**Reservoir Water Extent Analysis**

**Overview**

This repository contains three separate JavaScript codes for generating time series of water extent using Landsat, Sentinel-1, and Sentinel-2 datasets. Each script is designed to analyze the water extent in reservoirs and output the results in CSV format.

**Data Preparation**

* The output plots from each satellite dataset should be saved as CSV files with the naming convention **{reservoir\_name}\_{dataset}.csv**. For example, the Sentinel-2 plot for the Baish reservoir should be saved as **baish\_s2.csv**.
* Reservoir elevation and water volume data should be available in an Excel file (**.xlsx** format).

**Python Script for Combined Analysis**

* The provided Python script, **5combined.py**, combines the satellite data from the CSV files with the reservoir data from the Excel file.
* This script generates a comprehensive timeline plot combining satellite imagery data with reservoir metrics.
* It also calculates the annual trend by determining the median of each month within the specified time period, offering insights into seasonal variations.

**Usage Instructions**

1. Run the JavaScript codes in Google Earth Engine to generate water extent data for Landsat, Sentinel-1, and Sentinel-2.
2. Save the output plots in CSV format following the specified naming convention.
3. Ensure the reservoir elevation and water volume data are updated in the Excel file.
4. Run **5combined.py** to produce the combined timeline plot and the annual trend analysis.