

Part A) Public URL for the visualization:

https://public.tableau.com/views/ag2236-dsw-a1-q4/Sheet1?:language=en-US&publish=yes&:display_count=n&:origin=viz_share_link

Part B) 2022 is the year when the average temperature of the year goes above 55 F. You can find the visualization for this part in the following link:

https://public.tableau.com/views/ag2236-dsw-a1-q4-b/Sheet1?:language=en-US&publish=yes&:display_count=n&:origin=viz_share_link

I have created a forecast based on the data that we have in the weather.csv file, and according to the forecast, after 2021, the first year in which the avg temperature becomes over 55 F is 2022. After 1950, the first such year is 1953.

Part C) Visualization Link:

https://public.tableau.com/views/ag2236-dsw-a1-q4-c/Sheet1?:language=en-US&publish=yes&:display_count=n&:origin=viz_share_link

For this part, I am doing anomaly detection over the average yearly temperature data. I define a value which is higher than the sum of mean and one standard deviation or which is lower than the difference between mean and one standard deviation as an anomaly. I'm using a dual axis to use different kind of marks (line and circle). This will help in identifying anomalies. I'm using a calculated field with the following formula to calculate the anomalies in the data:

```
IF SUM([Ftemp]) < (WINDOW_AVG(SUM([Ftemp])) - WINDOW_STDEV(SUM([Ftemp])))
THEN "Bad Anomaly"
ELSEIF SUM([Ftemp]) > (WINDOW_AVG(SUM([Ftemp])) + WINDOW_STDEV(SUM([Ftemp])))
THEN "Good Anomaly"
ELSE "Expected"
END
```

Finally I use this calculated field as the color for the second axis to complete the visualization.