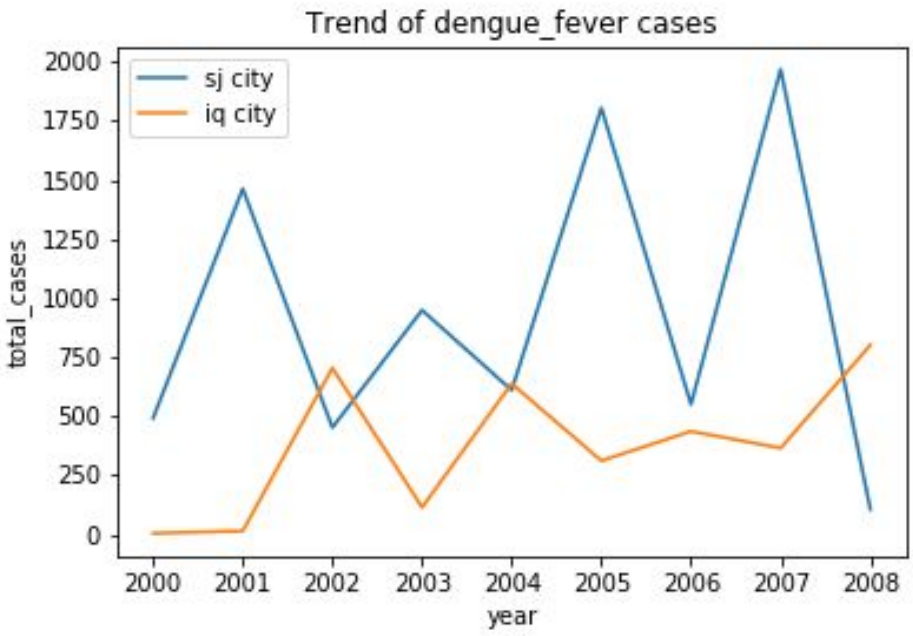
IMPLEMENTATION REPORT

Dengue Fever Trends 2000 - 2008

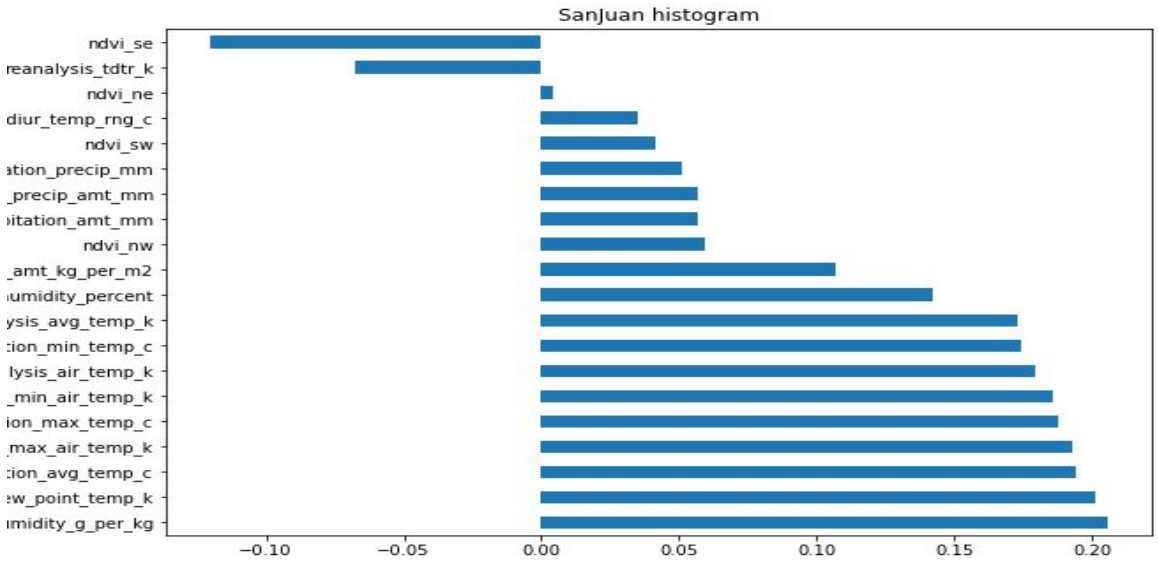


It can be seen from the line graph above that San Juan has more dengue fever cases over time than Iquitos for the time frame between 2000 and 2008. This chosen time frame is taken since these are the years the two cities have in common in the data.

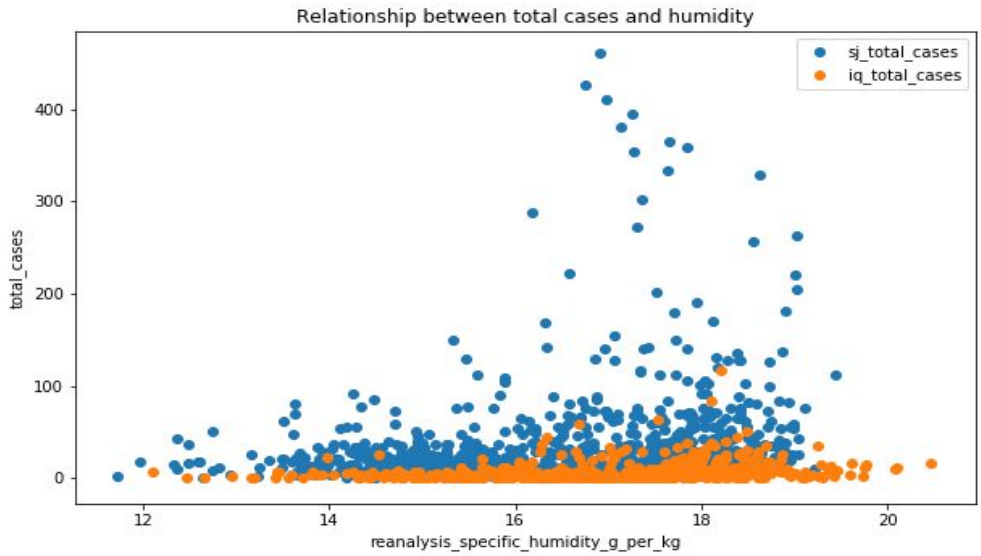
Correlation between the various features in the data and their correlation to our target variable i.e. the total cases of dengue fever are measured.

These correlations are visualised with the aid of bar-histograms with the x-axis representing the correlation value. -1 to 0 represents no correlation, 0 to 0.3 a weak positive correlation, 0.3 to 0.5 a moderate positive correlation and 0.5 to

a strong correlation

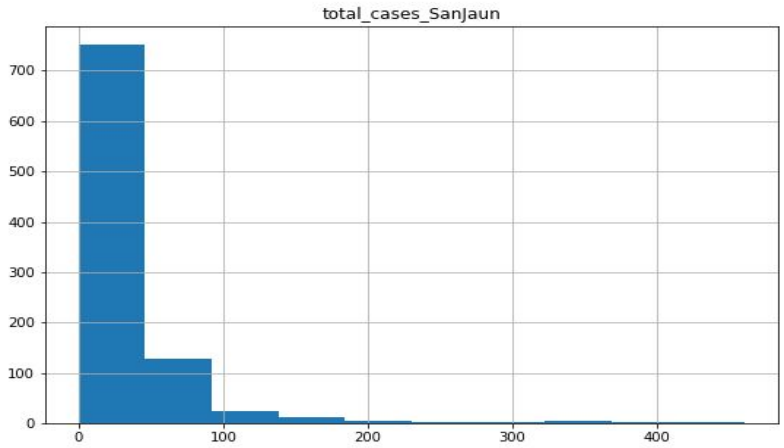


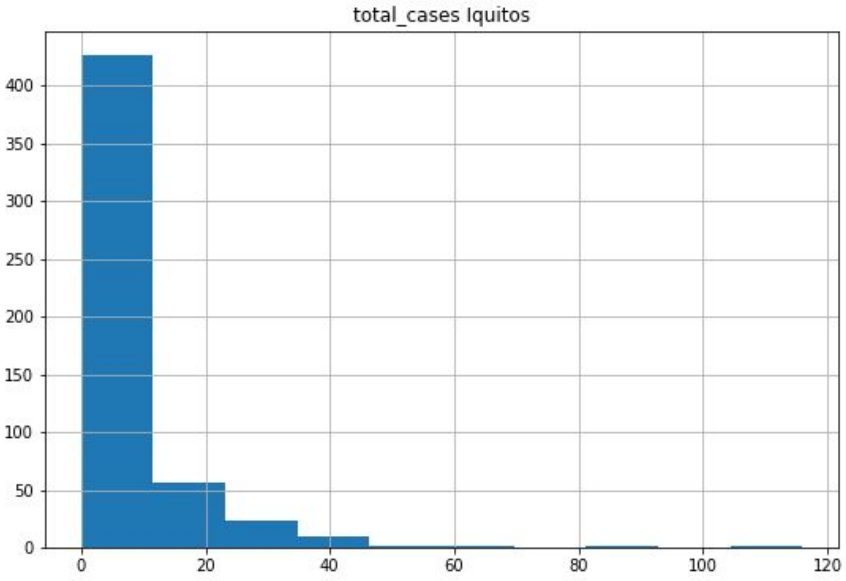
1. **Precipitation**: The precipitation measurements bear little to no correlation to total_cases of dengue fever, despite strong correlations to the humidity measurements, as evident by the correlation bar-histograms above.
2. **NDVI**: Surprisingly the normalised vegetation index has no correlation to the total number of cases in the city of Iquitos. This somewhat extinguishes the fact that mosquitoes thrive in areas with thick vegetation cover. It's slightly different for San juan as the vegetation cover contributes a very small amount to the total cases



3. **The wetter the higher the total cases**: The correlation strengths differ for each city, but it looks like reanalysis_specific_humidity_g_per_kg and reanalysis_dew_point_temp_k are the most strongly correlated with total_cases. This is reasonable as we know mosquitoes thrive in wet climate, the wetter the more the cases. This is depicted in the scatter plot above.

4. Distribution of the total cases reported. From the histograms below, it can be seen that the total number of dengue fever cases are highly rightly-skewed implying that mean > median > mode. It also implies that many cases fall to the right side of the distribution.





5. As minimum temperatures, maximum temperatures, and average temperatures rise, the total_cases of dengue fever in both SanJuan and Iquitos also tend to rise. This is shown in the scatter plot below.