The MATLAB files present in this folder will Compress (and Recover) the data using a method called as the Orthonormal Expansion L1 minimization or more specifically the relaxed version of it.

The test data (data.dat) given in the folder has been generated using MATLAB and is made of three cosine functions. The size of the data is 10000 x 50.

INSTRUCTIONS:

1. Once you open MATLAB import the ‘data.dat’ from the present directory.
2. After Step-1 run the file ‘compression.m’. This will generate the compressed data matrix ‘b’. The code also displays the time taken to compress the data.
3. After Step-2 run the file ‘recovery.m’. This will analyze the compressed data and return the recovered data (‘rec\_data’). The recovery phase utilizes the function rONE\_L1 given in the folder. As we are creating new object type called the pDFT we have a subfolder defining all the necessary properties of the object.
4. The results of Step -3 are the RMS error in recovery and the time taken by the code to recover the data.

NOTE: It should be noted that the user is not supposed to ‘clear’ the data in any way before Step-2 or Step-3.