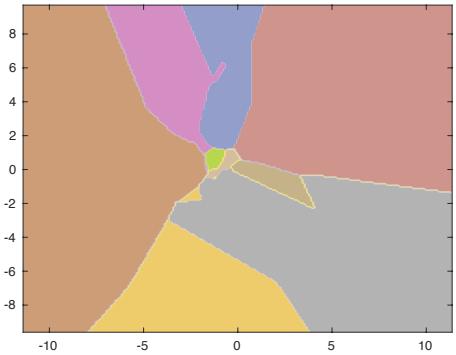
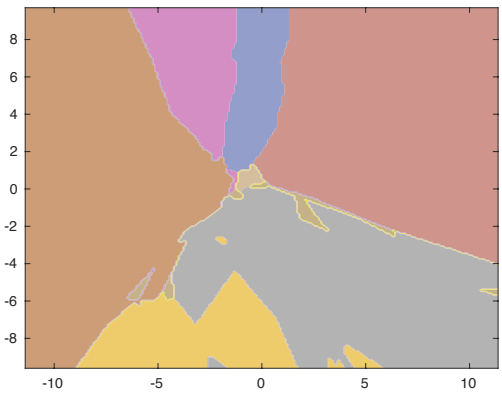
Task 2 – Classification

Task 2.1

k	N	Nerrs	acc
1	3993	125	96.86%
3	3993	118	97.04%
5	3993	129	96.67%
10	3993	140	96.49%
20	3993	156	96.60%

Task 2.2





Figures for the result when k=1, and Figure 2 for the one when k=3.

Task 2.3

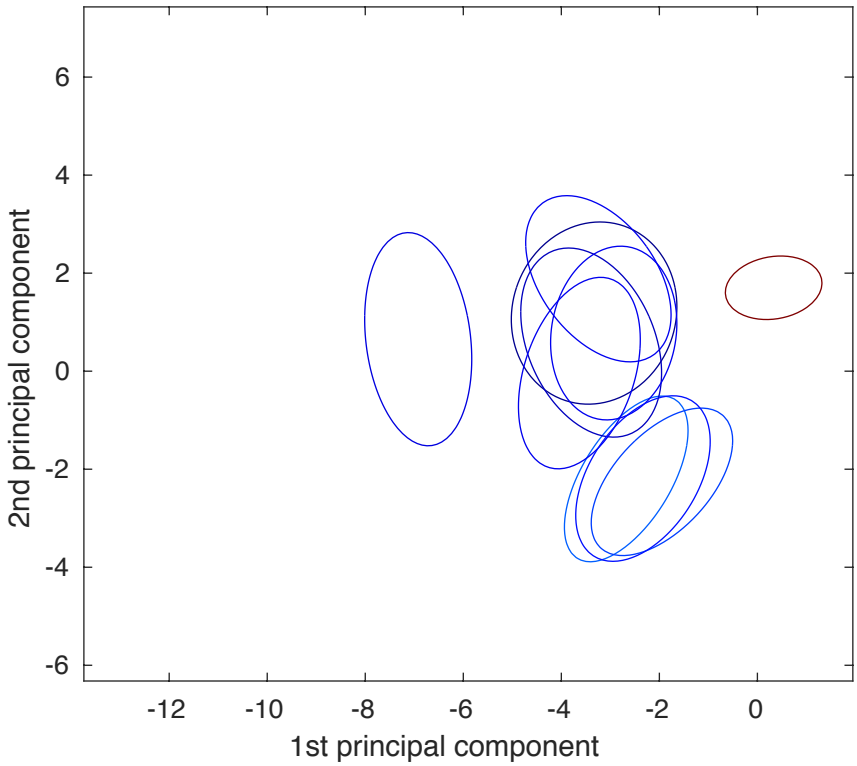


Figure 1 shows a contour of Gaussian distribution for each class k = 1,...,10

Task 2.4

Number (class-1)	Correration
0	0.1837
1	0.1837
2	-0.1326
3	-0.7064
4	0.2302
5	0.1178
6	0.1010
7	0.1969
8	0.0006
9	-0.0909
All data	0.2539

Task 2.5

N	Nerrs	Acc	Time(seconds)
3993	201	94.96%	6.93

Figure 2 Information for gussian classification on epsilon of 0.01

Task 2.6

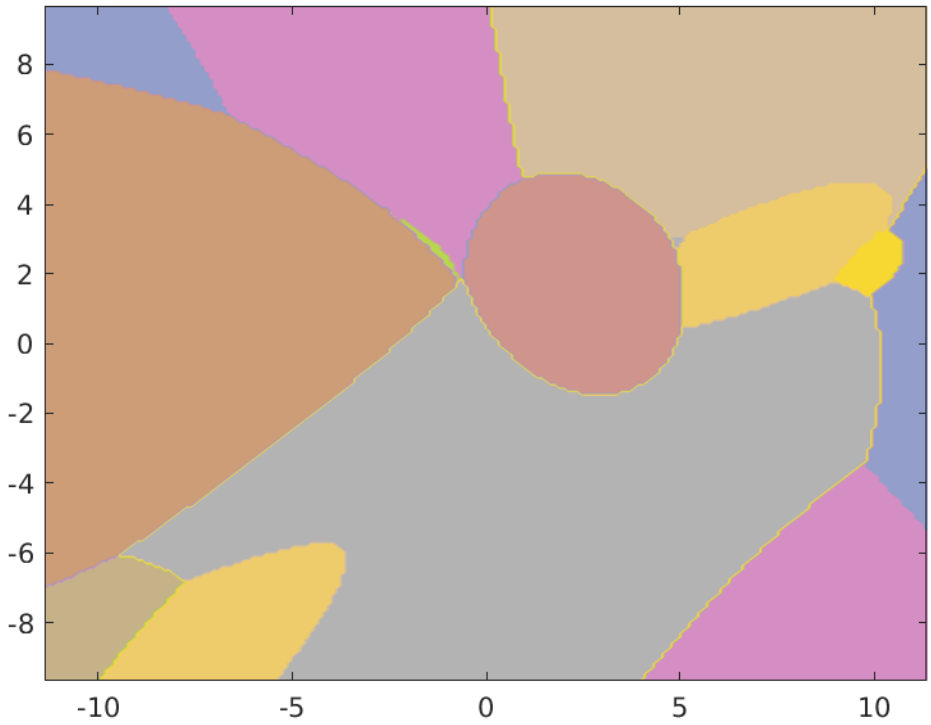


Figure 3 shows the decision regions.

Task 2.7

Ratio	Accuracy
0.9	0.9482
0.8	0.9092
0.7	0.8843
0.6	0.8900
0.5	0.8425
0.4	0.7893
0.3	0.6883

Task 2.8

L	N	Nerrs	acc
2	3993	125	96.86%
5	3993	118	97.04%
10	3993	129	96.67%

Table 1 (N, Nerrs, acc, time taken) for each L = 2,5,10.