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Course Name and Number: DSC 430 Python Programming

Assignment Name and Number: Assignment0201_StemAndLeafDesign

Date: 1/16/2023

Honor Statement: "I have not given or received any unauthorized assistance on this assignment."

What are the important steps in displaying a stem-leaf plot? Make sure the stem and leaf are calculated correctly and store in efficient data structure. Also, must determine the min and max value, especially for leaves.

How many levels does your design have? I have three level in my design

Choose one of the lower-level functions to describe in more detail: I choose readFile() because I spent so much time in this.

After open and read the chosen file, I chose readlines() method because it will return each line of the file. Then I close the file for procedure. Next step, I iterate over each string in the returning list; strip all before and after characters of each string, then convert them to into integer for calculation.

Then I initiate a dictionary and iterate over each number. For Leaf (value), it is the residual of the number after being divided by 10. For Stem (key), it is obtained by subtracting the number by "Leaf" and divided by 10. Results all leading digit(s) before the last-two final digits. I converted all numbers again to integer for calculation. Then I will append Leaf based on whether Stem is already available in the dictionary.

NEW THING I LEARNT: for new Stem value, Leaf value will be put as a list. So that later, new Leaf value(s) correspond with this Stem value can be added. If I just added as "data[stem]=leaf" this will result error.

Top-down structure chart for a stem-and-leaf display.