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INFM 405

2/17/2020 (Updated 3/21/2020)

Project proposal

Executive Summary

On February 3rd, 2020 our Democracy was introduced to technology. The 2020 Iowa Democratic caucus used a mobile application to gather and compile caucus votes. Unfortunately, the application did not produce results and was ultimately a failure. “The app that the Iowa Democratic Party commissioned to tabulate and report results from the caucuses on Monday was not properly tested at a statewide scale, said people who were briefed on the app by the state party. It was quickly put together in just the past two months, said the people, some of whom asked to remain anonymous because they were not authorized to speak publicly” (Corasaniti, Frenkel and Perloth, 2020). This idea was not lost. If technology can be incorporated into so many aspects of everyday life then it should be incorporated into our Democratic voting process. Some would argue that our voting process isn’t ready to transition to voting application via cell phone or computer because of security issues. The argument could also be made that voting booths have posed and continue to pose security issues. To combat this issue technology should be used to compensate voters in a securely encrypted environment. The technology that should be used to assist with secure voting issues are applications and websites.

The name of the application to be developed will be called “Your Voice.” The application will be used to collect and verify voter decisions on an initially small scale (local elections). Users will also rate the usability of the application by taking a survey provided to them. This project application will be managed by me. The primary stakeholders in this project will be Dr. Lui, my instructor, and primary users. Secondary stakeholders will be government officials contacted to give advice on the democratic process and the future of voting applications. This application will be developed for use only in the state

of Georgia and could branch out to other states and eventually be used nationwide after verification and secure establishment. The mission of the “Your Voice” project is to provide a stable and secure democratic voting experience to users electing government officials to office.

Introduction

This project will be implemented with a several tests and user tasks analysis to ensure the user needs and individual requirements are met. The voter data analysis portion of this project coincides directly with informatics studies. Once this application is designed it will test the accuracy of voter data collected through a mobile application called “Your Voice.” After the votes are tallied via the website they will be confirmed and verified with the user. The votes are data measured. The application is the technology being used to measure data and confirm it is correct. The survey that will be given to all clients that use the app will contain questions pertaining to the usability of the application. This portion of the project links directly to my concentration in Human-Computer Interaction and will gauge the user experience so ongoing adjustments can be applied. With any system constant updates should be made and ideas can be derived from the user base.

Research Question

How can the Democratic process of voting be improved within the United States of America?

Paper Ballots – Paper Ballots being used as the sole vote collection system in the Democratic process didn’t come to fruition. There were issues with hanging chads and confirming the correct vote but using paper ballots as a confirmation to votes entered on machines is a solid approach. This project will partially borrow that confirmatory approach using a secondary confirmation in the survey issued to all users.

Voting Machines – Machine Ballots have constantly encountered security and confirmation issues. To improve upon these the 2-step verification process of user votes will be implemented through survey confirmation and voting security resources will be consulted to determine the best plan of action when formulating security for the application.

Identity – Verification of identity has been a long-standing problem in the voting process. Drivers license and/or ID cards have always been the main source of identification to verify identity at polls. This is where security comes into place. Phones are already equipped with the proper cameras and scanners to check Drivers Licenses and ID's to determine authenticity for voting.

Timeliness – The development of this application is to improve the voting process, not replace the standard. This application is in place to give people the ability and freedom to vote on a mobile application. This option will drastically reduce lines at polls where voters can still place their votes in person if they would like to. The application should also incorporate voter registration.

Hypothesis – The introduction of the “Your Voice” application will make our voting process more accessible and secure over time with repeated updates based on user task analysis and post-use surveys used to gauge usability. Long lines and misinterpretation will no longer be the fate of our democracy.

Proposed Research Methodology

Study population – The overall study population will consist of 180-200 Male and Female voters between the ages of 18 – 62 in the Metro Atlanta area. This group is a true representation of U.S. voter demographics. A smaller sample group will be selected for the development of this project from the overall study population to reflect diversity in all areas.

Data Collection – Quantitative data will be collected using the “Your Voice” application. The quantitative data will be confirmed using a survey from Survey Monkey. After the confirmation of

quantitative data section within the survey is complete another section will ask questions to gather qualitative data relative to usability and human-computer interaction.

Data Analysis – Quantitative data processing will be processed from each user and compiled to determine a final selection based on user voter data in each category. The confirmation should reflect the exact same numbers and confirm the data selection. Qualitative data will be assessed by survey to gauge usability and human-computer interaction issues. This qualitative data gathered from research questions will be compiled and the most frequent issues, changes, and suggestions will be applied to the application for improvement over time. Survey questions should allow for repetition and continuous assessment of issues. Qualitative data will be used in application updates.

Location – This data analysis related to this project will be recorded live via Zoom video chat and/or at the Atlanta Campus AACC Building

Research Design – The research design is experimental for continuous improvement in the voting process. The design is also quantitative and quantitative as stated earlier. The focus group will vote and cycle through a user-task analysis 3 times (March 28th, April 11th, and April 25). April 25th will be the final vote for users in this project development process. Improvements and updates will be made between the 2 preceding dates based on quantitative and qualitative data gathered.

Rationale – The reason this project is being created is to enable our Democracy to have multiple secure voting options in our process. This project incorporates both quantitative and qualitative methods because both need to be assessed in this course of project development. The quantitative methods of this project need to be addressed to maintain accuracy. This is the main concern with current voting approaches and assessing the accuracy of voting data is essential. The qualitative area to be analyzed is to ensure the application has an effective user interface that feels comfortable for the user to navigate. Therefore, both methods are being measured to produce the “Your Voice” application. Using both

research methods can also help to fine tune each. One may offer assisted data to help adjustments to the other and vice-versa.

Obstacles/Risks – The largest obstacle to avoid with this project is incomplete data collection.

Incomplete data collection could result from voting ballot in the app being partially filled out and/or surveys not being completed used to gauge usability. The best way to avoid these foreseeable obstacles is to provide education and detailed instructions to participants in the study about the importance of complete data sets.

Observations – Observations will be made using recordings from user interaction with the voting application software during the user-task analysis. These recordings will be paired with their qualitative usability surveys for confirmation. Participants will be notified of times when recording begins and ends and will be asked if consent is given. Participants will also be notified that the answers they submit in surveys will be compared to others.

Data Collection Instrument

There will be 2 data collection instruments used. The voting application developed and used on mobile devices will be one instrument used to collect quantitative data. The survey administered via survey monkey will be a second instrument used to collect qualitative data. Both these instruments combined with research will yield an effective and secure voting application.

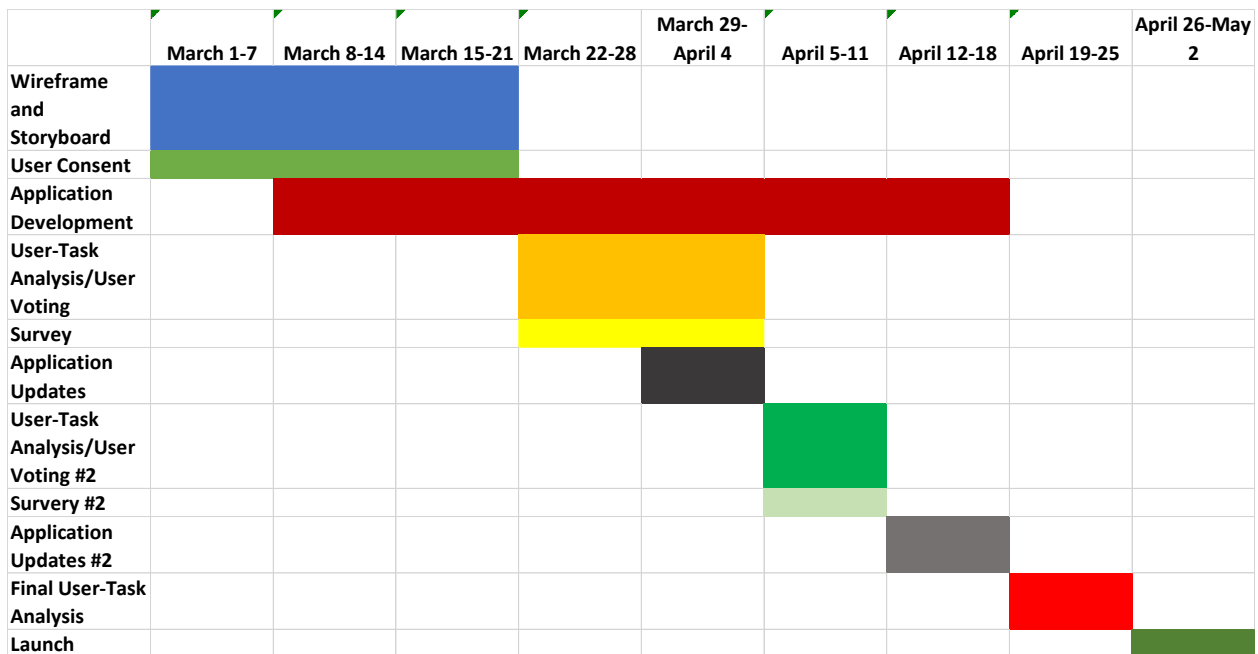
Project Planning Report

Purpose – The purpose of this project is to develop a secure and accessible way for people to vote for political candidates. This will solve issues with long lines at voting precincts and current security worries with current voting machines used. This project is not meant to replace the current Democratic voting

process, but to assist and improve upon the process. The confirmation process in this project will also be used in real-time with the final application system. Voters currently do not receive a confirmation of their vote and selections. The application system will produce this response for user personal record and to confirm numbers if a re-count is believed to be initiated.

Deliverables – An application that can function on local and then national levels to securely and efficiently compile user votes with confirmation. The interface should be user friendly based on usability data collected. The interface should be secure based on journalistic article research on application encryption and live cybersecurity monitoring during the voting time period.

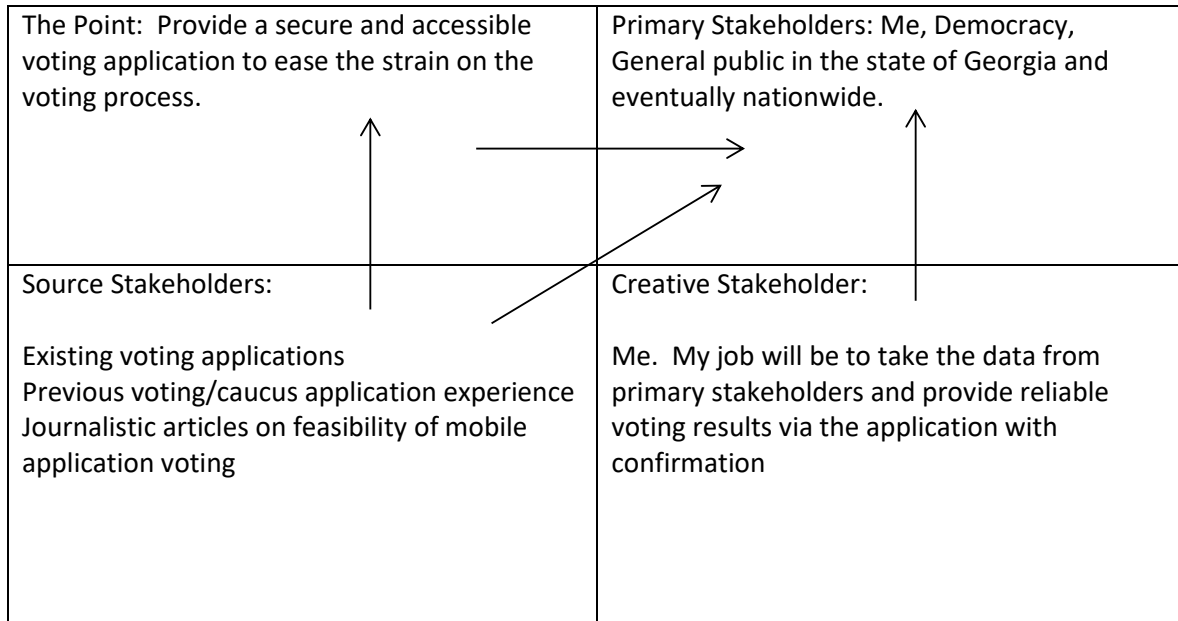
Timeline – The timeline for this project will be 8 weeks and 4 days. The project will run from 3/2/2020-5/2/2020. Updated 3/21/2020 due to COVID-19 pandemic. This application. The key timeline areas are listed in the Gantt chart below.



Resources

The required resources will be the Mercer INFM server, Text pad application, Adobe XD software, Zoom video conference services, Survey Monkey services, and participation from all stakeholders.

Stakeholders include myself as the primary investigator and all user participants used for project development. The state of Georgia is the origin stakeholder for this application. The entire nation and democracy will be the final primary stakeholder. Please refer to the stakeholder map below for these connections.



Sources

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