

Ranking Político*

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1. INTRODUCTION

Unfortunately, Brazil is notorious for governmental corruption. In 2013 the country ranked 72 in the Corruption Perceptions Index created by the Transparency International. That is below countries like Namibia (57), Bahrain (57), and Kuwait (69) [7]. “From 2003 to 2012, the federal auditor’s office fired nearly 4,000 employees from public service. And most of these charges stemmed from corruption or dishonesty” [6].

Distrust in the government and disenchantment towards politicians leads to a lack of engagement from the general public. In this scenario, politicians may feel less accountable towards the tiered and mildly apathetic population, thus creating a vicious cycle of disrespect towards constituents. With the believe that ideas have the potential to cause large positive impact, we set ourselves to help renew public engagement in politics, and to incentivize politicians to carry out positive, responsible actions. We tackle our goals through technology and sound design principles.

Our approach is built on a trend. With more than 260 million cell phones and a population of just under 200 million people, Brazil is a fairly well connected country [3]. Also recently, the financially constrained lower class has increased access to the internet, often not through desktop or laptop computers, but through smart phone devices. With this in mind, we designed a mobile application to display the rank of politicians. The expected users of the systems are Brazilian citizens who are cellphone owners and who can legally vote. Voting is mandatory in the country, and the electorate is very diverse. Keeping in mind Brazil’s poor performance in terms of education rate [5], we have developed the application to be highly graphical, to employ simple color coding, be simple to use, and to be as universally accessible as possible.

One typical usage scenario for the application is as a means for the users to track their favorite or least favorite politicians. This can be transformative given the myriad of political parties (there are more than 30 parties registered in Brazil [4]), the large number of politicians, and the constant flip-flopping of politicians between different parties. By creating a personalized watch-lists within the application, it becomes easier for the average citizen to track who he/she has voted for in the past, and to see how these politicians are performing today.

Another usage scenario for the application is to allow its

users to easily and quickly get feedback on the names of the politicians who are currently in the news. Given that the coverage of corruption charges is a constant theme in Brazil, the proposed application has the potential to provide the user with a context to these news stories; thus making politics more intelligible and hopefully interesting. Our goal is to empower citizens and to make them feel as part of the country’s political discussion.

A very important user expectation is that the data must be unbiased and not tied to any particular party or political agenda. In order to meet this expectation, the sources of the data must be trustworthy, and the calculation of the political rank must be clear and accessible. Transparency is paramount to building users’ trust.

One constraint of the design is that the application should be functional in places where there is no or low cellphone coverage. To meet that constraint, the data is cached locally. Finally, we were also constrained in terms of time and resources. Some desirable features were de-prioritized because they would require not only a user interface, but also may hours of server side and back-end development. Though these features are not present in the current version of the application they will be tackled as future work.

2. REQUIREMENTS GATHERING

The politicos.org.br website ranks politicians based on crowd sourced data[1], and the goal of this project is to reuse the data to develop a more user friendly application for mobile devices. By creating a better user experience, the aim is to provide a tool that helps Brazilian voters contribute to discussion and gather information from their phones.

2.1 Competitive Analysis

From the point of view of mobile users, the competitor website imposes limitations in terms of navigation[1]. For example, in Figure 1 the page width is too large for a mobile device and the search window becomes hidden during a search.

Good aspects of the competitor site include ability to view individual politician information as well as ability to search the website.

2.2 Data Gathering

Requirements were gathered during the creation of personas, which were generated using IDEO card sort activities including Card Sort, A Day in the Life and Behavioral Archeology. The process involved in-person and phone interviews, focus groups, mouse tracking software and surveys.

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Figure 1: Competitor’s search feature using a phone.

3. REQUIREMENTS ANALYSIS

When it comes to gathering data, personas, also known as abstract user representations or fictional users can be used to complement a full range of research methods. Personas create a strong focus on users and can be used in story boards and design discussions, and can serve as a medium for communication [9]. This project uses personas to ensure user centered design.

3.1 Personas

Personas[9] for the application included an IT Manager in Latin America who is a typical user, a teacher who is an occasional user, a university student, a non-profit student manager and a political activist. Described is an example of an occasional user persona representing a typical user.

3.1.1 Narrative

This persona has worked for various political organizations in the past and is very interested in peoples access to information. She believes that the more access people have to information the better their choices will be. She is very comfortable around a computer and also with mobile devices and uses both of them daily.

3.1.2 Key Attributes

Is frustrated when a website is unavailable/doesn’t work how expected on a mobile device. Wants a quick overview of items that is shareable. Wants to be able to back up claims made if needed using citations.

3.1.3 Key Goals

See at a glance the current "Worst Offenders." Use of visuals (graphs, charts) to get a quick picture of the current situation and also for use in social media. Be able to have clear citations so she can share with others and be able to back up her arguments.

In order to get data using behavioral archeology, mouse tracking software was used to examine evidence left by people. For validation, there was follow-up to see what types of things the participants usually posted onto their own political social media outlets.

3.2 Scenarios

A natural element of persona-based design is scenarios that describe the work processes being supported by a design [9]. A scenario is a story with a setting and actors who have goals, and a sequence of events [2]. Scenarios have been a useful design tool in the design of this application.

3.2.1 Scenario 1: Specific politician inquiry

In this scenario, the user wishes to find information regarding a specific politician. In other words, they have someone in mind, and they just want to read up on them. The type of expected user could be an individual who has been exposed to a politician and wants to know more. This could be a typical user who is seeking to make a decision whether or not to vote for a given politician. This scenario occurs frequently because whether the user has read a news article regarding a politician, or the user has clicked through to the site, they will want more detailed information about the politicians. The nuances that should be included are politician photo, and emphasis on valuable information. This scenario was collected and validated through our user studies.

3.2.2 Scenario 2: Region inquiry

This scenario occurs when a user would like to get information about politicians in their area or in an area they would like to know more about. Users concerned about their geography would be encompassed by this scenario. A region inquiry would not be as frequent as a specific politician inquiry, but this scenario is equally important because users interested in their region may influence others in their region to pay attention to politics and benefit from the app. A coloring scheme by region should be incorporated into this scenario, as our focus group emphasized the importance of color.

3.2.3 Scenario 3: Party inquiry

According to our user studies, party inquiries can be solicited by the most passionate users. While this type of scenario might not be high in frequency, this important user base deserves a substantial amount of attention. Nuances that would cater to this scenario include allowing users to search by party, and also displaying party information in a larger font.

3.3 Use Cases

A list of steps defining interactions helps ensure the application meets the requirements developed in the process of generating personas and scenarios. Below are several interaction use cases and their extensions.

1. **Find politician info via home page scroll:** Step 1. Open app, Step 2. On home page, swipe to desired politician if necessary, Step 3. Click on politician.
2. **Find politician info via home page search:** Step 1. Open app, Step 2. On home page, begin to type in name of politician, Step 3. Click on politician.
3. **Find politician via my rank:** Step 1. Open app, Step 2. Click on my rank, Step 3. Click on politician.
4. **Save a politician to my rank page:** Step 1. Open app, Step 2. View home, my rank or politician page,

Step 2. Click on eye next to politician and change to 'open eye' state.

5. **Find region info:** Step 1. Open app, Step 2. Search for region, Step 3. View search results.
6. **Find party info via search:** Step 1. Open app, Step 2. Search for party, Step 3. View search results.
7. **Find party info via graph page:** Step 1. Open app, Step 2. Click on graph page, Step 3. Select party from drop down.

3.4 Requirements Summary

Requirements were ranked high if they had a summed score of 250 or higher, medium if the summed score was between 150 and 250, and low if the summed score was less than 150.

High-priority functional requirements include displaying the rank of politicians and ability to track politicians. Functional requirements were scored by persona as depicted in Figure 9.

High-Priority non-functional requirements include making the application work on multiple platforms and making it accessible and intelligible by users with low literacy rate (visually accessible and not reading intensive), and allowing comparisons to be made between politicians of choice. Non-functional requirements as scored by persona are available in Figure 10.

4. LOW FIDELITY PROTOTYPES

Prototyping methods move from low to high fidelity. These include paper sketches, storyboards, Wire frames. Early versions of prototypes are usually low cost (e.g., paper and pencil, Drawing tools), and they help get high-level reaction and input from the user. As the design progresses, prototypes become more refined reflecting important design and usability decisions. Here we discuss how our prototypes evolved with time.

4.1 Storyboard

We developed the storyboard through an interactive process with our users and team members meeting over a Google Hangout. This setting was essential as the potential users of the system would be Brazilian natives and hence it was important to have participants who understood the Brazilian political system and additionally could also converse with the development team in English. We elected one team member to facilitate and the others took notes in a non-obstructive manner. For storyboard creation, one of the members edited a shared google document as per the participant's suggestions and feedback and another member facilitated the conversation with the participants. The team members took notes and added to the shared document. All of the objects on the page were editable, and during the session, users generated and populated new pages, and determined the ordering of the screens.

4.2 Inspection

We performed both Heuristic Evaluation and Cognitive Walkthrough on our prototypes as both approaches have strengths and weaknesses.

4.2.1 Cognitive walkthrough

- Who are the users?

The users are native Brazilians who have a working knowledge of their mobile phones and how to use them. They are also actively seeking out political information so they care somewhat about politics.

- What task will be analyzed?

Find information on a desired politician, add a politician to watch list, check if the people you voted for have done particularly well or poorly, see if your party's politicians have done well.

Sequence of actions:

1. Find information for a desired politician - Open app, click the search box, type in politician's name, click on politician.
2. Add a politician to watch list - Open app, click the search box, type in politician's name, click on the eye icon next to politician.
3. Check on those you voted for - Open app, scroll through top politicians browse for those you voted for, scroll to bottom, browse for politicians you voted for.
4. See if your party's politicians have done well - Open app, click search box, type party name in box, view politicians, click graph button, click party selector, select desired party, view graph.
5. See if your party's politicians have done well - Open app, click search box, type party name in box, view politicians, click graph button, click party selector, select desired party, view graph.

- How is the interface defined?

- Open app - The user is presented with a box labeled search, the list of politicians, and a navigation bar at the bottom.
- Click the search box - The label on the box hides and a keyboard appears for the user to type.
- Click on politician - A page with specific info on that politician is loaded.
- Click on eye - The eye icon toggles open or closed
- Scroll - More politicians on the list are loaded in (transparent to the user)
- Click menu button - The appropriate page is loaded

Walking through the actions.

- Finding information on desired politician:

The user opened the app and saw a list of politicians and on top of that a box labeled search. They saw the label and were familiar with search boxes and clicked on the search box. This brought up the onscreen keyboard where they typed their desired politician. As they typed the list was filtered until, eventually they saw their desired politician. Seeing that the politician was a button they clicked it and got the information they needed.

- Add a politician to watch list:

The steps were the same as above except instead of clicking on the politician they clicked on the eye icon. The eye icon matches what is listed on the watch list clicking the eye icon caused it to toggle and the person was added to the list page. The user opened the app and saw a list of politicians. Scrolled through the list and it was easy to see they are sorted by score. The score is the most highlighted thing on a politician so it stood out. By scrolling down the user could browse and find the politicians they voted for.

- Searching for a party:

This happens in the same way as the first example. If they wanted to view graphs they saw the button labeled graphs with an icon of a chart on it. Clicking this brought them to the graph page where they saw a list of political parties and a graph of that party. They tried selecting a different party and the graph changed.

4.2.2 Heuristic Evaluation

A heuristic evaluation is a usability inspection method that may identify usability problems in the user interface (UI) design. We used rating system from Nielsen [8].

- 0 = I don't agree that this is a usability problem at all
- 1 = Cosmetic problem only: need not be fixed unless extra time is available on project
- 2 = Minor usability problem: fixing this should be given low priority
- 3 = Major usability problem
- 4 = Usability catastrophe: imperative to fix this before product can be released

Visibility of system status:

1. Each page on the top bar displays the name of the current page and hence user knows which page he is watching. This does not need any change. Rating: 0
2. In case of an error when server or connectivity issues, the most previously loaded content will be loaded from local storage. This should display a message so as to why a different page other than page requested has been loaded. This is a persistent problem and would occur again and again. It would be hard for the user to determine what page is being loaded since local storage changes over a period of time. Hence if this problems repeats, the pages displayed will be different each time depending on local storage, making it difficult for the user to comprehend what page is being displayed each time and why as he may not be aware of local storage concept. Rating: 3
3. Error prevention - My Rank Page: Clicking on eye button removes the politician. There are no alerts or pop ups displayed that would give an indication that this would remove the politician from the list. Before removing the politician from the list an alert message should be displayed indicating that this would remove the politician and whether the user wants to continue. This is a persistent problem and frustrating experience as the user has to perform all the steps again to bring him in his preferred list. Rating: 4

4. Help and documentation - This feature has not been thoroughly developed and needs more work. Though most icons are self-explanatory but some icons like the eye icon should be explained. The homepage should have an additional button at the top with label help that should explain the functionality of the icons and what all can be accomplished by using the website. As this is a persistent problem and the user even after using the website may not be fully aware of some of the functionalities of the website Rating: 3

5. User control and freedom - The user can create a personalized list of politicians he wants to track by clicking on the eye links in home page. This action creates an entry in the My Rank Page. Clicking the eye link on My Rank page again removes the politician from his personalized ranking. However there is no option to undo this if user had done it by mistake. To add to the list again, he needs to move back to the homepage, search again and add him again to his list. This is a persistent problem and would not change over time and could be annoying for the user if he clicks on the eye button by mistake. Rating: 4

4.2.3 Summary and Findings

Applying heuristic evaluation to the App we identified issues with objects, such as choice of presentation: whether icons look like buttons when they should, whether options are easily accessible, and whether information is present, visible, and recognizable. Cognitive walkthrough had to be highly structured with a detail breakdown of goals, tasks and correct actions. It helped us to evaluate things such as time taken to reach a web page, Number of times user makes a mistake for lack of information, could he find the information he was looking for in the web pages, how many steps it takes to find out the criteria of scores calculation.

4.3 Wireframes

4.3.1 General Wireframe design

- Going back:

We included a back button on every page because our users felt very strongly about this feature during the focus group we conducted. They said "it's good design for every app". Aside from the left arrow, we also enable swiping right to go back to the previous screen. We chose to swipe right to go back because it literally moves the screen to reveal the contents on the left, where the user was.

- Color:

The colors Red, Yellow, and Green are working as a visual representation of a politician's rank. Having the text in these colors will make it more clear which politicians are doing well vs those that are not doing well. Green = good, red = bad, yellow = in between. All other text will be blue if it is a link and black if it is not in order to separate it from this visual ranking.

- Nav bar:

We placed the navigation bar towards the bottom so it would be easier for users to click using just one hand from their mobile device. We wanted to have an explicit nav bar so users could get to any page in a minimal amount of clicks.

4.3.2 Home page

The home page attempts to show the key information that was requested by our users for as many politicians as possible. The bolded text on the list items is the politician's name which is the most important piece of data if users wish to search for the politician more on their own. Underneath that is the less important position they hold followed by the political party they represent. These two pieces of information were the most requested text pieces and that is why they make it onto the list view. On the right hand side we have the last pieces of data. The chevron on top is a quick and easy way to tell if the politician is trending up or down. Below that in the grey box is the politicians total score. The grey box around it helps it to stand out as of the three items in this column it is the most important. Finally on the bottom is the eye open/close icon. This icon is used to set a politician to my rank page. The eye icon was chosen to match the symbol which takes you to my rank page in the navbar. Politicians are displayed in rank order from best to worst with the general wireframe colors being used to give information.

- Home page search functionality:

The search bar is located at the top of the page, where it will stay. This makes the search function more visible and easier to click on when intended to, as well as allowing more screen space for the politician list.

4.3.3 Graph page

The top graph is used to show the various regions of Brazil and the ranking of the politician represents that area. The colors are similar visual ranking that is present within the main page (green = good, red = bad). To the right of the region graph, there is a scale to show what these colors represent. The bottom graph will show the trend of a political party's average score over the past 10 days. Users can select which party they want to view above the graph with an option panel. Color of the line is set to the neutral blue to keep it visible on mobile screen

4.3.4 My Rank

This page displays the personalized ranking of the politicians, the user wants to track. Initially the empty ranking page is displayed with instructions so that the user will know how to populate it. The user can use the Home Screen to select the politician to track and the selected politicians are displayed on My Rank Page. The colors display is similar to that in main screen.(Green=good, Red=bad) in order to match the cultural associations of our users based on the focus group outcomings. We decided to have the "My Rank" page have a similar design as the "Home" page so that the user would have a consistent experience.

4.3.5 About page

The about page contains a series of frequently asked questions collected by the organizers of the politicos.org.br website. The difference between the site and the app is that in the app the questions are numbered for ease of referencing, and the answers are collapsed by default so that the user can quickly scan all questions without having to scroll much, if at all. When clicked upon, the answer expands underneath the question; and when clicked again, the answer collapses again beneath the question. Questions are marked blue, to

give the affordance of something clickable. Answers are plain black.

5. USER TESTING

5.1 Method

User testing was conducted in the field. Users were recruited and arranged for a time to come into the lab space and have the application installed on their smart phone. Users were then instructed to use the app in day to day activities over the course of one week. They also were required to use the app for at least 45 minutes over the course of this week. After a week, users would return to the lab space and were administered an interview and questionnaire. Questions inside the questionnaire:

- What is your Country of Origin?
- What cell phone did you try this on?
- How would you rate your experience with this application?
- Were you able to get the information you when examining a politician?
- Was there any information you wish to see about a politician?
- Was there any issues that occurred while you used the app?
- Which feature is most important to regarding the app?
- Is there any features you would like to be incorporated inside this app?
- Do you see this application being helpful for an individual to find information on politicians?
- Do you believe this application will assist individuals to make a decision in an election?

5.2 Users

There were 14 users recruited for this test. 4 users were from Brazil, while the remaining users' country of origin was Peru, Portugal, Nicaragua, or the United States. Users were recruited if they were above the age of 18 and had a smart phone. Recruitment was targeted toward Brazilian citizens but in order to increase the sample size, people who could speak Portuguese were allowed to be included in the testing. Only twelve users responded to which phone they used. 2

5.3 Analysis

The data was analyzed using a qualitative analysis, due to the low sample size as well as the answers given in many replies. Specifically the questions:

- Was there any information you wish to see about a politician?
- Which feature is most important to regarding the app?
- Is there any features you would like to be incorporated inside this app?

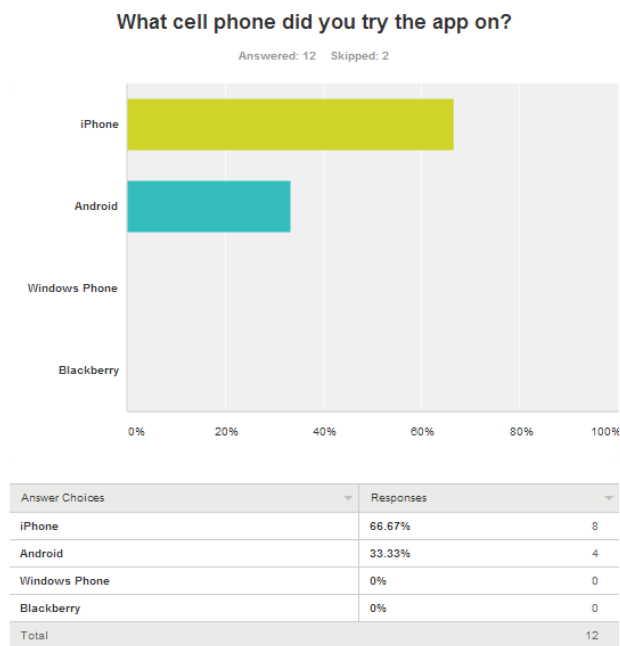


Figure 2: Cell Phones used in testing

- Was there any issues that occurred during your experience with the application?

Were targeted for analysis since users gave the most detailed feedback in reference to how the app could be improved.

5.4 Results

5.4.1 Answers to Questions

User feedback on their experience with the application was what we were hoping for. 3

Users either had an experience similar to other mobile applications or an easier time with our app than other applications. Users also typically found the information they desired when examining a politician. 4

When it came to issues that users experienced, there was just below half of the users experiencing errors. 5

Users did provide detailed response for when they did experience an error, but that was saved for the qualitative analysis.

When asked if users believe this application will be useful for people to get involved in politics as well as helping individual make a decision in an election, a high majority of users agreed that this application will be helpful to both questions. 6 7

5.4.2 Qualitative Analysis

A qualitative analysis was conducted to find the common issues users experience with the application as well as common desires to further improve the application.

- Was there any information that you wish to see about a politician?

When asked this the users were split across multiple categories of information. Users responded with additional in-

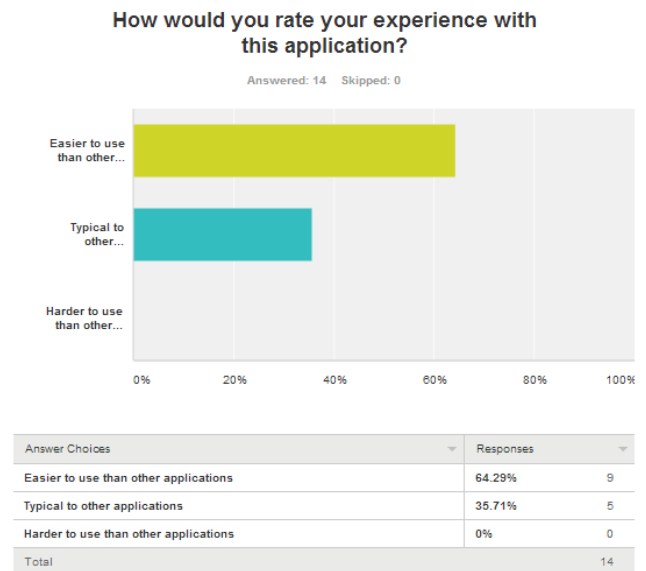


Figure 3: Answers to Question 3

Were you able to get the information you desired when examining a politician?

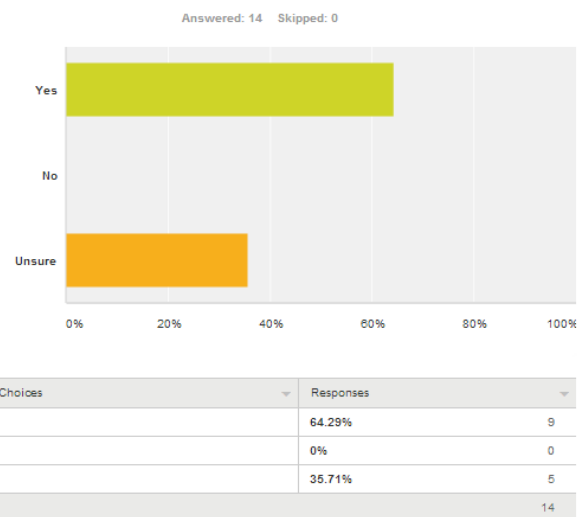


Figure 4: Answers to Question 4

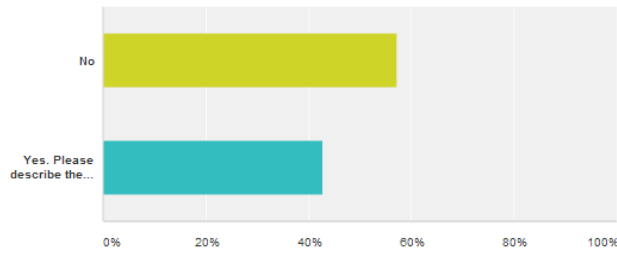
formation such as Wikipedia articles, voting records, specific state search, and background information that supports the politician's ranking. Two users wish there was the rank of the politician on the ranking list itself, however the rank was already present on the list, which gave us insight that the rank may not be visible enough.

- Was there any issues that occurred during your experience with the application?

6 users responded that there were issues that occurred, all of these users reported technical issues with the application. 4 of these users only had issues viewing the graph page, specifically they wished to have a legend explaining the graph

Was there any issues that occurred during your experience with the application?

Answered: 14 Skipped: 0

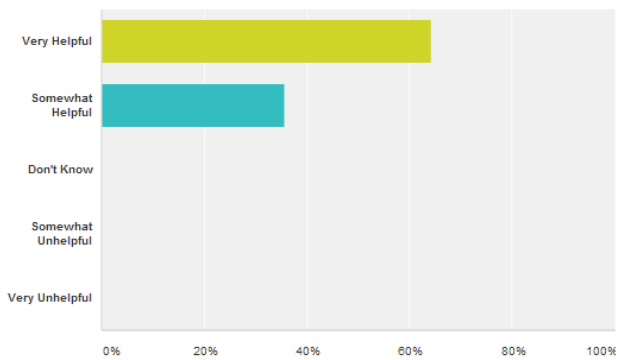


Answer Choices	Responses	
No	57.14%	8
Yes. Please describe the issue:	42.86%	6
Total		14

Figure 5: Answers to Question 6

Do you see this application being helpful for an individual to find information on politicians?

Answered: 14 Skipped: 0



Answer Choices	Responses	
Very Helpful	64.29%	9
Somewhat Helpful	35.71%	5
Don't Know	0%	0
Somewhat Unhelpful	0%	0
Very Unhelpful	0%	0
Total		14

Figure 6: Answers to Question 9

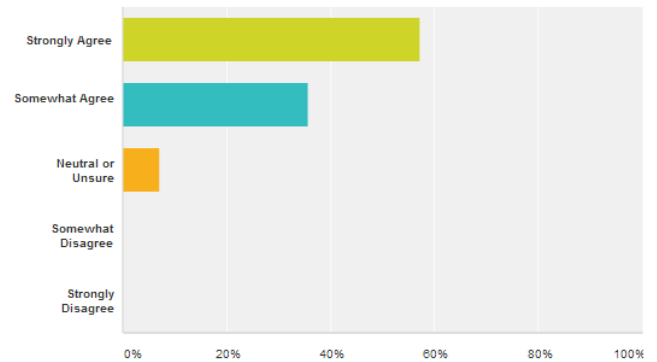
itself, only one user was unable to see the graph using an older Android OS. The other 2 users reported issues with the watch list page not loading.

- Which feature is most important to you regarding the app?

The most common response to this question was related to the watch list feature. User really liked the ability to keep track of a politician. 5 Users also mentioned the ranking itself being the most important feature. Other mentions were

Do you believe this application will assist individuals to make a decision in an election?

Answered: 14 Skipped: 0



Answer Choices	Responses	
Strongly Agree	57.14%	8
Somewhat Agree	35.71%	5
Neutral or Unsure	7.14%	1
Somewhat Disagree	0%	0
Strongly Disagree	0%	0
Total		14

Figure 7: Answers to Question 10

the information breakdown for the individual politicians and the simple interface.

- Is there any features you would like to be incorporated inside this app?

There were very few common answers to this question. One feature that users wanted expanded was the search feature. Users wished to search based on more categories other than the politician name; such as state and political party. Users also wanted the search function to be included inside the watch list. Other features included additional information included in the main rank list, such information as the state in which the politician is currently serving office and links to where this information was found. Finally some specific features that were outside of this application were, an option to invert list and see who is the worst politicians, an alert if one of your politicians in the watch list has lied, and predictions made on who is likely to win an election.

6. FINAL VERSION

Through the demonstration of the high fidelity prototype and results from our user study we were able to make a number of important changes to the final version. While most of the changes that were requested during our high fidelity prototype and user testing were implemented, some had to be pushed back until a later date due to time constraints.

6.1 High Fidelity to Pre Final Version

The biggest feature missing in our high fidelity prototype was search functionality. We had search working in Firefox but not in Chrome, Safari, or mobile. This was fixed so that



Figure 8: Final Application

search works on all versions. After getting user feedback search was again expanded to take into account political party, case insensitivity, and states.

People also found the toggling of the watch eye icon confusing so it was reworked for the final version. In our survey results we did not have complaints on this feature so that seems to indicate that the change was made for the better. Other than these two changes a few slight cosmetic changes were fixed and the overall program was made more robust. We fixed a number of programming bugs from the high fidelity to the final version which made the program run much smoother.

6.2 Pre Final Version to Final Version

After demoing our high fidelity prototype and implementing the requested changes we again gathered data for our final version. This user testing gave us a number of new features which were either added into our Final Version or which we hope to add in later.

Overall the user testing reported positive results but there were many minor issues that were brought up which we were able to fix for the final version. For instance people reported that the eye icon was too small to click reliably. This was increased. People also requested the search function be present on the watch list page. This was added in so a search function appears if the user has more than 10 politicians watched. People also disliked that as they scrolled through the list the search bar scrolled away. This was changed so that the search bar stays at the top of the screen no matter where you scroll. Finally, we were able to add slightly more information to the main page, such as what state the politician was from.

Some of the features requested we were not able to add in. Some users requested different sorting methods for the main page. Such as being able to see an inverted list with the worst politicians at the top. While this was to large a change to implement in such short notice it is possible to search for "red" to find all politicians who received the lowest color ranking. Many requests were for integration with news and social media sites. These were goals we also had in our functional requirements but were unable to implement

in such short time as detailed below.

6.3 Functional Requirements

Of our top five functional requirements (see below Figure 9) most were met, while one no longer made sense in our reworking of the políticos web page, and one was dropped for time reasons. The two highest priority requirements were to display the ranking of politicians and to be able to search politicians. Both of these requirements were completed and feature prominently in the front page of our application. We also have a working watch list, which was not as high priority as these previous two, it was listed as a top five requirement.

Of the two top five priority items which we did not implement one was infeasible due to our changed layout. On the original web page users see a number of columns each with the politicians score in that area. Users wanted to be able to sort according to these columns. In our final layout, due to mobile screen size, these columns are removed and we only show the politicians final score. Because the extra columns were removed, sorting based on them does not make sense. In the future perhaps we can offer alternative views so that people can sort based on one category or another.

The other feature that was not implemented was a region map of Brazil. This simply came down to time constraints. Implementing this feature called for a lot of time and knowledge of working with JavaScript and the graphing library d3. All of our JavaScript time ended up being used on the more structurally important parts of the site and the search functionality which was higher priority. In the end the region graph, while nice to have, was easy to remove without losing too much functionality.

As far as other lower weight features are concerned we were able to implement some of these such as structural hierarchy of information, display detailed information for each politician on a dedicated page, filter by party and state (using the search), and display average politician score by party (on the graph page). Of the lower ranked features, the features we did not get to are of two types. The first being features that would require us to have our own back end instead of just using the data provided by políticos.org. Writing our own back end server would have taken a huge amount of time and made the application significantly more complicated. The second type involve us gathering data from other websites (twitter, news sites, etc.). Each of these sites has their own API we would have to learn to integrate it into our application. Learning these APIs takes significant time and as such we did not have time to implement these.

7. FUTURE WORK

Going forward we would still like to implement the region map of Brazil and some of the news integration features but many of the other features that were not implemented simply do not fit with the direction of our final application. We believe that the final application will work as desired in being a useful tool for voters to get information on their politicians and the user tests we have done so far confirm this.

8. REFERENCES

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Figure 9: Functional Requirements

Functional Weights	Virgina		Alexandra Ce		Diego		Lara		Marcos		Summed scores
	0.5		0.8		0.8		1		1		
	Not Weighted	Weighted	Not Weighted	Weighted	Not Weighted	Weighted	Not Weighted	Weighted	Not Weighted	Weighted	
Display the rank of politicians	10	5	5	4	10	8	10	10	10	10	37
Search by politicians' name	10	5	5	4	10	8	10	10	10	10	37
Sort by columns, that is, the different ratings/attributes used to rank politicians (graphical summary of the data) A map of the different regions in Brazil with politicians' average scores superimposed (how do politicians from different states compare to each other?)	10	5	10	8	10	8	6	6	7	7	34
Allow users to select the politicians they want to track under a "watch list" or "my favorite"	10	5	10	8	5	4	5	5	7	7	29
Contextualize the site's information by matching politicians names to current news and display "realtime" news articles from major news sites	10	5	1	0.8	5	4	8	8	9	9	26.8
Display information based on user's geolocation	1	0.5	10	8	10	8	1	1	9	9	26.5
Have a structural heirarchy of information	1	0.5	10	8	10	8	4	4	5	5	25.5
Display politicians' information and rank over time (are they trending up, or down?)	10	5	5	4	1	0.8	8	8	7	7	24.8
Display detailed information about each politician on a dedicated page	1	0.5	5	4	5	4	6	6	8	8	22.5
Allow users to give different weights to each ratings/attributes, and construct their own rank based on these new weights	1	0.5	10	8	5	4	5	5	3	3	20.5
Filter by party affiliation and state (graphical summary of the data) Display average politician score by party	5	2.5	1	0.8	5	4	6	6	7	7	20.3
Most basic information toward the left, and the most high-level information to the right	10	5	1	0.8	1	0.8	4	4	7	7	17.6
Allow users to contribute with data about a given politician	5	2.5	5	4	1	0.8	5	5	5	5	17.3
Make it possible to hide pictures, videos and opinions	5	2.5	1	0.8	5	4	5	5	5	5	17.3
	1	0.5	5	4	1	0.8	5	5	3	3	13.3

Figure 10: Non Functional Requirements

Non-Functional Weights	Virgina		Alexandra Ce		Diego		Lara		Marcos		Summed Scores
	0.5		0.8		0.8		1		1		
	Not Weighted	Weighted	Not Weighted	Weighted	Not Weighted	Weighted	Not Weighted	Weighted	Not Weighted	Weighted	
Make it function on multiple platforms including iOS and Android	10	5	10	8	10	8	10	10	10	10	41
Make it accessible and intelligible by users with low literacy rate (visually accessible and not reading intensive)	5	2.5	10	8	10	8	10	10	6	6	34.5
Integrate with twitter and Facebook	5	2.5	10	8	5	4	10	10	8	8	32.5
Comparison can be made between politicians of choice	5	2.5	10	8	5	4	10	10	8	8	32.5
Get app into app stores	1	0.5	10	8	10	8	10	10	5	5	31.5
Audio assistance for illiterate	1	0.5	10	8	10	8	10	10	1	1	27.5
Display can change size to assist with visibility	1	0.5	5	4	10	8	10	10	3	3	25.5
Complete before the end of Winter quarter, March 4th	5	2.5	5	4	5	4	5	5	5	5	20.5
Discuss ownership of the code (e.g. who performs future maintenance) with owners of the politicos.org.br website	5	2.5	10	8	1	0.8	1	1	5	5	17.3
Translate the site to different languages	10	5	10	8	1	0.8	1	1	1	1	15.8

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