with the knowledge of my research, I began planning the application. In order to ensure that the design process proceeded in an efficient manner and to avoid any potential problems down the line, the basic technical specifications for this project had to be established at the onset of the planning. They are as follows:

- The end product is an Adobe Flash-based (version 9) web site, scalable to browser size, minimum application size to fit 1024 x 768 resolution.
- Flash would be driven by Extensible Markup Language (XML) to allow for dynamic data

I chose Flash as the technology to drive this project because it is a natural fit for the type of interactive experience I wanted to create. Flash allows the developer to create a rich user experience including standard user interface (UI) interactions, custom UI interactions, graphics, animation and sound. Furthermore, through Actionscript 3.0, Flash allows easy access to dynamic XML data, which, in theory, could be updated for future elections. The Flash (version 9) plugin is installed on nearly 98% of computers in mature markets around the world[12], ensuring that it will display on most users computers. Additionally, because the Flash Player is a plugin, the developer is assured that the experience will be consistent across platforms and browsers.

Using XML to separate the data (content) from the Flash (presentation) is also a logical decision and follows most development models. XML is a powerful, semantic programming language that allows the developer to create a complex hierarchy of information that can be loaded into the Flash application and used for a variety of purposes. Because the data is located outside of the Flash file, it can be easily updated as frequently as necessary. XML can also be data pulled from an outside source, such as an API.

In addition to these technical details, I also set out to establish the parameters for the content. A few initial questions had to be answered:

- Who is the audience?
- What is the scope of the content?
- What will be the learning outcome for the user?
- Based on the learning outcomes, what data is available?

[12]From "Flash Player Version Penetration", 2007. Available at: http://www.adobe.com/products/player_census/flashplayer/version_penetration.html

- How will the application be structured?

Who is the audience?

The primary audience for this application is the voting population of the United States, either male or female. For several reasons, the target age for the audience is the young-to-middle-aged adult (18-45). Trailing Boomers, Generation-X and Generation-Y (the Millennials, the Internet Generation) are more inclined to visuals due to technology adoption patterns. The target audience will have at least a high school education and moderate experience using a computer, the internet and interactive applications. Their knowledge of politics need not be extensive, though even those with extensive knowledge should find this site useful. The following personas were developed to better understand the user.

Personas

Consider Daniel. Daniel is a 24-year-old-male. He graduated from West Chester University of Pennsylvania in 2006 with a degree in accounting and currently resides in Havertown, PA. Daniel reads the news on the New York Times web site each morning for the first 15 minutes he is at work while drinking his morning coffee. Daniel is a registered Republican and voted in the 2004 election. Though he tries to follow politics in the news as much as possible, he is both frustrated and annoyed by the media's representation of politicians and the lack of access to meaningful data on the politicians he is interested in. He uses the internet daily at his job and uses his MacBook at home to edit photos he has taken. He has sporadically visited several politicians' websites and read some political blogs but prefers websites related to photography. Daniel has learned about a web site that will provide data on his elected officials' voting record and campaign funding while allowing him to interact with the data, so he decides to visit the site.

Susan is a 32-year-old female. She graduated from Ewing Public High School in Trenton, New Jersey, where she currently lives. She is an office assistant in a busy dental office. Susan has little concern for politics but is very concerned about the state of the healthcare industry as it relates to her job. Susan often watches the 6:00 news as she prepares dinner. Though she isn't a tech-guru, she does use a computer at work and checks her e-mail from her PC at home. She received an e-mail postcard from a co-worker with a picture of a New Jersey senator who recently voted in favor of a bill proposing a universal healthcare system and a web address. Susan clicks on the postcard and it sends her to the site.

What is the scope of the content?

The premise for this application is that a voter should know more about the candidate(s) for whom they are voting. The initial idea for this project was to allow a user to select where they live and they would be able to learn about all politicians representing them. Under the advisement of the committee overseeing this project, it was determined that this scope was not feasible in the given timeframe and the focus should be narrowed. After further consideration, the scope of the project was narrowed to eight major candidates (the four leading democrats and four leading republicans) in the 2008 Presidential campaign. They would be:

Democrats:
- Joe Biden
- Hillary Clinton
- John Edwards
- Barack Obama

Republicans
- Rudolph Giuliani
- Mike Huckabee
- John McCain
- Mitt Romney

What will be the learning outcome(s) for the user?

In other words, when the user has completed the application, what should they have learned? The premise of the project is that in using this application, a user would become a more informed voter. In order to become a more informed voter, the user would need to know more about the candidates in the race. The core function of being a politician is creating laws. In order to do so, they need to vote on issues that are the business of the people. In order to get and keep their job, they need to raise funds for campaigns. These are arguably the most important parts of being a politician. As such, I chose three key topics, related to these core functions, to allow the user to explore for each candidate:

- Issue positions
- Campaign finances
- Voting record

I felt that voters could make a more informed decision on the candidates for the 2008 Presidential election if they knew where candidates stood on specific issues that are important to the voter; knew from whom the candidates were receiving their campaign finances and

knew their voting record. Thus, I determined that the application would include a learning module (throughout the remainder of the paper, the terms "learning module" and "learning course" are interchangeable) for each of the three topics identified above in addition to general biographical information.

Based on the learning outcomes, what data is available?
From my preliminary research, I knew there was a plethora of data available on a wide range of topics, but that data would need to be narrowed down to fit the three learning outcomes. Since it seemed to have the least biased and most accessible information, I used VoteSmart.org as the starting point.

VoteSmart.org has an API (Application Programming Interface) that allows programmers to retrieve data from the VoteSmart.org databases for use in other websites and applications. Because VoteSmart.org's "basic categories" include issue positions, voting records, and campaign finances, I had hoped to use their API to retrieve all of the data for my application. However, upon further investigation, I discovered that the issue positions category relied upon a voluntary survey (the Political Courage Test) from the politician and only three of the eight politicians I had selected returned the survey to VoteSmart.org. Furthermore, the campaign finances category directed users to the politician's page on OpenSecrets.org. That meant that the VoteSmart.org API would only be useful for the voting record data. VoteSmart.org's voting record data is plentiful. It dates back as far as 1992 and is organized around specific issues (agriculture, abortion, war, etc.), which I felt would be extremely beneficial for my application.

Figure 6A-1 VoteSmart.org Voting Record Data

Abortion Issues
(Back to top)

Date	Bill Title	Vote	Outcome
02/26/2008	Prohibiting the Funds in S 1200 from Being Used for Abortions S Amdt 3896	NV	Amendment Adopted - Senate (52 - 42)
10/18/2007	Prohibiting Funds for Groups that Perform Abortions S Amdt 3330	NV	Amendment Rejected - Senate (41 - 52)
09/06/2007	Prohibiting U.S. Assistance for Groups that Support Coercive Abortion S Amdt 2707	NV	Amendment Adopted - Senate (48 - 45)
07/25/2006	Child Interstate Abortion Notification Act S 403	N	Bill Passed - Senate (65 - 34)
03/17/2005	Unintended Pregnancy Amendment S Amdt 244	Y	Amendment Rejected - Senate (47 - 53)

Since VoteSmart.org would not be able to provide the data for the issue positions learning module, I needed to look elsewhere. I turned to the candidates' websites. Each candidate had a section of their web site devoted to issues on topics ranging from Iraq/Iran to energy independence to senior citizens. I determined that could qualitatively analyze each candidate's issues section of their campaign web site to collect the data for the issue positions learning module. I discuss the methods that I used for analyzing and coding the issue positions data in section 7B.

Figure 6A-2 Sample Issues Page From HillaryClinton.com

Because VoteSmart.org uses OpenSecrets.org to provide campaign finance information, I assumed that their information would meet my needs also. Like the data on VoteSmart.org, OpenSecrets.org's campaign finance data is very comprehensive. It provides data by geography, industries, contributors, and a number of other categories. It also shows fundraising totals by Quarter, amount raised versus amount spent and the quality of their financial disclosure. (See figure 6A-3) For the purpose of the project, I felt that industries and contributors would likely be the most pertinent categories. I discuss the methods that I used for analyzing and coding the campaign finance data in section 7B.

Figure 6A-3 OpenCampaign Finance Data, By Industry

Rank	Industry	Total
1	Lawyers/Law Firms	$43,154,642
2	Retired	$42,892,978
3	Education	$22,976,126
4	Misc Business	$16,500,999
5	Securities & Investment	$14,891,735

How will the application be structured?
Knowing what data would be available, I was able to determine how users would move through the application. The major portions of the application can be divided into three phases: introduction, configuration, and learning.

In the introduction phase, the user would learn about the application and discover the learning outcomes. In the configuration phase, users are asked a series of questions including: issues important to them, party affiliation, gender, age, income, education, ethnicity and religion. Each of these questions, with the exception of issues important to the user and party affiliation, would be optional. Should the user not want to select issues important to them, issues are chosen at random for them. This data will be collected for two purposes:

- The "Issues important to me" question tailor the learning courses to the individual, thus improving the user experience and what the user takes learns, because it is pertinent to them.
- The remaining questions will be used in the aggregate to show users how they compare to others when they've completed the learning courses.

Once the user has answered the questions above, they are asked to select one of the eight candidates to learn about. They have the opportunity to learn about other candidates, if they so choose, once they have completed the three learning courses on the selected candidate. From here, the user is also able to view the candidate's bio via a link to the candidate's campaign web site.

In the learning phase, the user is asked to select one of the three learning courses to begin. They then move through the questions pertaining to the learning course, are presented with the results of the course, and are returned to the "Select a Course" screen until they've completed all three learning courses.

In the campaign issues course, users are presented with five questions related to the five issues that they selected (or were selected for them) in the configuration portion of the application. The user answers each question. At the end of the course, they are able to see how their answers compare to the answers of the candidate that they selected. Based on what the user learned in this course, they are asked to indicate whether or not they would support the candidate with a vote.

In the campaign finance course, users are presented with the commit-tees that the candidate has served on (if applicable), and the top 10 contributors. For each contributor, the user is shown the contributor's name, amount given, category, URL and description. They also have the opportunity to search for the contributor on Google news for current news and outside perspective of the contributor (as opposed to a description from the contributor's web site). The user is given the chance to indicate whether or not they agree with the candidate accept-ing campaign funds from each of the ten contributors. Once they have answered for each contributor, they are shown the results as bar graphs (yes vs. no) and asked to indicate, based on what they learned in the course, whether or not they would support the candidate with a vote.

In the voting record course, the user is presented with the five most recent votes by the candidate (if applicable) on legislation related to the five issues the user chose (or were selected for them) in the configura-tion phase. They are provided with a brief description of the legislation and then asked to indicate how they would vote on the legislation. After completing all five, the user is shown their results compared to the actual vote of the candidate and asked to indicate, based on what they learned in the course, whether or not they would support the can-didate with a vote.

Once they have completed all of the learning courses, the user is pre-sented with their overall results compared to others who have taken the course and has the opportunity to share the results with a friend. Figure 6A-4 on the following pages illustrates the flow of the application.

Figure 6A-4 Application Flow Chart
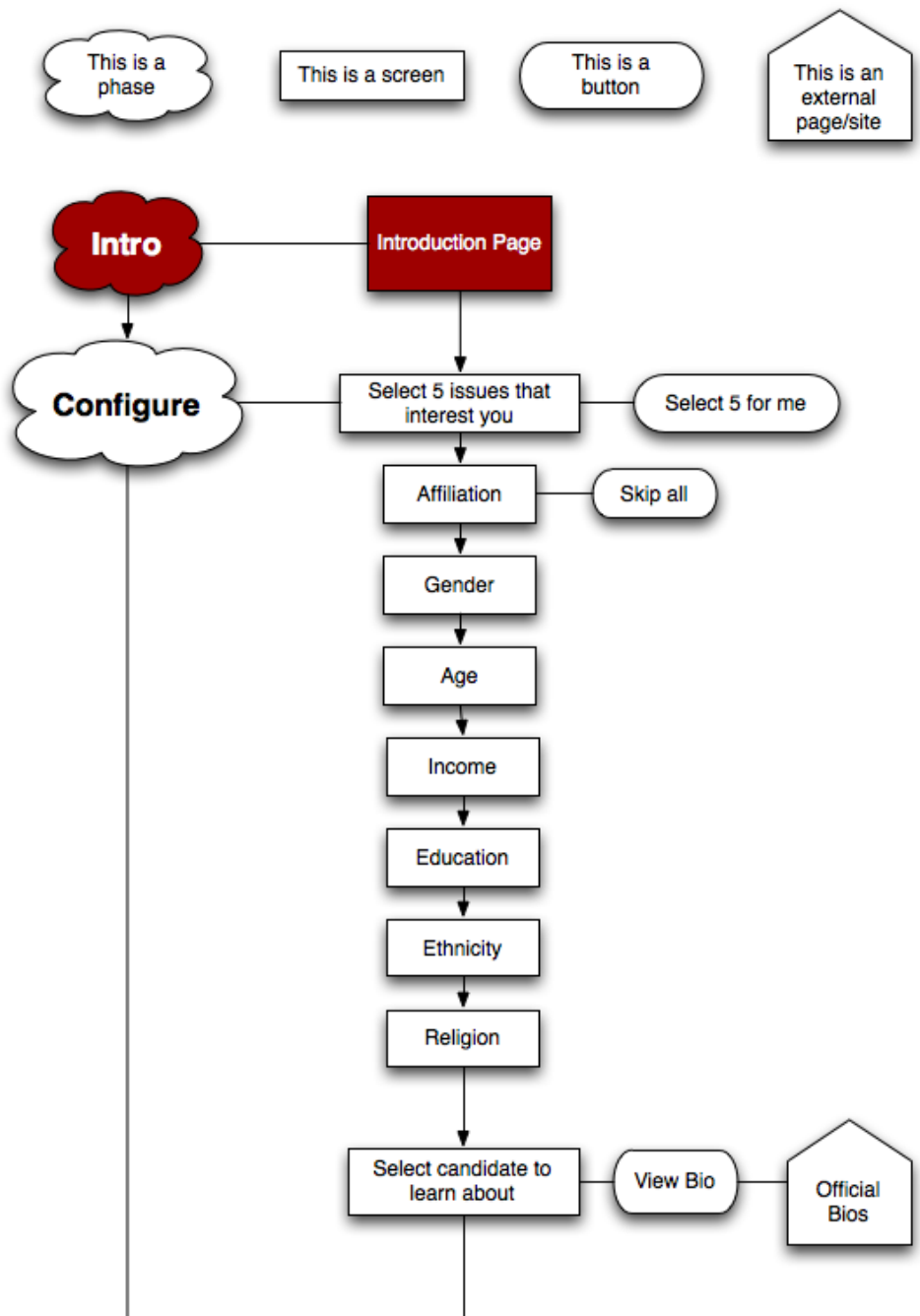
Figure 6A-4 Application Flow Chart (continued)
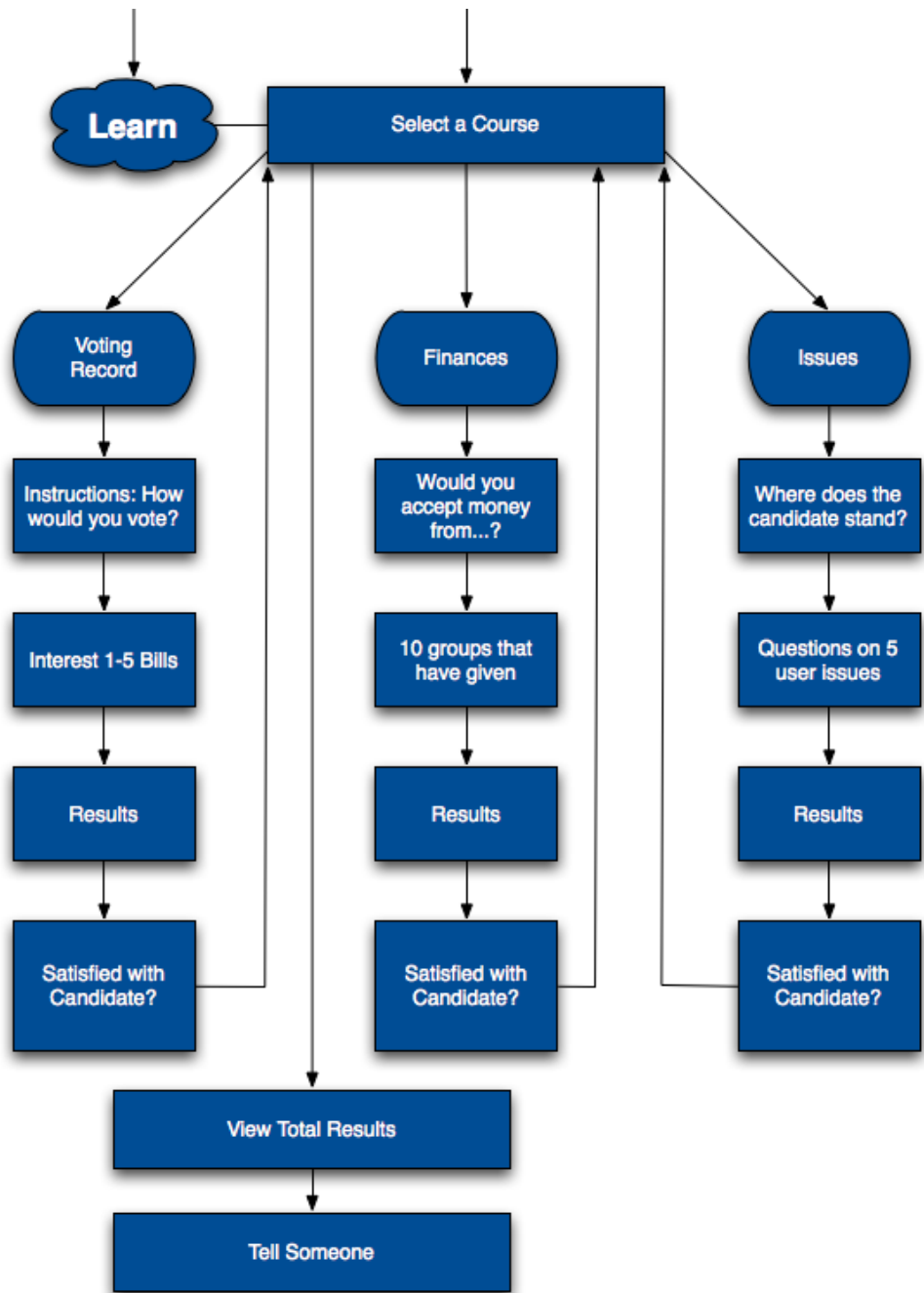
B. Data Collection

With a solid plan in place, I set out to collect the data for two of the learning courses, issues and campaign finances. For the third course, the data would be retrieved dynamically using the VoteSmart.org API, meaning there would be no need for up-front data collection. I used Microsoft Excel to organize the collected data.

Issues

As noted in the previous section, I planned to use the candidates websites to collect the data for the issues section. I scoured the campaign web site of each of the candidates and compiled a master list of issues that contained any issue referenced in the issues section. The results are listed below in figures 6B-1 and 6B2.

Figure 6B-1 Campaign Issues - Democrats

Campaign Issues

Democrats

Biden	Clinton	Edwards	Obama
Budget/Spending	Budget/Spending	Civil Liberties	Darfur
Crime	Democracy	Darfur	Democracy
Darfur	Education	Education	Education
Education	Energy	Energy	Energy
Energy	Environment	Environment	Environment
Environment	Government Reform	Government Reform	Faith and Politics
Firefighters	Health care	Health care	Government Reform
Global Development	Immigration	Homeland Security	Health care
Health care	Innovation	Human Rights	Homeland Security
Homeland Security	Iraq	Innovation	Immigration
Immigration	Seniors	Iraq	Innovation
Iran	Taxes	Military	Iraq
Iraq	Veterans	Poverty	Poverty
Online Nation	Women's Rights	Rural America	Seniors
Seniors		Seniors	Taxes
Taxes		Taxes	Veterans
Veterans		Veterans	War on Terror
Women's Rights		War on Terror	
		Women's Rights	

Figure 6B-2 Campaign Issues - Republicans

Campaign Issues			
Republicans			
Giuliani	**Huckabee**	**McCain**	**Romney**
2nd Ammendment	2nd Ammendment	2nd Ammendment	2nd Ammendment
Abortion	Abortion	Abortion	Abortion
Budget/Spending	Agriculture	Budget/Spending	Budget/Spending
Economy	Budget/Spending	Economy	Economy
Education	Crisis Management	Energy Independer	Education
Energy Independence	Economy	Environment	Energy Independence
Environment	Education	Ethics & Lobbying	Health care
Health Care	Energy Independence	Health Care	Immigration
Immigration	Faith and Politics	Human Dignity	Iraq
Iraq	Health Care	Immigration	Marriage
Judges	Immigration	Iraq	National Security
Marriage	Iraq	Marriage	Taxes
National Security	Israel	National Security	War on Terror
Taxes	Marriage	Taxes	
Veterans	National Security	Veterans	
War on Terror	Taxes	War on Terror	
	Veterans		
	War on Terror		

Because the data was specific to each candidate and not standardized, a system was created to determine what issues would and would not be included. Issues mentioned by fewer than 50% of the candidates were removed from the list. This final issues master list on the following page in figures 6B-3 and 6B-4.

Figure 6B-3 Campaign Issues Final - Democrats

Biden	Clinton	Edwards	Obama
Iraq	Iraq	Iraq	Iraq
Taxes	Taxes	Taxes	Taxes
Health Care	Health Care	Health Care	Health Care
National Security	National Security	National Security	National Security
Energy Independence	Energy Independence	Energy Independence	Energy Independence
Education	Education	Education	Education
Immigration	Immigration	Immigration	Immigration
Budget/Spending	Budget/Spending	Budget/Spending	Budget/Spending
War on Terror	War on Terror	War on Terror	War on Terror
	Economy	Economy	Economy
	Abortion	Abortion	Abortion
Veterans	Veterans	Veterans	Veterans
Environment	Environment	Environment	Environment
	Marriage	Marriage	Marriage
Seniors	Seniors	Seniors	Seniors

Figure 6B-4 Campaign Issues Final - Republicans

Giuliani	Huckabee	McCain	Romney
Iraq	Iraq	Iraq	Iraq
Taxes	Taxes	Taxes	Taxes
Health Care	Health Care	Health Care	Health Care
National Security	National Security	National Security	National Security
Energy Independence	Energy Independence	Energy Independence	Energy Independence
Education	Education	Education	Education
Immigration	Immigration	Immigration	Immigration
Budget/Spending	Budget/Spending	Budget/Spending	Budget/Spending
War on Terror	War on Terror	War on Terror	War on Terror
Economy	Economy	Economy	Economy
Abortion	Abortion	Abortion	Abortion
Veterans	Veterans	Veterans	
Environment		Environment	
Marriage	Marriage	Marriage	Marriage
2nd Ammendment	2nd Ammendment	2nd Ammendment	2nd Ammendment

From the list above, the issues mentioned by more than 50% of the candidates included:

- Iraq
- Taxes
- Healthcare
- National/Homeland Security
- Energy Independence
- Education
- Immigration
- Budget/Spending
- War on Terror
- Economy
- Abortion
- Veterans
- Environment
- Marriage
- 2nd Ammendment
- Seniors

The questions for this section needed to be simple to answer and easy to understand. I originally thought I might be able to use questions from the Political Courage Test (PCT) issued by VoteSmart.org, however the format for those questions ("select all that apply" with 8-10 choices), presented serious development challenges. Instead, I determined it would be best to work backwards, developing multiple choice questions based on the candidates positions on the issues. In order to do this, I needed to qualitatively analyze the candidates positions on the issues and extrapolate concise answers that could apply to more than one candidate.

An example:
On the issue of Iraq, there existed several candidate viewpoints on a strategy. One view was to increase the number of troops in Iraq. Another was to maintain current troop levels until the war is over. Another was to have a phased withdrawal of troops. Yet another viewpoint was to immediately withdrawl a majority of troops. The end result was a question that looked like this:

The following strategy should be employed in Iraq:
A) Increase the number of troops
B) Maintain current troop levels and stay until the war is over
C) A phased withdrawal of troops with a set date to have troops removed
D) Immediately withdrawal a majority of troops and maintain a smaller force to train Iraqi troops

By analyzing the candidates' issue positions on their campaign websites, I was able to align their views with one of the four answers. I followed the same process for each of the sixteen issues. This task was both time consuming and tedious. Much of it was done by evaluating the content included in PDF versions of candidate "roadmaps" or strategy plans. Figure 6B-5 below shows data from Mitt Romney's "Strategy for a Stronger America" plan (downloaded from the "Issues" section of his campaign web site) illustrating his position on the Iraq question.

[13]Romney, Mitt. "Strategy for a Stronger America". 2007.

Figure 6B-5 Mitt Romney Iraq Question Supporting Data[13]

"Iraq is just one front in the war. We removed Hussein, but afterward, we were under-prepared, under-planned, under-manned, and under-managed. But walking away now or dividing the country and then walking away would have real and severe risks for America and for our troops. I support the troop surge for that reason. And one thing I know, we shouldn't let Nancy Pelosi and Harry Reid dictate our battle strategy to the commanders in the field or to the Commander-in-Chief.

From this data, I was able to conclude that Mr. Romney's answer to the Iraq question would be:

A) Increase the number of troops

This strategy allows for scrutiny, as it could be argued that the qualitative approach allows the potential for bias. I tried to remain as unbiased as possible while coding this data. This issue is discussed at length in section 6. The full question and answer list can be found in Appendix C.

Campaign Finances

The collection method of the campaign finances course was far more straightforward because there was no need for qualitative analysis. Hard data existed, leaving no room for scrutiny. As previously mentioned, I used OpenSecrets.org to obtain data on each candidate's financial donors. For each candidate, I collected the top 20 industries and contributors.

It is important to note that OpenSecrets.org issues the following disclaimer regarding the contributor data:

> "The organizations themselves did not donate, rather the money came from the organization's PAC, its individual members or employees or owners, and those individuals' immediate families."[14]

A sample can be found in figure 6B-6.

[14]From OpenSecrets.org. Available online: http://www.opensecrets.org/pres08/contrib.php?cycle=2008&cid=N00009638

Figure 6B-6 Sample Financial Data For John McCain

McCain

Total Raised	Full Disclosure (94.1%)	Coded (74%)	Incomplete	
$32,124,785.00	$24,814,118.00	$17,687,278.00	0	

Total Spent	No Disclosure (5.9%)	Uncoded (26%)		
$28,636,157.00	$1,558,949.00	$6,214,670.00		

Top Industries			Top Contributors	
1	Retired	$3,185,427	Blank Rome LLP	$141,100
2	Lawyers/Law Firms	$2,214,820	Citigroup Inc	$137,050
3	Securities & Investment	$1,781,260	Greenberg Traurig LLP	$124,987
4	Real Estate	$1,666,880	Merrill Lynch	$113,575
5	Misc Finance	$713,513	Goldman Sachs	$88,700
6	Commercial Banks	$583,700	Univision Communications	$82,000
7	Health Professionals	$568,880	IDT Corp	$77,150
8	Business Services	$531,575	Bank of New York Mellon	$74,000
9	TV/Movies/Music	$386,325	MGM Mirage	$70,400
10	Misc Business	$378,957	Irvine Co Apartment Commu	$68,400
11	Lobbyists	$340,365	Pinnacle West Capital	$64,000
12	Computers/Internet	$252,675	JP Morgan Chase & Co	$59,850
13	Insurance	$246,524	Credit Suisse Group	$58,950
14	Education	$228,250	Bridgewater Assoc	$58,300
15	Misc Manufacturing & Distribu	$219,045	Cisco Systems	$56,600
16	Construction Services	$205,952	Lehman Brothers	$53,250
17	General Contractors	$190,405	Morgan Stanley	$50,950
18	Oil & Gas	$189,935	Wachovia Corp	$50,850
19	Civil Servants/Public Officials	$186,323	Blackstone Group	$47,950
20	Telephone Utilities	$176,800	Deloitte Touche Tohmatsu	$41,601

In addition to the contribution data, each contributor was assigned a category based on the industry. For example Bank of America would be categorized as "Commercial Bank" and Skadden, Arps et al would be categorized as "Law Firm". Also, each contributor needed a description and URL, which were pulled from the contributor's web site (if applicable).

C. Design

> "The problem of the artist is to defamiliarize the ordinary." - Paul Rand[15]

[15]Rand, Paul. Paul Rand: A Designer's Art. New Haven: Yale University Press, 1985

This quote became a mantra of sorts for this project. I found myself asking how, through design, can I take this data that is ordinary and make it new and exciting? I knew that the design of this application would be a sizable challenge. The following subsections highlight the creative process for the development of the design, as I set out to "defamiliarize the ordinary."

Colors

The color palette for this project was a pretty easy decision. Because of the project's political content, I felt that a patriotic theme was appropriate. Thus, red, white and blue were obvious choices. In addition, I added gold and silver as auxiliary colors. Of course, the project would also use gradients and tints of these colors to achieve a sense of depth, but the working palette for this project is as follows:

R:188	R:4	R:255	R:230	R:154
G:17	G:100	G:255	G:195	G:154
B:2	B:201	B:255	B:72	G:154

For the red, I chose something with more depth and richness, rather than the fire truck red you often see. I also chose a more bold blue rather than the Navy of the flag. I purposely chose bolder colors with the idea that they could really make the graphics come to life. I chose the gold and silver because these colors are often associated with wealth, status and power, factors that play into politics.

Name & Logo

Selecting a name for the project/application/web site was not an easy task. The name needed to convey four core qualities:
- The application has something to do with politics and political engagement.
- It needed to convey that the content was serious, but that this was not just another boring political web site.
- The name would preferably have three words to match the three colors (red, white and blue).
- The domain name had to be available.

I tried many variations including:
- VoterEd
- AboveThePolitics
- InformedVoter
- VoterLearningCenter
- CountMyVote
- MyVoteCounts

Finally I came to rest on "Make Mine Count". This satisfied the core qualities. Though not explicitly mentioning politics or voting, the word "mine" referred to the user's vote. Since the goal of the project was for the user to leave a more informed voter with a sense that their vote did indeed count and speaks to the serious nature of the content. This domain name (www.makeminecount.com) was available, and was purchased from 1&1 Web Hosting, inc.

With the name selected, I tried to create a logo for the project that embodied the core qualities and inspired patriotism as well. My initial logo concepts can be found in figure 6C-1.

Figure 6C-1 Logo Concepts

The initial iterations (Figure 6C-1a and 6C-1b) were 3D. I felt that the 3D design would be modern and visually interesting. Ultimately, these concepts distracted from the name, which is the primary purpose.
I then decided that I might be able to use the American flag in combination with the name as you see in Figure 6C-1c and 6C-1d. In all concepts, I wanted to use the checkmark as an indicator of the concept of voting and the stars as a symbol of patriotism (in addition to the colors). Figure 6C-1c was in contention for a while, in fact it appears in some of the initial mockups. In Figure 6C-1e, I tried to add the ".com" In the horizontal format, but felt that it made the logo too wide for practical use, which lead to Figure 6C-1f. This concept was much stronger, but lacked the checkmark to indicate "voting". Finally, I came to rest on the concept in figure 6C-2 as the final logo for the project.

Figure 6C-2 Final Logo

This logo embodies all of the qualities I was seeking to convey: political process (checkmark = voting), patriotism (red, white and blue and star), serious content but still fun (Cooper Std. Black font). The star and check mark centered over "mine" provide balance and signify that the user is being patriot/doing their civil duty regarding *their* vote. One consideration with this logo is that it must always appear on a dark background due to the white font and star element.

Wireframes

Before beginning the design, I needed to have a clear idea of how the application would be laid out. Due to the pre-determined technical specifications, the application had to fit neatly within the constraints of a 1024 x 768 screen resolution. To allow for browser toolbars and scroll bars, the maximum viewable are is roughly 990px in width by 500px in height. These constraints presented a unique challenge because, unlike a conventional web site that allows scrolling, a scalable Flash application does not. Thus, all content needed to be viewed within those dimensions. To deal with this issue, I determined that the application would have content that would (through animation) scroll both vertically and horizontally within the application itself. After several revisions, I came to rest on the wireframes in figure 6C-3.

Figure 6C-3 Wireframe - Overall
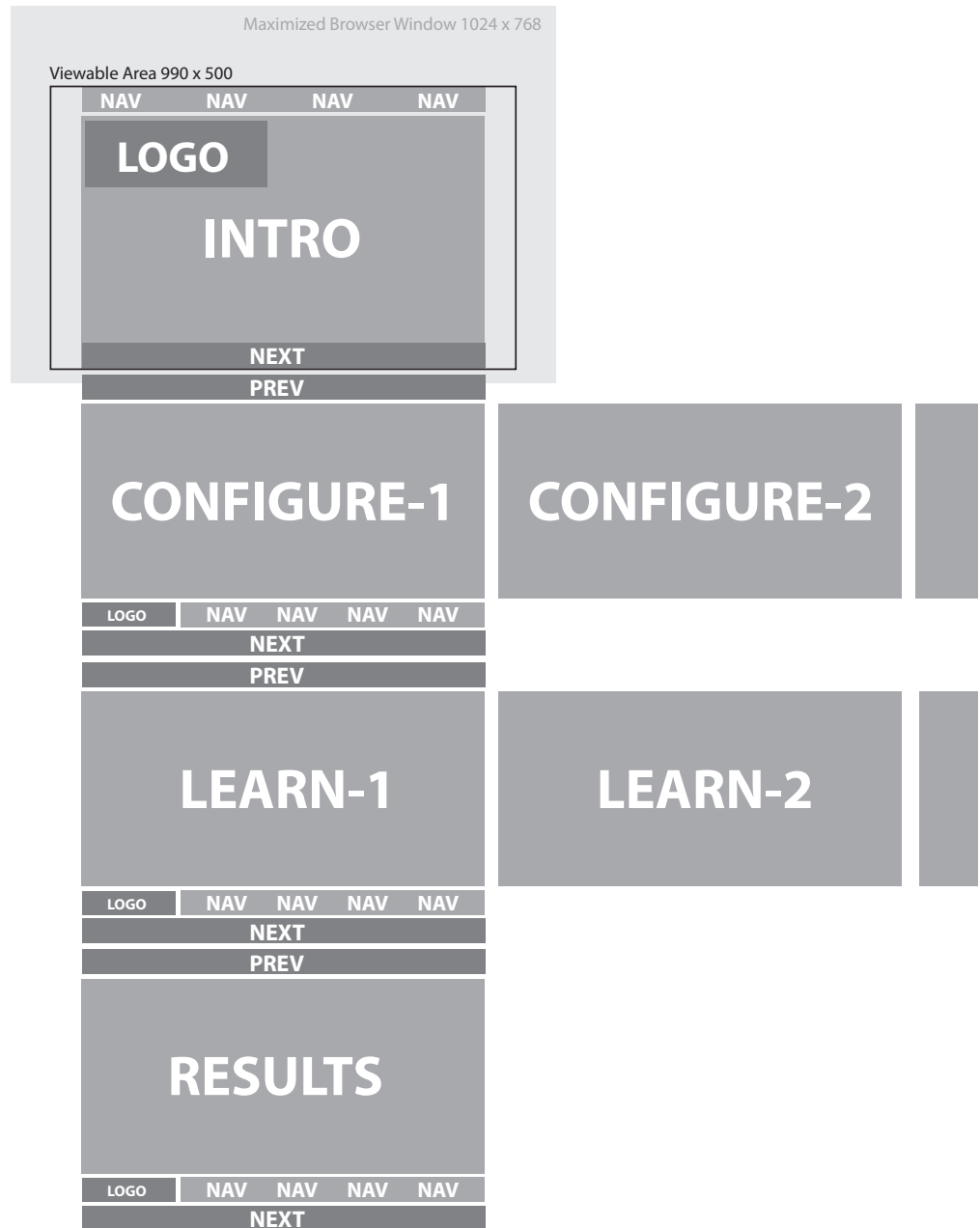
Figure 6C-4 Wireframe - Intro/Results Detail

Maximized Browser Window 1024 x 768

Viewable Area 990 x 500

Home   Help   About

LOGO

Lorem ipsum dolor sit amet, consectetur
adipiscing elit. Nam mi augue, ultrices
commodo ultrices et, malesuada a justo.
Nullam eleifend justo a felis sagittis quis
rutrum lacus sagittis. Nunc diam mauris,
vulputate vel pretium et, hendrerit vitae
quam. Nam lacinia semper tempus. Mauris
orci sapien, aliquam a sollicitudin eget,
pretium ut massa. Cum sociis natoque
penatibus et magnis dis parturient

result1   **result2**

result3   **result4**

NEXT

Figure 6C-5 Wireframe - Configure/Learning Detail

Maximized Browser Window 1024 x 768

Viewable Area 990 x 500

PREV

Lorem ipsum dolor sit amet, consectetur
adipiscing elit?

button   **button**

next   prev

LOGO   **Home   Help   About**

NEXT
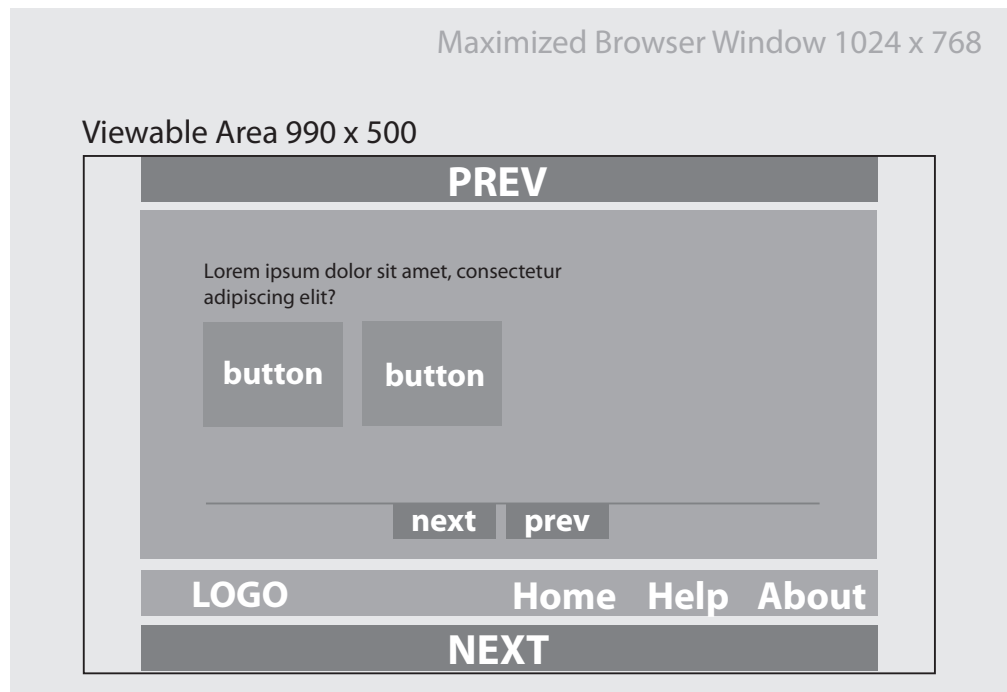
Based on the content of the application, I determined I would need two types of panels, one for introductions and results and another for the configuration and learning content. In figure 6C-3, you can see that the major section panels (Intro, Configure, Learn, Results) scroll vertically and the panels for each section (Configure, Configure-1, Configure-2, etc.) scroll horizontally.

Mockups
Much of my original inspiration for the style of the application came from CNN.com/politics. Their font and color choices made the site feel sleek and modern. The site's dark header with bold colored fonts made the text really powerful. The textured stars in the section header are a nice addition also, drawing the eye toward the content. I wanted to incorporate elements of this style into the design of MakeMineCount. See figure 6C-6.

Figure 6C-6 CNN.com/Politics

Because it was the first screen users would see and contained a lot of information, the introduction page became the focus of the mockups. For the initial style test (see figure 6C-7 on the following page), I decided to use a dark gray with a muted American flag overtop as the background. I chose white copy over black boxes to emphasize the text. Header text was Cooper Std to match the logo, while body copy was Helvetica. The bold colors from the color palette were used to draw attention to the key information related to the results.

Figure 6C-6 Mockup 1
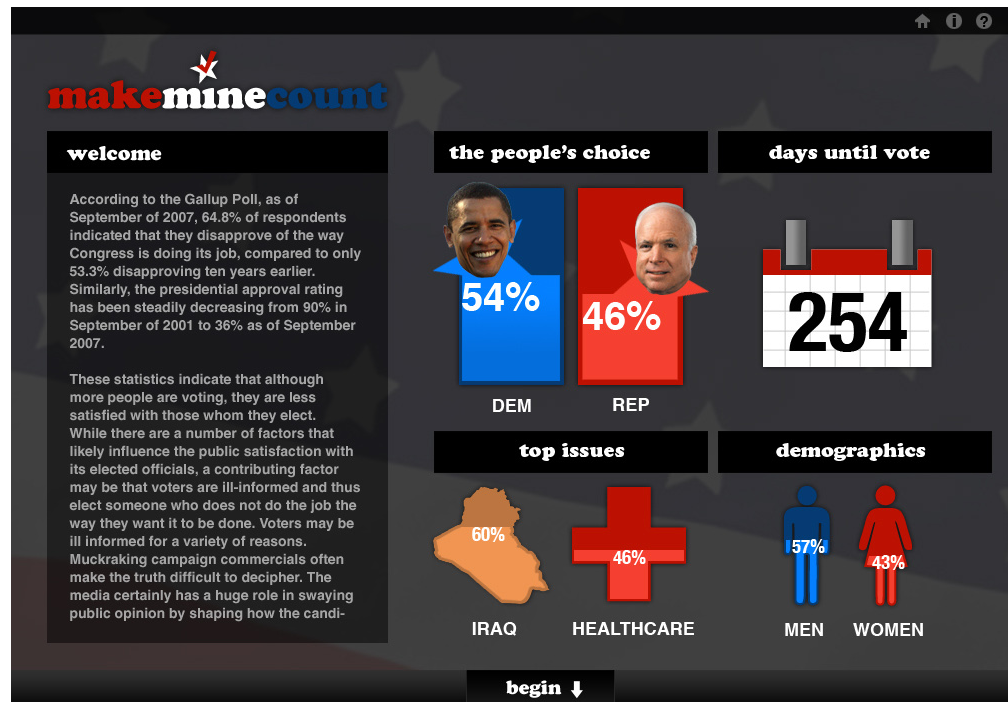
Overall this design was effective visually, however, upon some initial user testing and reaction from the committee overseeing the project, there was consensus that the design was too dark and felt too much like a video game, detracting from the seriousness of the content. There were also concerns that the content seemed to be floating and not "grounded" and that the begin button was not prominent enough.

With the second attempt, I tried to lighten up the background. I kept the American flag but changed it's orientation. Instead of gray, I used a red base. Because users responded well to the visuals, I kept them in the second mockup as well. In this second version, I tried to add some Web 2.0 style (gloss and reflections). I also grounded the content on panels and pulled the "begin" button out to make it more noticeable. The results can be seen in figure 6C-7.

Ultimately, this design would not work either. There was too much red, and the Web 2.0 design trends were already growing tired on users. Though the palettes did ground the content, using them meant that there would be even less space for content. Due to the fact that the site is already space-constrained, this was a serious concern. A member of the committee also pointed out that neither the previous layout nor this one would work well with the scrolling system I had planned to use.

They also pointed out that there was no place for the user to track their progress in the application.

Figure 6C-7 Mockup 2

Another issue surfaced related to the navigation. As laid out in my wireframes, the design called for more than one navigation system (a new one to replace the old each time the content scrolled vertically), which would be programmatically challenging. In addition, users may be confused at the fact that the navigation would shift throughout the application, since on the introduction and results pages it is at the top and throughout the rest of the process it is at the bottom. It was time to go back to the drawing board.

Because some of the issues surrounding these mockups were related to the layout and flow, I decided to revisit the wireframes to ensure that the flow of the content provided the best possible user experience. It was clear that the navigation needed to be located in the same position, most likely at the top, throughout the application. However, I was concerned how this could be achieved with the vertical content scrolling. The solution was to keep the navigation and logo fixed at the top and have the content scroll vertically underneath the navigation. The navigation would consist of two collapsible menus, "Menu" and "Progress". "Menu" would contain the three navigation items in the

previous mockups, "about this project", "help" and "start over".
The progress menu would be accessible at all times, but would be visible when the user completes a section to show their progress throughout the application. In addition, I decided to move the buttons controlling the vertical scrolling into the content panels, connecting it to the content. I also decided to forgo the horizontal scrolling in the learning section as it might prove to be a distraction from the content.
The results of the wireframe revisions can be seen below in figure 6C-8.
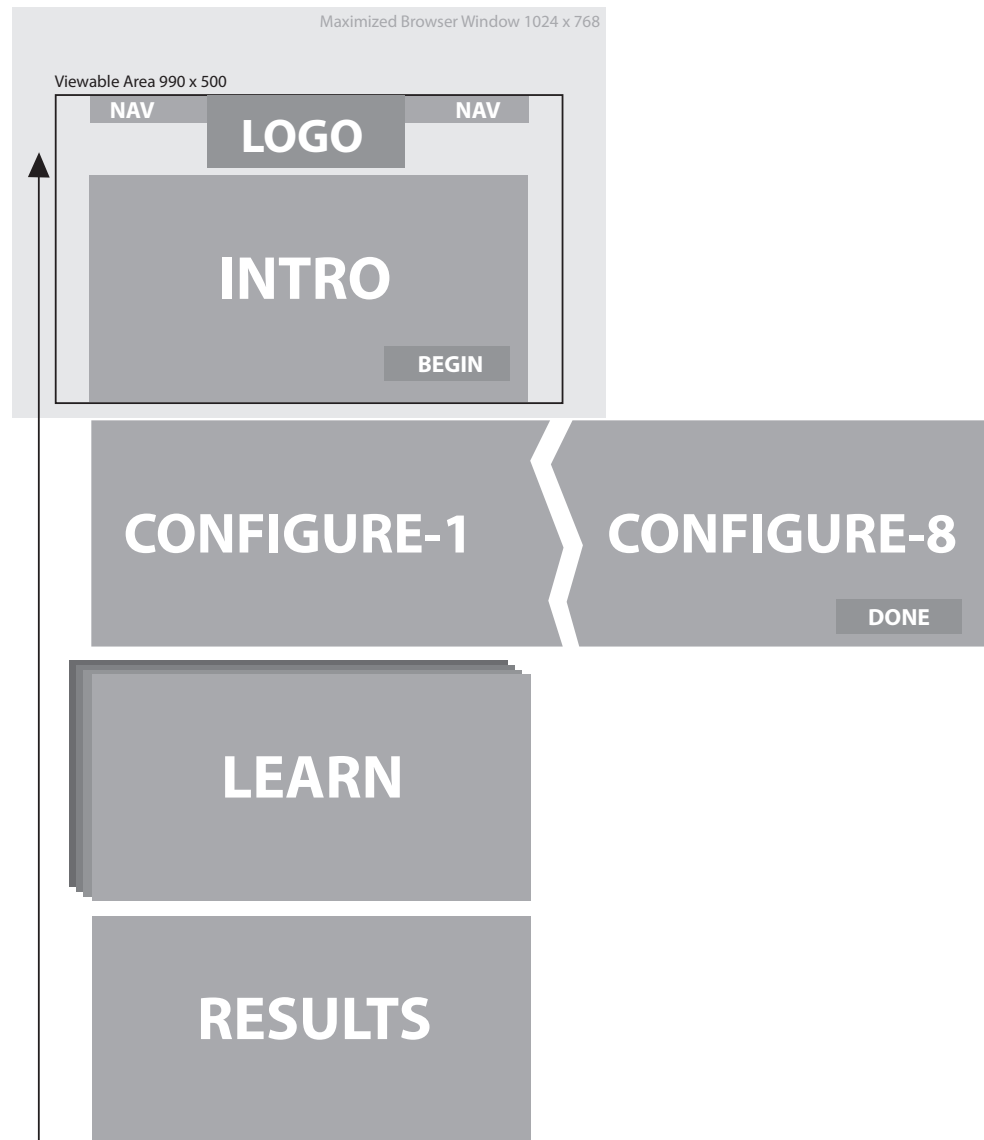
Figure 6C-8 Revised Wireframes - Overall

Maximized Browser Window 1024 x 768

Viewable Area 990 x 500

NAV   LOGO   NAV

INTRO

BEGIN

CONFIGURE-1   CONFIGURE-8

DONE

LEARN

RESULTS

Figure 6C-9 Revised Wireframe - Intro/Results Detail

Maximized Browser Window 1024 x 768

Viewable Area 990 x 500

menu   progress

LOGO

Lorem ipsum dolor sit amet, consectetur
adipiscing elit. Nam mi augue, ultrices
commodo ultrices et, malesuada a justo.
Nullam eleifend justo a felis sagittis quis
rutrum lacus sagittis. Nunc diam mauris,
vulputate vel pretium et, hendrerit vitae
quam. Nam lacinia semper tempus.
Mauris orci sapien, aliquam a sollicitudin
eget, pretium ut massa. Cum sociis
natoque penatibus et magnis dis parturi-
ent montes, nascetur ridiculus mus. Nulla
accumsan ipsum purus, mollis ullamcor-
per lorem. Vestibulum sem mauris,

begin

Figure 6C-10 Revised Wireframe - Configure/Learning Detail

Maximized Browser Window 1024 x 768

Viewable Area 990 x 500

menu   progress

LOGO

Lorem ipsum dolor sit amet, consectetur
adipiscing elit?

button   button

next   prev

Feeling more confident about the streamlined wireframes, I sought a new source of inspiration for the design. A colleague recommended that I take a look at some vintage political campaign posters. I found that the Library of Congress has an extensive collection of such posters in an online collection called "Pictoral America: Presidential Campaigns".[16] The posters are for campaigns from 1836-1908. See the sample posters below in figure 6C-11.

[16]June 2008. Library of Congress. Pictoral America: Presidential Campaigns. Available online. http://www.loc.gov/rr/print/list/picamer/paPrescamp.html#1844

Figure 6C-11 Sample Campaign Posters
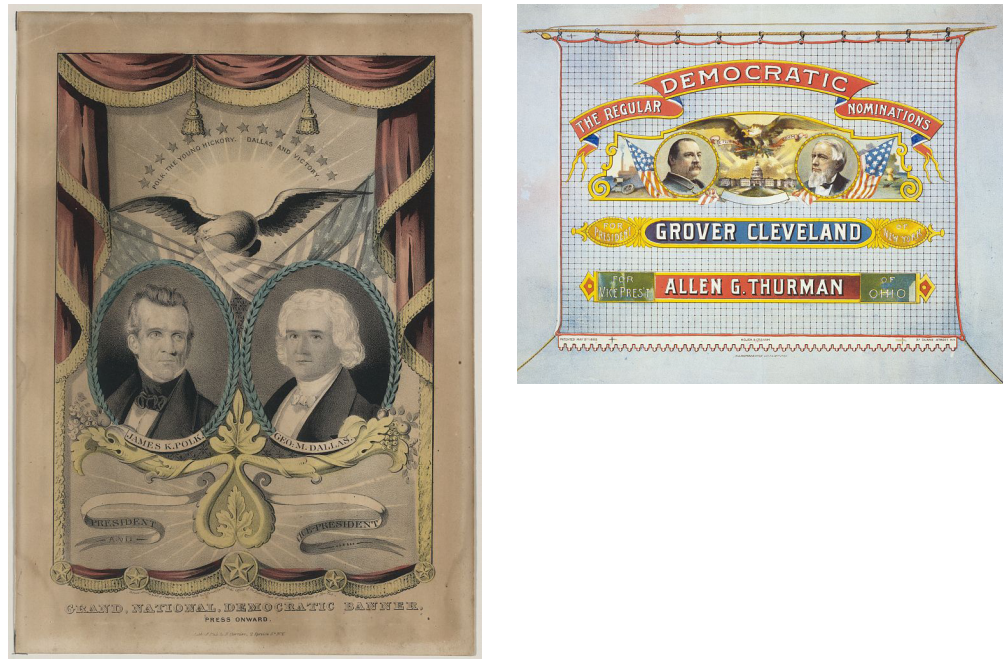
This proved to be a valuable exercise. I found the posters to be very visually appealing. Their combination of what appeared to be hand carved baroque-style wood elements, tapestry banners and patriotic imagery was both interesting and compelling. This style added the flair that I needed while reinforcing the political tones. I really liked the idea of combining something that is so old, with the web which is still relatively new. I also felt that using this style would set the design apart from other websites since it was well outside the bounds of current design trends. These posters inspired a unique style that would become the final style of MakeMineCount. See figure 5C-12 and 5C-13 on the next page.

Figure 6C-12 Final Mockup - Introduction

Figure 6C-13 Final Mockup - Configuration

There are some noticeable changes in this mockup from the previous versions. One aspect of the vintage posters that I really liked was the texture. The now-faded paper that they were printed on afforded me the opportunity to bring some interesting textures into my design. Those textures are apparent in the background and in the negative space behind the logo. In order to match the vintage poster style, the body copy font was changed to a serif font, Bookman Old Style. The header text font remained as Cooper Std. Black. Additionally, the width of the content panels was narrowed, and the height extended. Though this did afford the opportunity to include more content vertically on the page, I believe that this was ultimately a mistake, which I discuss in section six. The horizontal scrolling in the configure section was accomplished using a scroll metaphor, implementing a unique interface which is discussed at length in the following section. However, overall, the new design was more functional and more visually exciting, qualities that were really important to accomplish the goals of this project.

D. Development

Developing an application of this magnitude was a daunting task. In the end, this project required nearly 30 Actionscript files, two Flash source files, four XML files, a text file, a CSS file, several PHP files, and an HTML file. All of the Flash code was written by hand in Actionscript 3.0. All animation for the application was done entirely with code via the Tweener animation library. All data for the application was loaded from external files. It would require another fifty pages to describe the entire development process in depth, instead, this section will focus on providing an overview of highlights and challenges.

XML creation

In the initial planning for the development portion of the application, it was decided that XML would drive the entire project. Today's web applications are built around an industry-accepted standard that the data should be separate from the presentation, allowing for easier updating. In keeping with that standard, I planned to load several external XML files throughout the application, each serving a specific function. As previously mentioned, this project uses four XML files, one for the intro and configuration sections, one for the candidates, one for the issues learning module and one for the finances learning module. The first phase of development was creating these files.

The configuration XML was easily hand coded since it had only a few entries containing the data for the configuration section. However, due

[17] Ellison, Mark. 2006. "Converting a List of Data to XML using Microsoft Excel 2003". Available Online. http://www.codeproject.com/KB/cpp/ExcelListToXml.aspx

to the amount of information that would be needed in the finances and issues files, I sought out an automated process to move the data from the Microsoft Excel spreadsheets to XML. Using a tutorial from The Code Project,[17] I was able to do so using the Windows version of Microsoft Excel 2003 via the Export XML feature. The process required that I make a small schema file for each XML structure.

Excel then mapped the data from a specially formatted spreadsheet containing my data to the schema file. The result was an auto-generated well-formed XML file. This process was used for the issues and finance sections and save hours of time that would have otherwise been spent hand-coding XML. See figures 6D-1, 6D-2, 6D-3 and 6D-4 below for examples. Unfortunately, this process could not be duplicated for the candidate XML file, since the data was specific to each candidate, therefore the candidate XML file was hand-coded.

Figure 6D-1 Issues Excel Spreadsheet

Figure 6D-2 Issues XML Schema

```
1   <?xml version="1.0" encoding="utf-8"?>
2   <issues>
3       <issue>
4           <name></name>
5           <question></question>
6           <answers>
7               <a></a>
8               <b></b>
9               <c></c>
10              <d></d>
11              <e></e>
12          </answers>
13          <responses>
14              <giuliani></giuliani>
15              <huckabee></huckabee>
16              <mccain></mccain>
17              <romney></romney>
18              <biden></biden>
19              <clinton></clinton>
20              <edwards></edwards>
21              <obama></obama>
22          </responses>
23      </issue>
24  </issues>
```

Figure 6D-3 Sample Excel 2003 XML Export
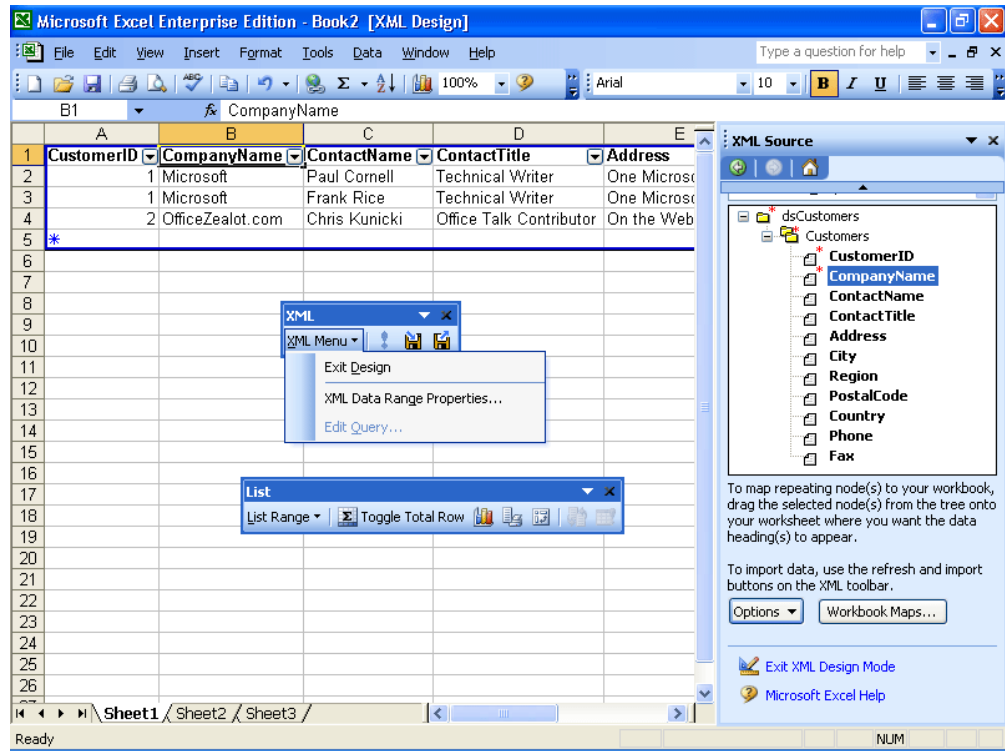
Figure 6D-4 Excel-Generated XML

```
1   <?xml version="1.0" encoding="UTF-8" standalone="yes"?>
2   <issues>
3       <issue>
4           <name>Iraq</name>
5           <shortname>iraq</shortname>
6           <question>The following strategy should be employed in Iraq:</qu
7           <answers>
8               <a>Increase the number of troops</a>
9               <b>Maintain current troop levels and stay until the war is o
10              <c>A phased withdrawl of troops with a set date to have troo
11              <d>Immediately withdrawl a majority of troops and maintain a
12          </answers>
13          <responses>
14              <giuliani>b</giuliani>
15              <huckabee>b</huckabee>
16              <mccain>a</mccain>
17              <romney>b</romney>
18              <biden>d</biden>
19              <clinton>c</clinton>
20              <edwards>d</edwards>
21              <obama>c</obama>
22          </responses>
23      </issue>
24      <issue>
```

Preloading / Scaling

Unlike traditional HTML websites, Flash is uniquely poised to load the entire site's content before the user ever begins viewing the site. Unfortunately, because Flash loads all assets at run-time, it is impossible to create a functional preloader in the same Flash file as the main content. If you were to do so, the result for users on slower connections is that they see nothing while the application is loading because. The industry practice to avoid this is to create a shell SWF that contains the preloader. When run, the shell SWF loads in the main SWF that contains the content. Because the shell SWF is significantly smaller in size, in my case 16KB, it loads quickly and displays a preloader while the content SWF is loading. See figure 6D-5 below.

Figure 6D-5 Loading Model
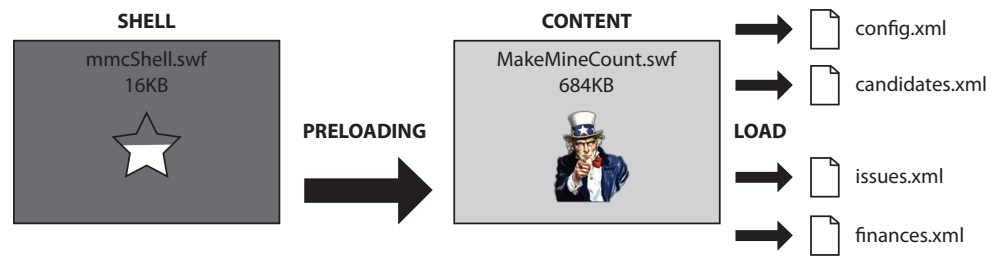
Once the content SWF is loaded, it performs all functions related to the application, including loading the data XML files, except for one; handling the resizing of the application. Because the application scales to fit the entire browser window, the shell SWF is listening for a stage resize event. When the stage is resized, the shell SWF centers the content SWF according to the new browser dimensions and tells the content SWF to update itself accordingly as well. If the browser dimensions are less than 960px wide or 660px in height, no scaling occurs. This prevents the content from moving out of view. The result is a seamless, fluid experience regardless of the browser size.

Class structure

As previously mentioned, this application has nearly thirty Actionscript files or classes. Classes were important because they allowed for various components of the application to have their own unique set of functions. Through the use of classes, each MovieClip or button "knew" its own information or actions. For instance, each of the menus, "Menu" and "Progress" has its own class. The menus "knew" when then were clicked, they should drop down. This made streamlined the development process. While classes were invaluable in this project, I believe I could

have leveraged the class implementation even further, which I discuss in section six.

The document class, "MakeMineCount.as", served as the engine for the entire application. It managed the loading, unloading and animation of each of the major sections (Intro, Configure, Learning, and Results), as well as tracked the users progress through the application. It was supported by four other main classes, connected to 4 MovieClips, that handled the specific functions for each of those major sections. These four classes handled the loading of the XML data specific to each of their sections. Between these five classes alone, there are more than 1600 lines of code.

Scrolling Interface

Because the scrolling interface in the configuration section is so complex and unique, I'd like to describe how it was developed. With this particular element, I was really seeking to push the boundaries of conventional navigation. To do so, I decided to use a scroll as a metaphor. In order to read a scroll, you pull the paper to the left to reveal more content on the right, hence the next button was placed to the left of the previous button. See figure 5D-6.

Figure 6D-6 Scrolling Interface Buttons

The content MovieClip (the one that scrolls) was setup to be one extremely wide clip. When the user clicks and drags the next button to the left, the content MovieClip moves to the left with the button. It was setup so that when the user drags the next button, they cannot drag further right than the next buttons initial position. Likewise, if the user drags the previous button to the right, the content clip moves to the right.

Throughout the width of the content MovieClip there are "hotspots", (shown in pink in figure 6D-7) strategically placed in the middle of the each section of content. In addition, there are larger "trigger" hotspots (shown in pink in figure 6D-8) outside of the content MovieClip placed near the edges of the content area. When the user clicks the previous or next button, the application begins checking whether or not any two

hotspots are overlapping (see figure 6D-9). When a hotspot within the content clip hits a trigger hotspot, the content MovieClip animates to its next position, which is such that the next hotspot is centered in the middle of the content window (see figure 6D-10). Also, the previous and next buttons are animated back to the middle and the event listeners for all events are reset.

Figure 6D-7 Content Clip Hotspots
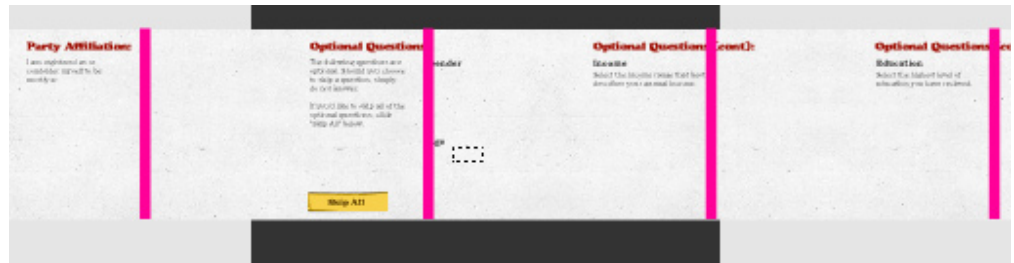
Figure 6D-8 Trigger Hotspots
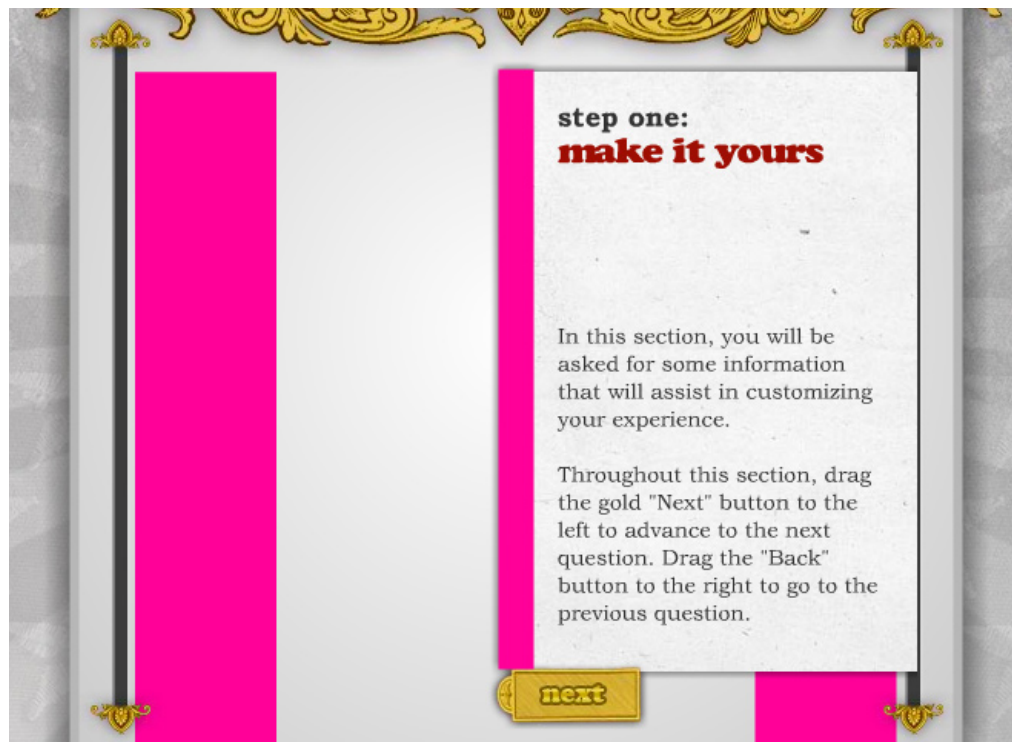
Figure 6D-9 Hotspots Nearly Overlapping
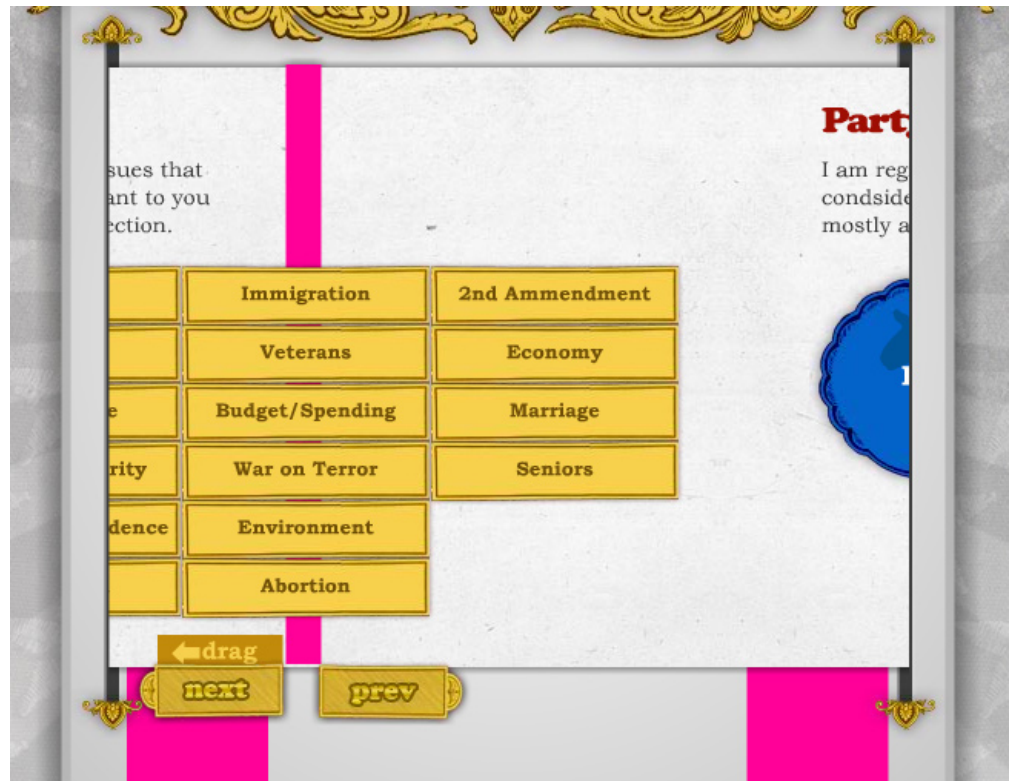
Figure 6D-10 Post Hotspot Overlap
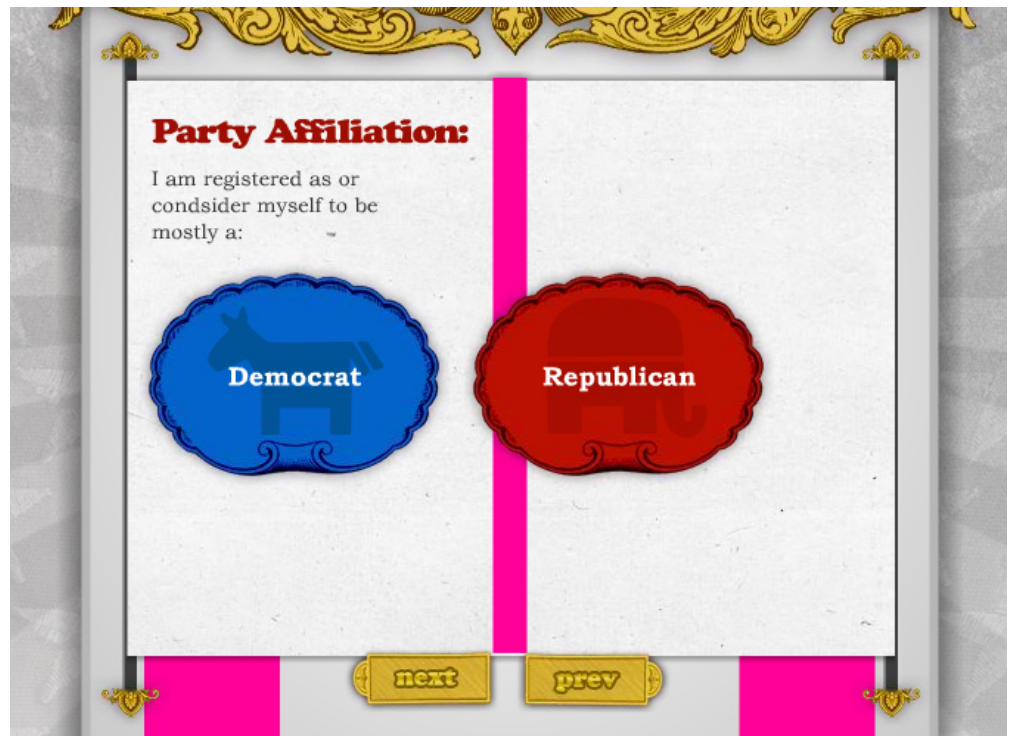
Linear Development

One of the problems with this project, strictly from a development standpoint, is its linear nature. Because the application requires a series of steps, as I got further into the development process, the testing became more tedious. I would have to complete each step in order to get to the next section. In order to save time, I created a testing button and deployed it in each section. When clicked, the testing button provided the application with all of the information it needed to advance to the next section without disrupting the application's flow. With the change of three variables in the testing button's class, it could easily be turned on and off. See figure 6D-11.

Figure 6D-11 Testing Button
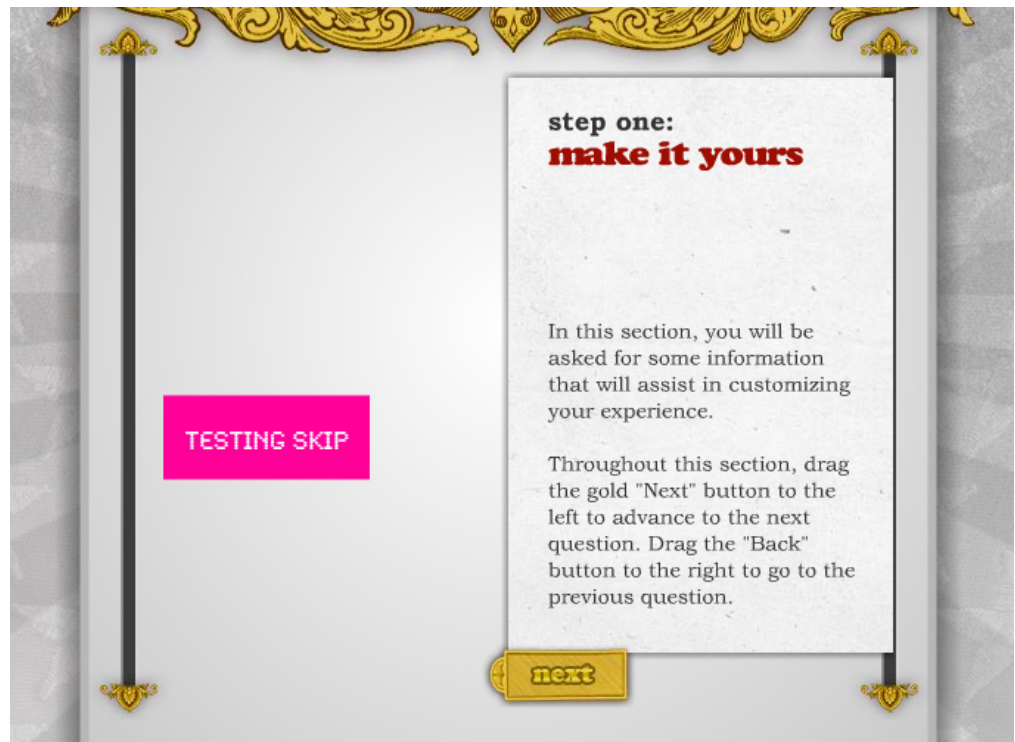
Dynamic Graph Results

In the results of the campaign finance learning module the user is presented with a bar graph that shows the percentage of the campaign dollars that they either accepted or rejected. This bar graph needed to be dynamic since it depended upon which candidate the user selected and which contributor's dollars they accepted and rejected.

Several pieces of data were tracked in order to create the graph.
As the user accepted funds from a contributor, the contribution amount was added to a variable tracking accepted funds. Likewise, as the user rejected funds, the amount was added to a variable tracking rejected funds. Upon completion, the accepted and rejected totals were divided by the total amount of campaign dollars from the top ten contributors which resulted in a percentage.

Flash MovieClips have a properties called scaleX and scaleY. Both properties are expressed as a percentage (0.0 to 1.0). The bars in the graph a simple MovieClips. When they first appear, their scaleY property is set to 0.01. Through the Tweener animation engine, their scaleY property is animated to the percentage described in the previous paragraph. The result is a dynamic, animated bar graph. See figure 6D-12.

Figure 6D-12 Dynamic Bar Graph
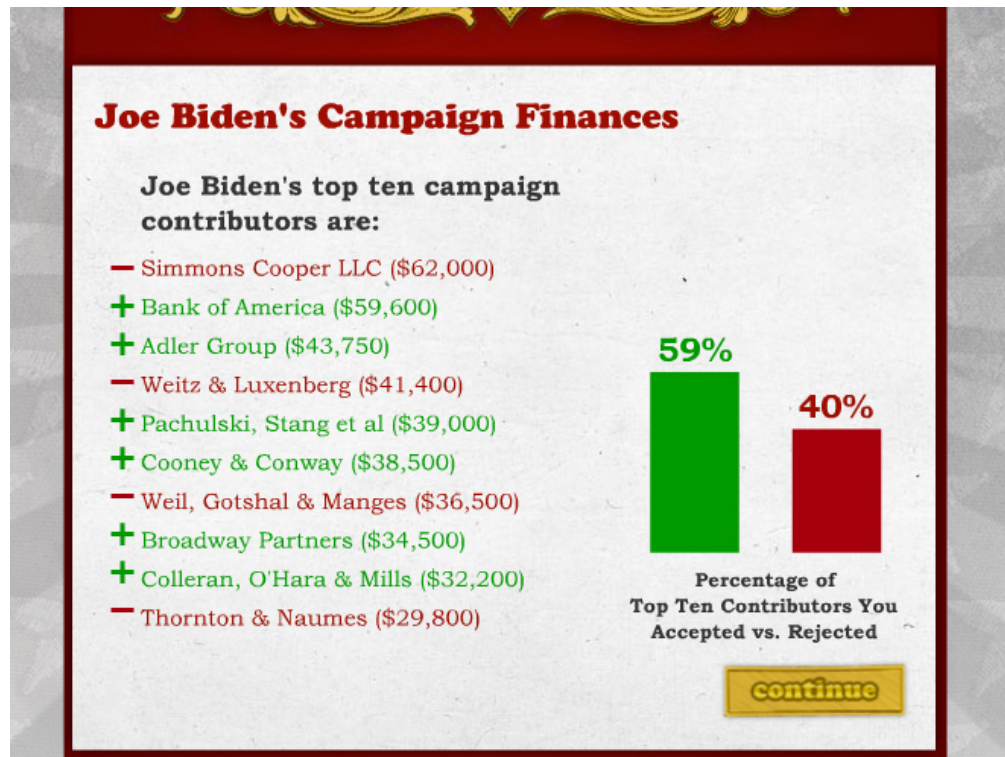
PHP Remoting

The voting record learning module required that data retrieved from the Project VoteSmart API. In order to get that data, I needed to use a technique known as PHP remoting. This complicated technique involves the Flash file communicating with a PHP file on the server which communicates with the Project VoteSmart server to retrieve the data. The PHP file then outputs XML and returns it to Flash. Once in Flash, the XML can be used in the same way as local XML. I will briefly describe how this was achieved.

The PHP file needed to include some basic information required to connect to the VoteSmart database including a unique API key assigned specifically to me and the libraries that would be needed. In this case those libraries are "Candidates", and "Votes". In the PHP file, I created a function called "getVotes" to retrieve the votes of the candidate. Flash passes the user's candidate selection (name of candidate) and the issues the user has selected (as an array) into the PHP file as _POST variables. With this information, the appropriate date can be retrieved from the VoteSmart database. For this example, let's suppose that the user selects Joe Biden.

VoteSmart assigns each politician a unique ID. This ID is used to retrieve data about the politician whenever using the various functions of the API. The getVotes function queries the VoteSmart database using an API function called "Candidates.getByLastname" to determine Joe Biden's ID. The call in the PHP looks like this:

$candidate = Candidates.getByLastname(_POST[$can]);

The function returns a large amount of XML, but only the candidates' ID is needed, so the ID is retrieved from the XML like this:

$id = $candidate->candidateId

Now that the ID is known, all of the bills voted on by a candidate in a specific category can be obtained using another API function called "Votes.getByOfficial". In the PHP:

$bills = Votes.getByOfficial($id, null, $categoryID)

The category ID's were obtained manually and matched to the issues in the configuration section. Bills were retrieved for each of the five cat-

egories selected by the user. It is only necessary to use one bill from each category, thus:

$bill = $bills[0]

This variable now contains XML for a bill in a category selected by the user, voted on by the candidate the user has selected. That XML contains the candidates vote action (yea or nay), and a title (a short description of the bill). The XML for each of the five bills is combined into one XML file and returned to Flash for use.

This technique was quite involved. Due to the lack of documentation on the API and the API functions somewhat complex nature, it took many hours and a lot of PHP learning to get this PHP file to function properly. In addition, the API server at Project VoteSmart is not always reliable, adding to the frustration. That said, PHP remoting is an increasingly important part of Flash development. I am thankful to have had the experience learning a new programming language and broadening my development skills.

07. CONCLUSION

Overall, I believe this project was largely successful. I was able to demonstrate that interactivity can be used to take a complex data source (political data) and tailor it to the user to create a unique, interesting and engaging user experience. On a personal level, with this project I was able demonstrate my ability to effectively design and program a full-featured interactive application around data that required a significant amount of analysis and system thinking.

While this project was largely successful and the feedback was mostly positive, there were a number of "lessons learned", which I discuss at length in this section.

A. Feedback

After months of peer-testing wireframes, mockups and the initial builds, I was finally able to put it to the test with mainstream users. While this project was on display at the May 2006 Computer Graphics Design Thesis exhibition, users were asked to complete a survey regarding their experience. The survey consisted of three sections: navigation, graphics and effectiveness, with four to six questions in each section. I chose these three sections to gauge the three core qualities of the application: usability (navigation), engagement (graphics), and learning (effectiveness). Six users responded to the survey. A sample survey can be found in Appendix D. The results of the survey are as follows:

Navigation
1. This site was easy to use.
   Average answer: 1.5 (1 = Easy, 5 = Hard)

2. The navigation makes sense.
   Average answer: 1.5 (1 = Agree, 5 = Disagree)

3. This site was difficult to navigate at times.
   Average answer: 3.5 (1 = Agree, 5 = Disagree)

4. I had the most trouble navigating in this section:
   • Horizontal / Drag nav (listed twice)
   • Finances (listed twice)

Graphics

1. The graphics are interesting.
   Average answer: 1 (1 = Agree, 5 = Disagree)

2. The colors are effective.
   Average answer: 1 (1 = Agree, 5 = Disagree)

3. The text is easy to read.
   Average answer: 1 (1 = Agree, 5 = Disagree)

4. I would like to see more graphics and read less.
   Average answer: 3.6 (1 = Agree, 5 = Disagree)

5. I would like to read more and see fewer graphics.
   Average answer: 4.3 (1 = Agree, 5 = Disagree)

Effectiveness

1. I would use this site again.
   Average answer: Maybe (Definitely, Maybe, Neutral, Maybe Not, Definitely Not)

2. I would tell my friends about this site.
   Average answer: Maybe (Definitely, Maybe, Neutral, Maybe Not, Definitely Not)

3. This site is informative.
   Average answer: Definitely (Definitely, Maybe, Neutral, Maybe Not, Definitely Not)

4. I expected to see or learn about _____ but it was not on the site.
   • Obama (1 response) "Stopped working, even after refreshing"

5. I would change or add:
   • "A better menu with options to skip backwards to any point"
   • "More explanations of what my actions were going to result in"

6. Other comments:
   • "Nice Job!"
   • "Good graphics, good colors, easy to read, no too much info, fascinating, good job!"

The comments from the survey are mostly positive. Key takeaways:

- Users felt the site was easy to use.
- The horizontal / sliding navigation needs to be revised.
- Graphics and colors are interesting and effective.
- Text/Graphics balance is good.
- The site is informative.

In hindsight, I would have added a few questions to the survey including:

- This site was engaging. (Agree/Disagree)
- I learned something new about the candidate that I selected. (Agree/Disagree)
- This site influenced my vote. (Agree/Disagree)

Although not entirely conclusive due to the small sample size, these results do support my conclusion that the project successfully accomplished its stated purpose: to create a more informed voter through an engaging interactive experience.

B. Lessons Learned

This project was certainly a learning experience. Despite a tremendous amount of strategic planning, there were some challenges that couldn't be foreseen. There were also some challenges that with a bit more foresight probably could have been avoided. The remainder of this section is devoted to describing these challenges and the areas in which this project could be improved.

Content

The voting record section proved to be a challenge. While many of the candidates formerly served in the U.S. Congress, some had not. If a candidate held a non-voting office, such as Governor or Mayor, they had no voting record. This meant that a user selecting such a candidate, could only take two of the learning courses. If this model were to be expanded to other elections, this course may need to be replaced with something that applies to all candidates.

Gathering the content for this project proved to be a sizable task. What I had thought would be simple calls to an API to retrieve data, turned into collecting a large amount of data manually. Additionally, some of the data had to be analyzed as and, as objectively as possible, interpreted. This method left room for doubt about the validity of the data.

If this concept were to be expanded and applied en masse to general elections using this data collection method, it would be impossible for a single person to maintain. Either a large team of people would be needed to collect and code the data, or the process would need to be automated in some fashion. Ideally, the data would be pulled from existing APIs, such as Project VoteSmart, OpenSecrets, and GovTrack. That said, if the data were not available via an API for one of the learning courses (as was the case for issue positions), the courses would need to be modified or replaced accordingly.

Design

While I think the final design "worked", I think that with a bit more perfecting, it could have been better. In retrospect, it is apparent that the final design didn't utilize the browser space as best it could have. There was a significant amount of horizontal space that was wasted. In fact, the content area could have been widened by 440px (or nearly half the usable width). See figure 7B-1 below. This would have utilized the entire browser window at a1024 x768 screen resolution. Because the Flash is scalable, the background would have scaled to the width and height of the browser, taking up the entire window at larger resolutions.

Figure 7B-1 Application Sizing

Additionally, because the logo and header elements are secondary to the content in terms of importance, I would reduce the height of the header to 120px from its current height of 170px. This would not only draw less attention to those elements, but also provide more vertical space for content.

In the feedback from the surveys, it was mentioned that the sliding navigation on the configuration page was difficult to use. The configuration of the previous and next buttons is opposite of most traditional websites. Normally, the next button is to the right and the previous button is to the left. Additionally, most sites you simply click the previous and next buttons, rather than dragging. Anticipating that there might be some confusion over this, I built in an instructional cue to let a user know how to interact with the buttons. When the user clicked the button, a small slideout informed the user to drag. See figure 7B-2 below.

Figure 7B-2 Sliding Interface Cue

Despite the visual cues, it seems as though some users still had difficulty with the interface. I was hoping to push the boundaries of traditional navigation. Again, the results of the survey are not conclusive, so perhaps with more testing, the interface could still be viable. If not, it could easily be remedied by reversing the buttons so that previous appears to the left and next to the right.

However, the most glaring error in this version of the design was a lack of a back button for the major sections. While users were able to go to the previous question in the configuration panel, once they left the configuration section, they were not able to return. This was true for the other major sections as well. For example, if a user accidentally selected Hillary Clinton, they would have to restart the application, rather than simply going back and selecting a different candidate. Though a major oversight, it could also easily be fixed by adding a simple button to each major section.

Development

This was easily the most challenging Flash development project that I have ever worked completed. With nearly thirty Actionscript class files, it was at times difficult to keep track of which files were attached to specific MovieClips. Often times just the management of the files slowed down the development process. With some better pre-planning, these problems could have been avoided.

Because this site was hand-coded from scratch, it took a considerable amount of time to develop the structure around unloading and loading the different sections of the application and managing the data external data. In retrospect, this project was well-suited for a Flash framework such as Gaia. Frameworks are an industry-recognized method employed to develop applications of this nature. Specifically, Gaia is an "open-source front-end Flash Framework for AS3 and AS2 designed to dramatically reduce development time."[19]

[19]Gaia Framework for Adobe Flash. 2008. Available online. http://www. gaiaflashframework.com/

Gaia enables the developer to setup a page structure for a site in XML and then Gaia creates unique .SWF files for each page. Gaia uses pre-determined functions to manage the loading and unloading of the pages and assets. It includes an extensive API which allows extreme customization, event hijacking, and asset management. In short, it does indeed dramatically reduce development time by handling common application tasks.

In the case of this application, I could have set up the Gaia system in such a manner that the introduction, configuration, learning introduction and each learning module were their own self-contained pages. Gaia would have handled the loading and unloading of these pages and the assets (the XML data) that were associated with each section. Thus, because Gaia handles the common application tasks, I could have spent less time coding those functions and focused a large majority of my efforts on coding the specific features for each section.

However, even without Gaia I could have been more efficient with my coding. I often opted to duplicate entire classes for objects that performed similar functions rather than extending the functionality of existing classes. This lead to a lot of redundant code and unnecessary files. The XML files could have been simplified and in fact, I could have used XML to an even greater extent to manage the content. Overall, the coding in this project could have been streamlined to simplify the development process and shorten the development timeline.

C. Summary

The end result of this project was significantly different than the idea at its inception. That said, the fundamental goal of the project remained the same: to help a voter make the best decision for them. Born out of my passion for politics and interactive design, the original goals for this project were certainly lofty. But, in order for the project to be viable in the given timeframe, those goals had to be scaled back. Despite the scale change and obstacles, this project succeeds as a proof of concept, achieving the established goals by making complex data easy to understand through interactivity in a way that was engaging for users. I believe that this concept, with some modifications, could be applied on a larger scale to all political races, making it relevant to all Americans of voting age.

This project was fulfilling on many levels for me. Given my passion for politics and interactive design, I can't imagine a more fitting or exciting project for me to take on. I whole-heartedly believe that participation in the political process is the keystone to our success as a nation, and that an informed body of voters is essential to that success. This project allowed me to bring that passion to others. In addition, I was able to effectively demonstrate my ability to research, analyze, conceptualize and execute an application of this caliber and magnitude.

I would like to thank my thesis committee: Chris Jackson, Alex Bitterman and Nancy Doubleday for their guidance, support, and encouragement throughout the process. Their feedback was crucial in bringing this project to realization. In particular, chief advisor Chris Jackson's extensive knowledge of Flash and Actionscript was an invaluable resource.

In conclusion, I believe that this kind of interactivity can bring information to life in ways that are contagious. Given the role of politics in our society, I can't think of more important information to spread. While I do not know whether or not this project informed a user's decision for election 2008, it is certainly my hope that this model can be applied to future elections at a larger scale to truly Make Mine Count.

08. APPENDICES

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B. Issues Learning Model Questions and Answers

Iraq

The following strategy should be employed in Iraq:
- Increase the number of troops
- Maintain current troop levels and stay until the war is over
- A phased withdrawal of troops with a set date to have troops removed
- Immediately withdrawal a majority of troops and maintain a smaller force to train Iraqi troops

Taxes

If elected, my ideal candidate would do the following:
- Establish a "Fair Tax" program, eliminating income tax and replacing it with a national sales tax.
- Decrease taxes to promote spending and economic stimulation Simplify tax filing procedures
- Make the Bush tax cuts permanent
- Repealing the Bush tax cuts

Health care

Our healthcare system should be improved by:
- Reducing frivolous lawsuits
- Decreasing government involvement in the healthcare system and allowing the private sector to control the system.
- Encouraging solutions at the state level
- Allowing people to keep their current provider or choose a government plan

National / Homeland Security

Our nation should be made more secure by:
- Increasing our military strength
- Enabling existing agencies (FEMA, first responders, police, etc) to do their jobs more efficiently
- Continue the War on Terror to protect our interests at home
- Increase funding for homeland security
- Strengthening our alliances with international allies

Energy Independence

The government should make the U.S. energy independent by:
- Investing in new energy technologies
- Increase domestic energy production
- Create a strategic energy fund to fund investments in alternative energy
- Increase the use of renewable energy sources

Education

The education system should be changed by:
- Eliminating "No Child Left Behind"
- Advocating school choice, charter schools and voucher programs Improving and enhancing No Child Left Behind
- Making higher education more affordable
- Investing in teachers

Immigration

Immigration reforms should be made by:
- Improving Border Security
- Building a fence between the US and Mexico
- Improving our immigration system
- Holding employers accountable for hiring practices
- Provide an earned path to citizenship

Veterans

If elected, my ideal candidate would:
- Create comprehensive recovery plan for returning veterans
- Modernize the VA
- Provide Veterans with healthcare benefits similar to those received by federal employees
- Enact a 21st century GI Bill of Rights

Budget / Spending

If elected, my ideal candidate would:
- Eliminate ear mark spending
- Reform major social programs such as social security and medicare
- Eliminate deficit spending
- Enable the President to veto line-items on budgets
- Make government spending more accountable and efficient

War on Terror

The War on Terror should be fought by:
- Remaining on the offensive against terrorists
- Strengthening global alliances
- Creating a new worldwide organization similar to NATO for counter terrorism
- Developing international terrorism partnerships

Environment

If elected, my ideal candidate would:
- Recognize the relationship between the environment and the economy
- Establish the US as leader in environmental change
- Require more fuel efficient vehicles
- Work to reduce the effects of global warming
- Invest in clean energy

Abortion

If elected, my ideal candidate would:
- Support a ban on partial birth abortion
- Work to overturn Roe v. Wade
- Believes abortion is a woman's right

2nd Amendment

If elected, my ideal candidate would:
- Work to remove guns from the criminals by enforcing existing laws
- Protect gun manufacturer's from liability in gun crimes
- Be against gun control

Economy

If elected, my ideal candidate would:
- Support free trade agreements
- Reduce taxes and regulations on corporations
- Create a program to help individuals affected by the mortgage crisis
- Reduce income taxes on families, providing them with more take-home pay
- Enact trade deals that benefit American workers

Marriage

If elected, my ideal candidate:

- Believes marriage is for a man and a woman only
- Will repeal the Defense of Marriage Act
- Will work to provide equal benefits to same-sex couples

Seniors

If elected, my ideal candidate would help seniors by:

- Protecting Social Security
- Protecting and strengthening Medicare
- Lowering Medicare premiums

C. User Survey

Name:
Email:
May I contact you for further information?

Navigation

1) This site was easy to use:
1   2   3   4   5
Easy   Hard

2) The navigation makes sense:
1   2   3   4   5
Agree   Disagree

3) This site was difficult to navigate at times:
1   2   3   4   5
Agree   Disagree

4) I had the most trouble navigating in this section:

Why?

Graphics

1) The graphics are interesting:
1   2   3   4   5
Agree   Disagree

2) The colors are effective:
1   2   3   4   5
Agree   Disagree

3) The text is easy to read
1   2   3   4   5
Agree   Disagree

4) I would like to see more graphics and read less
1   2   3   4   5
Agree   Disagree

5) I would like to read more and see fewer graphics
1   2   3   4   5
Agree   Disagree

Effectiveness

1) I would use this site again

Definitely   Maybe   Neutral   Maybe not   Definitely Not

Why or Why Not?

2) I would tell my friends about this site

Definitely   Maybe   Neutral   Maybe not   Definitely Not

Why or Why Not?

3) This site is informative:

Definitely   Maybe   Neutral   Maybe not   Definitely Not

Why or Why Not?

4) I expected to see or learn about _____ but it was not on the site.

Comments:

5) I would change or add:

6) Other Comments

E. Project Proposal

Problem Statement

Factual political data such as voting records and campaign funding is readily available to the public; however, this data is often both boring and overwhelming due to how it is presented and thus may not be utilized to make important decisions in the voting process. In the today's media environment, where much of the information we consume is visually presented or interactive, this is both problematic and counterproductive to being a truly informed voter. As we near an election, arguably one of the most important elections to date, it is important that voters are armed with accurate information with which to make their decisions. Can interactivity be used to visually display complex political data in a way that both engages and entertains the user, without trivializing the seriousness of the content while appealing to age and experience-varied audiences? For my thesis I will develop a Flash-based web application that takes a large amount of complex political data about the elected officials of a given area and integrates it into a user-experience-driven interactive environment in an attempt to answer this question. My goals for the project are to create a user experience that makes important but often boring information, more accessible and less dry, and that develops a more informed voter and thus a more responsible citizen. My hope for this project on a personal level is that I will demonstrate my ability to effectively design an interactive application; highlight my analytical and creative thinking skills through the creation of a visual solution to displaying complex data; and demonstrate my well-roundedness by creating a utility of societal importance.

Background

According to the Gallup Poll, as of September of 2007, 64.8% of respondents indicated that they disapprove of the way Congress is doing its job, compared to only 53.3% disapproving ten years earlier[1]. Similarly, the presidential approval rating has been steadily decreasing from 90% in September of 2001 to 36% as of September 2007[2]. These decreases are despite the fact that the U.S. Census Bureau indicated an increase of 5% in the number of people who voted over the past two elections.[3] These statistics indicate that although more people are voting, they are less satisfied with those whom they elect. While there are a number of factors that likely influence the public satisfaction with its elected officials, a contributing factor may be that voters are ill-informed and thus elect someone who does not do the job the way they

[1]From The Gallup Poll "Presidential Job Approval In Depth" available at:
http://www.galluppoll.com/content/default.aspx?ci=1723

[2]From The Gallup Poll "Congress and the Public" available at:
http://www.galluppoll.com/content/default.aspx?ci=1600

[3]From the U.S. Census Bureau "Voting and Registration in the Election of November 2004" available at:
http://www.census.gov prod/2006pubs/p20-556.pdf

want it to be done. Voters may be ill informed for a variety of reasons. Muckraking campaign commercials often make the truth difficult to decipher. The media certainly have a huge role in swaying public opinion by shaping how the candidates are presented. How does a voter really know whom they are voting for?

Enter Project Vote-Smart. Project Vote-Smart is a non-profit organization that has had more than 6,000 people volunteer throughout the past 16 years to develop an extensive database of political information. Their database includes biographical, voting record, campaign finance, issue stance, and many other categories of information for major elected officials. These officials include the President and presidential candidates, Vice President and vice presidential candidates, U.S. Representatives, Senators, Governors and Lt. Governors, State Legislators, and several other statewide positions. The Project Vote-Smart website (vote-smart.org) allows users to enter their zip code and see a list of these officials. The user can then click on each official to access the aforementioned data. While this data is extremely useful, it is "dry" and arguably difficult to sift through due to its text-based "point and click" presentation. The user is presented with this complex information in ways that, by today's web standards, are very primitive and boring because it is not visually intensive or interactive. Because of the "dry" presentation of this data, only those who are very motivated or concerned will be likely to take the time to learn about their elected officials. Recently, Project Vote-Smart has released a web API that allows software developers to integrate the data from the Project Vote-Smart database into their own applications, which will be a crucial resource in the development of this thesis project.

Scope
The primary focus area for this thesis project is in interactive design, as my end product is an interactive web application. However, in developing this project I will also rely heavily upon information architecture and design, interface design, and usability. Of course, this project also deals with social responsibility in the sense that my end goal is to ensure that voters are better informed.

Literature Survey
The research for this project is sweeping in both breadth and depth. Because this project delves into many areas of design, it will require research in a number of areas. Two main research concerns are the content and interactive design. Other important research areas are inter-

face and information design.

The idea for this project came to full realization after visiting the Project Vote-Smart website (www.vote-smart.org). Vote-Smart is likely the most in-depth political website on the Internet. It has an enormous database on politicians from every state. The database includes biographical information, campaign contributions, voting record, stance on issues, committee service, speeches and public statements, and ratings from interest groups. As previously mentioned, it has recently released an API which will allow me to pull from and use information from its database. There are numerous other online resources that deal with politics and the web. Some of the better ones are epolitics.com, which has published an e-book titled, "Online Politics 101"; Personal Democracy, a discussion-based site that examines the role of technology in politics; and OpenCongress.org, which combines blogs, news and factual data related to the bills in Congress and presents them in a visually appealing way. These sites provide excellent resource lists in addition to their valuable articles. One article on epolitics.com (http://www.epolitics.com/2007/07/02/why-think-tanks-and-nonprofits-should-be-thinking-like-new-media-newsrooms/) makes a call for a project exactly like the one I am proposing. It discusses the need for non-profit organizations to incorporate interactive design elements with their databases.

With regard to interactive design, a wide body of literature exists on this topic, both online and offline. Dan Saffer's book, "Designing for Interaction: Creating Smart Applications and Clever Devices," is an excellent resource for broad strokes of interactive design. The Interaction Design Association has an extensive resource library, including case studies and a "principles & guidelines" section on their website which will also prove to be very useful. The company Persuasive Games specializes in creating Flash-based games that promote social change. Because this project will also deal with the visual representation of information, I will consult the book "Envisioning Information" by Edward Tufte, a leading scholar in information design. I will also use "Information Graphics: Innovative Solutions in Contemporary Design" by Peter Wilbur and Michael Burke. Additionally, InfoAestheics.com will be a great resource for inspiration with regard to informational graphics.

I have also begun to examine many political websites to identify commonalities in interface design. TemplateMonster.com has several "political" pre-packaged website templates that provide insight on

interface design for politically-based sites. While many political and news sites have interactive elements, I have not yet encountered an application like the one I have proposed; however, one site comes close. State-machine.org visually presents politicians, interest groups and campaign contributions and the connections between the groups and the politicians, but it is difficult to use and did not work properly. Another site, redistrictinggame.org is a game that allows users to learn about the issue of political redistricting. Some sites such as votesmart. org and opensecrets.org are devoted to developing extensive political databases but do little in the way of content presentation. Many sites, such as the New York Times interactive "Election 2004" and "Election 2008" guides, are interactive or have "interactive" maps that provide voting data from past elections or contact information for elected officials. Another similar site, produced by Capitol Advantage, allows users to click on a state in order to find their elected officials.

Methodology
The first step toward the completion of this project is to continue to review the literature pertaining to the research areas. This is a process that will continue over the duration of the project. The next phase will be choosing and understanding the appropriate technology that will be used to create the application. The application will likely be built in either the Flash or Flex environment, as they are most suitable for developing interactive applications and interfacing with XML, the output language of Vote-Smart's web API. This phase will also include in-depth learning of how to interface Flash and PHP to actually retrieve the data from the Vote-Smart database. Based on my understanding of the technology, available research, information design, flowcharting and some creative thinking, I will then develop interface concepts that will be user tested. Once a layout is selected, I will begin building the prototype. The prototype will then be user tested. Changes will be made and a fully functional prototype will be ready for thesis defense. Following defense, final changes will be made and the project will be documented.

Throughout the project, I will use a panel to conduct user testing that will consist of 8 to 10 hand-selected individuals from various backgrounds and experience levels, in order to ensure that a majority of potential users are represented. I hope the panel will consist of individuals from both RIT and the surrounding community of varied ages within the scope of the target audience, varied internet usage experience, and varied political motivations. In order for them to evaluate the

project, I will provide the users with several scenarios that ask them to accomplish specific tasks within the application. They will then be asked to respond to a survey that will be used to rate their satisfaction with the experience and test the knowledge they gained about the elected officials. The estimated time frame for the completion of this project is 26 weeks, ending on May 23, 2008. For further information, please consult the attached timeline.

Limitations
Due to the time constraints and the large amount of data associated with this project, it will be limited to a three-state geographical region. Time permitting, this region will be expanded to include a larger area. A minor limitation is the acquisition of the technical knowledge related to Flash/Flex/PHP programming, which may slow the process but not stifle it.

Implications
The implications of this project are far reaching. Assuming that the project is successful, it would be expanded to include all 50 states. Consequently, voters would have an invaluable resource available to them to learn about their elected officials and/or candidates. A similar system could be created for local governments as well. Once armed with the knowledge gained from using this resource, they will vote for new candidates or re-elect those presently in office who will best serve their interests. The previously mentioned Congressional job approval rating would increase, as the constituent's needs are being better met.

Peer Review
Once completed, this project may be submitted to the following organizations for peer review, though this list is not static:
- The FWA: The Favourite Website Awards
thefwa.com
- Best Flash
bestflashanimationsite.com
- The Webby Awards
webbyawards.com
- Communication Arts Interactive Media Awards
commarts.com/ca/magazine/comp/mag_ia.html
- Horizon Interactive Awards
horizoninteractiveawards.com/
- Interactive Media Awards
interactivemediaawards.com

- SIGGRAPH
siggraph.org

Audience

The primary audience for this application would be the voting population of the United States, either male or female. For several reasons, the target age for the audience is the young-to-middle-aged adult (18-45). Trailing Boomers, Generation-X (the MTV generation) and Generation-Y (the Millennials, the Internet Generation) are more inclined to visuals due to technology adoption patterns. According to a Pew Internet report, 59% of the U.S. "elite" technology users are between the ages of 18 and 49.4 The target audience will have at least a high school education and moderate experience using the internet and interactive applications. Their knowledge of politics is minimal to moderate, though even those with extensive knowledge will find this site useful. However, their motivation for politics is moderate at best. Consider Daniel. Daniel is a 24-year-old-male. He graduated from West Chester University of Pennsylvania in 2006 with a degree in accounting and currently resides in Havertown, PA. Daniel reads the news on the New York Times website each morning for the first 15 minutes he is at work while drinking his morning coffee. Daniel is a registered Republican and voted in the 2004 election. Though he tries to follow politics in the news as much as possible, he is both frustrated and annoyed by the media's representation of politicians and the lack of access to meaningful data on the politicians he is interested in. He uses the internet daily at his job and uses his MacBook at home to edit photos he has taken. He has sporadically visited several politicians' websites and read some political blogs but prefers websites related to photography. Daniel has learned about a website that will provide data on his elected officials' voting record and campaign funding while allowing him to interact with the data, so he decides to visit the site.

Susan is a 32-year-old female. She graduated from Ewing Public High School in Trenton, New Jersey, where she currently lives. Susan was in the top 20% of her class. She is currently an office assistant in a busy dental office. Susan has very little concern for politics but is very concerned about the state of the healthcare industry as it relates to her job. Susan often watches the 6:00 news as she prepares dinner. Though she isn't a tech-guru, she does use a computer at work and checks her e-mail from her PC at home. She recently received an e-mail postcard from a co-worker with a picture of a New Jersey senator who recently voted in favor of a bill proposing a universal healthcare system and a

web address. Susan clicks on the postcard and it sends her to the site.

Technical Requirements
This thesis project will require the following software and hardware for design:
1.0+ Ghz PC (Windows XP or Apple OSX 10.4+)
Broadband connection
Adobe Flash, Photoshop, and Illustrator CS3
Adobe Flash Player 9
Internet Explorer 6+, Firefox 1.0+, Safari 2.0+ with Flash Player 9 plugin
PHP capable webhosting with SimpleXML PHP extension installed

This thesis project will require the following software and hardware for viewing:
1.0+ Ghz (Windows XP or Apple OSX 10.0+)
56k+ modem connection (broadband recommended)
Internet Explorer 6+, Firefox 1.0+, Safari 2.0+ with Flash Player 9 plugin