CS:5800 – Fundamentals of Software Engineering Team 11

(TBD) Election App

# Aims and Objectives

## “Customer seeks to build a state of the web application for their election management system. The goal is to build an integrated application system integrating demographics, voter registration, and configurable ballot management, voting with paper trail, results and system administration.”

# Process Guidelines

## Customer prefers to have an interactive approach to software development and would like to see intermediate versions of the proposed software.

## Customer approval is required for document formats.

## An iterative development model is preferred with Screens, Navigation and some of these functions being delivered first.

## The customer would like to see full documentation of the process you would follow.

# User Requirement Specifications (URS)

## User friendly UI

## Minimum data entry

## Data transfer from context sensitive help screens

## FAQ and help page

## Mobile and desktop functionalities

## Email Notifications

## Id / Password Based Authentication with Security

### Invisible password

### Structure of password/password requirements

#### Be at least 8 characters in length.

#### Contain at least 1 lowercase and 1 uppercase letter.

#### Contain at least 1 special character (!@#$%^&\*)

#### Contain at least 1 number (0–9)

### Password/ ID retrieval policy

#### Forgotten password/ID through email only

#### Answer security question

## Password change policy

### Forgotten password : password change

#### Password reset using new random string and sent via email

### Normal password change

#### Requires old password

#### New password can’t match the previous password

# Software Requirements specifications (SRS)

## 3 Levels of Users

### Suppliers

### Managers, Administrators

### Users

## Customer must be able to collect demographics info on all residents,

## Register voters,

## initiate election cycles,

## Setup secret ballots for individual races,

## maintain voting stations (precincts),

## associate voting stations with voters,

## present an online ballot to authenticated voters with only the races that the voter is eligible to vote on

### Assume there are some races in which only some voters can vote on

#### For example one can vote only for the House representative of the congressional district they are residents of

## tally the election results ,

## be able to verify the election results with manual counting of votes with the paper trail the voting system supports,

## Maintain secrecy of voter identity,

## provide for system admin functions.

## A voter can only vote once in an election cycle.

## To be eligible to vote the individual must be citizen of the country with a government provided id.

# Roles and responsibilities

## Junyan

## Heather

## Ru

# Storyboard

## Home Page

## Log in page

## Forgot my password screens

## Account registration screen

## Landing page (following successful log in)

## Create Electoral Race

## Create Ballot

## Manage Electoral Races

## Manage Ballots

## Voting Page

## Profile Settings

### Change security questions

### Change password

### Update Natural geography area (Update’s electoral)

## Demographics

## Users

### Can only see users name/precinct

### Allows for upgrading from member to higher status

# Tools

## [MEAN Stack](http://www.bradoncode.com/tutorials/learn-mean-stack-tutorial/)

### MongoDB (Database)

### ExpressJS (Web Framework)

### AngularJS (Front-end Framework)

### NodeJS (Application Server)

# Test Plans

# Risk management plans

# Estimation worksheet

# Master Project Schedule

## Week 1

### Log in

### Stack set up

### Home page

## Week 2

### Registration

#### Email verification

#### Validate government ID

#### Encrypt Password

### Forgot Password

## Week 3

## Week 4

## Week 5

## Week 6

## Week 7

## Week 8

## Week 9

## Week 10

## Week 11

## Week 12

## Week 13

# High Level Design

## Screens

## Database

## Architecture

# Process Model implementation

# Requirements for initial set of functions

## Voter address votes one precinct

## Precinct is the polling station for many addresses

## Natural geography refers to City, Country, and State, etc.

## Electoral geography consists of precincts, congressional districts

## Assume that Precincts never span across geographical units like City, County, and State

## Elections are held often 2016 Nov General election is an example

## There will be many ballots in an election though the A Ballot is specific to a Precinct and a User

## Ballot is configurable; this software must be usable for any election subject to assumptions laid out here

## Electoral Race is the election for an office

## An Electoral Race presents one or more candidates

## An electoral race is conducted over 1 or more precincts

## A Ballot has one or more electoral race in it

## The result of an electoral race is the accumulation of votes across the associated Natural Geography unit

# Analyze

## SRS

## Models

## Analysis

## Data Dictionary

## Specific Requirements

# Required Modules

## Administrator, users, managers

## Voting functions

## Search, Home page etc.

## Email notifications

# Use Cases

## Authentication, Forgot password, security questions

## Demographics Search

## Demographics of Residents entry

## Natural geography entry / query / update

## Electoral geography entry / query / update

## Election

## Offices / Races in each precinct

## Ballots

## Sys Administration tasks

Questions and Answers:

# Week 1 (Feb 5)

# Q: What standard of security do you want? Encryption or does just invisible password work? A:Invisible password would work + 128 bit encryption (AES) – standard encryption

# Q: what are the “desired demographics” for a user? A:?? Age, location, state, district, federal voting, names

# Q: Is a user able to register and vote right away or do they need to be approved by an admin? A: Auto approval with government id

# Q: What is needed to be a valid voter? Does only the government id matter? A:­ Standard 18 yrs registered and other normal voting

# Q: How do you want to handle the government id part of registration? Is that an admin thing or something for us to check? A: Voter ID # or driver license # validate that through an api to a us census (Rock n roll if you can have it.)

# Q: When a user registers, do they get an email to confirm their email? A: Confirmation of the email

# Expect a lot of changes to the project scope.

# The basics of the class are trying to replicate what’s in the industry as much as possible.

# Week 2 (Feb 12)

# Week 3 (Feb 19)

# Week 4 (Feb 26)

# Week 5 (Mar 5)

# Week 6 (Mar 12)

# Week 7 (Mar 19)

# Week 8 (Mar 26)

# Week 9 (Apr 2)

# Week 10 (Apr 9)

# Week 11 (Apr 16)

# Week 12 (Apr 23)

# Week 13 (Apr 30)

# Questions to be scheduled

# How do you define an election cycle? Is that a system feature or an admin defined one?

# What’s the difference between each level of administration

# Name/Logo/Color/ui preferences : No preferences

# How much testing do you want implemented like is code coverage a matter to consider :

# kphp ?