

Question 1:

Q1 (1):

	sepal-length	sepal-width	petal-length	petal-width	Class
0	5.1	3.5	1.4	0.2	Iris-setosa
1	4.9	3.0	1.4	0.2	Iris-setosa
2	4.7	3.2	1.3	0.2	Iris-setosa
3	4.6	3.1	1.5	0.2	Iris-setosa
4	5.0	3.6	1.4	0.2	Iris-setosa
..
145	6.7	3.0	5.2	2.3	Iris-virginica
146	6.3	2.5	5.0	1.9	Iris-virginica
147	6.5	3.0	5.2	2.0	Iris-virginica
148	6.2	3.4	5.4	2.3	Iris-virginica
149	5.9	3.0	5.1	1.8	Iris-virginica

[150 rows x 5 columns]

	sepal-length	sepal-width	petal-length	petal-width
count	150.000000	150.000000	150.000000	150.000000
mean	5.843333	3.054000	3.758667	1.198667
std	0.828066	0.433594	1.764420	0.763161
min	4.300000	2.000000	1.000000	0.100000
25%	5.100000	2.800000	1.600000	0.300000
50%	5.800000	3.000000	4.350000	1.300000
75%	6.400000	3.300000	5.100000	1.800000
max	7.900000	4.400000	6.900000	2.500000

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Q1 (2):

SE

	sepal-length	sepal-width	petal-length	petal-width
count	50.000000	50.000000	50.000000	50.000000
mean	5.006000	3.418000	1.464000	0.244000
std	0.352490	0.381024	0.173511	0.107210
min	4.300000	2.300000	1.000000	0.100000
25%	4.800000	3.125000	1.400000	0.200000
50%	5.000000	3.400000	1.500000	0.200000
75%	5.200000	3.675000	1.575000	0.300000
max	5.800000	4.400000	1.900000	0.600000

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VE
      sepal-length  sepal-width  petal-length  petal-width
count      50.000000    50.000000    50.000000    50.000000
mean       5.936000     2.770000     4.260000     1.326000
std        0.516171     0.313798     0.469911     0.197753
min        4.900000     2.000000     3.000000     1.000000
25%        5.600000     2.525000     4.000000     1.200000
50%        5.900000     2.800000     4.350000     1.300000
75%        6.300000     3.000000     4.600000     1.500000
max        7.000000     3.400000     5.100000     1.800000
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VI
      sepal-length  sepal-width  petal-length  petal-width
count      50.000000    50.000000    50.000000    50.000000
mean       6.588000     2.974000     5.552000     2.026000
std        0.63588      0.322497     0.551895     0.27465
min        4.900000     2.200000     4.500000     1.400000
25%        6.225000     2.800000     5.100000     1.800000
50%        6.500000     3.000000     5.550000     2.000000
75%        6.900000     3.175000     5.875000     2.300000
max        7.900000     3.800000     6.900000     2.500000
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VE & VI
      sepal-length  sepal-width  petal-length  petal-width
count     100.000000   100.000000   100.000000   100.000000
mean       6.262000     2.872000     4.906000     1.676000
std        0.662834     0.332751     0.825578     0.424769
min        4.900000     2.000000     3.000000     1.000000
25%        5.800000     2.700000     4.375000     1.300000
50%        6.300000     2.900000     4.900000     1.600000
75%        6.700000     3.025000     5.525000     2.000000
max        7.900000     3.800000     6.900000     2.500000
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Q1 (3):

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SE
      sepal-length  sepal-width  petal-length  petal-width
sepal-length      1.000000     0.746780     0.263874     0.279092
sepal-width       0.746780     1.000000     0.176695     0.279973
petal-length      0.263874     0.176695     1.000000     0.306308
petal-width       0.279092     0.279973     0.306308     1.000000
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VE
      sepal-length  sepal-width  petal-length  petal-width
sepal-length      1.000000     0.525911     0.754049     0.546461
sepal-width       0.525911     1.000000     0.560522     0.663999
petal-length      0.754049     0.560522     1.000000     0.786668
petal-width       0.546461     0.663999     0.786668     1.000000
=====

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VI

	sepal-length	sepal-width	petal-length	petal-width
sepal-length	1.000000	0.457228	0.864225	0.281108
sepal-width	0.457228	1.000000	0.401045	0.537728
petal-length	0.864225	0.401045	1.000000	0.322108
petal-width	0.281108	0.537728	0.322108	1.000000

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Question 2:

Q2 (1):

training set:

	sepal-length	sepal-width	petal-length	petal-width	Class
138	6.0	3.0	4.8	1.8	Iris-virginica
76	6.8	2.8	4.8	1.4	Iris-versicolor
126	6.2	2.8	4.8	1.8	Iris-virginica
120	6.9	3.2	5.7	2.3	Iris-virginica
77	6.7	3.0	5.0	1.7	Iris-versicolor
129	7.2	3.0	5.8	1.6	Iris-virginica
124	6.7	3.3	5.7	2.1	Iris-virginica
117	7.7	3.8	6.7	2.2	Iris-virginica
81	5.5	2.4	3.7	1.0	Iris-versicolor
70	5.9	3.2	4.8	1.8	Iris-versicolor
91	6.1	3.0	4.6	1.4	Iris-versicolor
66	5.6	3.0	4.5	1.5	Iris-versicolor
107	7.3	2.9	6.3	1.8	Iris-virginica
105	7.6	3.0	6.6	2.1	Iris-virginica
104	6.5	3.0	5.8	2.2	Iris-virginica
67	5.8	2.7	4.1	1.0	Iris-versicolor
51	6.4	3.2	4.5	1.5	Iris-versicolor
118	7.7	2.6	6.9	2.3	Iris-virginica
74	6.4	2.9	4.3	1.3	Iris-versicolor
142	5.8	2.7	5.1	1.9	Iris-virginica
96	5.7	2.9	4.2	1.3	Iris-versicolor
132	6.4	2.8	5.6	2.2	Iris-virginica
146	6.3	2.5	5.0	1.9	Iris-virginica
89	5.5	2.5	4.0	1.3	Iris-versicolor
143	6.8	3.2	5.9	2.3	Iris-virginica
140	6.7	3.1	5.6	2.4	Iris-virginica
106	4.9	2.5	4.5	1.7	Iris-virginica
119	6.0	2.2	5.0	1.5	Iris-virginica
57	4.9	2.4	3.3	1.0	Iris-versicolor
58	6.6	2.9	4.6	1.3	Iris-versicolor
128	6.4	2.8	5.6	2.1	Iris-virginica
85	6.0	3.4	4.5	1.6	Iris-versicolor
144	6.7	3.3	5.7	2.5	Iris-virginica
101	5.8	2.7	5.1	1.9	Iris-virginica
54	6.5	2.8	4.6	1.5	Iris-versicolor
92	5.8	2.6	4.0	1.2	Iris-versicolor
59	5.2	2.7	3.9	1.4	Iris-versicolor
114	5.8	2.8	5.1	2.4	Iris-virginica
55	5.7	2.8	4.5	1.3	Iris-versicolor

131	7.9	3.8	6.4	2.0	Iris-virginica
65	6.7	3.1	4.4	1.4	Iris-versicolor
73	6.1	2.8	4.7	1.2	Iris-versicolor
136	6.3	3.4	5.6	2.4	Iris-virginica
53	5.5	2.3	4.0	1.3	Iris-versicolor
100	6.3	3.3	6.0	2.5	Iris-virginica
60	5.0	2.0	3.5	1.0	Iris-versicolor
133	6.3	2.8	5.1	1.5	Iris-virginica
88	5.6	3.0	4.1	1.3	Iris-versicolor
110	6.5	3.2	5.1	2.0	Iris-virginica
97	6.2	2.9	4.3	1.3	Iris-versicolor

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Q2 (2):

PW:CalculateQ2 confusion matrix

PW:CalculateQ2 confusion matrix

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PW:CalculateQ2 confusion matrix

Q2 (2)confusion for SL:

TP: 14

TN: 20

FP: 6

FN: 10

Q2 Accuracy: 68%

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Q2 (2) confusion for SW:

TP: 1

TN: 26

FP: 0

FN: 23

Q2 Accuracy: 54%

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Q2 (2) confusion for PL:

TP: 24

TN: 21

FP: 5

FN: 0

Q2 Accuracy: 90%

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Q2 confusion for PW:

TP: 4

TN: 26

FP: 0

FN: 20

Q2 Accuracy: 60%

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Question 3:

Q3 (1):

confusion for SL:

TP: 14

TN: 20

FP: 6

confusion for SW:

TP: 24

TN: 0

FP: 26

FN: 0

Q3 Accuracy: 48%

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confusion for PL:

TP: 24

TN: 5

FP: 21

FN: 0

Q3 Accuracy: 57%

=====

confusion for PW:

TP: 24

TN: 0

FP: 26

FN: 0

Q3 Accuracy: 48%

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Question 4:

Q4 (1):

For SL:

label for Q4 SL

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For SW:

label for Q4 SW

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For PL:

label for Q4 PL

=====

For PW:

label for Q4 PW

=====

confusion for SL:

TP: 7

TN: 7

FP: 19

FN: 17

Q4 Accuracy: 28%

=====

confusion for SW:

TP: 3

TN: 17

FP: 9

FN: 21

Q4 Accuracy: 40%

=====

confusion for PL:

TP: 0

TN: 21

FP: 5

FN: 24

Q4 Accuracy: 42%

=====

confusion for PW:

TP: 0

TN: 26

FP: 0

FN: 24

Q4 Accuracy: 52%

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Question 5:

Q5 (1):

For SL:

label for Q5 SL

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For SW:

label for Q5 SW

=====

For PL:

label for Q5 PL

=====

For PW:

label for Q5 PW

=====

confusion for SL:

TP: 24

TN: 0

FP: 26

FN: 0

Q5 Accuracy: 48%

=====

confusion for SW:

TP: 24

TN: 0

FP: 26

FN: 0

Q5 Accuracy: 48%

=====

confusion for PL:

TP: 24

TN: 0

FP: 26

FN: 0

Q5 Accuracy: 48%

=====

confusion for PW:

TP: 24

TN: 0

FP: 26

FN: 0

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=====
confusion for PW:
TP: 24
TN: 0
FP: 26
FN: 0
Q5 Accuracy: 48%
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