

CLIMATE ACTION

Analysis of average rainfall and humidity percentages

Done by : Srilekhya Turlapati and Bhavani Silasagaram

Introduction

Being aware of weather conditions and monitoring weather related activity like rainfall patterns and average rainfall and humidity is the best way to protect crops and secure a high and healthy yield in a state such Telangana as well as be prepared for natural calamities caused by rising precipitation levels such as floods and human-caused hazards like road traffic and accidents. Using this data and analysis one can create a well-structured plan to ensure the state is safe and utilizing this natural resource to its highest capacity. Extreme weather conditions can prove to be hazardous for those in the state and keeping a check on the rainfall patterns along with categorizing the data and analyzing the data found individually can help predict and find solutions to problems which prevail in the state.

Prompt

To use the Exploratory Data Analysis to analyze the average rainfall in each district of Telangana, average rainfall in each month(Jan-Aug), and the average Minimum Humidity and Maximum Humidity percentage.

Methodology

In order to organize and analyze the data from the dataset, we grouped the data based on the District and Month and creating a DataFrame around it

We then Calculated the mean/average of all the days under each month

Next, we Pivoted the table based on the Rain Fall

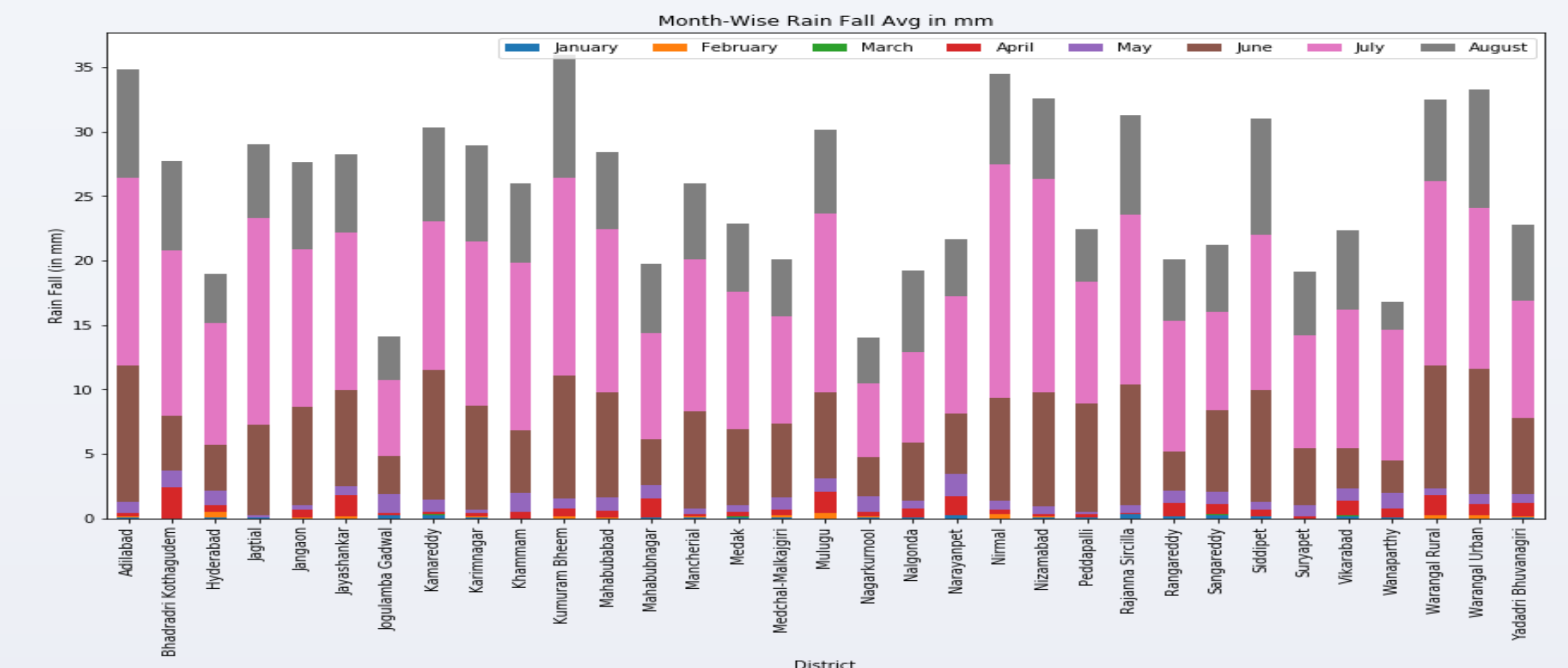
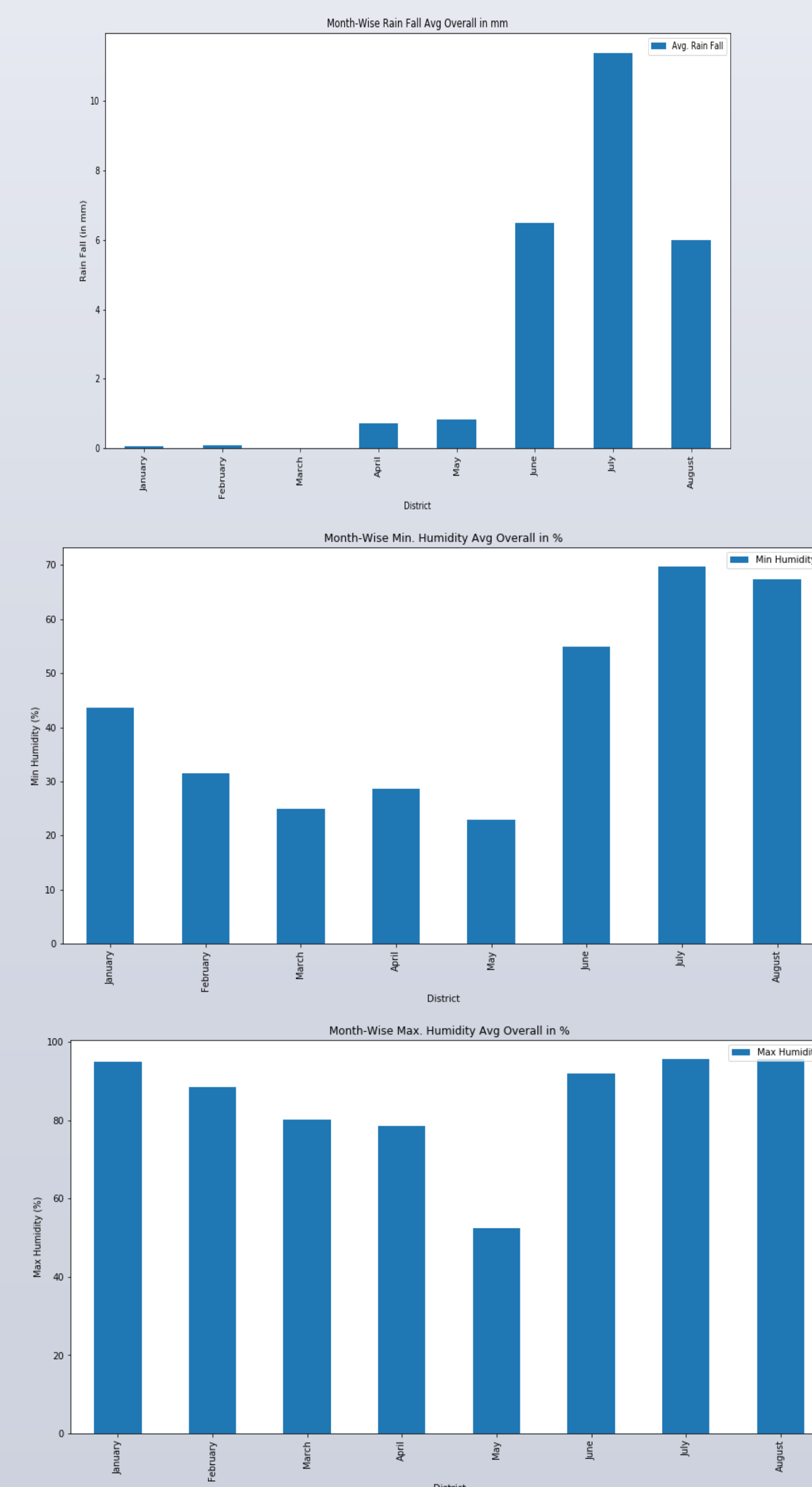
- Converting months in the rows to columns
- Reindexing the months to be displayed in order.

We then created a set of 4 individual graphs to infer from.

- Month wise rainfall average for each district in mm
- Month wise rainfall average overall in mm
- Month wise minimum humidity average overall in %
- Month wise maximum humidity overall in %

The inferences from the above were made and a summary was drafted based on the overall trends and patterns we observed on rainfall and humidity in the month of Telangana.

Results



Conclusions

Patterns detected:

- Rainfall in March will most likely not occur. Rainfall in this month is non-existent in many areas.
- Rainfall in June, July and August are most likely to occur.
- Telangana has high humidity year-long with lowest humidity in May.
- Kumuram Bheem District has highest rainfall average. Nagarkurnool District has the least rainfall average.
- In the months January to May, all the districts have a comparatively less rainfall average when compared to the other monsoon months, with Narayanpet and Bhadrachalam having the most rainfall in this time (January - May).

Final Words:

After visualizing the rainfall patterns and humidity patterns in the state of Telangana, month wise and district wise, we have analyzed the results and discovered that in the months January to May, all the districts have a comparatively less rainfall average when compared to the other monsoon months, therefore with the introduction of proper irrigation practices, crops can achieve the desired amount of water. In the monsoon months, one can introduce dikes and soil bunds to prevent excess water from accumulating and destroying the crop. In urban areas, sewage systems can be upgraded to better suit the heavy rainfall during the monsoon months and to ensure waterlogging does not occur as this may lead to road traffic and accidents.