Corresponding to the paper, titled “**Automated large scale mineral mapping of AVIRIS-NG observation by MapReduce model of an integrated ELM method**”, this is the instruction file to run the implemented code. The process has included a three phase of operation: 1) To finalize the endmembers for a particular Region of Interest, an automated learning process with integrated Extreme Learning Machine (integrated ELM) is implemented in Java Environment through eclipse Java EE developer (Folder name: JavaCode\_Jahazpur).

The demo data are selected from the study area itself with dimension: 200X100 (heightXwidth). This data is uploaded as ‘DummyROI\_200X100’(envi format) . For testing phase of integrated ELM, this file is uploaded as ‘DummyROI\_200by100XBand.txt’. The number of bands is 110. The training set consist of Bare soil, Dolomite, Montmorillonite, River sand, Vegetation land and Cultivation land samples for this Region of Interest. This file is uploaded as ‘TrainingSet\_Pure\_7.csv’. Similarly, the corresponding validation set is uploaded as ‘ValidationSet\_Pure\_7.csv’. Both files include the label of the dataset in the 1st column. The corresponding number of class instances or endmembers is 7, here. The corresponding spectral signature of each class instance is uploaded as ‘SpectralSignature\_ClassInstances\_110X7.csv’. The list of wavelength is uploaded as ‘JPL\_wave.txt’. The all .csv/.txt files need to be comma separated.

The corresponding segmented output files of ROI are uploaded as ‘DummyROI\_200by100XBand.txt\_20000\_classified.tif’ & ‘DummyROI\_200by100XBand.txt\_20000\_verified.tif’

How can you run this code:

Run ‘Main\_MineralCharacterize.java’ file. This is the main program file wherein the all inputs and outputs are described on ‘commented section’. Please follow the description. The corresponding packages are also uploaded to ease the running process with ‘demo data’. The segmented images of classified and verified image are uploaded corresponding the “demo data”.