

System Design Document

Un-Gerrymandered Software

Customer: Shawn Squire



DIAMOND DISTRICTING

Members: Corey Atkins, Matthew Hancher, Nahum Meherete, Joey Napolitano, Nirav Shah, Eric Yoo

Date: 10/24/2017

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Section 1: Introduction

Section 1.1: Purpose of this Document

The purpose of this document is to describe the system requirements, system architecture, operating environment, database design, and external interfaces that will be seen in the product. This description will help with keeping track of what needs to be done prior to, and after, creating the product.

Section 1.2: References

Ingraham, Christopher. (2015, March 1). *This is the best explanation of gerrymandering you will ever see*. Retrieved from https://www.washingtonpost.com/news/wonk/wp/2015/03/01/this-is-the-best-explanation-of-gerrymandering-you-will-ever-see/?utm_term=.8c8e3fe95ad1

(2017, August 12). *Redistricting*. Retrieved from <https://en.wikipedia.org/wiki/Redistricting#Gerrymandering>

Section 2: System Architecture

Section 2.1: Architectural Design

The software technology our system will be using is Qt. Qt is a cross-platform application framework that is used for developing application software. It uses C++ and runs on most major desktop platforms.

Section 2.2: Decomposition Description

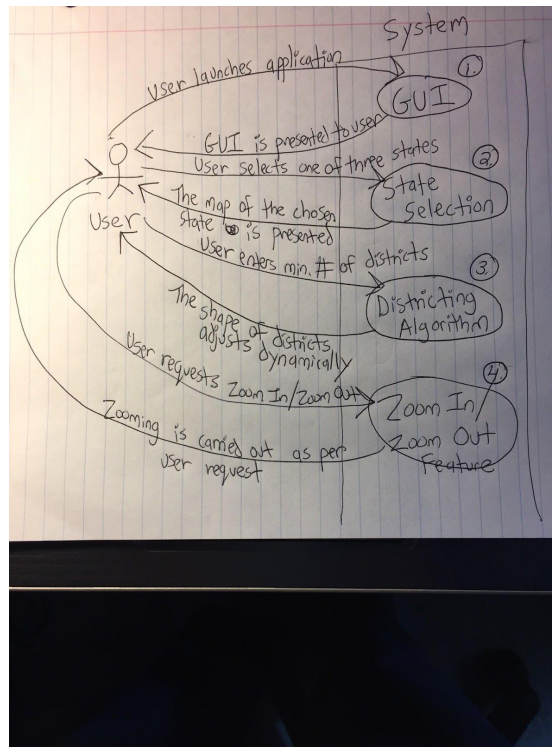


Figure 1

The user will be given multiple options to choose from, as seen in the figure. The user will interact with the interface to decide what state will be chosen and the number of districts in the state. The interface will then return a new map of the state with evenly populated voting districts. From there the user should be able to zoom in and out to get a better view of the new state districts.

Section 3: Persistent Data Design

Section 3.1: Database Descriptions (if we use a database)

N/A

Section 3.2: File Descriptions

The system will use a file that contains all the data of a given state. That population file will contain the population of each city in the given state. The second file that is used in the system is a blank map of the chosen state. The map will be blank so the system can draw the new voting lines in.

Section 4: Requirements Matrix

<i>Requirement #</i>	<i>Module Name</i>	<i>Roles</i>	<i>Description</i>
R1	State and District Selection	Customer	A customer can choose which state and the number of districts the user wants to redistrict
R2	Zooming function	Customer	The customer can zoom in or out of the map to better view how the districts were redesigned
R3			

Appendix A – Agreement Between Customer and Contractor

Client Agreement

Shawn Squire
1000 Hilltop Circle
Baltimore, MD 21250

The following represents an agreement between **Diamond Districting** (hereinafter referred to as “we”, “us”, or “Diamond Districting”) and **Shawn Squire** (hereinafter referred to as “you” or “Client”). The details of this agreement are as follows:

Professional Services. The Client hereby contracts with Diamond Districting to perform a visualization of non-gerrymandered states.

Description of Services. The following services will be provided:

- Files containing all source code to Un-Gerrymandered Software

Other Terms/Customer Comments

Terms and Conditions

Limited Liability. We shall not be liable for any delay due to circumstances beyond our control to provide services, including acts of God, war, government regulations, disaster, or civil disorder.

Amendments. Any changes or modifications must be specifically placed in writing, attached, dated, signed, and approved by both parties.

Cancellation. Cancellation of services should be provided to **Diamond Districting** in writing to amend the current client agreement. In the event that the client cancels the contracted services outlined in this contract, the initial payment will be forfeited.

I have read and understand the terms of the entire agreement. I hereby agree to the terms of this agreement. We both agree to make the attached Terms and Conditions as part of this Agreement.

Client

Shawn Squire: _____ **Date** _____

Diamond Districting (Team)

Corey Atkins: _____ Corey Atkins _____ **Date** _10/24/2017_

Matthew Hancher: _____ Matthew Hancher _____ **Date** _10/24/2017_

Nahum Meherete: _____ Nahum Meherete _____ **Date** __10/19/2017__

Joey Napolitano: _____ Joey Napolitano _____ **Date** _10/24/2017_

Nirav Shah: _____ Nirav Shah _____ **Date** __10/24/2017__

Eric Yoo: _____ Eric Yoo _____ **Date** __10/24/2017__

Appendix B – Peer Review Sign-off

All members of Diamond Districting have reviewed the document and agree on its content and format.

Corey Atkins: _____ Corey Atkins _____ **Date** _10/24/2017_

Matthew Hancher: _____ Matthew Hancher _____ **Date** __10/24/2017__

Nahum Meherete: _____ Nahum Meherete _____ **Date** __10/19/2017__

Joey Napolitano: _____ Joey Napolitano _____ **Date** _10/24/2017_

Nirav Shah: _____ Nirav Shah _____ **Date** __10/24/2017__

Eric Yoo: _____ Eric Yoo _____ **Date** __10/24/2017__

Comments:

Appendix C – Document Contributions

Corey Atkins - References

Hancher, Matthew - Architectural Design

Meherete, Nahum - Requirements Matrix

Napolitano, Joey - Purpose of this document

Shah, Nirav - Decomposition Description

Yoo, Eric - File Description