

FireFlight

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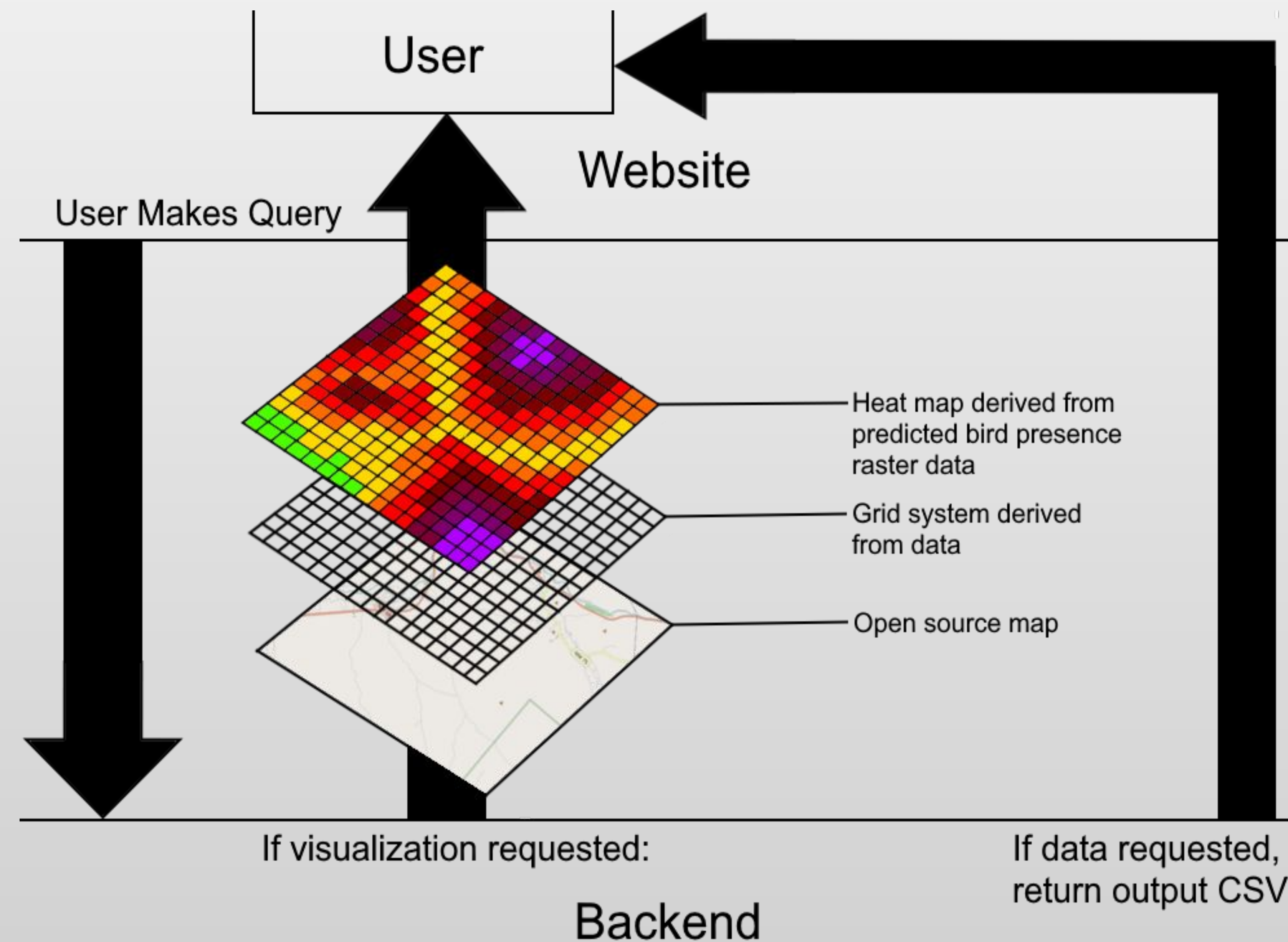
What is the Problem?

- Climate change has become an increasing issue in recent years. As a result, wildfire rates have increased, ravaging ecosystems.
- Birds are an **indicator species** that reflect an ecosystem's health. To determine which course of actions are best to take, scientists need to first **look at how bird populations change** in response to wildfires.
- Currently, **there is no user-friendly tool** that helps visualize the impact of wildfires on local bird populations.

Plans, Goals, Stretch Goals

- We are creating a **user-friendly visualization tool** that makes predictions of bird populations based on years of gathered data.
- Officials can use this tool to **estimate ecosystem recovery** after wildfire or other natural disasters.
- This tool will eventually be **used by US Forest Service stations** across the Western US to allow prediction analysis on an individual basis and timeframe for each end user.

Our Proposed Solution



Solution Overview

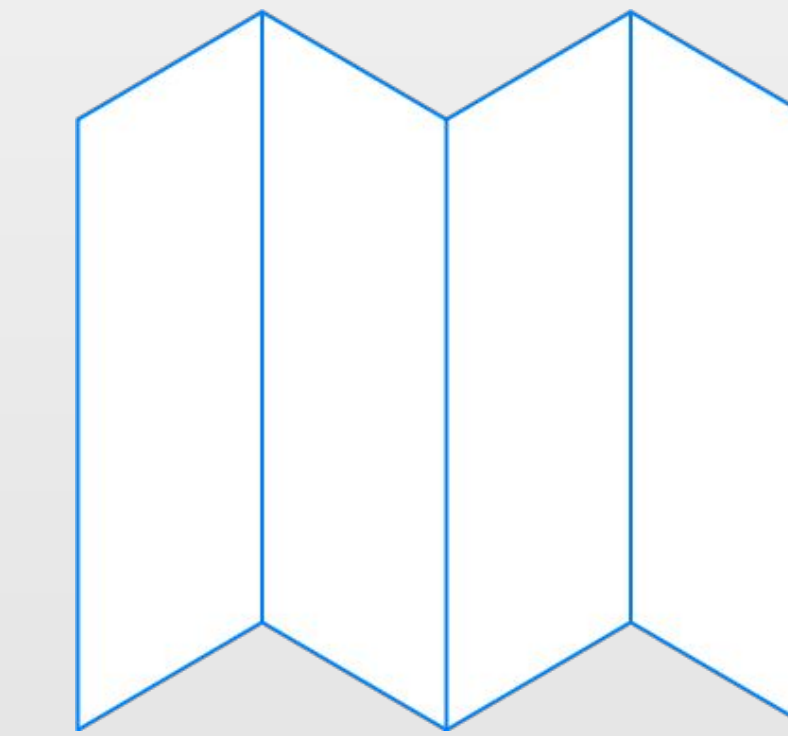
- Users wishing to access the data will do so through our project's web framework.
- Two options: requesting a visualization of the data in the form of a heat map, and/or querying the database for a specific data file.
- Request(s) will then be sent to server and programs to fetch the requested data/generate a map.
- The data/map will be returned via the website.

Visit Our Website!



https://ceias.nau.edu/capstone/projects/CS/2025/FireFlight_F24/

Feasibility



Folium (Mapping)

- Creates interactive maps with Python
- Seamless Django integration

Django (Back-End)

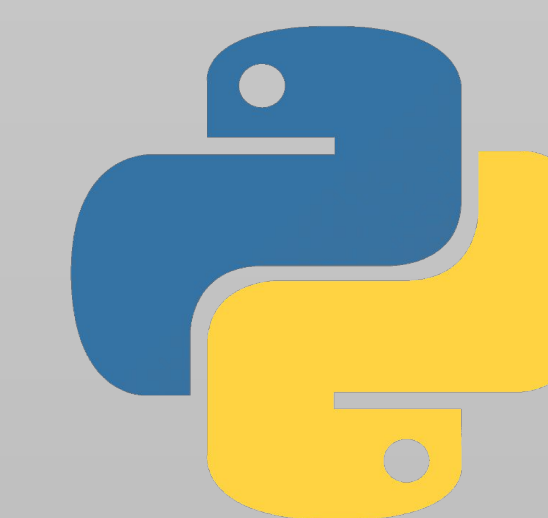
- Handles server and database logic
- Designed for rapid development in Python



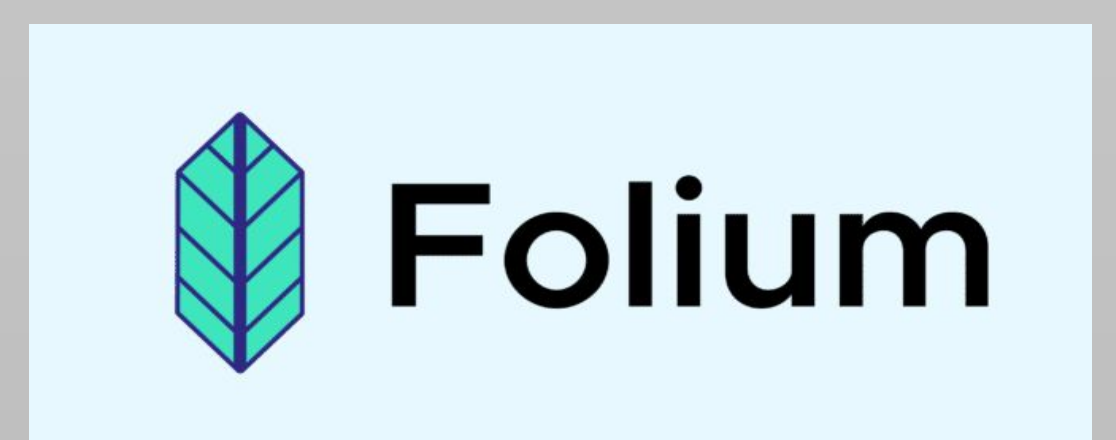
AWS (Hosting)

- Reliable cloud hosting with scalability
- Ensures easy client handoff after project completion

Technologies Planned



python™



RASTER.io

