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The python code in the GitHub for African drought monitor is complete version:

https://github.com/chaneyn/African_Drought_Monitor

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No longer available, use the one in my git: https://github.com/zzz0069/African_Drought_Monitor

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Links for NLDAS-2 monitor data:

https://hydro1.gesdisc.eosdis.nasa.gov/data/NLDAS/NLDAS_FORA0125_H.002/

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Have downloaded all the data(167.34 GB).

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Links for GFS forecast data (select the one for GFS, 004 (0.5°) – Domain, 10Oct2006–Present):

<https://www.ncdc.noaa.gov/data-access/model-data/model-datasets/global-forecast-system-gfs>.

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Part of data(to large, 26GB for one day).

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NLDAS-2 monitor variables: Need to convert hourly into daily; you will need to register for a NASA earthdata account: <https://urs.earthdata.nasa.gov/>

Daily precipitation rate (24 hour total precipitation)

Daily maximum and minimum temperature at 2 meter

Daily Specific humidity at 2 meter

Daily surface pressure

Daily U wind speed at 2 meter

Daily V wind speed at 2 meter

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Done. Check code on: https://github.com/zzz0069/web_project/blob/master/hour_to_daily.py

Authorization needed for web_project, leave your github username below:

Calculation details:

Daily precipitation rate (24 hour total precipitation)	total
Daily maximum and minimum temperature at 2 meter	max and min for all
Daily max and min relative humidity at 2 meter	max and min for all
Daily U wind speed at 2 meter	mean
Daily V wind speed at 2 meter	mean
Daily downward short-wave radiation flux	mean
Daily dew point temperature	mean
lat	Same for each day
lon	Same for each day

26F

Use Panoply to quickly view the data: <https://www.giss.nasa.gov/tools/panoply/>

Computing Reference ET using PyETo: <https://pyeto.readthedocs.io/en/latest/>. Please use FAO-56 Penman-Monteith equation.

Mapping and extract data point at any location for the following elements:

consecutive dry/wet days for the past and future 3/5/7/10 days

consecutive hot (>38 degC)/cold (<0 degC) days for the past and future 3/5/7/10 days

Average minimum temperature over past and future 3/5/7/10 days

Average maximum temperature over past and future 3/5/7/10 days

Water deficit (ETo-P) over past and future 3/5/7/10 days

We will run lake model (from Dr. Xing Fang) with precipitation, temperature, humidity, and radiation as input. We can talk about that once the input data is ready for use.

Please feel free to ask me if you have any questions.

Questions:

1. Use nio instead of pygrib.
2. Keep the original data or not?
3. Attr for each variables(especially for wind_direction).
4. Expectation for this semester.