Classification:

1) Lisa has lost gender information of one of her customers who has Waist 28, Hip 34 and does not know whether to make skirt or trousers. Can you help here to make a better decision using **3NN- classifier?** (Use the following history of her customers)

Waist (cm)	Hip (cm)	Gender
28	32	Male
33	35	Male
27	33	Female
31	36	Female
32	34	Male

2) The following table shows a training set with 20 instances, each giving the values of two attributes and an associated classification. Calculate the 5-nearset neighbors of the instance with first and second attributes 9.1 and 11.0 respectively

Attribute 1	Attribute 2	Classification
0.8	6.3	-
1.4	8.1	-
2.1	7.4	-
2.6	14.3	+
6.8	12.6	-
8.8	9.8	+
9.2	11.6	-
10.8	9.6	+
11.8	9.9	+
12.4	6.5	+
12.8	1.1	-
14	19.9	-
14.2	18.5	-
15.6	17.4	-
15.8	12.2	-
16.6	6.7	+
17.4	4.5	+
18.2	6.9	+
19	3.4	-
19.6	11.1	+

Clustering:

We have 4 medicines as our training data points object and each medicine has 2 attributes. Each attribute represents coordinate of the object. We have to determine which medicines belong to cluster 1 and which medicines belong to the other cluster.

Object	Attribute1 (x): weight index	Attribute2 (y): pH
Medicine A	1	1
Medicine B	2	1
Medicine C	4	3
Medicine D	5	4