CS 361
HW1
Team BlackBerry
Fall 2015

HW1: Requirements

Requirements in Terms of the Environment

Functional Requirements:

The front page of the website will guide the user through a series of decisions to locate exactly what he is trying to vote for. It is critical that the system provide an intuitive system in doing so, letting the user choose whether he is voting at the federal or state level, on a person or bill, and then becoming more precise from then on.

Once the user has reached a bill/topic they want to vote on, the system will display a simplistic voting page. On the right is a simple vote menu with the candidates or stances displayed and on the left a brief description of the topic as well as links to reputable sources. A google search bar below this will allow them to keep researching the topic if the user wishes to.This process is repeated until every topic that the user wants to vote on is complete. The votes will be saved on the machine's local environment.

Once done voting the web application takes you to an authorization page by way of a ‘VOTE’ button located on the top right of the screen. This page provides a summary of every vote the user made and a form. The form requires the user to fill in their full name, date of birth, social security number, a home address, and to complete a Captcha. The information cannot be saved for later use and upon submitting, the vote will be cast. An additional option to activate the fingerprint scanner verification is explained through a use case.

NonFunctional Requirements:

The customer has highlighted the simplicity of being able to navigate this program, as the application will ultimately be utilized by a large audience. Upon deciding on a topic, key issues will be bolded and displayed in bullet point format for better identification purposes. The search bar will be no larger than 120px with direct access to the google search engine.Upon navigating to your topic, drop down lists will render fluidly in under .1 seconds, giving a list of issues/candidates in the chosen subcategory.

This application needs to be fast too in order to promote voting. For this reason, votes will be saved locally and the user can continue onto further topics without inserting more information. This process minimizes the amount of times users have to input information.

The final page where the ballot is cast is built to provide the user as clear instruction as possible. The summary of the user's decision is presented in bullet point format with the topic on the left and their choice on the right hand side of the left page. On the right side of the page is a display with succinct headers providing the user with input boxes for their information. Helpful messages will appear to the right of each box automatically, letting the user know if their input was invalid/valid for any reason(Example: Typo in email formatting). An option to automatically certify your identity is possible through fingerprint validation.

Requirements in Terms of the System

Functional Requirements:
The organization levels for navigation purposes are designed through an object-oriented class system where objects ultimately inherit values depending on whether they are people/bills/amendments etc as well as the levels of government. An indexing algorithm sorts and organizes options into the respective order.

The search bar provided on a topic's page is directly linked to google search engine. Queries into the government driven database return a description of whatever main points the current bill/candidate focuses on, fields that are filled in by a panel of administrators to provide an unbiased view of the stances.

Upon submitting the ballot, the user's information will be verified through the government registered voter's database and their contact info(email) updated in the database if different. Any incorrectly filled fields will be highlight if an error occurs and instructions with how to proceed explicitly stated.

NonFunctional Requirements:
A class-based binary system allows for faster indexing, with query results for information being returned with a response rate of under .001 seconds from the server. As the user navigates or focuses on a topic, the web application will predict the scope the user will look at and continue to load pages asynchronously in order to provide a smoother experience, allowing users to navigate without future delays.

When verifying that the information provided from users is correct the servers will support concurrent access to the database from up to 100,000 users with lag times below .1 seconds. The information needs to be handled smoothly in order for users to navigate quickly through the different sites. The website operates on a HTTPS connection. All data is sent securely over the encrypted network and verified upon reaching government servers. All precautions are taken to

protect voter confidentiality. Once verified and transmitted, the session ends and all data is deleted from the client's perspective.

Due to the hassle of having to input all your information every time, users can additionally register themselves for fingerprint scanning down at their local police station or dmv. Although not publicly widespread, scanners on phones are becoming more common and in the US where over 60% of the population owns a smartphone, this option is becoming increasingly viable

Persona

Occupation: University student
Recommended priority: primary
Tasha is exactly the type of user we're targeting. The client's vision statement specified that they're interested in the youth demographic, as the elderly population are overrepresented and disproportionate to the age distribution of the United States.

Meet Tasha
Tasha is a 19 year old student attending a state univeristy. She is in her second year as a Psychology major and has good academic standing. Outside of class, she enjoys spending time at the coffee shop on campus and plays puzzle games on her phone. Tasha has limited interest in politics, as she finds the process of researching and forming opinions on current events too time-consuming. She also isn't very familiar with the voting process, as she is living away from her old home and doesn't know if she needs to change her information or how to vote from school. On social media, she frequently sees her friends and classmates advocating for different presidential nominees and is inspired by their passion, but doesn't know how to get involved and is worried she doesn't have the time to commit to these causes. The only causes she is familiar with are social issues - issues which are relevant to her life.
When asked if she's planning on voting this upcoming election year, she says she would like to but isn't sure if it will actually happen due to not having a strong attachment to a political party or candidate and the voting process being too cumbersome.

Tasha's goals
- I want to get involved with my peers more.
- I want to find a political party and nominee that matches my interests.
- I want to vote, but I don't want it to be a hassle.
- I would like to better understand who the candidates are and what they are advocating for.
- I want to be able to learn about the election from an unbiased source.

Tasha's questions in her own terms
- Is there an easy and quick way to vote?
- How can I learn more about the different political parties in America?
- What candidates have similar views to my own?

How we think Tasha should know
- We are providing a quick and easy way to vote - all we need from you is valid identification.
- We have unbiased and easy to understand information on each candidate.

USE CASES

Use Case 1:

Actor: A register United States voter, between ages 18-30, voting in an election.

Preconditions: A United States citizen, whose age is between 18-30, is voting in the upcoming presidential election.

Postconditions: A United States citizen voted for the presidential election without going to a ballot.

Event Flow:

1. Voter types in the internet address of the voting website on a phone.
2. Voter see the main page of the website with three different tabs at the top.
3. Voter clicks on the "People" tab.
4. Voter sees the drop down menu of the different "office positions".
5. Voter looks at and goes down the different "office positions".
6. Voter clicks on the "president" option.
7. Voter sees a drop down menu of the different "candidates".
8. Voter clicks on one of the "candidates".
9. Voter sees the candidate's page, which has the candidate's profile, his/her name in big font at the top of the page, his/her short description about them and their views, and a vote button underneath his/her profile.
10. Voter reads through the candidate's information.
11. Voter clicks on the candidate's name.
12. Voter is taken to "let me google that for you" link that opens on different tab/window.
13. Voter looks through all the different websites about the candidates.
14. Voter closes the tab/window and sees the candidate's page.
15. Voter goes through the drop down menu again to get to a different presidential candidate's page.
16. Voter looks at the candidate's page and clicks on the candidate's name.
17. Voter looks through the different websites and closes the tab/window.
18. Voter clicks on the "Vote" button that is below the candidate's profile.
19. Voter sees a pop-up that says "Your vote has been saved".
20. Voter clicks on the "Submit" tab at the top of the webpage.
21. Voter sees a drop down menu that has two options: written and fingerprint.
22. Voter clicks on the "fingerprint" option.
23. Voter scans his/her fingerprint going through the fingerprint scanning process built into the phone.
24. Voter is taken to a webpage that shows all the different people and bills they can vote on.
25. Voter scrolls down and clicks on the "submit" button.
26. Voter sees a pop-up that ask if they are sure they want to submit the form.
27. Voter clicks yes
28. Voter sees a page that reads "Your vote has been successfully submitted"
29. Voter closes the tab/window.

Use Case 2:

Pre-Conditions: The voter is satisfied with their voting summary that is displayed on the left side of the final page and is ready to cast their ballot. The user is within U.S boundaries and they know their personal information which includes their social security number, date of birth, first name, last name, home address, and email address.

Post-Conditions: The voter was able to submit their ballot online and their email address received a summary of the votes they made.

Event Flow:

1. Voter sees on the right hand side of the final page the social security, first name, last name, date of birth, and home address fields that are required to verify their identity.
2. Voter enters their personal information into the corresponding fields by entering their information inside input boxes.
3. Voter's first name, last name, date of birth, mailing address, and social security fields are used to check a government registered voters database to determine whether or not the voter has registered vote.
4. Voter sees that for each field there is a valid message that indicates that they are a registered voter
5. Voter notices that the CAPTCHA test and email address fields are now available to fill out
6. Voter enters their email address that will receive their ballot summary
7. Voter's email address is checked if it is valid
8. Voter's email address displays a valid message
9. Voter proceeds to completing the CAPTCHA test by entering characters that best match the set of distorted characters
10. Voter passes the CAPTCHA test and can now submit their ballot
11. Voter submits their ballot by clicking the submit button
12. Voter's email address is checked in the registered voters database to see if it is the same email and if it is different their email address will be updated
13. Voter's email address is determined to be the same and the ballot summary is sent to their email address.

Use Case 3:

Actor: A U.S citizen that is a registered voter

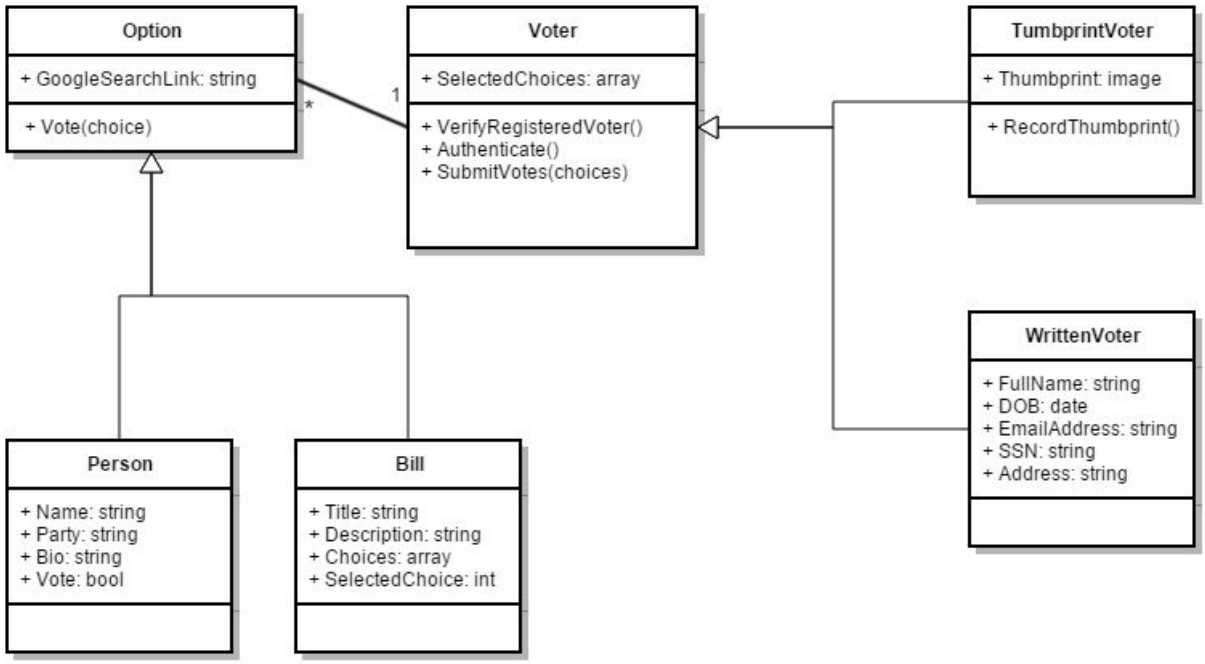
Pre-Conditions: The voter has checked their voting summary on the right hand side of the final page and is ready to submit their votes online by using the alternative fingerprint login method. The voter has their fingerprints recorded in the government registered voter database and is within U.S boundaries. Furthermore, their computer has a built in fingerprint scanner that will enable them to upload a scanned image of their fingerprint.

Post-Conditions: The voter's identity was verified using their fingerprint and their ballot was successfully submitted. They also received an email containing a summary of their ballot.

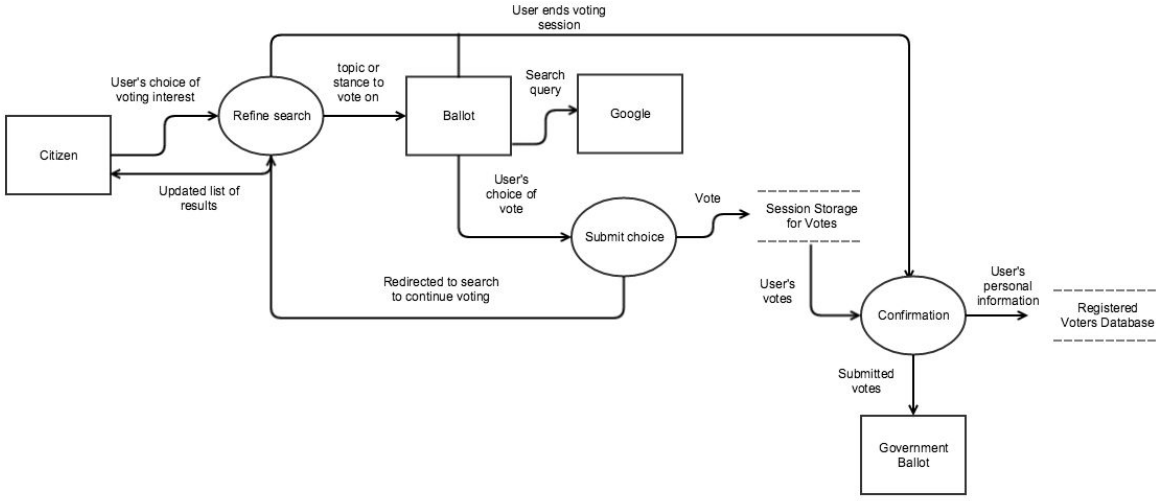
Event Flow:

1. Voter decides to use their fingerprint to verify their identity instead of entering their personal information
2. Voter clicks on the fingerprint login option that is located below the information verification fields
3. Voter is asked to upload a scanned image of their fingerprint
4. Voter scans their fingerprint using their computer's built in fingerprint scanner to upload an image of their fingerprint
5. Voter's fingerprint is verified by checking if it exists in the government registered voters database
6. Voter receives a valid message that their fingerprint was found in the database
7. Voter is asked to enter an email address where they would like their ballot summary to be sent
8. Voter enters their email address
9. Voter's email address is checked to see if it exists
10. Voter receives a valid message for the email address that they entered
11. Voter clicks on the submit button to submit their ballot
12. Voter's email address in the government registered voters database is updated if it is different than the one that the voter entered
13. Voter's email address in the government registered voters database is left unchanged after determining that the email address that was entered was the same
14. Voter receives an email of their ballot summary

UML Class Diagram



Dataflow Diagram



<u>Our customer was able and willing to meet with us.</u>