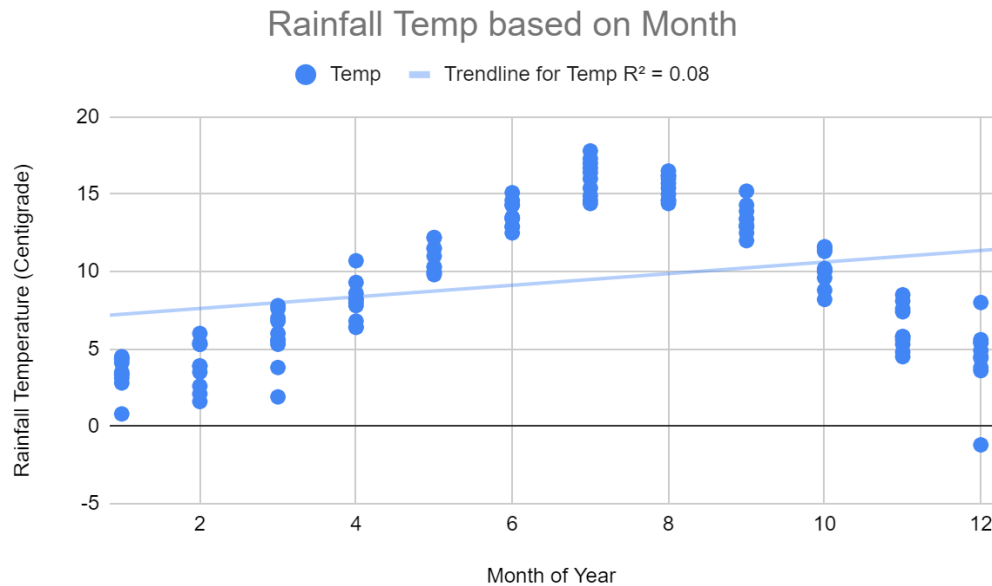
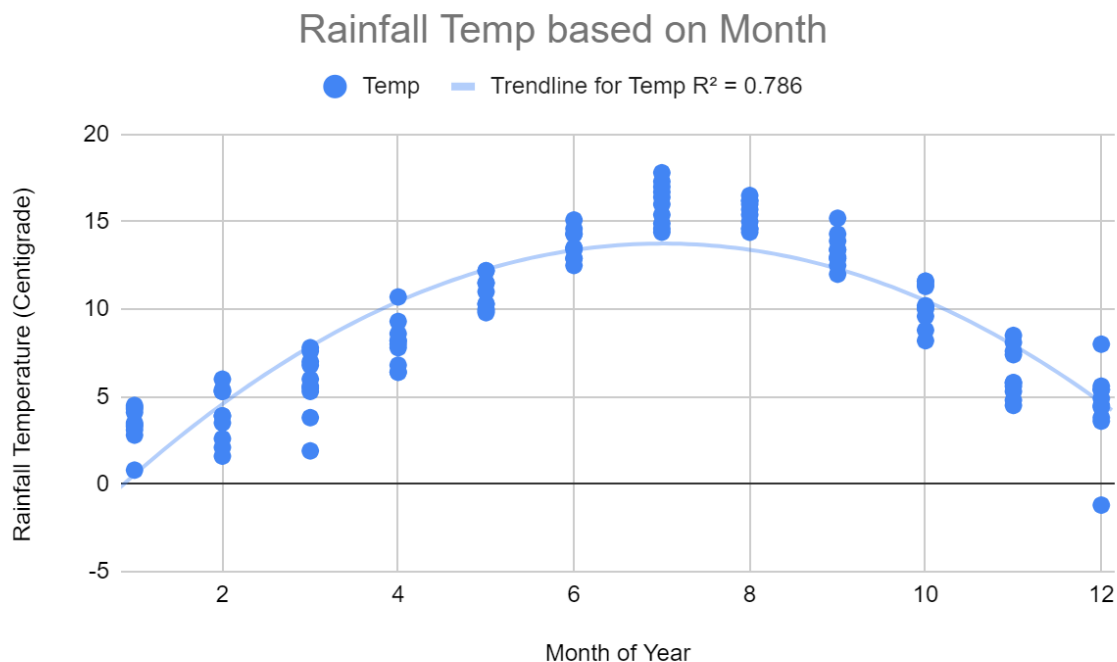


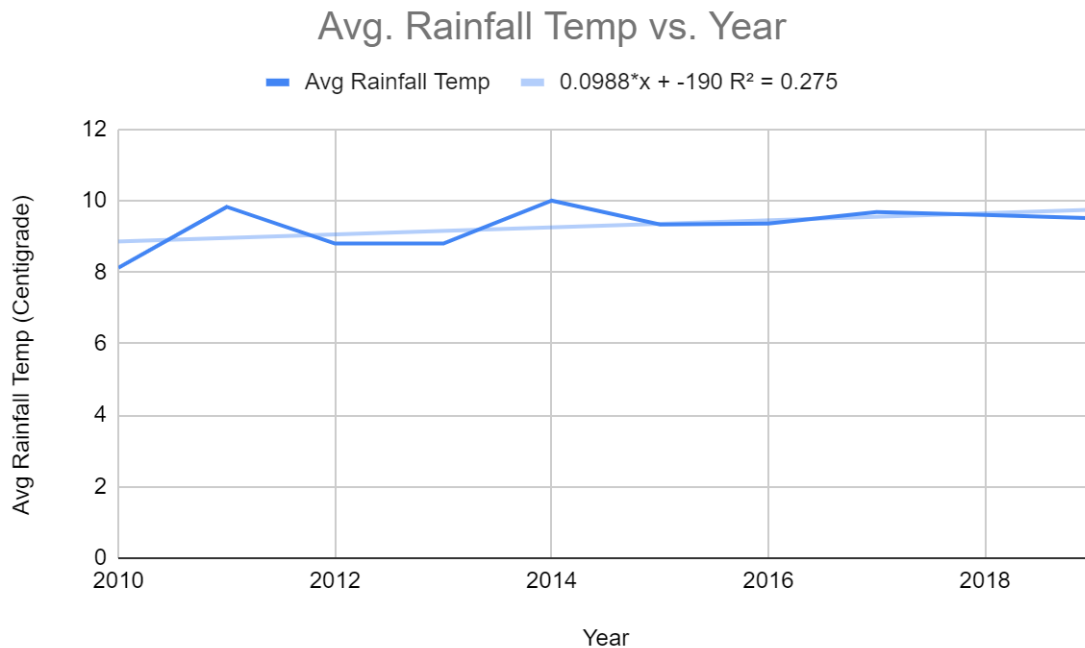
Is there a high-confidence relationship between the month of the year and rainfall temperature?
The first regression is as follows:



With a linear regression, the line of best fit has an R^2 coefficient of 0.08. This is very low, and might indicate a lack of a cause-effect relationship between these two variables; however, there is a clear pattern in the visualization. With this, there does seem to be a cause-effect relationship between month and rainfall temp, but it's not well described by a linear regression. Quadratic may provide a better fit, as seen below:



In the regression depicted above, the R^2 value is much higher - 0.786. This indicates that the line with the equation $y = -0.365x^2 + 5.21x - 4.21$ provides a pretty good fit to the data. However, this relationship provides few predictive capabilities - one cannot extrapolate to find the anticipated rainfall temperature of a month that doesn't already exist in the data. Perhaps an interesting relationship to explore would be that which is between year and average rainfall temperatures. The regression can be seen below:



The R^2 value of this linear regression is relatively low at 0.275, meaning that the data displays significant deviation from the trendline $y = 0.0988x - 0.190$. It seems that a linear regression is most appropriate here; however, a higher quantity of data would be useful for confirming the relationship and calibrating the line of best fit.