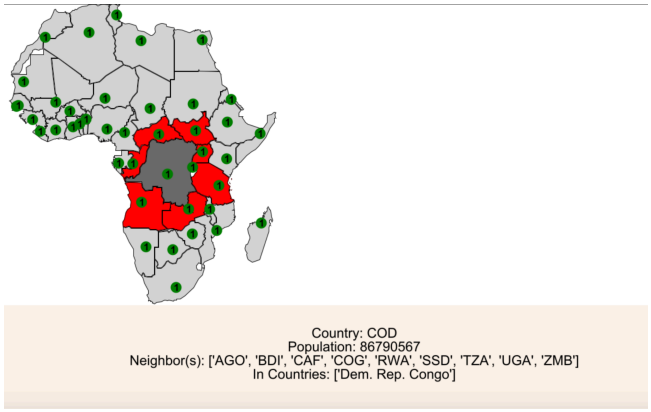
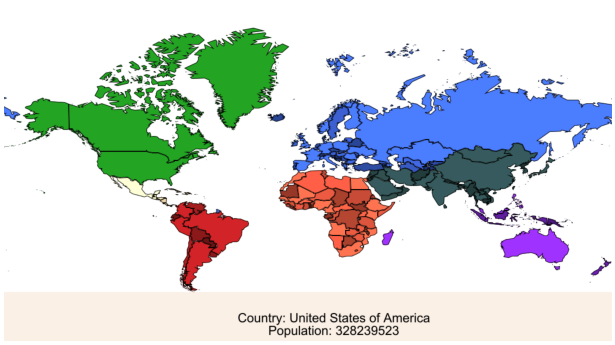
TP0 Proposal

Risk: Python Edition

Description:

My term project will recreate the classic strategy board game *Risk* using Python, which focuses on players fighting over land on a board of territories. My current iteration uses a map rendered using geospatial data for Africa, divided into territories and subregions. Each player starts with a randomly assigned set of territories and progresses through phases of reinforcement, attack, and fortification. Interactive components of the game include drawing and selecting countries, viewing neighboring territories, and managing armies. The game also includes dynamic interactions between players (like trading countries) and additional mechanics such as territory cards that are rewarded for occupying countries. Further development of the game may include features such as additional maps, an AI opponent that uses an algorithm to play the game, or a real-time strategy version.





- A geospatially accurate map that leverages Mercator projection for smooth visuals.
- Real-time interactivity: players can view population statistics, neighboring countries, and territorial ownership.
- Players' territories are marked and updated dynamically to reflect the game state.
- The game mimics classic *Risk* strategies while introducing new territory-specific rules, such as bonus reinforcements for controlling entire subregions.

Similar Projects

1. **Risk: Global Domination** (Google Play Store/Apple App Store) (Pictured Above)
    - Features: Interactive maps and customizable rules
    - Clean UI with multiplayer, player icons/profile pictures
    - Game AI algorithm that makes smart choices/incorporates strategy
    - Inspiration: Implement a visually engaging map and smooth ui design that improves upon the board game version
    - Focus on drag-and-drop mechanics for units or territories, and to deploy cards
2. **Similar Term Projects**

Risk: Avatar the Last Airbender https://www.youtube.com/watch?v=_8DEGg5sdt4

World War: https://www.youtube.com/watch?v=GCrFlC2SF3g

- Ability to choose your color/avatar
- Nodes representing different territories, ability to reinforce regions with onMousePress
- Multiple splash screens
- Soundtrack
- UI for ending/starting different phases, using PIL to create images for better visuals
- Text Display recording the different Game Actions

3. **Various Online Geospatial Visualization Projects**
    - Features: Dynamic zooming and filtering of map data.
    - The ability to select countries and display data about that country
    - Changing the color representation
    - Inspiration: Include zoom capabilities for players to focus on individual territories or regions.

Version Control / Backup Plan

I am using **Git for version control** which is built into Visual Studio Code: https://github.com/hansy-w/Risk-in-Python

Please use `pip install geopandas shapely pandas numpy geopy requests`
To install the modules in your virtual environment. These are the **external tech** I want to use in my project.