First we import all the required libraries. Next I create 40 samples with 2 features in 2 clusters. Next I change the value of Y to -1 and 1 if the value is 0 or 1 respectively. Divide the data into train and test arrays. Then bias is appended at the end of train and test data. A weight matrix is created with 0 values. Learning rate is set to 0.001. We set the number of positive and negative support vectors to 0. We set the condition for the while loop to be true. We create a factor with which we will change the weights. Then in a loop we optimize the weights . We predict the value using w.x +b. If the value is 1 then we add to positive support vectors and if -1 then to negative support vectors. Then if there is a misclassification we change the weights according to factor + learning rate \* y value and x values and if it is a correct classification then weight = factor. Then we check for convergence conditions. Then I plot the graph for SVM.