Homework 2

Make a copy of this document or answer in a separate document.
You must submit :

1. **.pdf of your answers to these questions**
2. **.pdf of your code / figures (File > Print > save as .pdf, *MAKE SURE THE BOTTOM ISN'T CUT OFF*)**
3. **Active link to your colab (Share > Anyone with Link, set to "Viewer") This link can be embedded in your .pdf.**

You may have multiple submissions on Canvas.

1. (1 point) Python Complete the function to find the distance from the test_point coordinates to the data coordinates.
2. (1 point) Fill in the `for loop` below so that each task is completed.
3. (1 point) Take the code from Q2. and package it into a function called `find_all_distances` which takes in the test point and the data and returns an array of distances.
4. (1 point) Write detailed comments for each line in the code below. What is it doing?
5. (1 point) What is the prediction for k = 1? How do you know?
6. (1 point) What is the prediction for k = 3? How do you know?
7. (1 point) Assume you were able to acquire more test data. How would you go about finding the optimal value of k?
8. (2 points) We want to create a new array which has labels `"hot"`, `"cold"`, `"okay" `which correspond to the temperatures in `temp_array` . `label_list` should be the same length as `temp_array`.
9. (1 point) What metric do we use to compare regression models against one another?
10. What metric do we use to compare classification models against one another?How does one decide on the best model for a given problem?

    Answered in the colab

Attach your Google Colab notebook link here :
https://colab.research.google.com/drive/153hfeFj-Tyr5kVF5Q-XmGHwWpV_LMWRv?usp=sharing