CS384 2022 Assignment 2 - Identify Octant Transition Count From XLSX File and Provide Octant Transition Count Based on Mod Values

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Python 3.8.10 Install Instruction https://pastebin.com/nvibxmjw

Deadline: 28th Sep, 2022. 23:59. All of your git repos shall be pulled after that. That will be the version which will be checked.

Warning: Sharing is Caring is good for cat videos. Sharing of program may lead to plagiarism and would effect in 0 to both.

Pull This Git Repo - https://github.com/Cs3842022/CS384_2022 and copy the tut02 to your repo folder. The Octant analysis is a series of assignments divided into 4 assignments. They have a dependence on the previous assignment. So Assignment 4, depends on Assignment 3, which depends on Assignment 2, and so on.

Git Requirements: At least 5 git commits should be there with meaningful comments (at least 4 words)

The entire code must be into multiple try, except block: Multiple Try Except should be the part of the code, so that if there is an error in a new file, the program throws the exception and does not stop.

Library Requirements: You can use csv, pandas, or any other library / inbuilt module, but for evaluation you need to explain each line of code.

Help: How to tag the Octant. Please refer https://youtu.be/S5L43QT-gNs [Already placed in Tutorial 1]

Data Pre-processing: Subtracting mean from the original velocities and then working on the new values. https://youtu.be/R_epLjJzarU [Already placed in Tutorial 1]

Tasks: 1) Like Tutorial 1, Find the individual count of each of the octant and write the overall count. However, this time you need to do processing from Excel format (not csv) (see the input_octant_transition_identify.xlsx & output_octant_transition_identify.xlsx).

2) Take a user input for the mod value. Its already pre-defined in the code file specified. Dont ask for explicit input. This mod value will be used to break the file into ranges. So User Input of Mod 5000 breaks the ranges as 0-5000, 5001-10000, 10001-15000, 15001-20000, 20001-25000, 25001-Last. The max value will never exceed 30,000. Here now you need to give the overall count of each octant in each of the mod ranges too, (see the output_octant_transition_identify.xlsx). The mod value shall be defined as a **variable** and not taken by user. The user will modify the program code if required for different mod value.

3) Transition Count. Details in the video: https://youtu.be/RFjdW1l0p6c. Here you need to see the count of transition for Octact X to Y., Remember this is not a symmetric matrix. So when you read the values from the begening, read the Octant_X and Octact_(X+1). Based on their values, the in final matrix add a count for Octant_X [row]and Octact_(X+1) [col]. The same approach needs to be done for mod based values, and the values for Octant_X and Octact_(X+1) should be the count for that range.

Input File: input_octant_transition_identify.xlsx

Input File: output_octant_transition_identify.xlsx