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Question/Demonstration: Will Monarch butterfly populations decrease with Climate Change?

* Monarch population data from 97-2020
* Global climate change (yr) 97-2020
* Migration cities avg temps(Nov, Xyr-April, Y yr)avg 97-2020
  + - Sept-dec migration S
    - March migration N
    - Nov-Feb first arrival in CA cities

Data/Storage:

* City Weather Data
* Monarch population data
* Global temp avg data(migration yr)
  + <https://www.ncdc.noaa.gov/cdo-web/datasets>
* March avg temp 97-2020 at certain CA cities
* Store in SQL

Machine Learning Models:

Measuring Models Performance (accuracy, recall, precision, f1, something else?)

* Linear regression
* Predict Weather from past weather data

Deployment: ppt

Other Notes:

Monarchs disappearing. Why matters. Climate change responsible. Here’s how:

Along way correlation: temperature – middle plant they lays eggs during their migration

Plant can only thrive in specific temps.

Climate change specifically or climate change affecting milkweed growth

End: other issues; deforestation, increase in wildfires,

* Focus on California Monarch Migration
* Select several cities with monarch sightings along migration route
* Use weather data from selected cities
* Predict temperatures for upcoming migration season using Machine learning from weather data
* Use lat and long from cites to create geospacer map showing avg temp during migration season and predicted temp from climate change trends
* Data on different ca milkweed and min -max temp for growth
* CA data- and see if we can expand to central and E migration

PPT:

* climate change info-focus on how few degrees in avg temp can affect so much
* monarch migration background
* milkweed background
* map of monarch migration

Visualizations:

* Avg temperature graph from x to 2020
* Avg temp graph of select cities from x to 2020
* Map with CA cities with monarch sightings w popup of avg from x year and avg 2020 between months that monarchs are in area.