Programming Assignment 1

kNN, Decision Tree Classification and Random Forest Regression (100 points)

Instructions

- The deadline for the assignment is May 26, 2023, at 23:59:59 PDT.
- Please use Python 3.5 or 3.6 (for full support of typing annotations).
- In this programming assignment, you will implement **kNN Algorithm**, apply **Decision Tree Classification and Random Forest Regression** on the wine toy and California Housing dataset from SciKit Learn**.**
- We have provided the bootstrap code and you are expected to complete the **classes** and **functions**.
- Download the .ipynb file of Programming Assignment 1 from DEN.
- DO NOT CHANGE THE OUTPUT FORMAT. DO NOT MODIFY THE CODE UNLESS WE INSTRUCT YOU TO DO SO. A homework solution that mismatches the provided setup, such as format, name initializations, etc., will not be graded. It is your responsibility to make sure that your code runs well on google colab.
- Assignment submission will be via courses.uscden.net. By the submission date, there will be a folder named 'Programming Assignment 1' set up in which you can submit your file.
- You can submit multiple times, but only the last submission counts. That means if you finish some problems and want to submit something first and update later when you finish, that's fine.

  Please also follow the rules below:

  - The file should be named as firstname_lastname_USCID.ipynb *(e.g., John_Davis_8675309045.ipynb*).
  - Do not have any spaces in your file name when uploading it.
  - Please include your name and USCID in the header of your file as well.

  Collaboration: You may discuss with your classmates. However, you need to implement your own solutions and submit them separately. Please consult the syllabus for what is and is not acceptable collaboration. Review the rules on

academic conduct in the syllabus: a single instance of plagiarism can adversely affect you significantly more than you could stand to gain.