User Interface Design Document

Un-Gerrymandered Software

Customer: Shawn Squire

DIAMOND DISTRICTING

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

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Section 1: Introduction

Section 1.1: Purpose of this Document

The purpose of this document is the implementation of how this software should work. This document will give a more detailed format of the product requirements. This document will show the user interface standards, as well as a user interface walkthrough. We will also show data validation, to verify the data that can be entered by the user.

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: User Interface Standards

The overview design standards will consist of a main window, buttons, a spinbox, and dropbox bar along the bottom. The main window will consist of a widget that will display the image of the selected map. Buttons are used for zoom in/out features. The spinbox is used to select the number of districts. Also, the spinbox has a limit from 0 to 50, anything above or below will not be selected. The drop down bar will allow the user to select a state. See Figure 1 below.

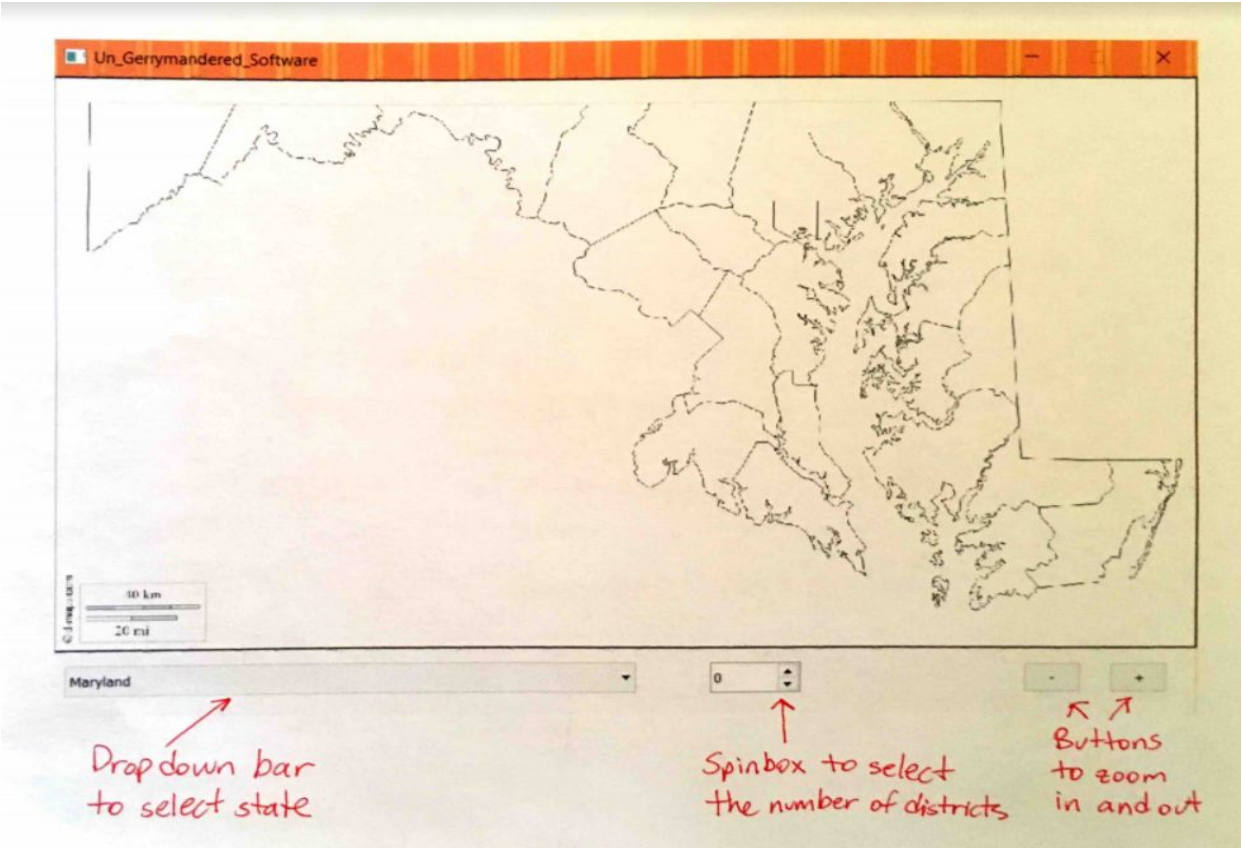

Figure 1: Displays all the functions of the user interface.

Data should be parsed out, dependent on the variable (number of districts), and displayed in real time (best case scenario). The user should see colors equal to the number of districts, prefered to separate districts. Data results should be present upon selecting a state and number of districts.

Section 3: User Interface Walkthrough

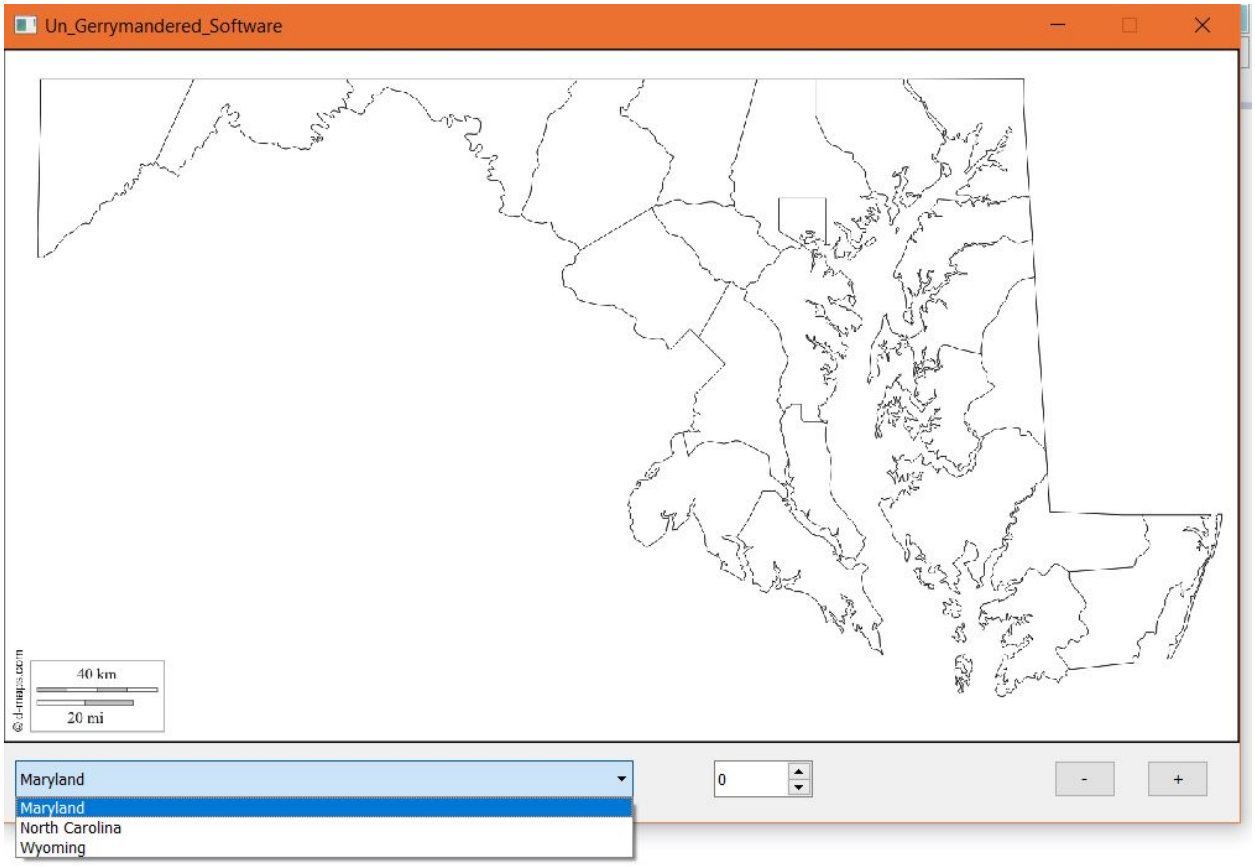

Figure 2: Displays selecting a state. The user selected Maryland (e.g. Maryland is also the default state).

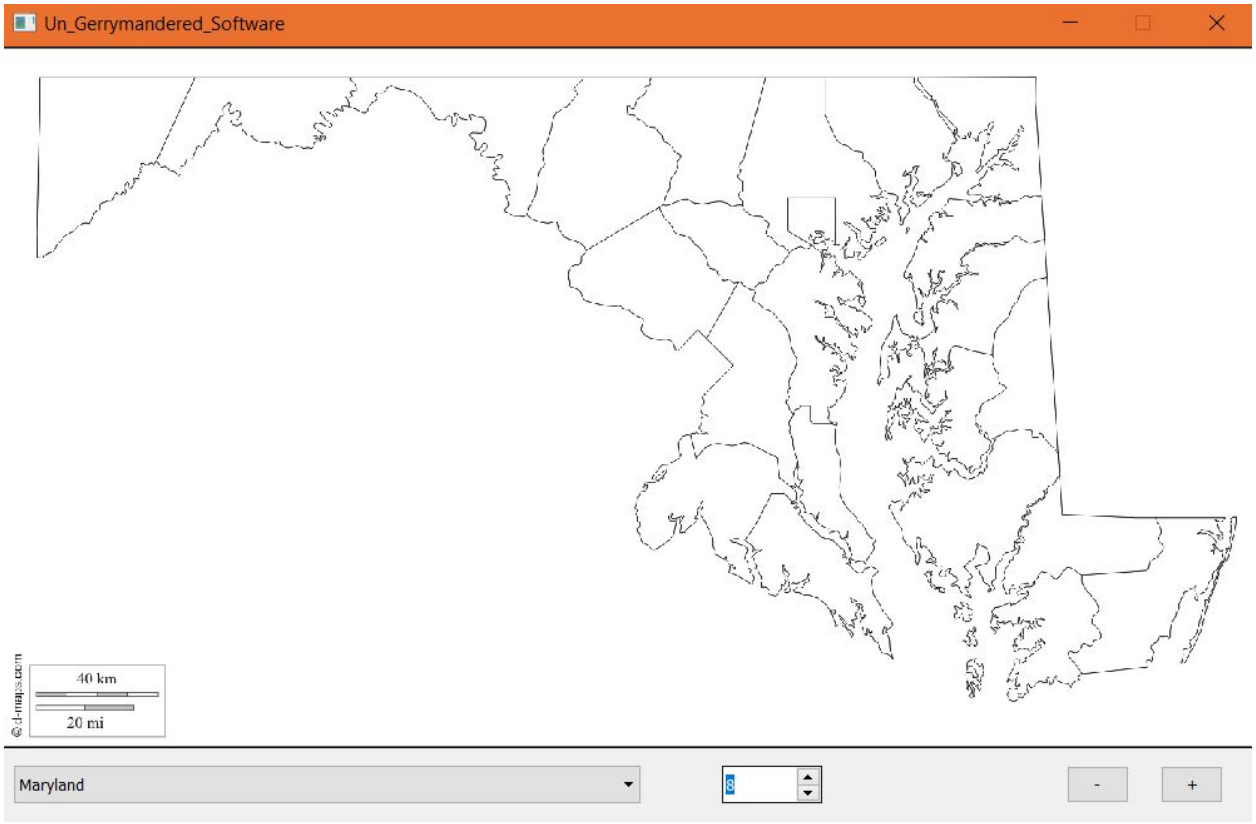

Figure 3: Displays selecting the number of districts. User selected the number 8.

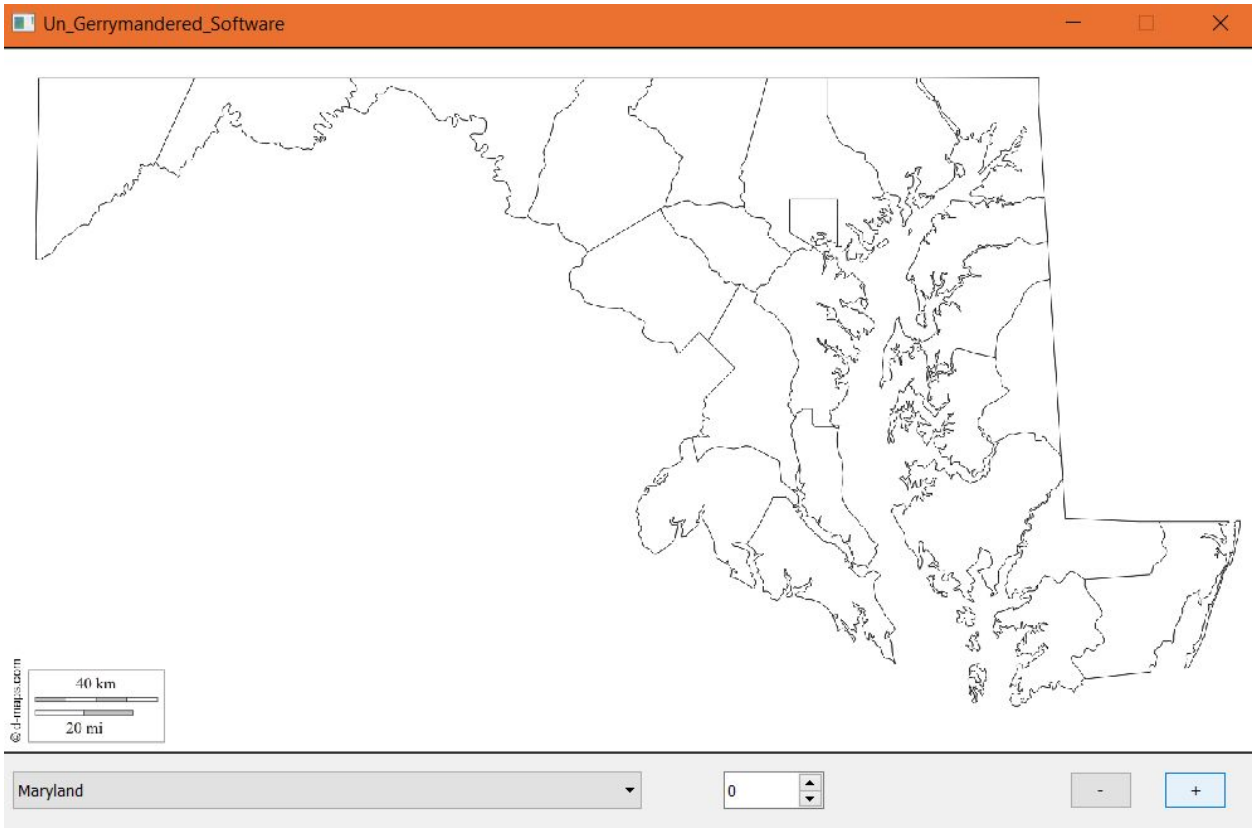

Figure 4: Displays the user selecting the button to zoom in (button is highlighted). Note: same result for the zoom out button as well.

The user will start by selecting a state to work with, as seen in Figure 2. When a state is selected the program will display the current state. The user must then choose the number of voting districts they would like in the given state. Figure 3 shows the menu after the user selects 8 voting districts to be implemented into the state of Maryland. Once the program shows the state with its updated voting districts the user then has the option to zoom in and out of the map to get a clearer view of the new map. Figure 4 shows the zoom in button highlighted.

After viewing the first choice the user can continue to tinker with the state and number of voting districts. The user can only have a max of 50 voting districts for a given state. The user can then decide what number of voting districts will best suit a given state.

Section 4: Data Validation

Data items that can be entered into the system would be an integer and a string. An integer if for the number of districts, in which the user can only enter up to 50. A string would be the predefined states the user can select from.

Error case of 0 districts, will be defined the same as 1 defined district (will include entire population in district of the state). States population will be divided by the “district total” and the districts will have an average population per district with a level of error no greater than 10,000 individuals. Data should have a no bias parsing method to make each district contain a similar average population.

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
_None_____
_____
_____
_____
_____

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 _10/31/17__

Diamond Districting (Team)

Corey Atkins: _____ Corey Atkins**_____ Date** _10/31/17_____

Matthew Hancher: ____ Matthew Hancher**_____ Date** _10/31/17__

Nahum Meherete: _____ Nahum Meherete**_____ Date** _10/31/2017_

Joey Napolitano: _____ Joey Napolitano**_____ Date** _10/31/17__

Nirav Shah: _Nirav Shah**_____ Date** __10/31/17_____

Eric Yoo: ___ Eric Yoo**_____ Date** _10/31/17____

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** __10/31/17____

Matthew Hancher: ____Matthew Hancher_____ **Date**__10/31/17_____

Nahum Meherete: _____Nahum Meherete_____ **Date** _10/31/2017____

Joey Napolitano: __Joey Napolitano_____ **Date** _10/31/17__

Nirav Shah: _____Nirav Shah_____ **Date** __10/31/17__

Eric Yoo: __Eric Yoo_____ **Date** _10/31/17___

Comments:
_None_____

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Appendix C – Document Contributions

Corey Atkins - Appendices and Screenshots
Hancher, Matthew - Data/UI comments
Meherete, Nahum - User Interface Walkthrough
Napolitano, Joey - References
Shah, Nirav - User Interface Standards
Yoo, Eric - Purpose of this document