GitHub: https://github.com/mannataneja/IGME689_Assignment2.git

Data Set

The data set I used is the fire protection district boundaries of Marin County from the ArcGIS Hub. Each district is marked off in a red boundary that shows the area where a local fire department has responsibility. I chose this data because it is a real world data set which was easy to access, and it highlighted clear territories that can be used for a fire simulation. When you start the game, you see a fire in the middle of the area. It keeps spreading out until it reaches the boundaries of one of the fire districts. Once it crosses one of the boundaries, its spread slows down.

Controls

- Increase fire spread speed Button: Makes the fire spread faster
- Decrease fire spread speed Button: Makes the fire spread slower
- Left (<) / Right (>) buttons: Move the view to the previous or next district
- Display panel: Shows weather data - temperature, pressure, sea level, and ground level (from OpenWeatherMap API)

Gamification

This simulation could be gamified into a territory control strategy game. Each fire district becomes a zone that the player must protect. The fire spreads across zones depending on weather conditions. The player has limited resources and must choose which district to defend before the fire grows too big. The player wins if the fire is contained, and loses if too many districts are destroyed.

The weather data adds challenge and replay value. For example, high temperatures may make the fire spread faster. The player must adapt their strategy based on their resources and weather conditions.

Here are some resources the player could manage:

- Firefighting units
- Water supply
- Budget
- Fuel
- Time