FairyMander

Jeysen Angous, Dylan Franco, Sophia Ingram, Ceanna Jarrett, and Izaac Molina

Our team

Jeysen Angous

Release Manager

Dylan Franco

Architect

Sophia Ingram

Customer
Communicator

Izaac Molina

Team Lead

Ceanna Jarrett

Recorder

Meet Our Client
Dr. Bridget Bero, P.E.

Professor at Northern Arizona University
Associate Chair for CENE Programs

Dept. of Construction Management, Civil and
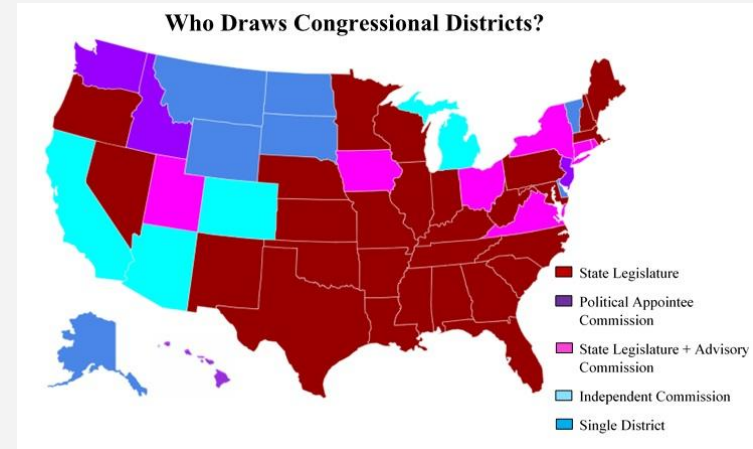
Environmental Engineering

Problem Statement

Congressional districts are redrawn every ten years

- 39 states redistricting process is controlled by legislature
- Districts are Gerrymandered

Each district elects a state representative

- Representatives are members of Congress
- Congress creates and changes laws

Who Draws Congressional Districts?

- State Legislature
- Political Appointee Commission
- State Legislature + Advisory Commission
- Independent Commission
- Single District
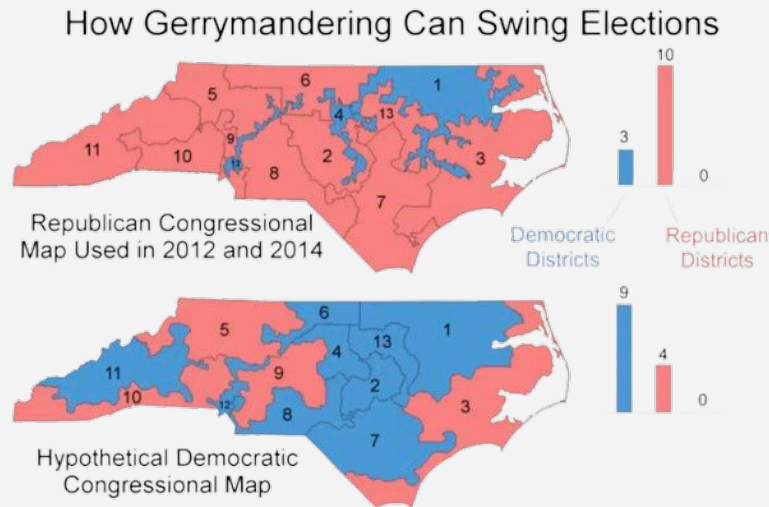
Problem Statement – cont.

Packing

- Packing like-minded voters to as few districts as possible

Cracking
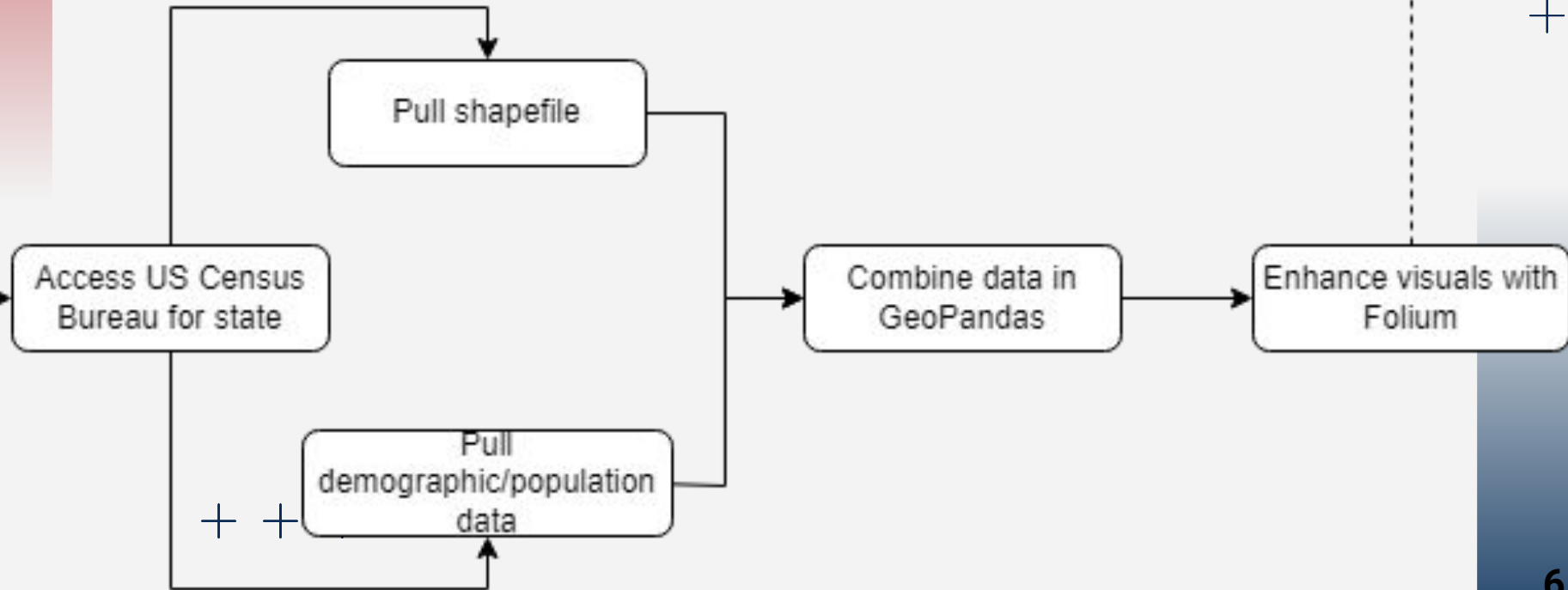
- Splitting like-minded voters across different districts

Underrepresentation

- Taking away the principle of fair representation

How Gerrymandering Can Swing Elections

Republican Congressional Map Used in 2012 and 2014

Democratic Districts   Republican Districts

Hypothetical Democratic Congressional Map

Solution Overview

District: 9
Population: 794,612
Democratic Vote Percentage: 37
Republican Vote Percentage: 63
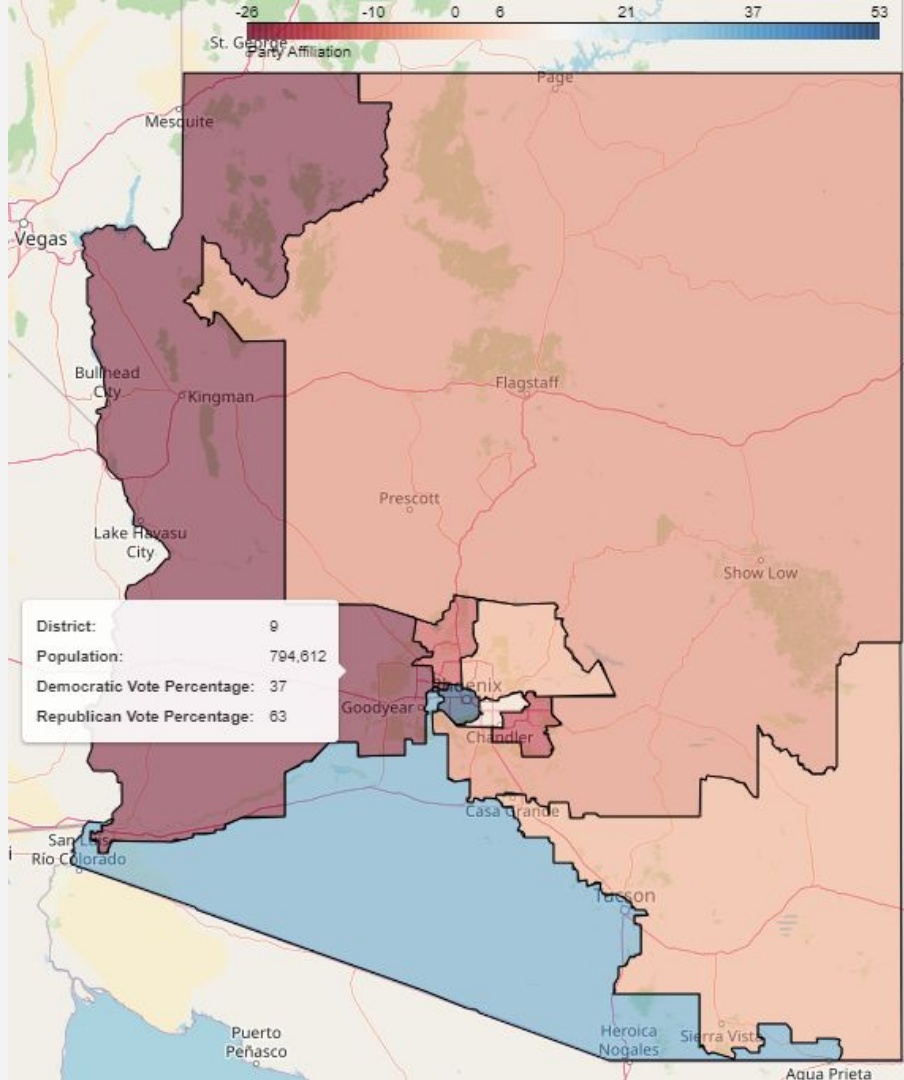
Functional Requirements

Creating the Districts

- Must visually generate redistricting plans

District Meeting Fairness Requirements

- Geographic, Electoral, and Demographic

Produce Interactive Map

- Show populations, district lines, and congress seats.

Functional Requirements - cont.

Education on State Redistricting Laws

- ○ Describe nuances between states

Educational Reasoning of Why Our District is Fair

- ○ "Why are these the better districts?"
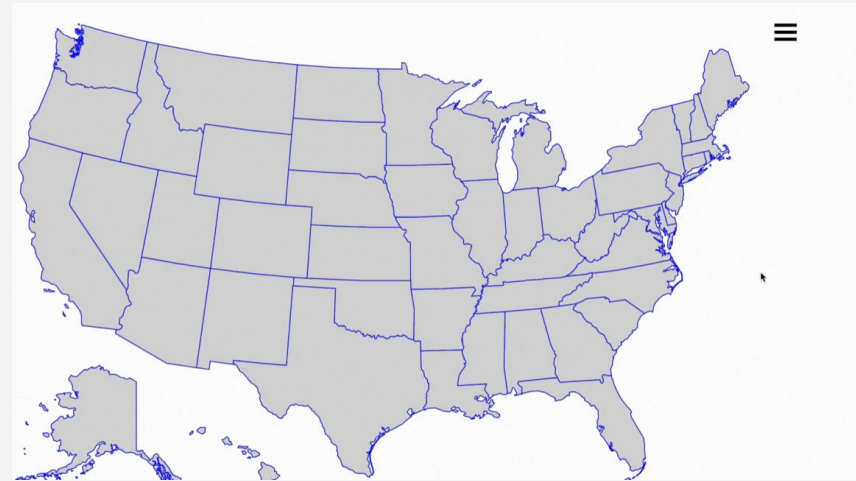
Performance Requirements

User Interface

- Accessible and straightforward

Interactive Map Responsiveness

- Fast and device compatible

Understandable
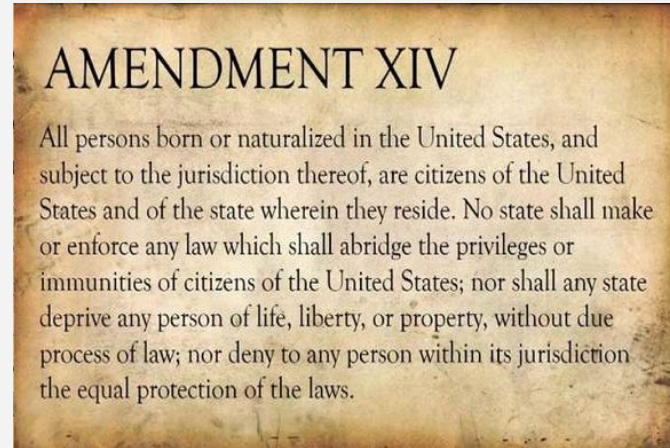
- From the general public to redistricting officials

Environmental Requirements

Web-App

- ○ App must be web based

Created Districts Follow Federal Redistricting Laws

- ○ Ex: 14th Amendment

AMENDMENT XIV

All persons born or naturalized in the United States, and subject to the jurisdiction thereof, are citizens of the United States and of the state wherein they reside. No state shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any state deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws.

Risks and Feasibility

Failure to deliver Fair Redistricting Plans
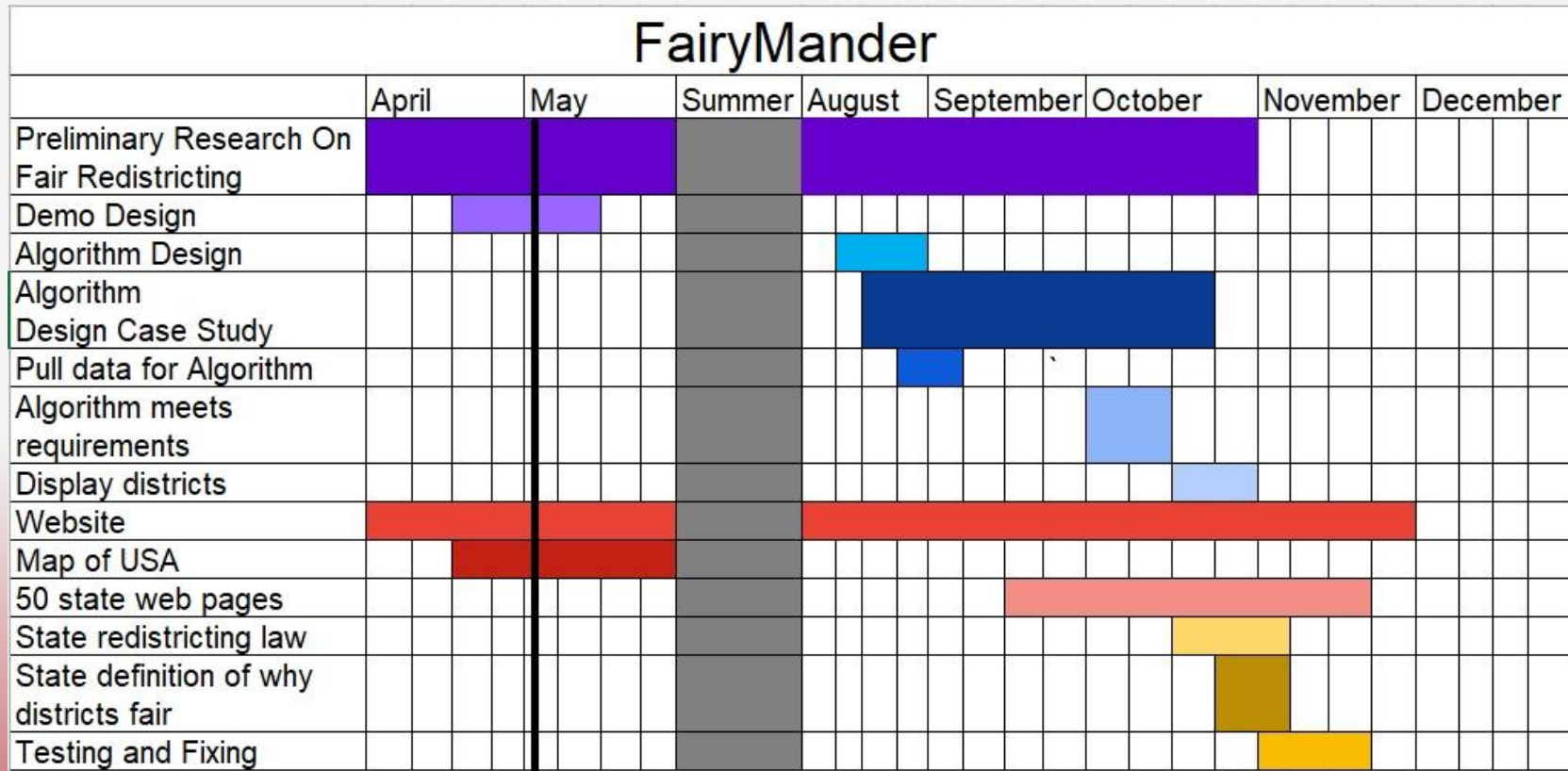
- Must develop clear fairness standards through research

Failure to Update Redistricting Data
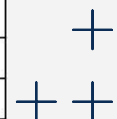
- Ensure data sources are properly up-to-date.

Low Understandability

- Evaluate website materials using readability tools and user testing

Schedule

FairyMander

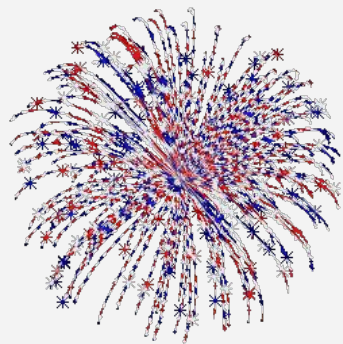|	April	May	Summer	August	September	October	November	December
Preliminary Research On Fair Redistricting	███	███	███	███	███	███		
Demo Design		███	███					
Algorithm Design				███				
Algorithm Design Case Study				███	███			
Pull data for Algorithm				███				
Algorithm meets requirements						███		
Display districts						███		
Website	███	███	███	███	███	███	███	
Map of USA		███	███					
50 state web pages						███	███	
State redistricting law						███		
State definition of why districts fair						███		
Testing and Fixing							███	

NOW

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Conclusion

Problem

- Gerrymandering poses a serious threat to democracy

Solution / Requirements

- We propose a geospatial redistricting algorithm, presented using a web application.

Next Steps

- Continue research, begin case study

Thank You

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