Software Requirements Specification

University of Iowa

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1 Introduction

This document is the definitive specification of the software requirements for the voting portal to be developed under the Fundamentals of Software Engineering Project. This document is intended to be read by all responsible for the development of this online election system software. Contractors who undertake all or parts of the development are also encouraged to read this the user requirements specification document.

2 Overall Description

2.1 Product Scope

The aim is to build an integrated application system for voting, integrating demographics, voter registration, and configurable ballot management, voting with paper trail, results and system administration.

2.2 Product Functions

- The voter must be able to vote for representatives only in his or her precinct.
- Precincts are a polling station for many addresses.
- There will be many ballots in an election cycle.
- A ballot is configurable by the administrator.
- The user must be able to sign up and log in to their account.
- If the user has forgotten their password or wishes to change it, they are able to do so through the system.
- The voter must be able to register to vote.
- The system has a dashboard for both the voter and the admin.
- The admin is able to create candidates, ballots, and elections.
- The admin can approve voter registrations for each user that has submitted a form for approval.
- The admin can search for users, state geography, and precincts.

2.3 User Classes and Characteristics

2.3.1 Administrator

The admin will be the most frequent user of the election system. They need no technical expertise or certain education level to complete their desired tasks. The manager or administrator will be the user that creates each election and ballot. They also have the capability to search the database for users and election IDs. Due to the frequency of use for this user, the admin is the most important user class. The administrator also has all the capabilities of the voter user class.

2.3.2 Voter

The voter is the second main user class of this software system. They need no technical expertise or certain education level to complete their desired tasks. They need to be able to complete the voter registration form online and submit an online ballot. This is done through simple computing skills. The voter does not have any admin capabilities. They do not use the system as frequently as the manager, so they are a lower priority in the user classes.

2.4 Design and Implementation Constraints

- Developers must not use Ruby on Rails or Django.
- Design and implementation must be original.
- Must use the principles of Software Engineering
- The tool must be user friendly and require minimal data entry
- Must use data encryption techniques
- Must have invisible password
- System must provide levels of users (admin, voters)

2.5 User Documentation

User documentation can be found in the user requirements specification document.

3 External Interface Requirements

3.1 User Interfaces

Due to the fact that this system will not have frequent users, it is important for the interface to aid the user in their task. The dashboard is linked in the navigation bar as well as the login, logout, and sign up functions. From these links, the user has access to the entire site which is labeled according to the task he/she wishes to complete. The user interface was created using HTML/CSS. Originally the layout was solely created using Bootstrap and the Java Play Framework. After several iterations of the design, a custom stylesheet was created for the project and integrated into the user interface. This stylesheet is a responsive design that allows the user to view the program on multiple devices of different widths.

3.3 Communication Interfaces

4 System Features

4.1 Login/Log-off/Sign-up

4.2 Voter Registration

4.3 Dashboard

4.4 Precincts

4.5 Elections

4.6 Ballots

5 Resources

https://web.cs.dal.ca/~hawkey/3130/srs_template-ieee.doc