EXERCISE 1: K–MEANS ALGORITHM

Iris data set consists of 150 samples from each of three species of Iris (Iris setosa, Iris virginica and Iris versicolor). Four features were measured from each sample: the length and the width of the sepals and petals, in centimeters. Based on the combination of these four features, Fisher developed a linear discriminant model to distinguish the species from each other.

The vector class, instead of containing the names of each class has been replaced by the numbers 0, 1 and 2, which correspond to Iris setosa, Iris versicolor and Iris virginica classes respectively.

The patterns matrix size is 4x150, and the vector corresponding classes is 1x150:

	150 patterns							
Sepals length	6.1	6.3	6.0	5.0	5.0	5.2	...	6.7
Sepals width	2.9	3.4	3.0	2.0	3.6	3.5	...	3.0
Petals length	4.7	5.6	4.8	3.5	1.4	1.5	...	5.0
Petals width	1.4	2.4	1.8	1	0.2	0.2	...	1.7
Classes vector	1	2	2	1	0	0	...	1

Load Iris data base and using the K-Means algorithm classify the data as follows:

a) With two features
b) Three features
c) All features

In all cases you should graphically display the classification and it error.