**Documentation for FewViewPart2**

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Overview:

The script “FewViewPart2” only comes into play when using the tomography code for generating the order of the list of degrees. The function takes in the list of degrees, where it starts and where it stops. A few view algorithm is used to generate a list with large spacing between the degrees to start and then becomes finer and finer. This way, if an experiment had to stop short, some views would have been taken all around the rotation angles. It starts with a list of 5 degrees (or 8 if the max is 360) to ensure all the first 5 (8) fit within the view. After these “cardinal degrees” the code goes by 10s, then by 5s, then 2s, then 1s, then 0.5s, then 0.1s. At each of these points it checks that the incremental degree is smaller or equal to the division before trying to fill the list. Finally, the code goes through to make sure the few view list matches the number of elements in the input list by attempting to fit in the rest of the numbers. In an attempt to allow for any type of list, the code calculates a number that is compared against the input list and the closest value gets inserted into the few view list.

Notes:

The code is fairly brute force in the method of trying to fit data to a list. It works for the typical types of inputs done at OSU, but it is not a perfect method. There have been some instances where the inputs have caused the code to get stuck in an infinite loop. The looping structure attempts to fill the number of elements in the list to match the original list but if the closest value function provides numbers that already exist in the Few View list, it can get stuck trying the same numbers. It is fairly easy to tell this is happening in the Tomography code as once the user presses enter, the button will never unclick and no messages will populate in the black box on the GUI.