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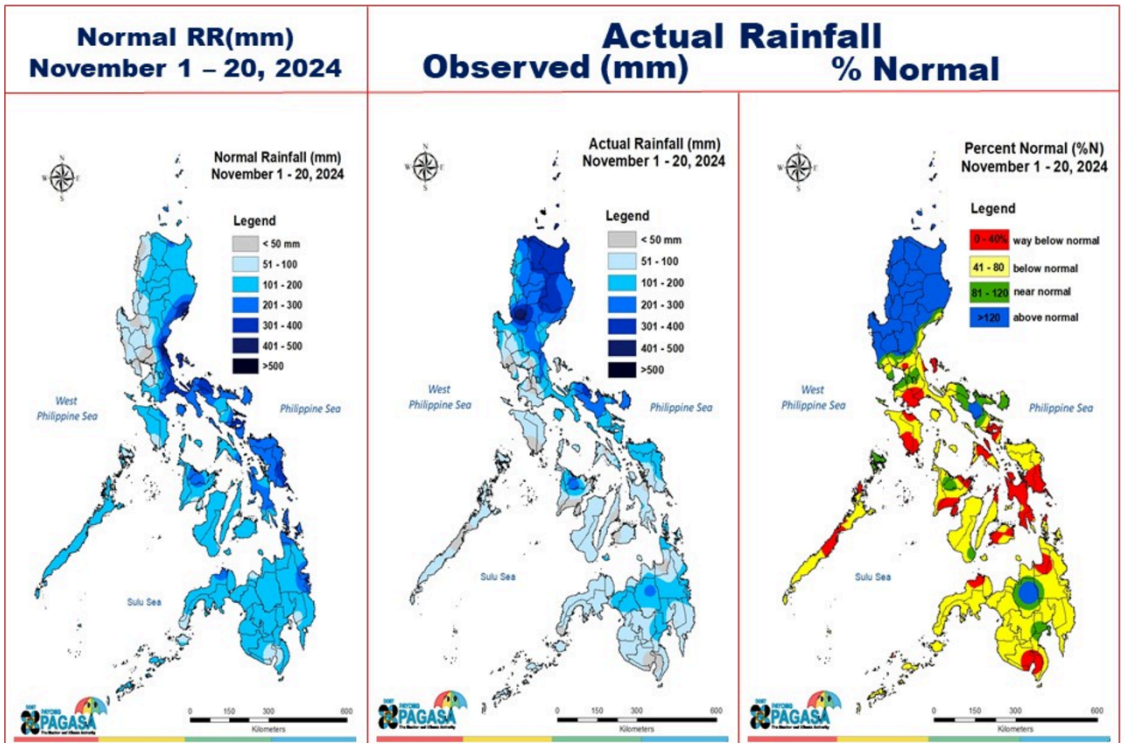
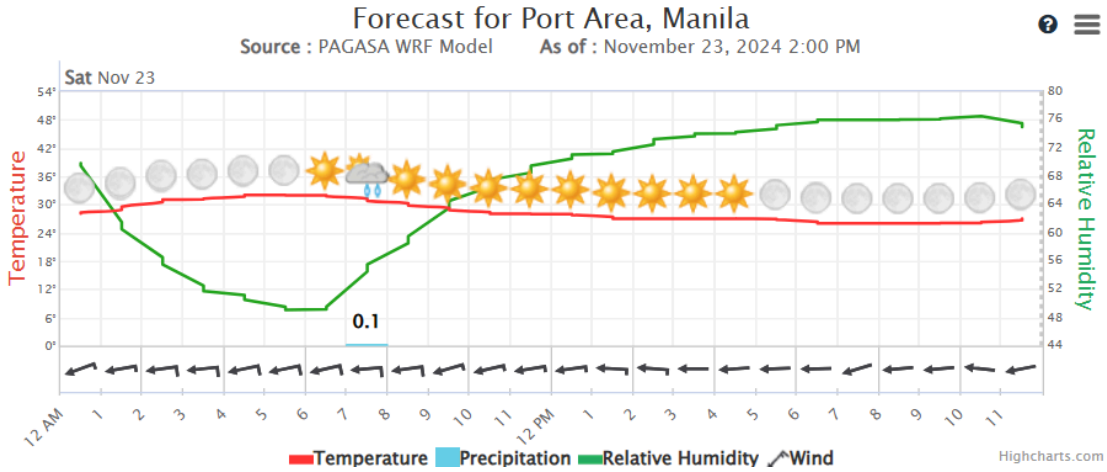
1. **Choose 2 visualizations** from the latest DOST PAG-ASA weather updates.

Visualization 1



Accessible in: https://www.pagasa.dost.gov.ph/climate

Visualization 2



Accessible in: https://www.pagasa.dost.gov.ph/

2. **Analyze** each visualization, applying your class learnings.

Visualization 1

This visualization consists of three choropleth graphs. The first graph (left) is what I would assume as the prediction in the amount of rainfall (in mm) from November 1 - 20, 2024. It seems that the amount is higher on the right side of the country which would make sense given that the tropical storms/cyclones are coming from the Pacific Ocean. Moreover, the second graph (middle) shows the actual observed amount of rainfall (in mm) from November 1-20, 2024. While the third graph shows the difference (in percentage) of the predicted amount of rainfall compared to the actual amount of rainfall observed from the specified dates.

Visualization 2

This visualization shows today's weather forecast in Port Area, Manila as of 2 PM. This graph shows quite a lot of information regarding today's weather forecast. First, it shows a multi-line chart with two y-axes corresponding to temperature (on the left y-axis) and the relative humidity (on the right y-axis). It also shows the wind direction on the bottom of the graph. On top of it is what is supposed to be a bar chart on the amount of rainfall that landed on the area within certain timeframes. Moreover, the diagram of moon, cloud, and sun also shows whether it will rain, cloudy, or sunny, within a certain timeframe.

3. **Submit a PDF** report, including:
    - **Visualization Pitfalls:** Identify weaknesses in the visualization compared to other sources (e.g., online, other government agencies).
    - **Improvement Areas:** Propose 3 key areas for improvement and suggest solutions.
    - **Visualizations** and **Citations** (if applicable).

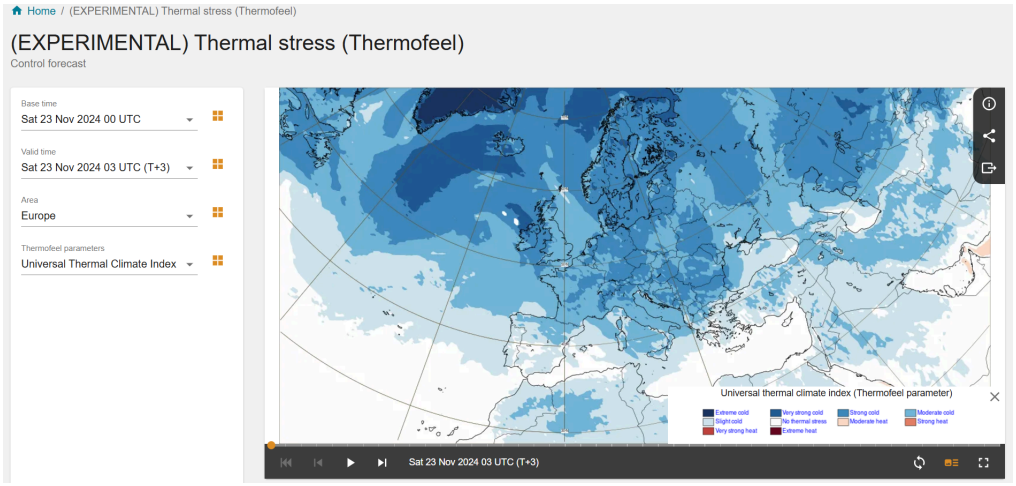
Visualization 1

Problem: Color Scheme of Choropleth

I want to focus first on the blue choropleth graphs in Visualization 1 wherein the last two color colors "401-500" and ">500" seem rather similar and hard for the audience to distinguish.

Solution: Improve Color Scheme

A graph from the European Centre for Medium-Range Weather Forecasts (ECMWF) would give an idea on how it should be done. Despite the difference on the context, the user can distinguish between the difference of the thermal stress in the graph due to its color scheme.



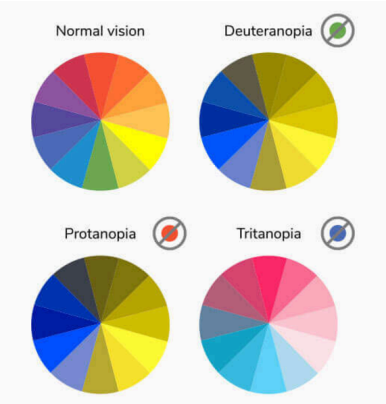
Retrieved from: [ECMWF - Thermal Stress]

Problem: Not Color Blind Friendly

Observe that on the third graph (far right), the color scheme may confuse some of the users especially those who have visual impairments. The red (very below normal), yellow (below normal), and green (near normal) categorical colors may be hard to distinguish especially for those who have red-green color blindness.

Solution:

A change in the color scheme would suffice – a color scheme that would accommodate not only the majority but also those who have visual impairments. This color palette may be considered:



Retrieved from: [Venngage - Color Blind Friendly Palette]

Problem: Scale and Resolution

If you visit the website of the graph, you will see that it is only a static image of a choropleth map. And, if you look closely, the image is not of high quality and the graph itself does not have clear regional details – making smaller regions to be misrepresented.

Solution: Enhance Resolution and Regional Markings

Add labels for regions or highlight the tiles or boundaries of each region/cities/provinces in order to give emphasis on them. An interactive hover data or pop-ups would give more context on each area of the graph.

Visualization 2

Problem: Overcrowded Design

If the users look at the graph at first glance, there's a tendency for them to feel overwhelmed by the amount of variables that are plotted in one chart. This would make the graph visually cluttered and harder to interpret.

Solution: Reduce Overcrowding and Focus on Key Variables

They can split the data into multiple, yet simple charts for it to reduce overcrowding. In each chart, they should focus on one or two key variables in which they wish to differentiate. Moreover, another alternative solution would be an interactive chart that allows the users to toggle between variables.

Problem: Overlap on Symbolic Diagrams

The first thing that caught my attention is the weather icons on the graph and honestly I don't think it belongs to the chart at all. Moreover, this design may lead to overlapping data points and/or visual noise that distracts the user from analyzing the key variables.

Solution: Improve Visual Design

They can either resize or reposition the weather icons to minimize overlap.

Problem: Lack of Explanation and Context

If you visit the website, there is no detailed information or annotations that explains each of the variables. This may lead to confusion for the users on how they will interpret the graph, given that there is also an issue of overcrowding of variables in the graph.

Solution: Enhance Interactivity and Context

Add some explanations and/or annotations regarding the graph and its variables. A simple hover data would be wise to use in this situation.