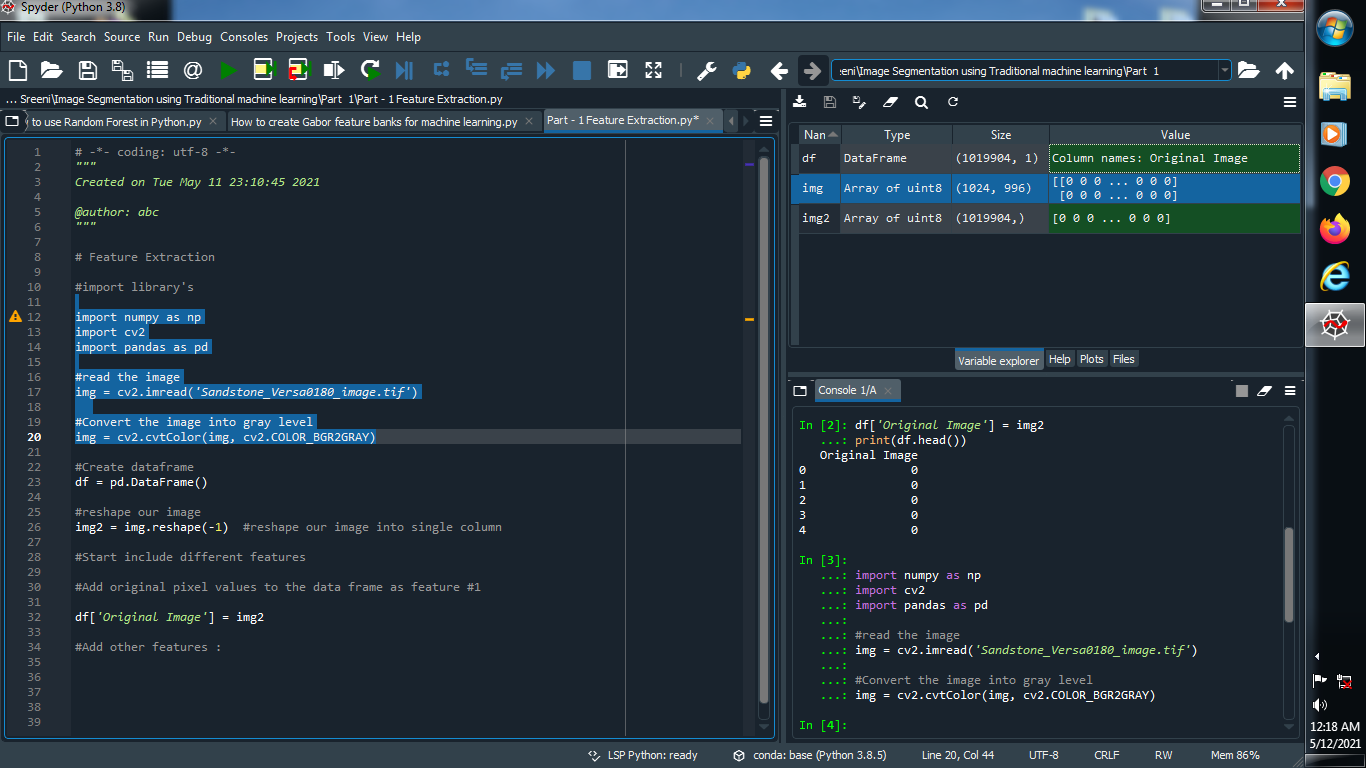
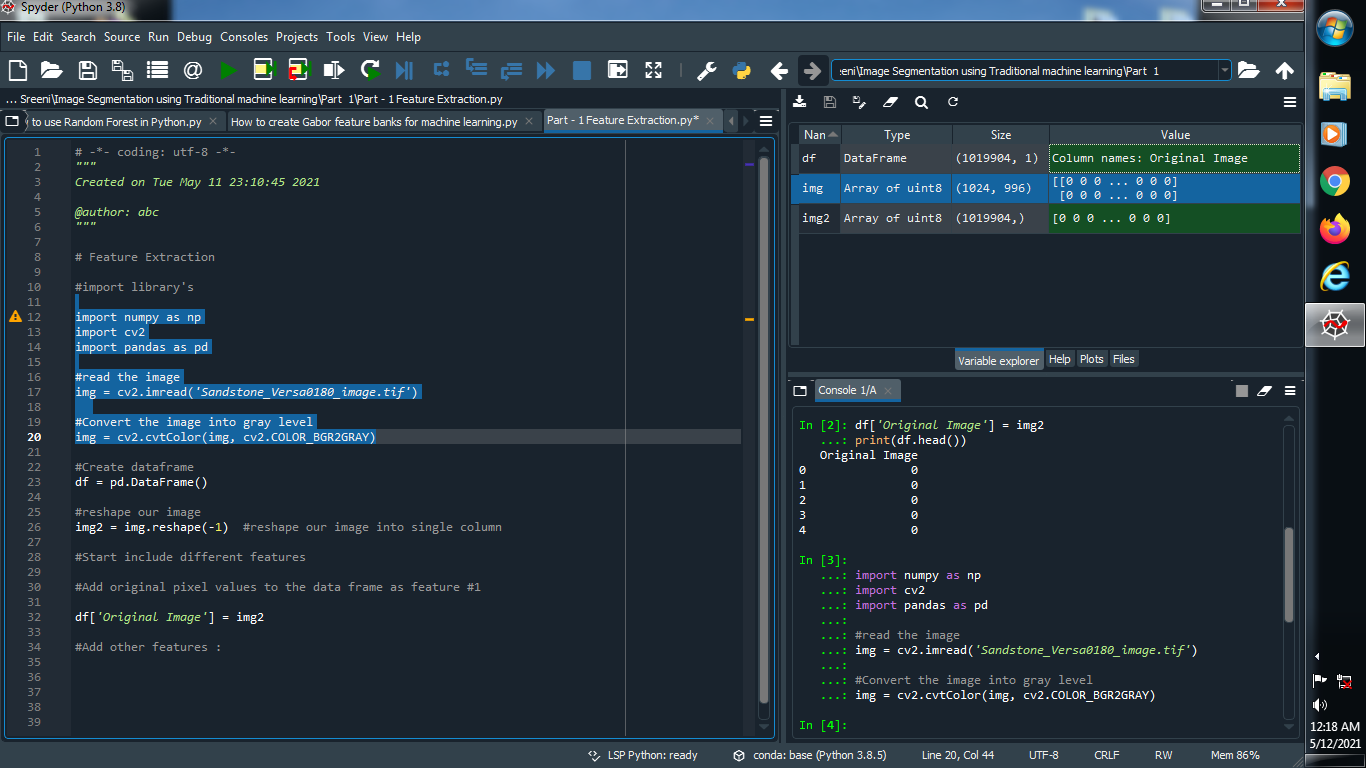
Part : 1 Feature Extraction

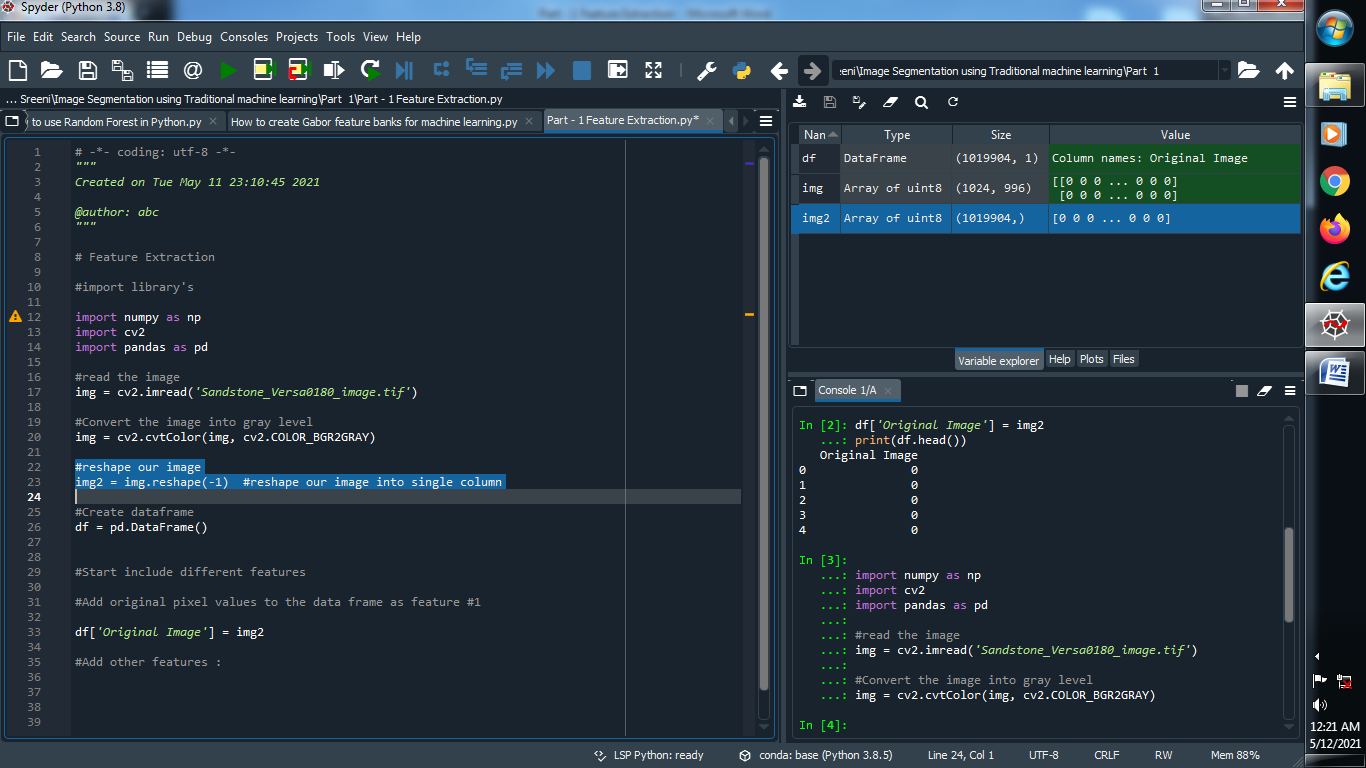
(1) Read the image and Convert it into gray level image :



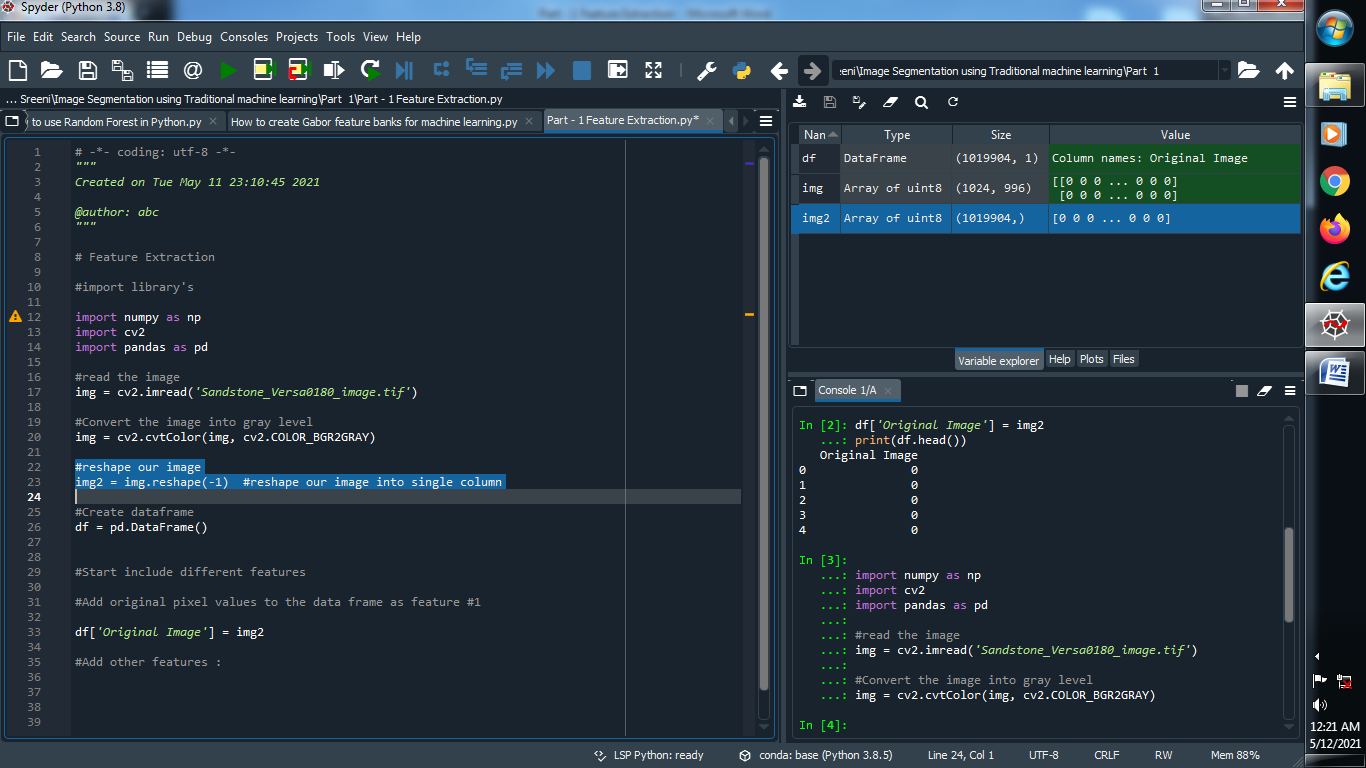
Output :



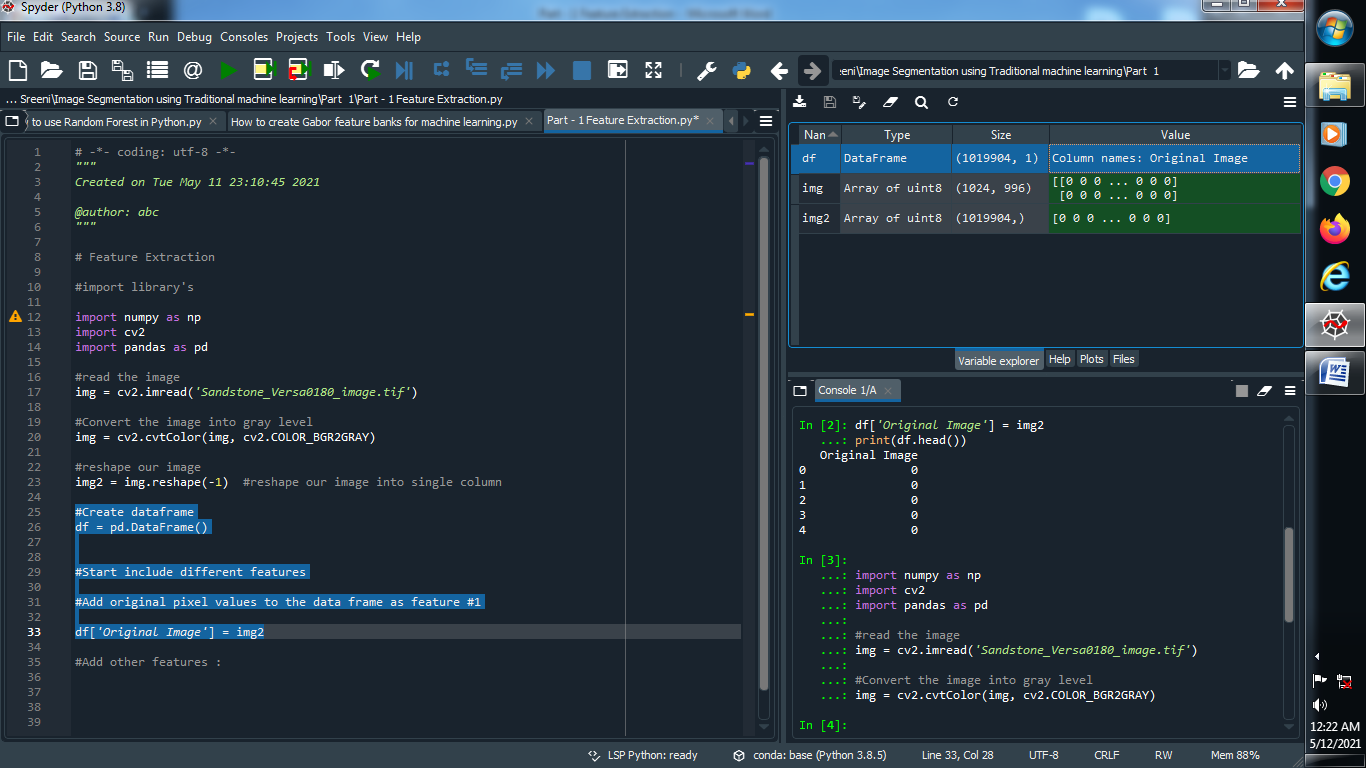
(2) Reshape our image into single dimension :



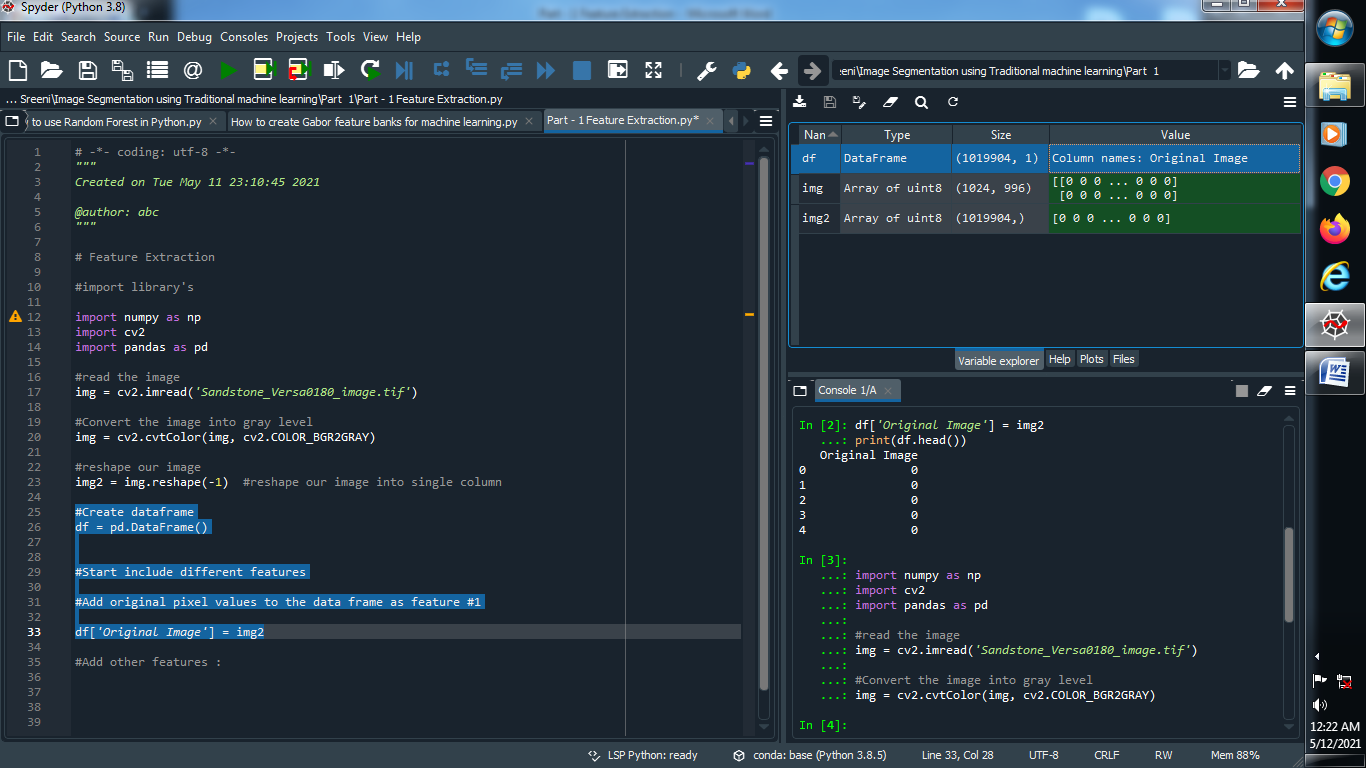
Output :



(3) Create one dataframe and named it’s column name :

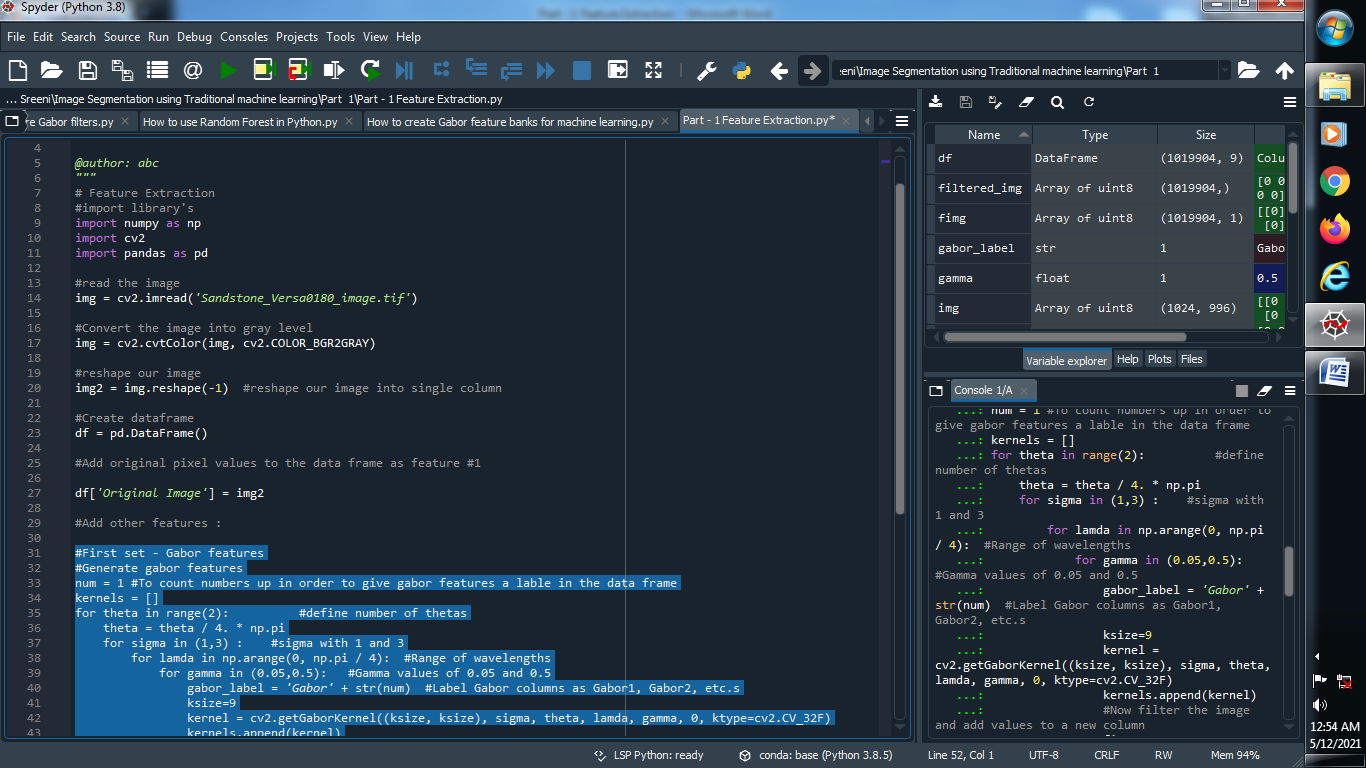


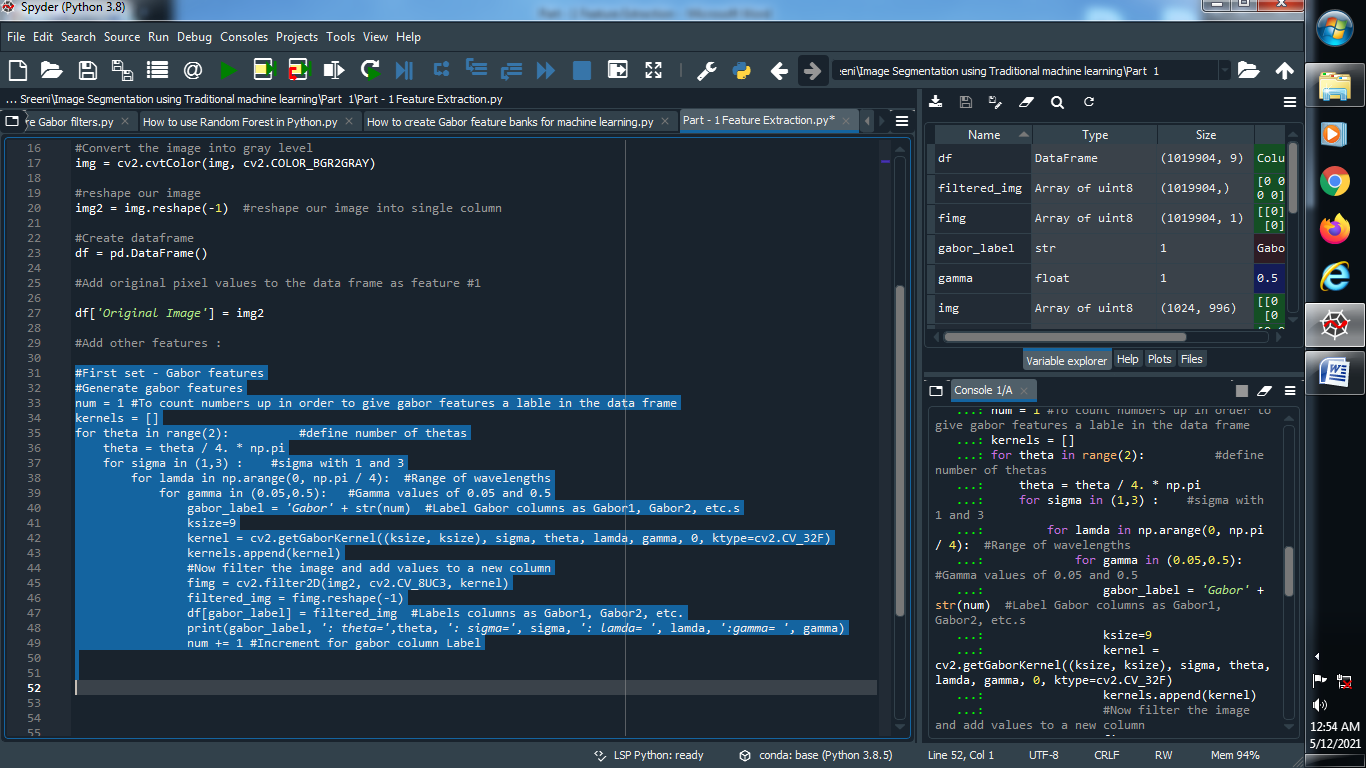
Output :



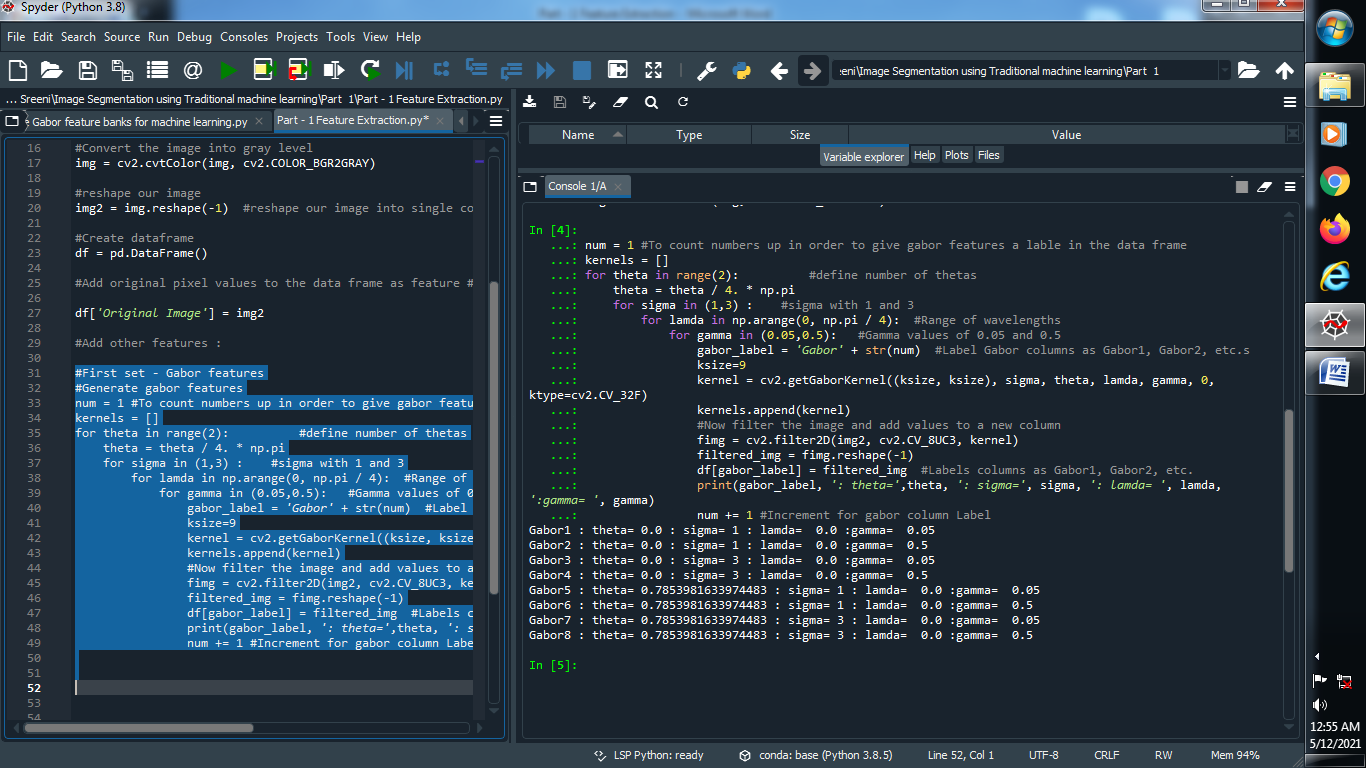
(4) Add another features :

(I) Gabor features :

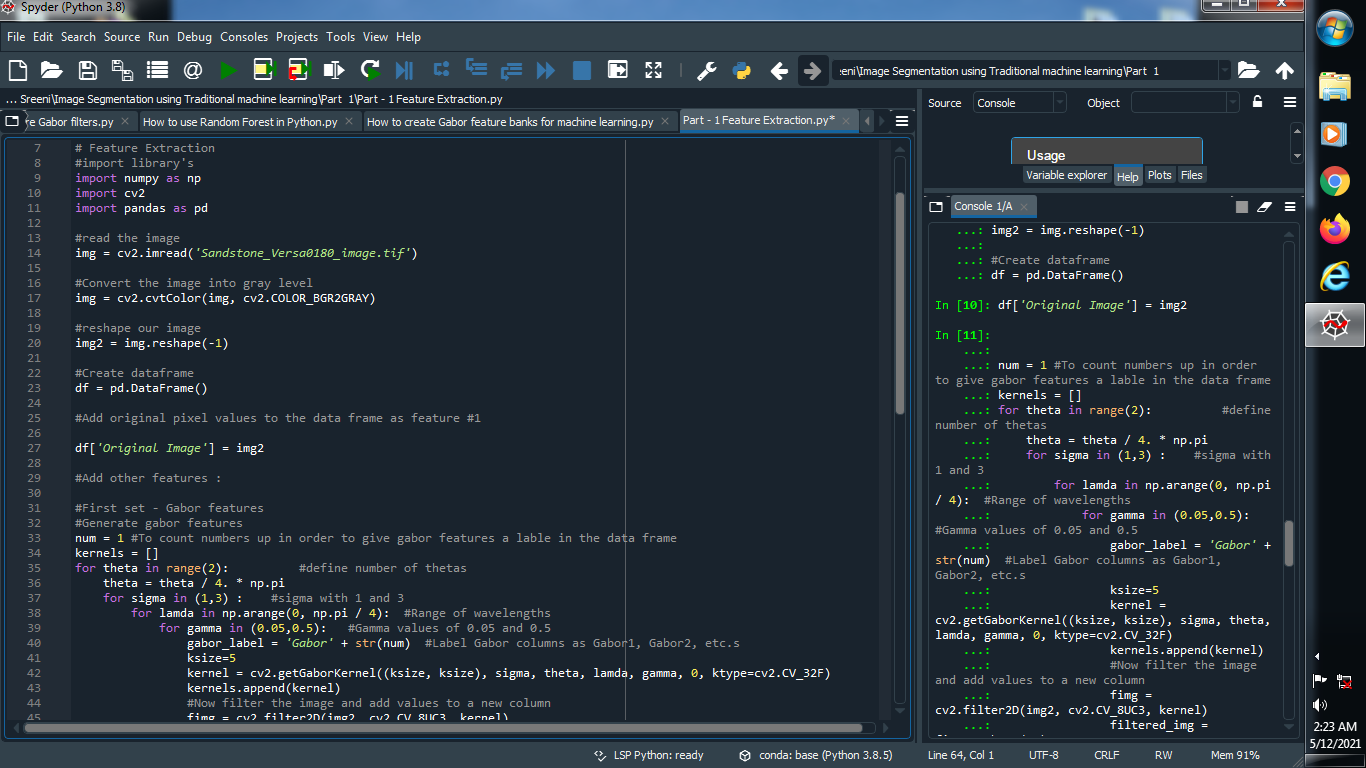


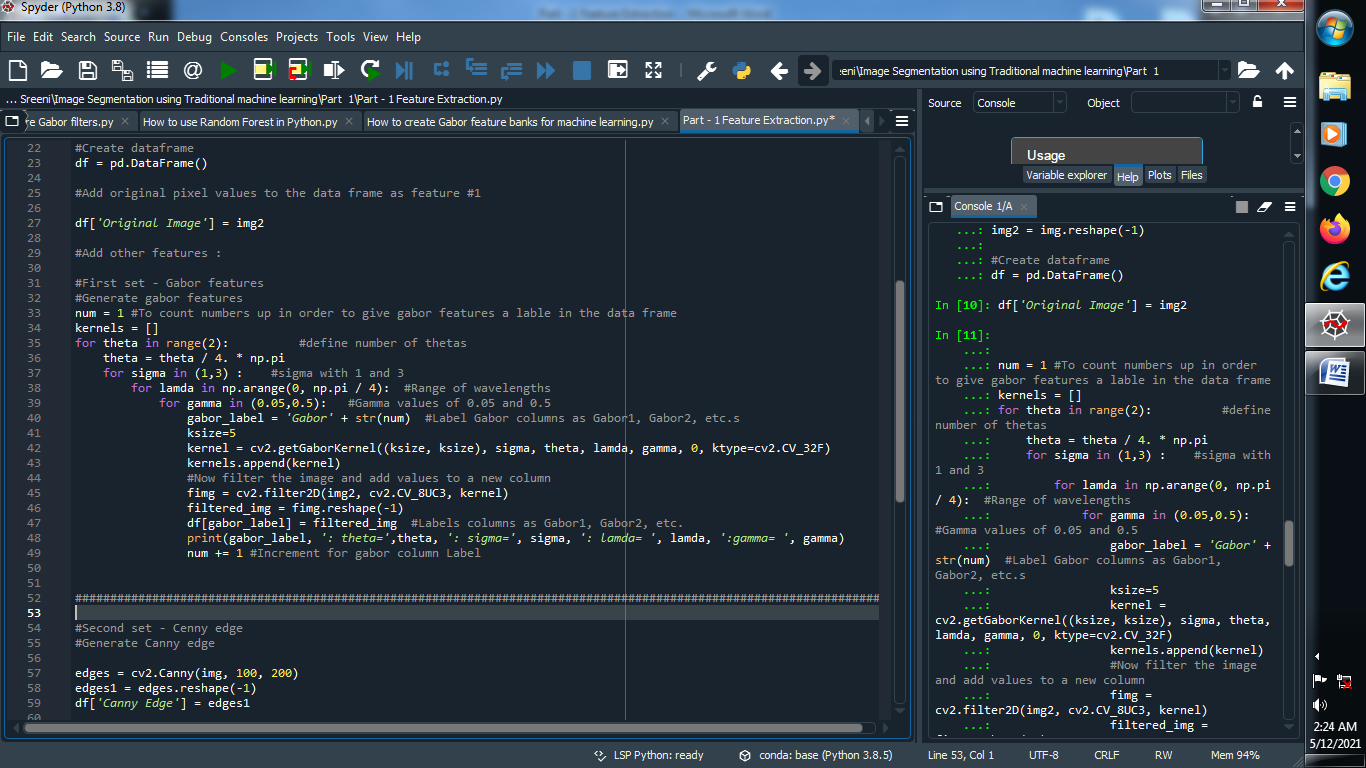


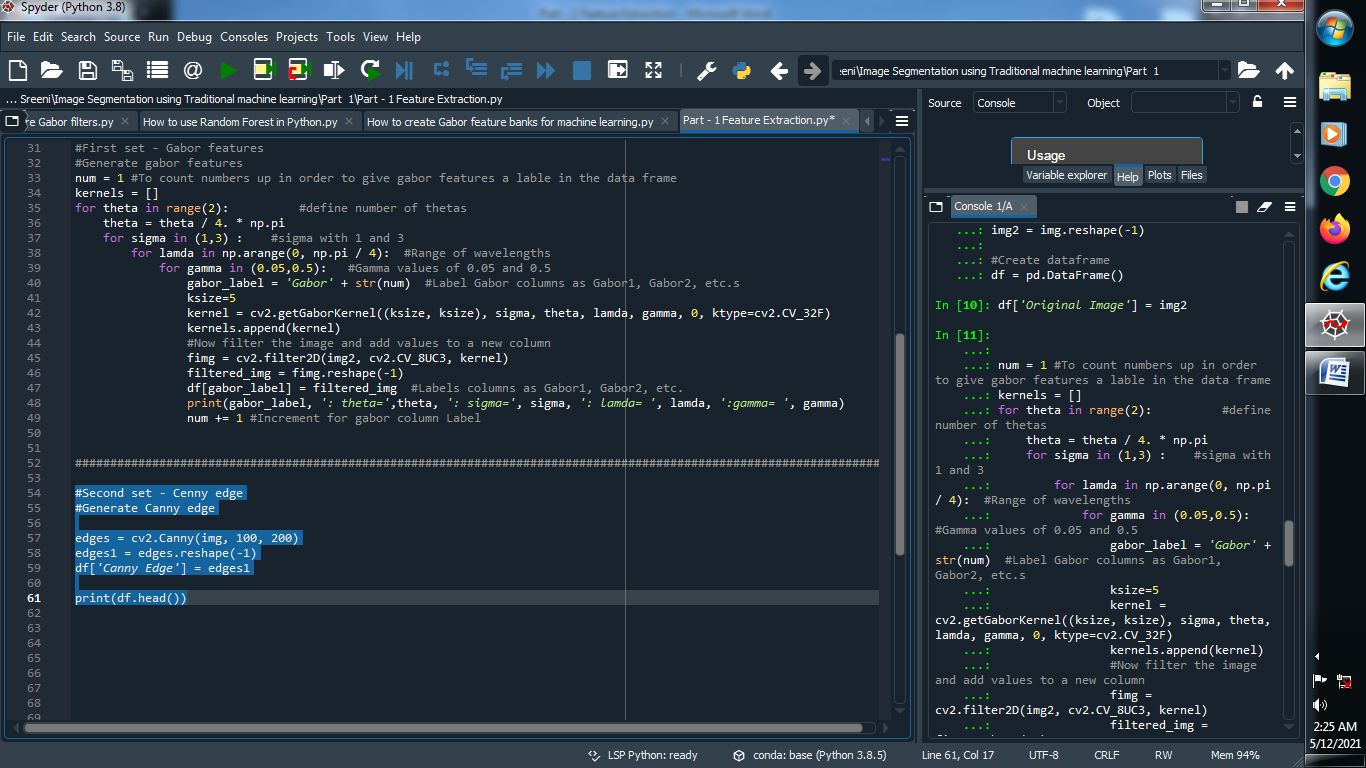
Output :



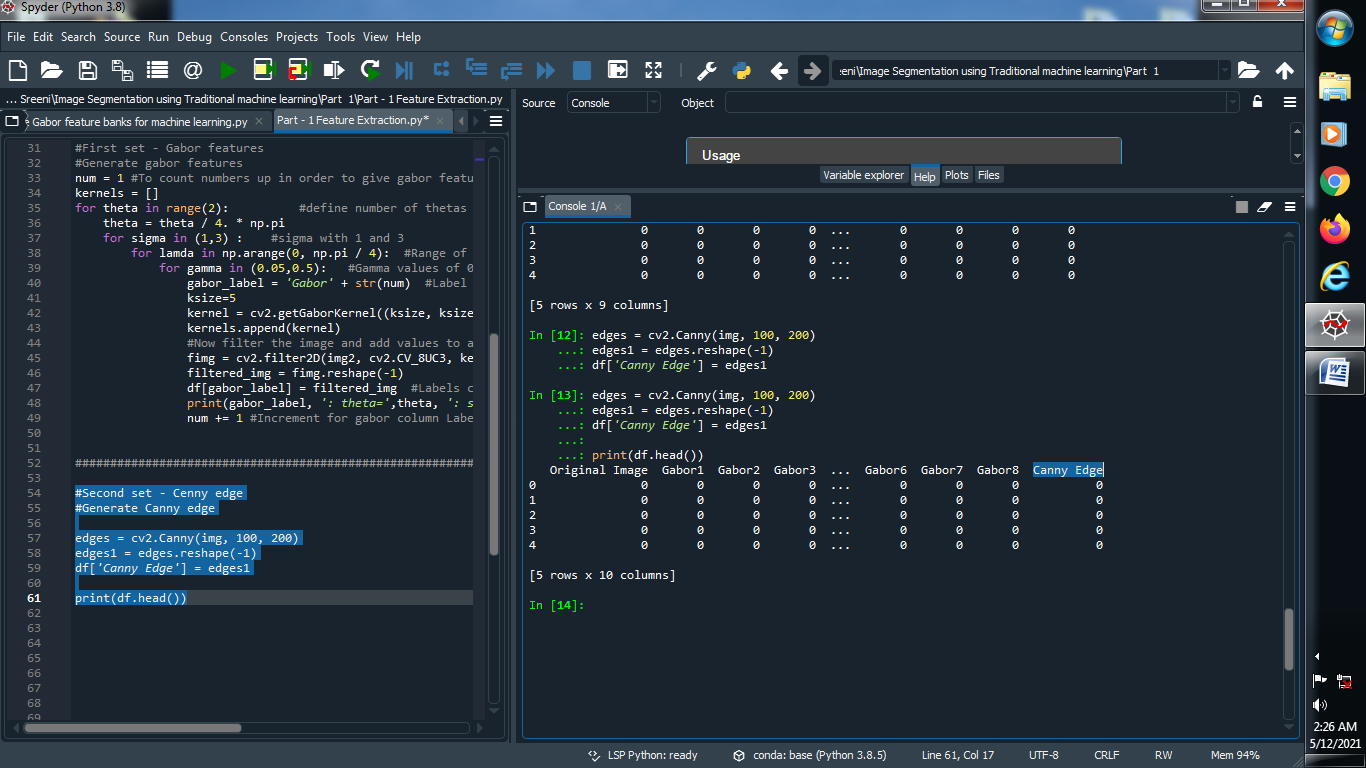
(II) Apply Canny Edge filter :



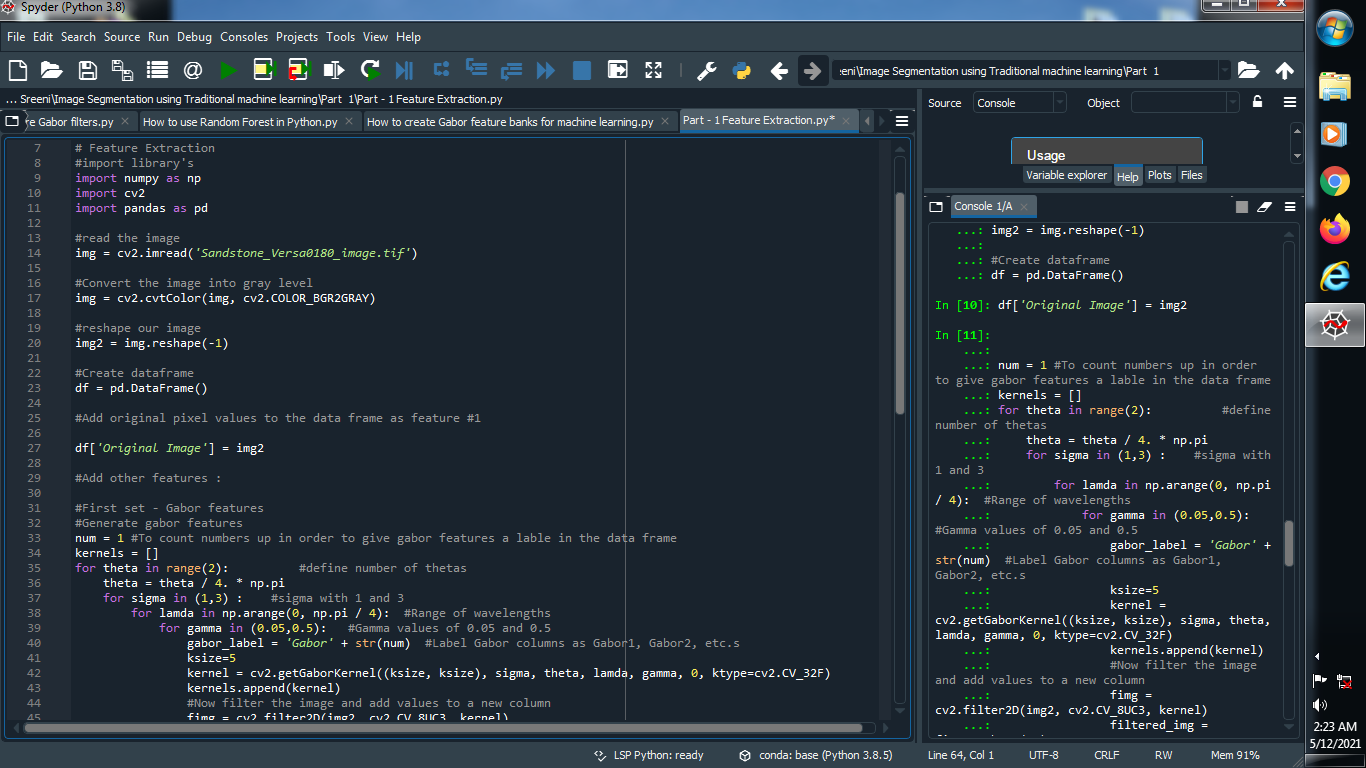


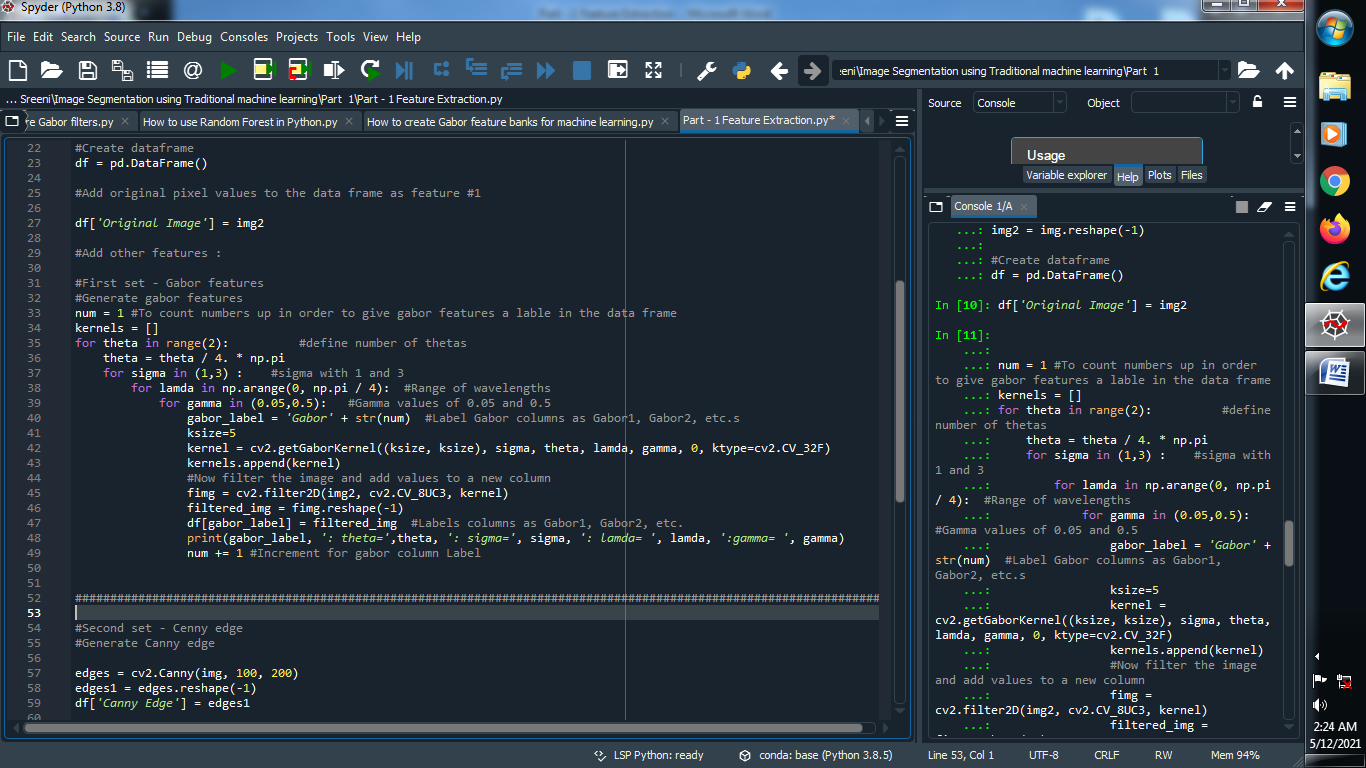


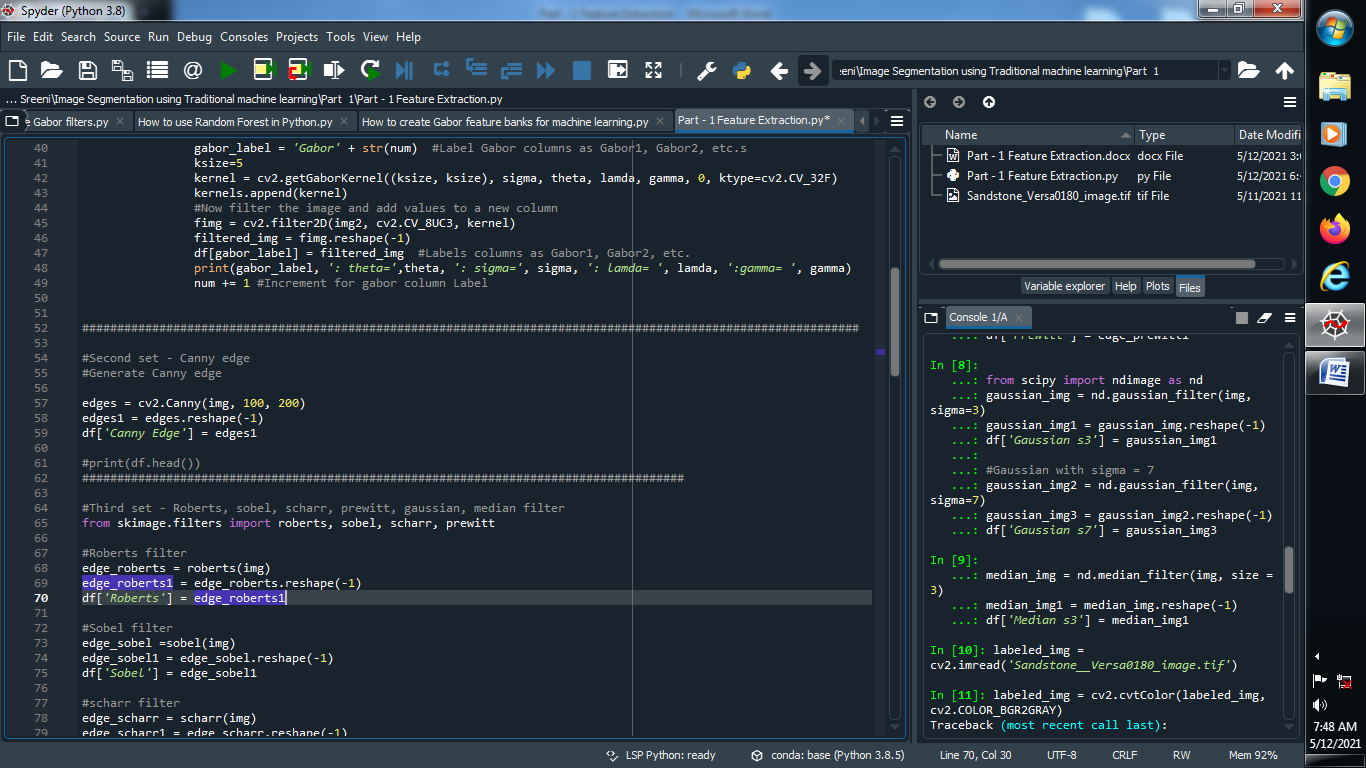
Output :

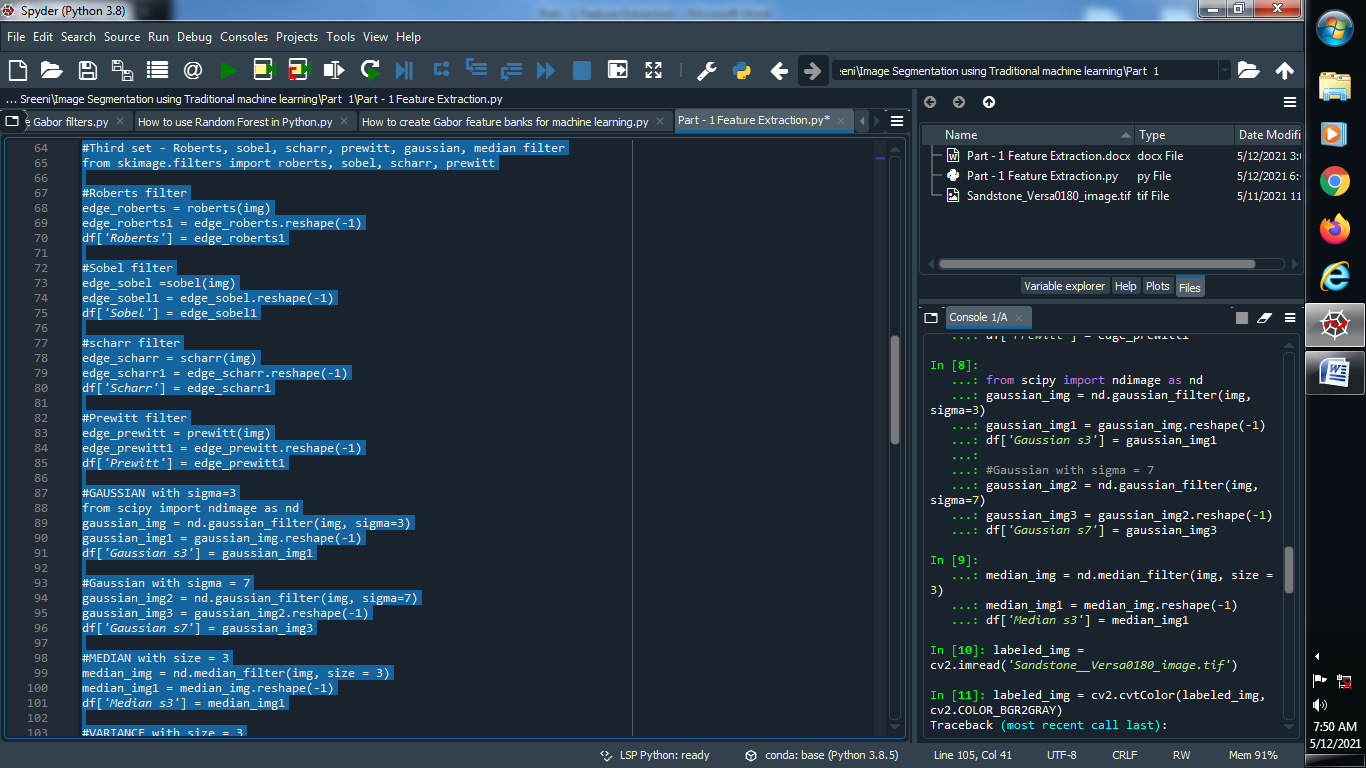


(III) Apply Roberts, sobel, scharr, prewitt, gaussian, median filter :

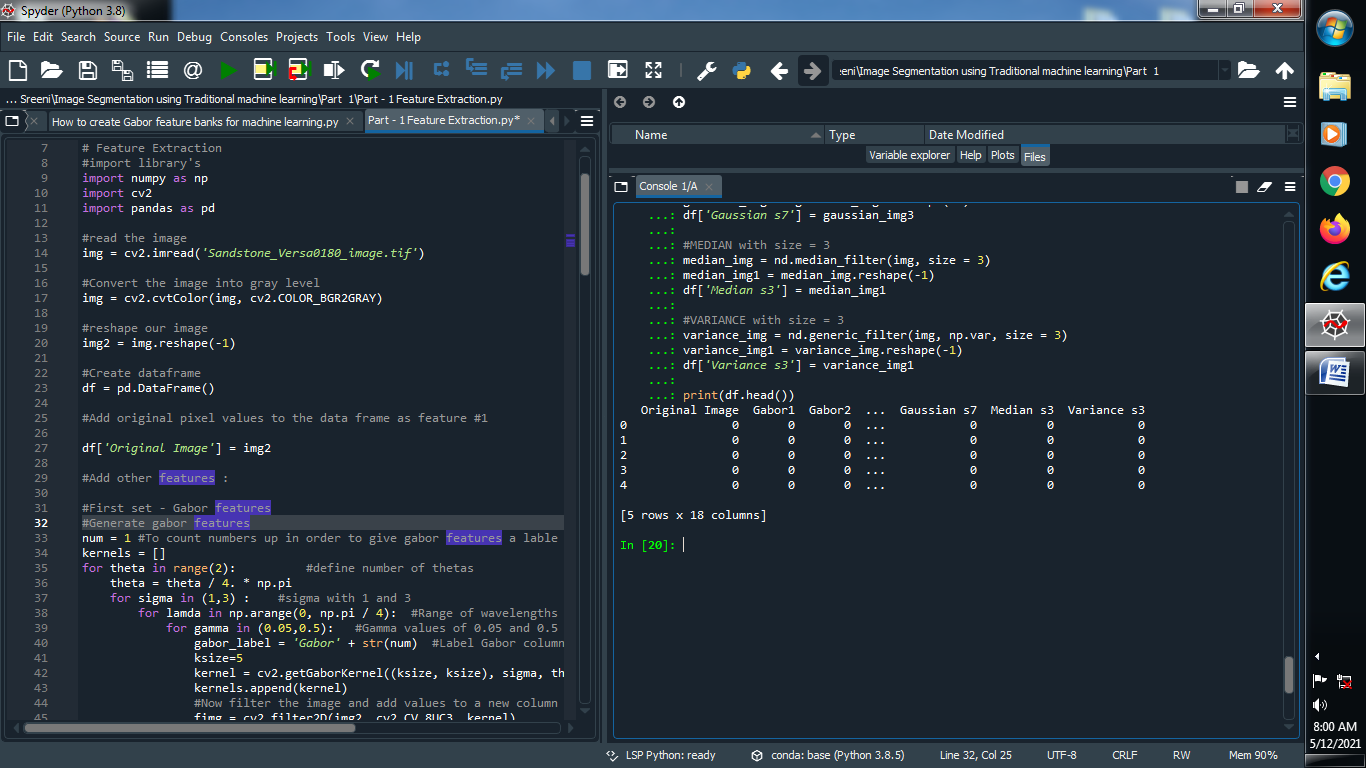




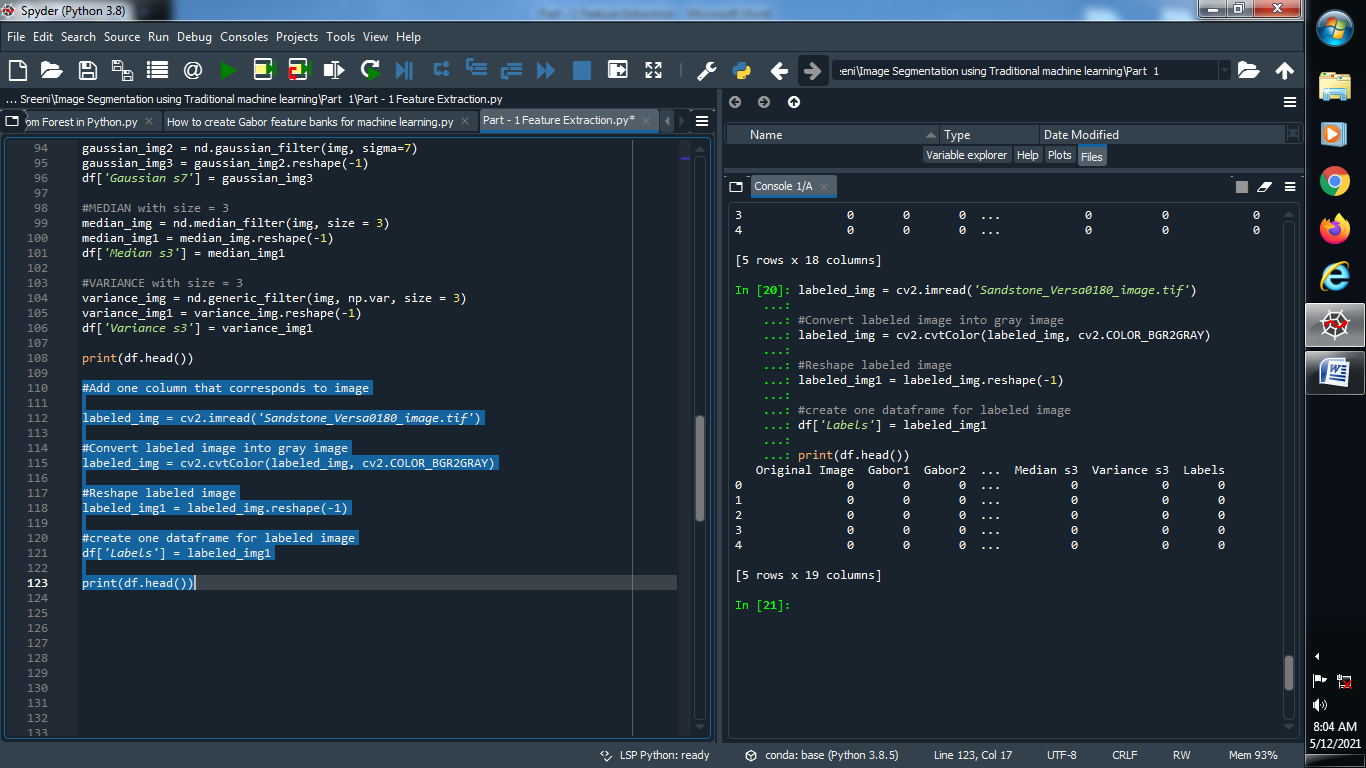




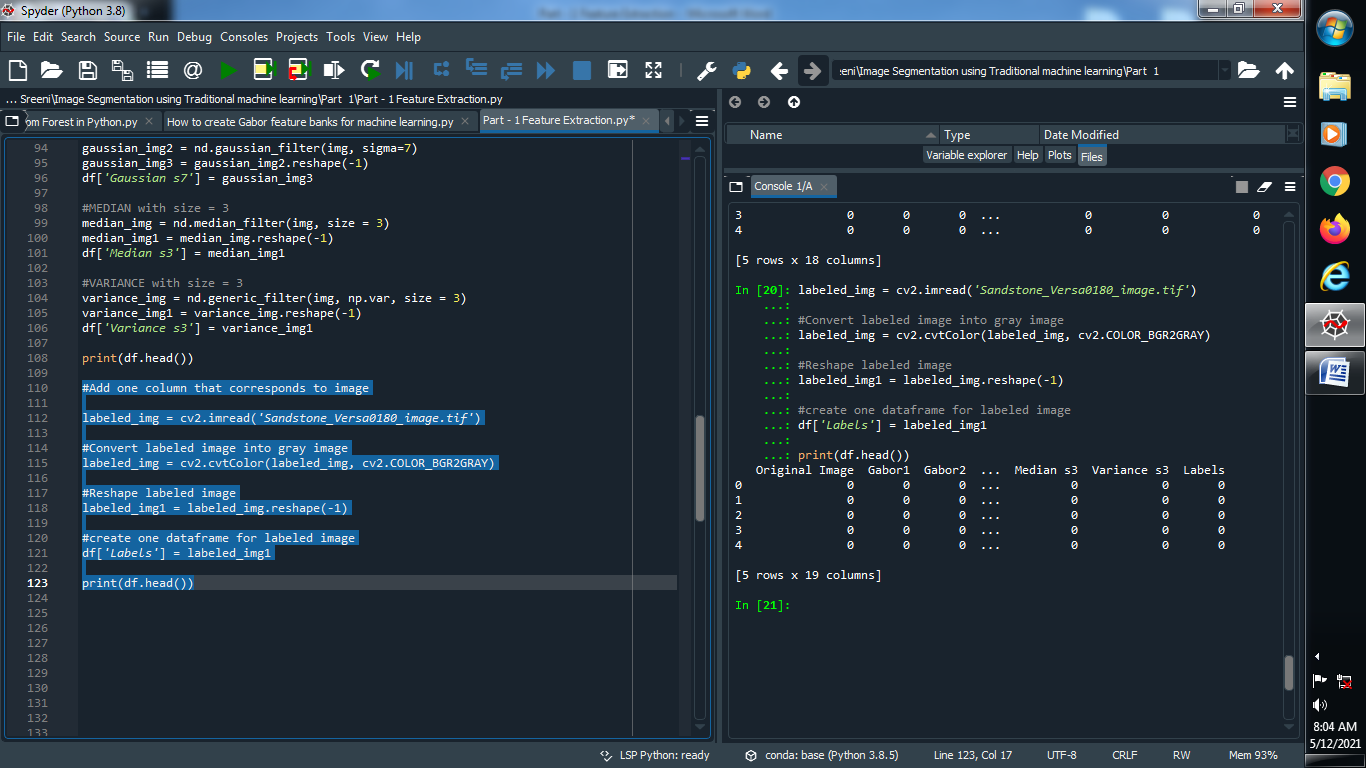
→ Output :



→ Add one column that corresponds to image :



Output :



PART : 2 TRAIN A MODEL :

→ Let’s Train our model :

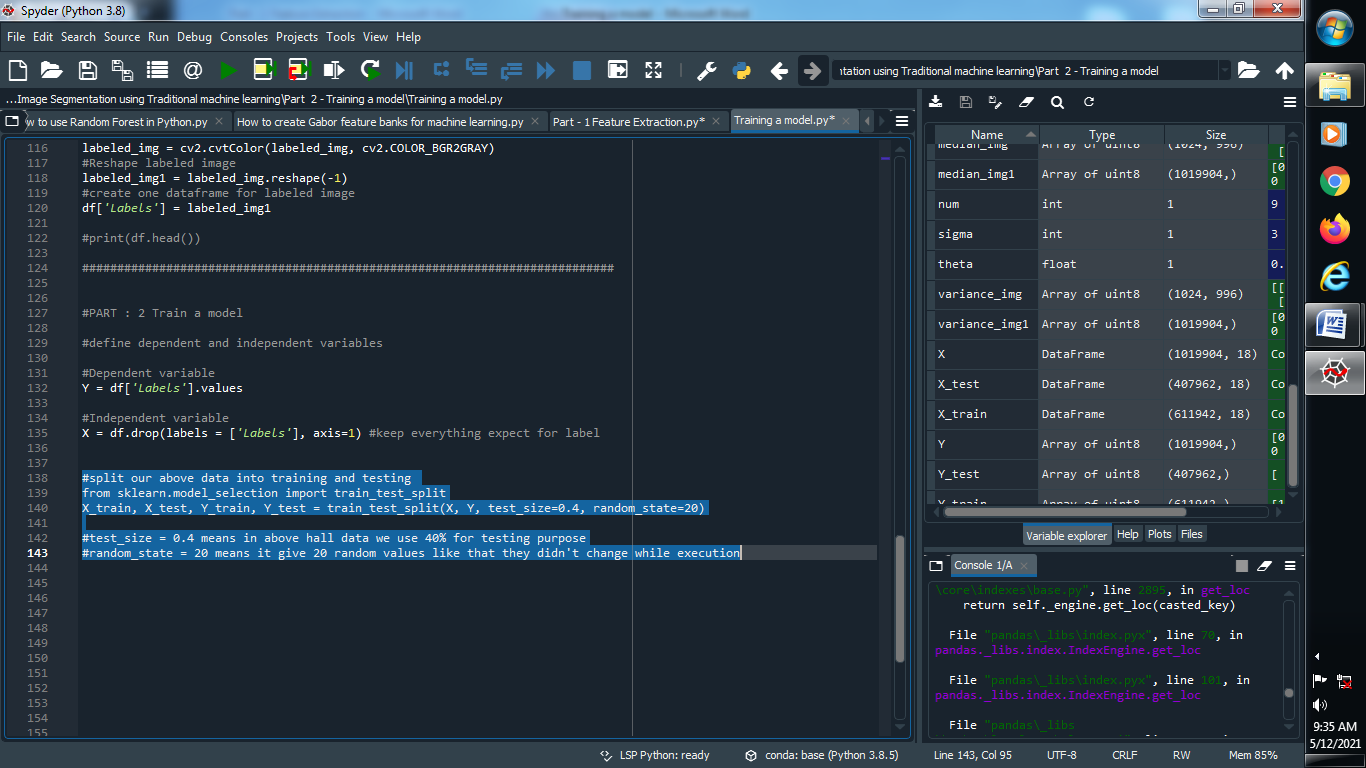
(1) Define dependent and independent variables :



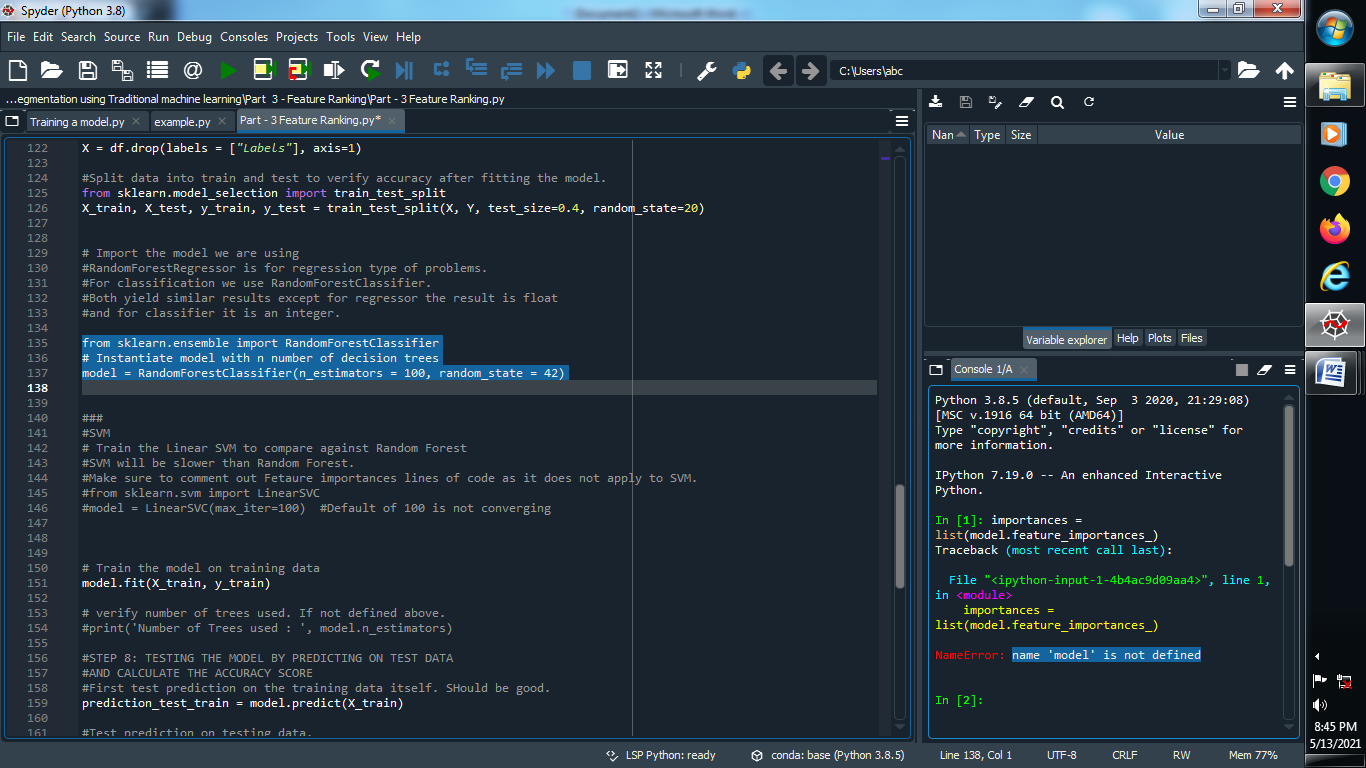
Output :



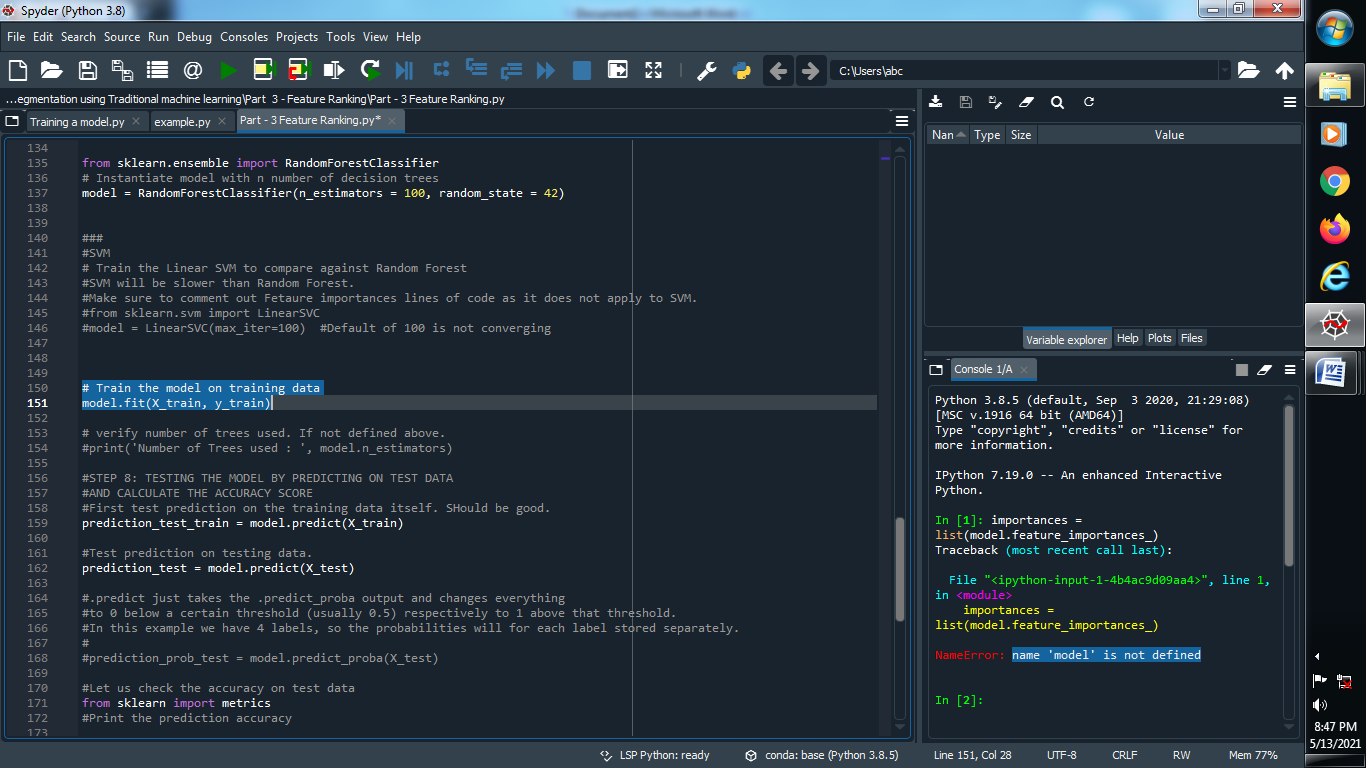
(2) Split our data into training and testing :



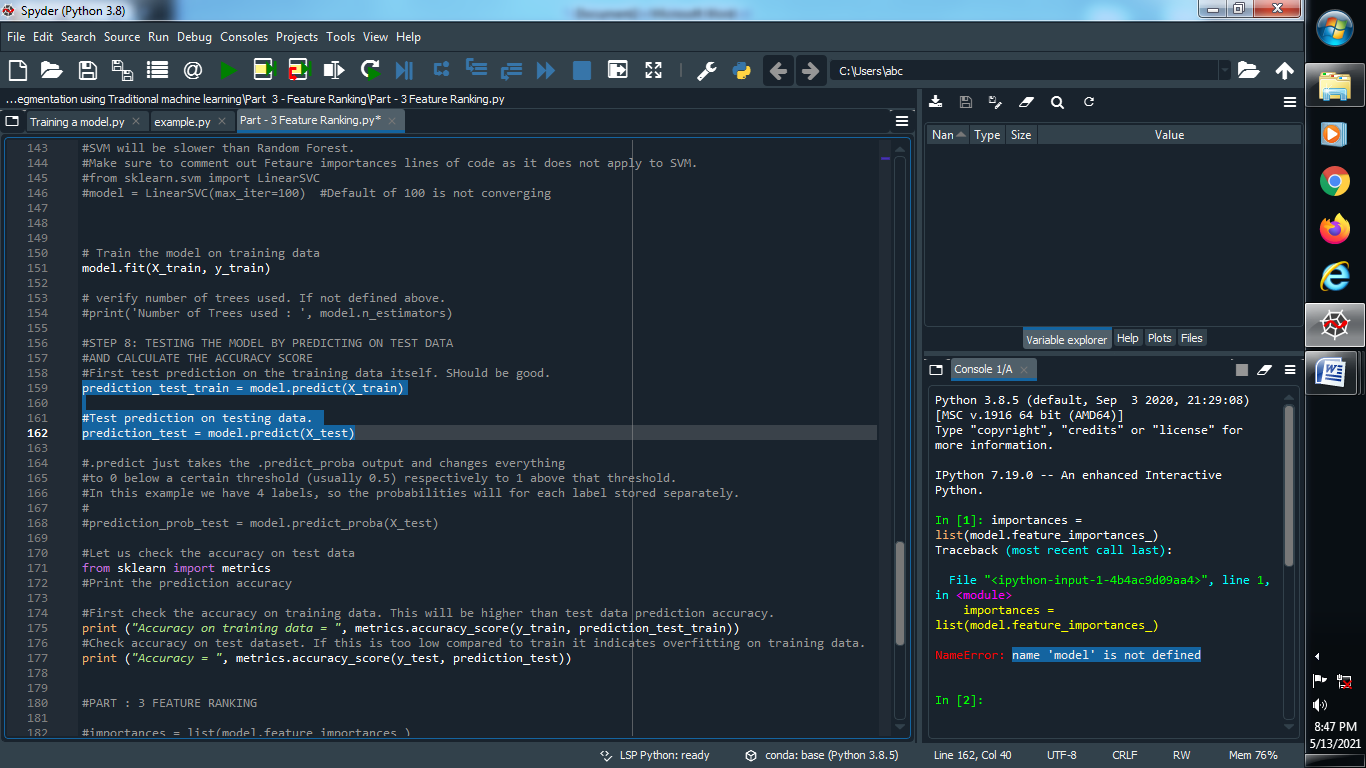
(3) Apply Random Forest Classifier :



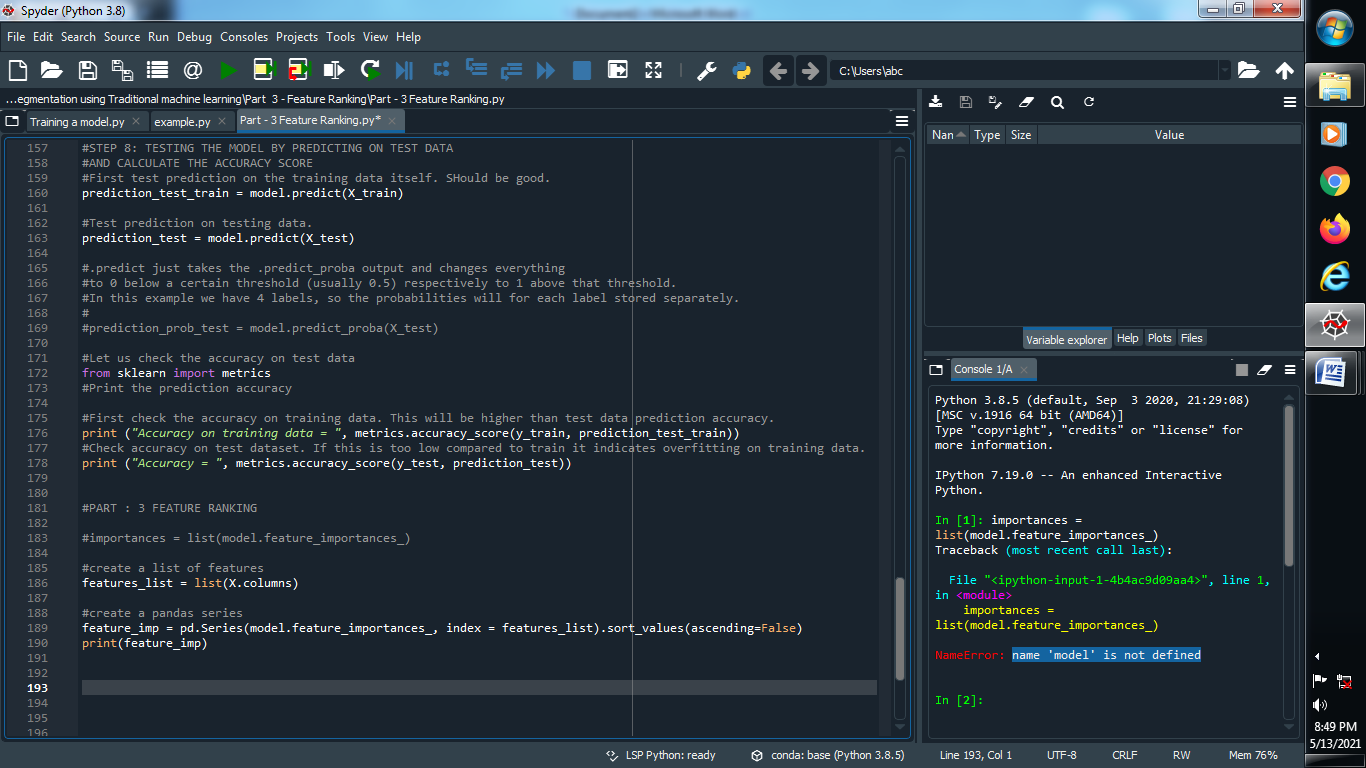
(4) Fit Our model :



(5) Predict Our training and testing dataset :

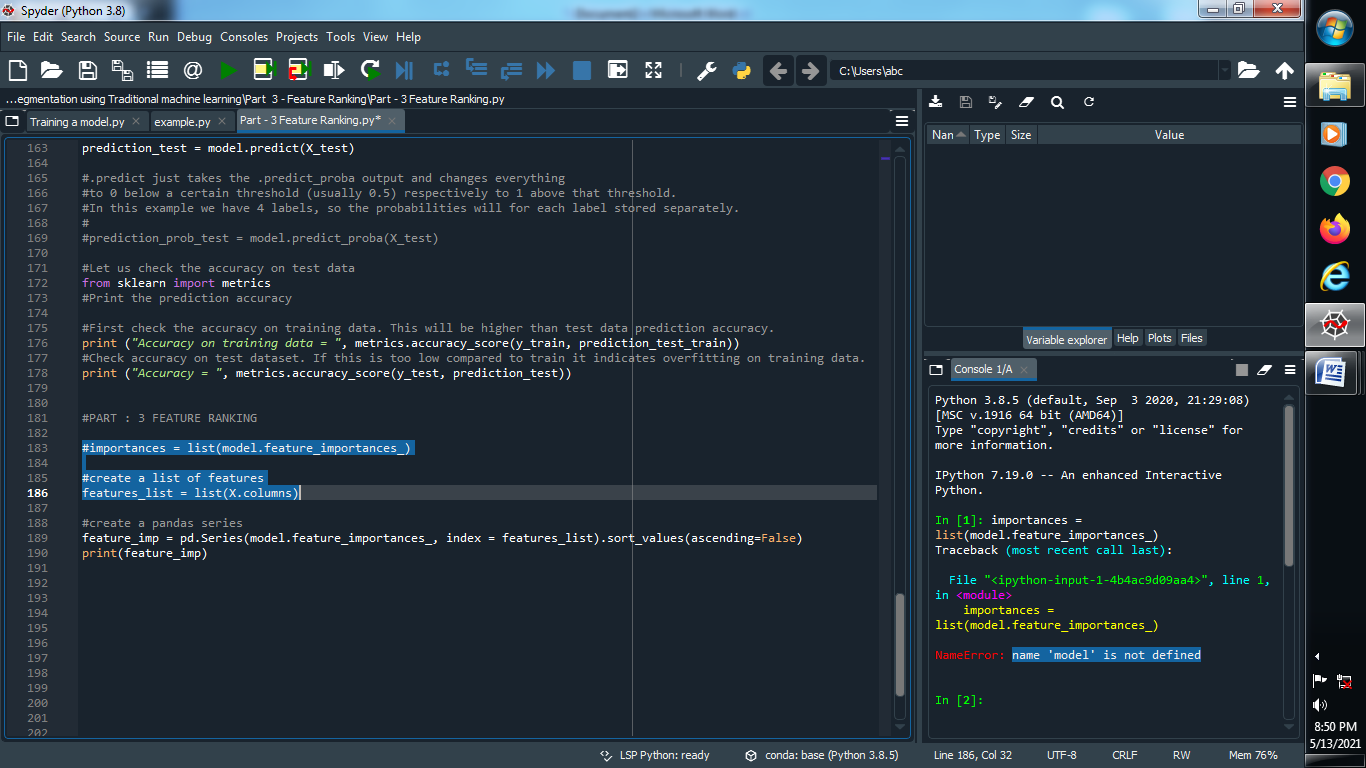


(6) Find the accuracy of our predicted data :

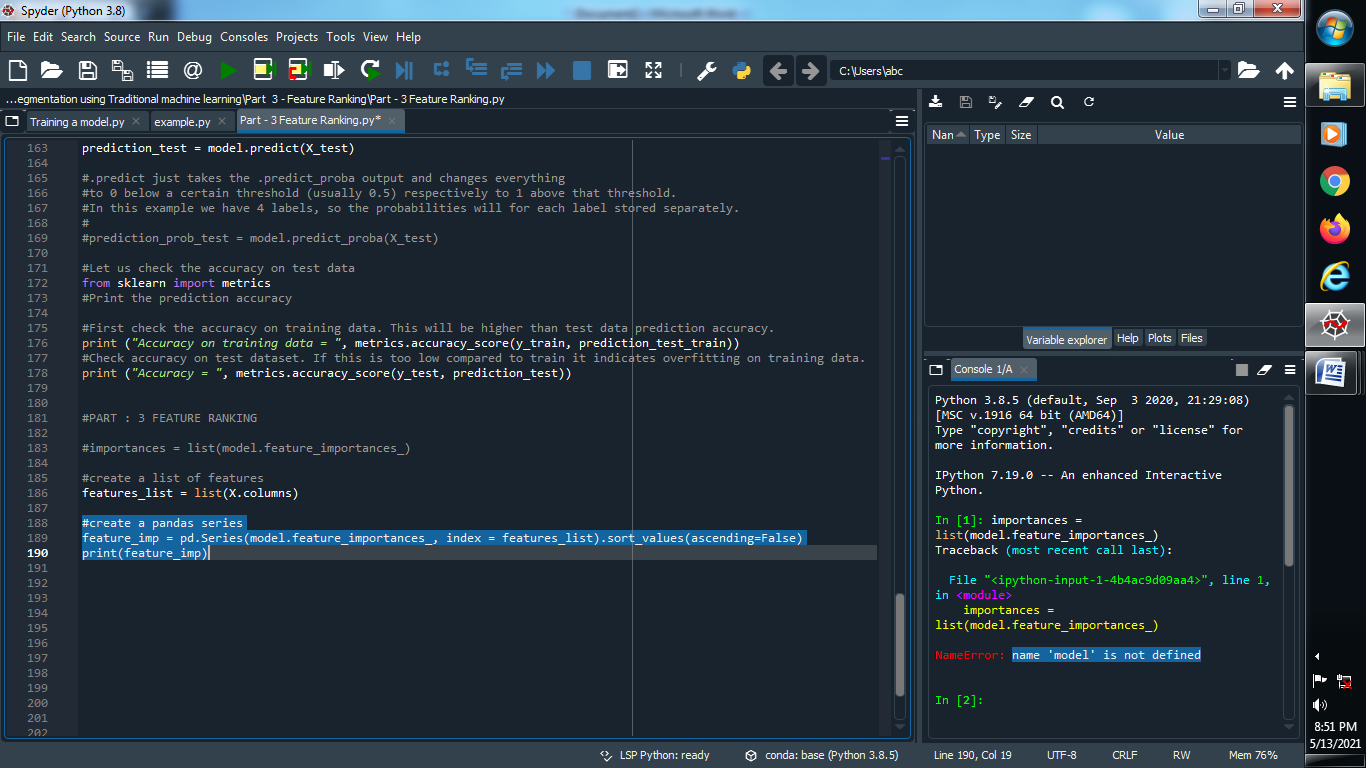


PART : 3 FEATURE RANKING :

(1) Create a list of features :

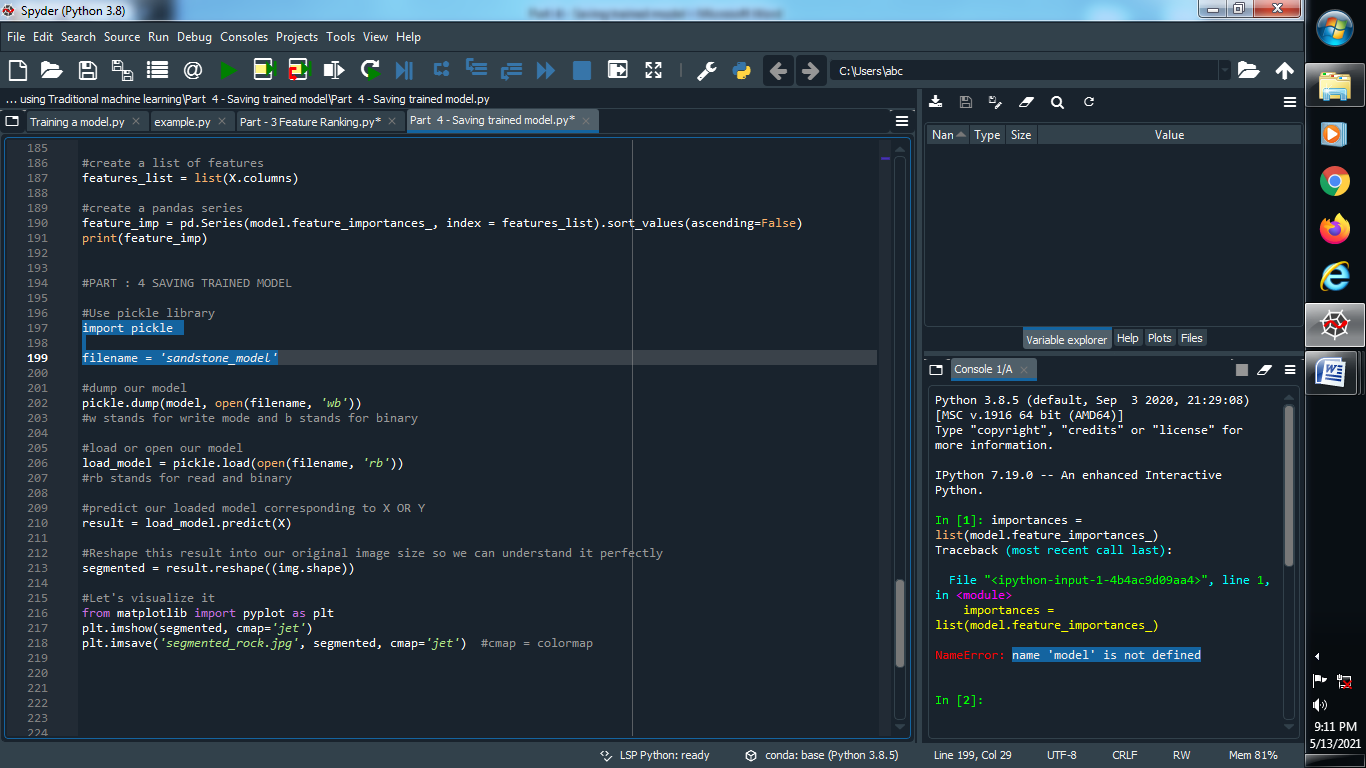


(2) Create a pandas series and print the ranking of our features :

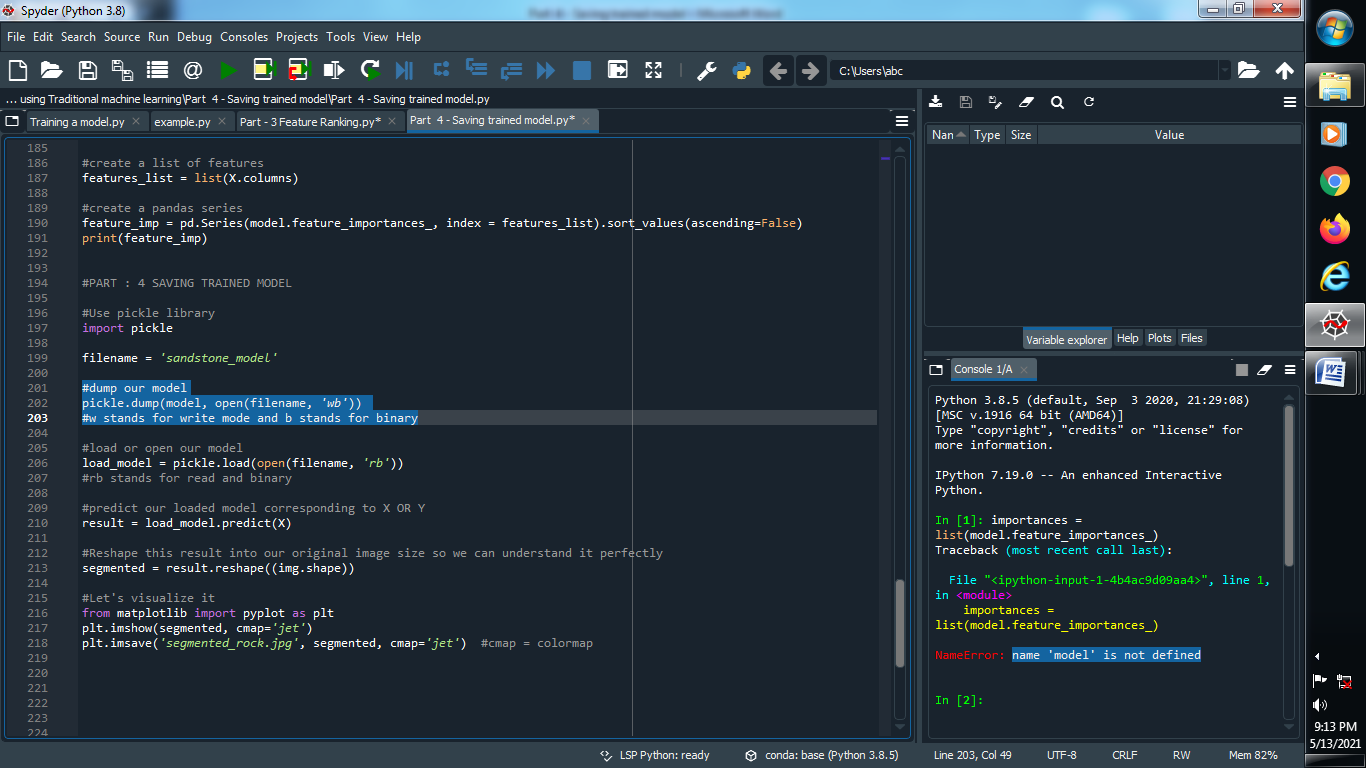


PART : 4 Saving trained model

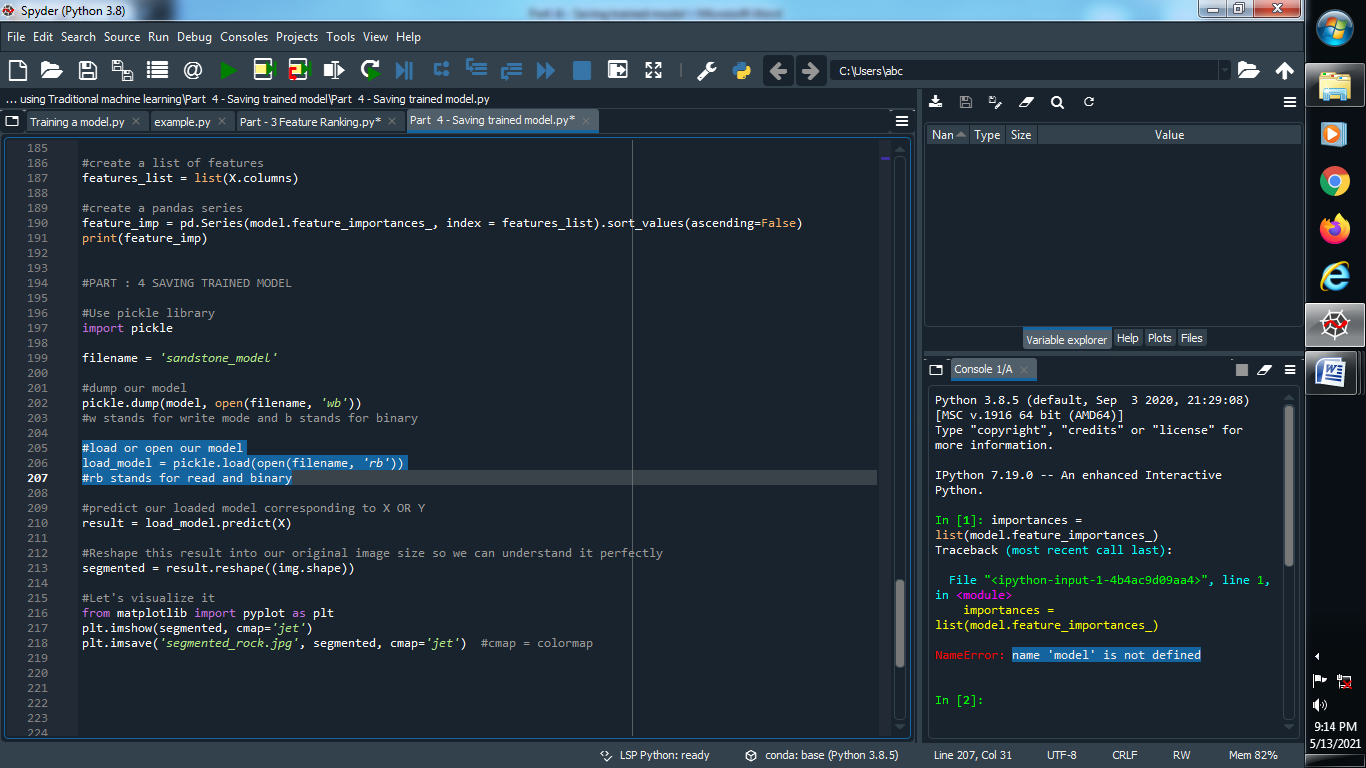
(1) import pickle library and give one filename :



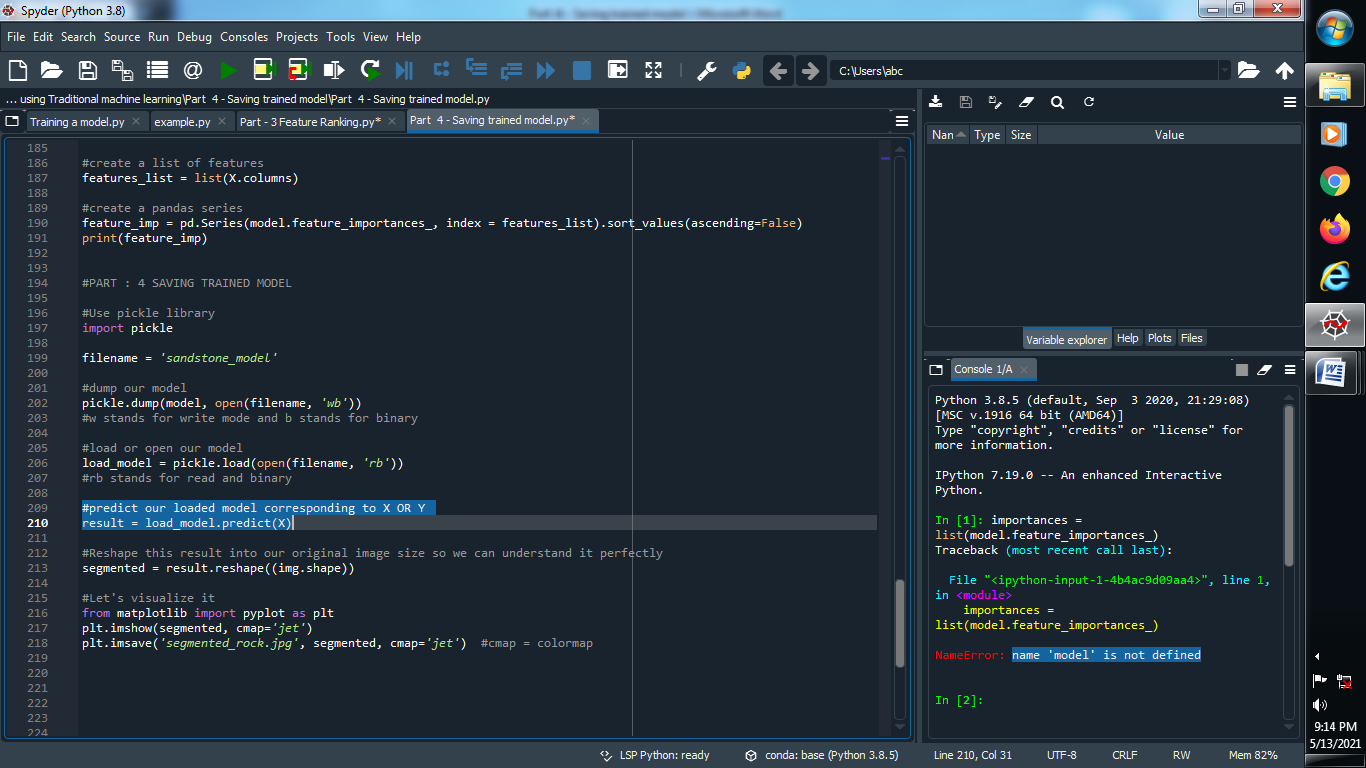
(2) Dump our model into write and binary mode :



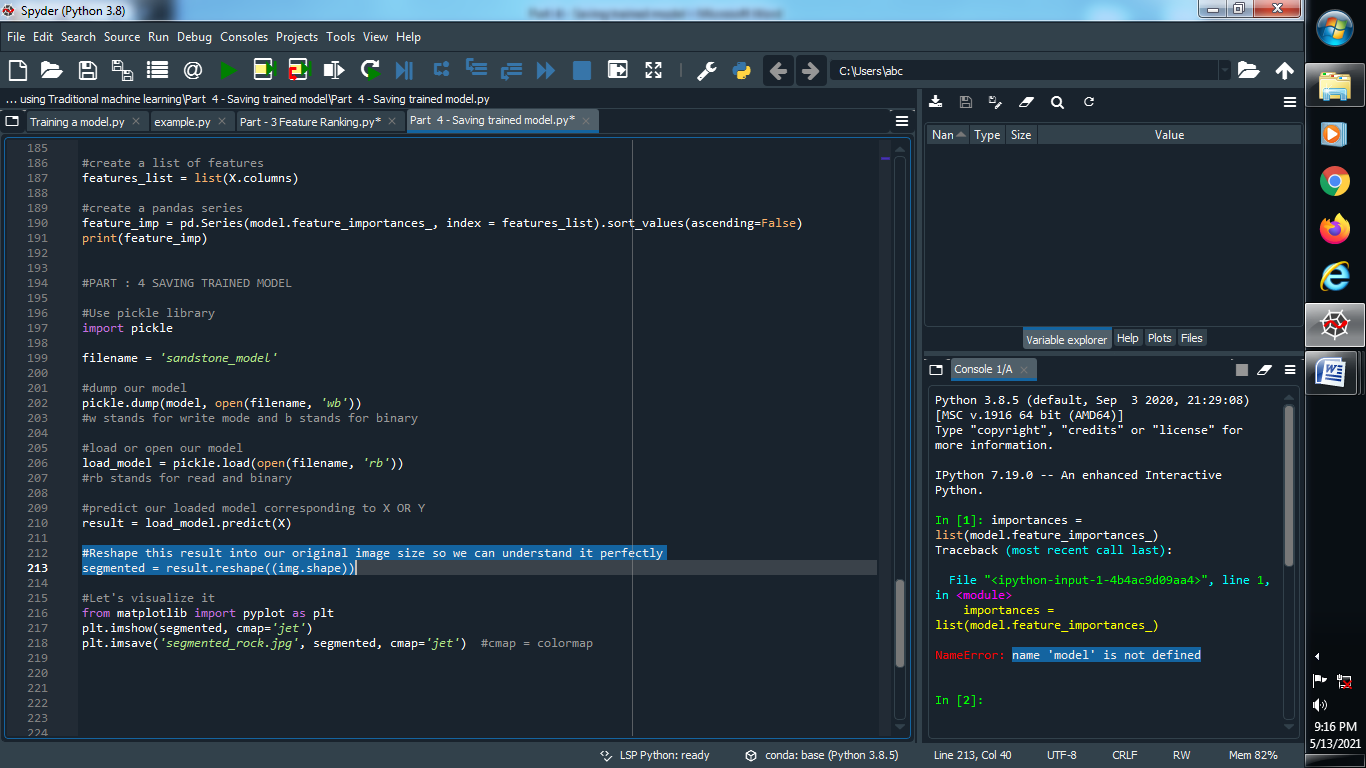
(3) Load our model into read and binary model :



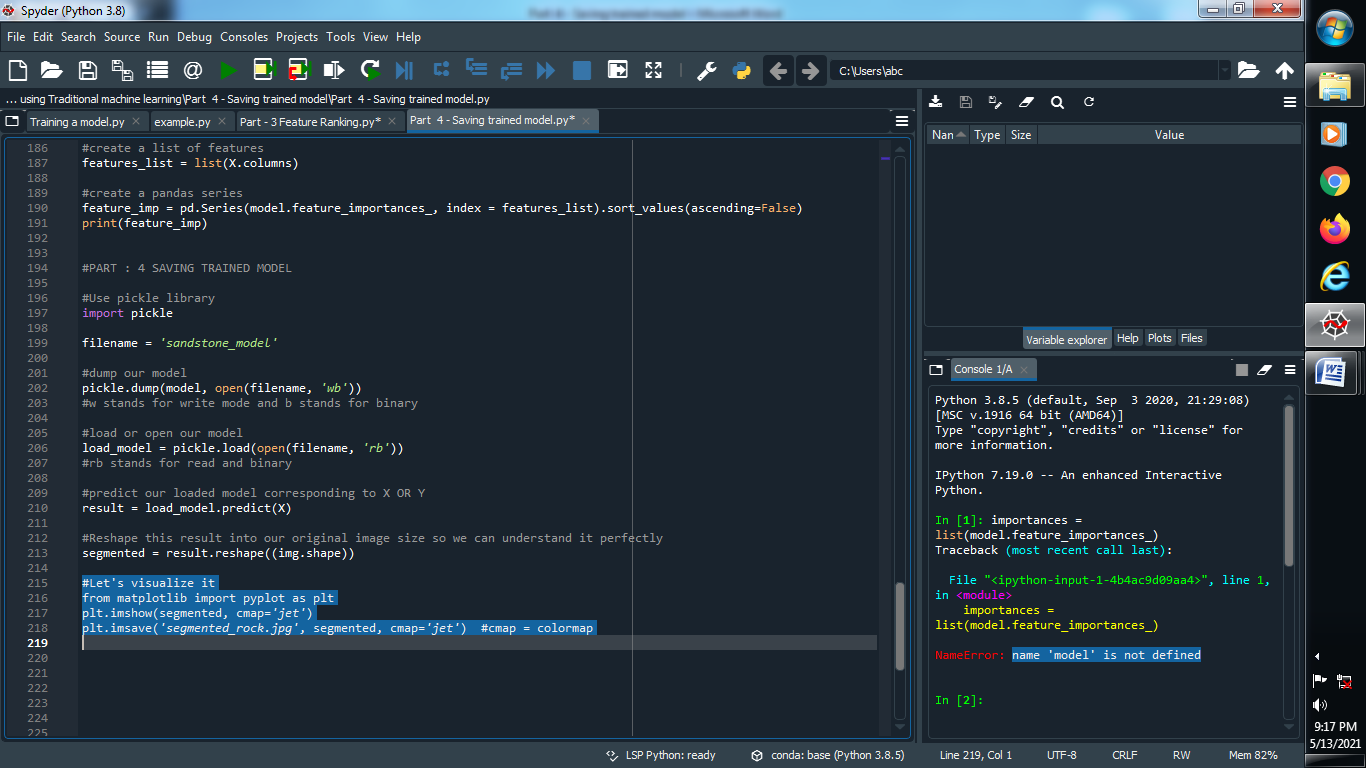
(4) Predict our loaded model corresponding to X or Y



(5) Reshape this result into our original image :

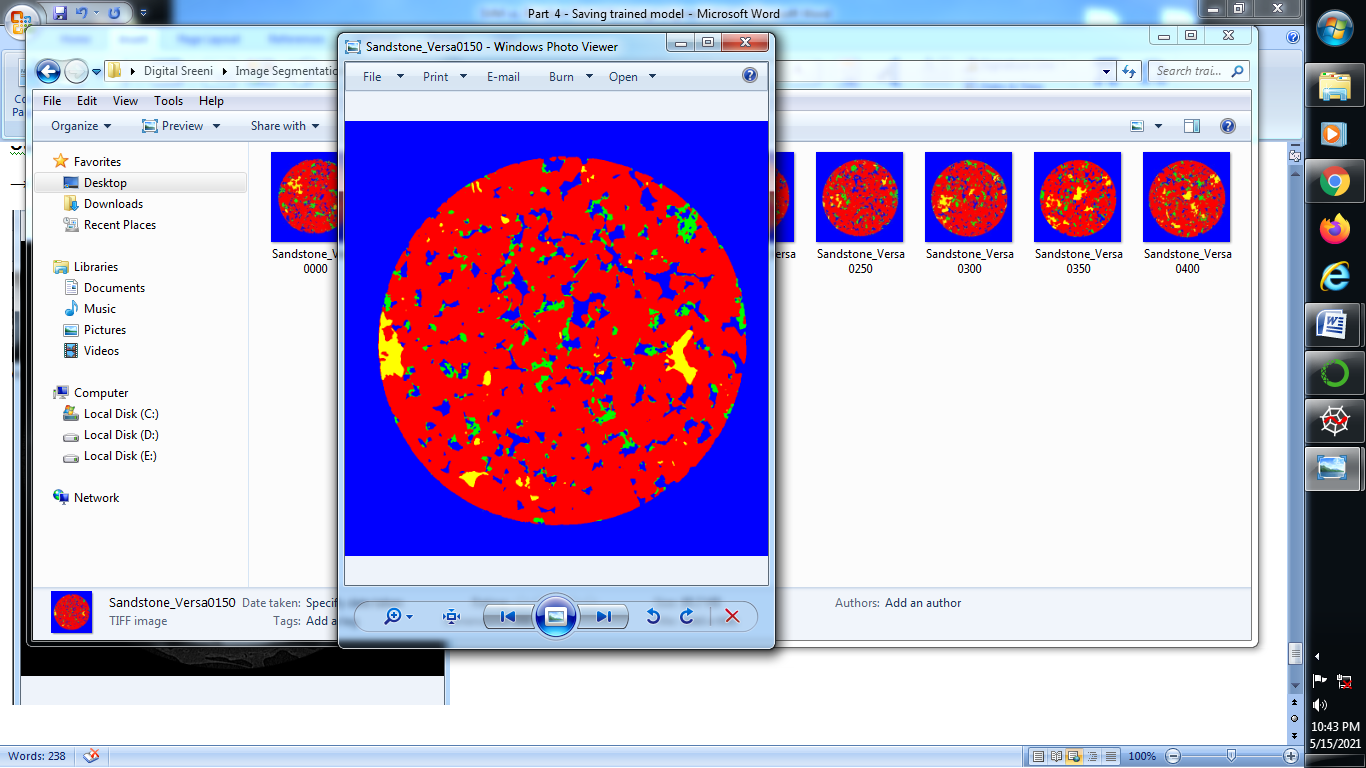
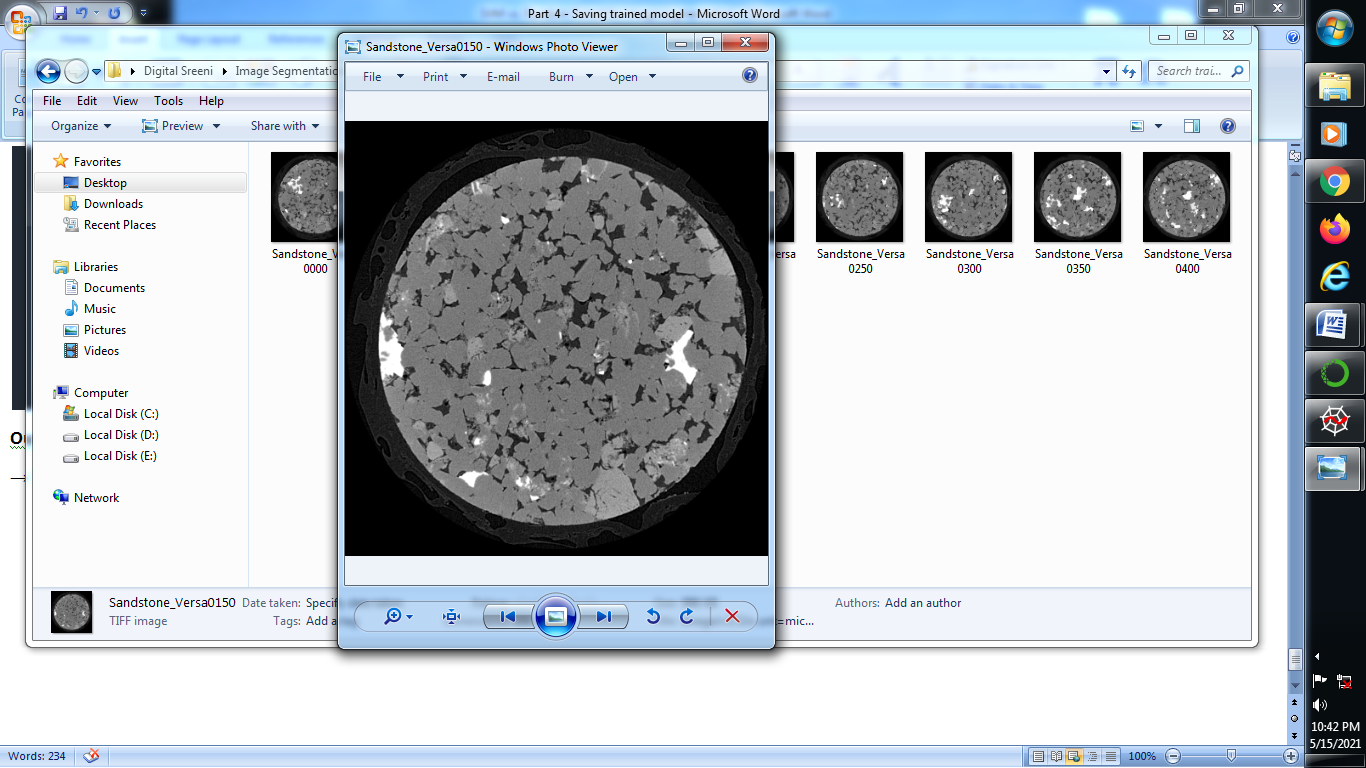


(6) Let’s visualize our model



Output :

→ Train image : → Label image :



Segmented image :

