2. k-nearest neighbor (5 points)–Write a k-NN classifier for the data in the files provided. Make your training data from the training data files provided and test on the test file.

a. Test it with k=1

b. Test it with k=3

Variables:

I run **K =1,3,5** for test. I have five different test points from test file.

```
%%%%%%%%%%%%%%%%%% K value %%%%%%%%%%%%%%%%%%%%%%%%%%%
for k = 1:2:5
K            = k;                                                    % K value 1,3,5
%%%%%%%%%%%%%%%%%% K value %%%%%%%%%%%%%%%%%%%%%%%%%%%
```

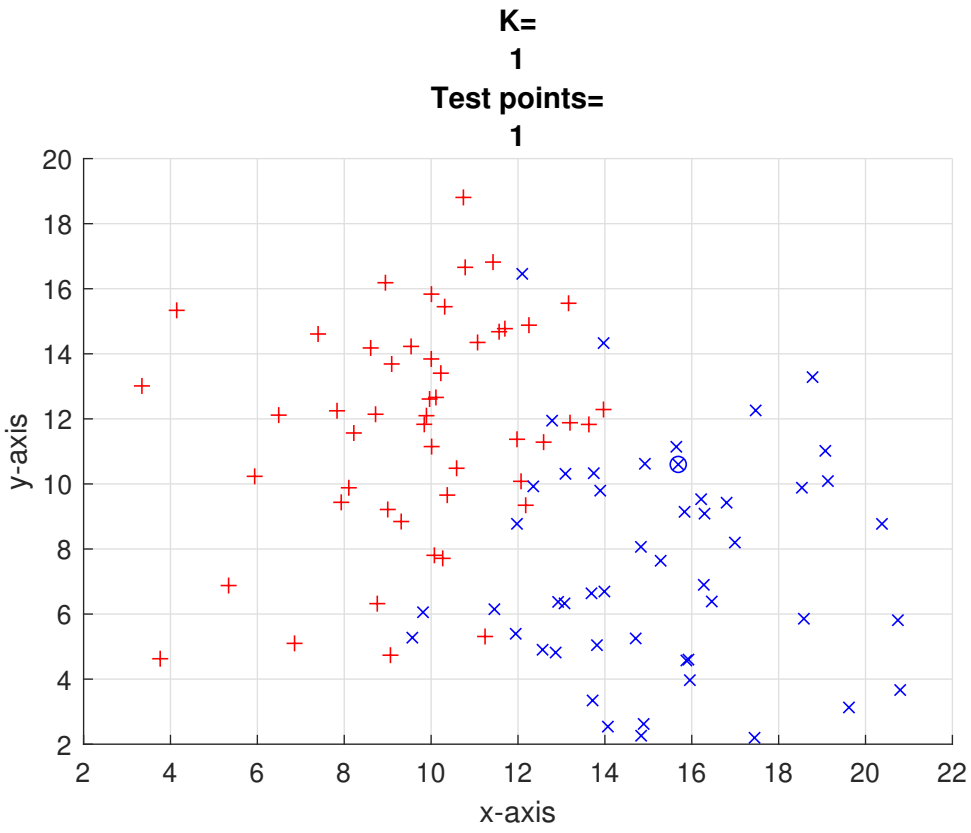
Files and outputs: (see following pages for output results)

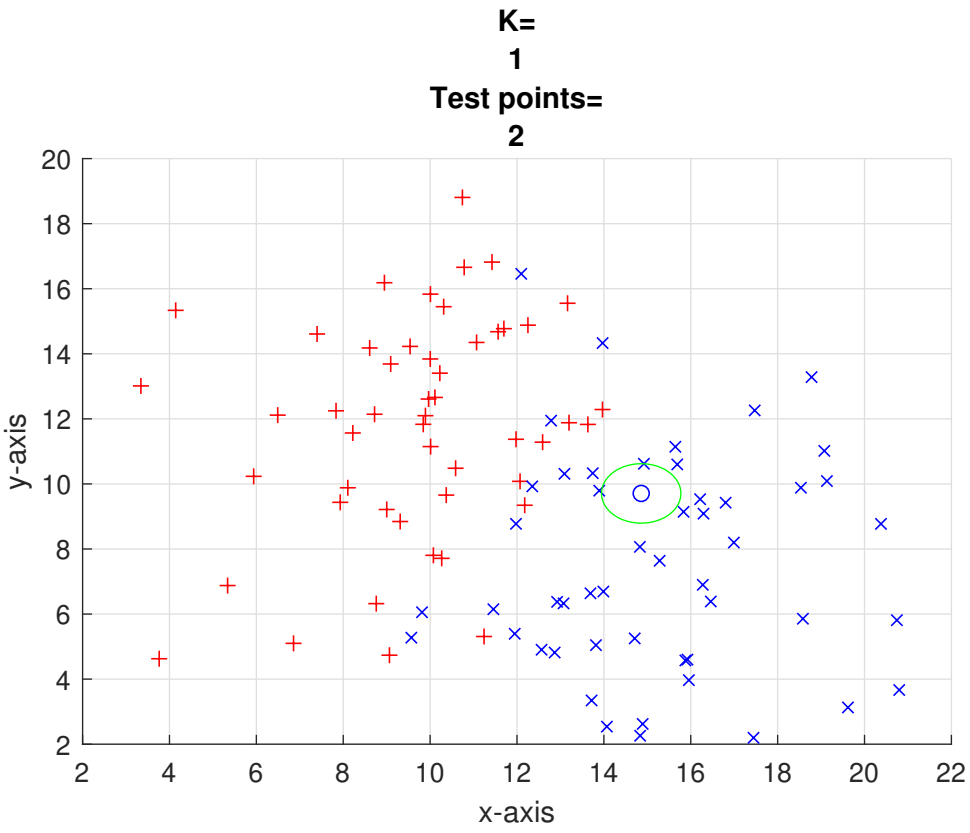
1. Code will generate the 2D.ps in the working directory.

   Those files can be converted to pdf with online resources.

Files submitted:

1. hw7CSC546_2D.m code
2. homework_classify_test_2D.dat test data
3. homework_classify_train_2D.dat training data


K=
1
Test points=
1
y-axis
x-axis
20
18
16
14
12
10
8
6
4
2
2
4
6
8
10
12
14
16
18
20
22


K=
1
Test points=
2
y-axis
x-axis
20
18
16
14
12
10
8
6
4
2
2
4
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8
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12
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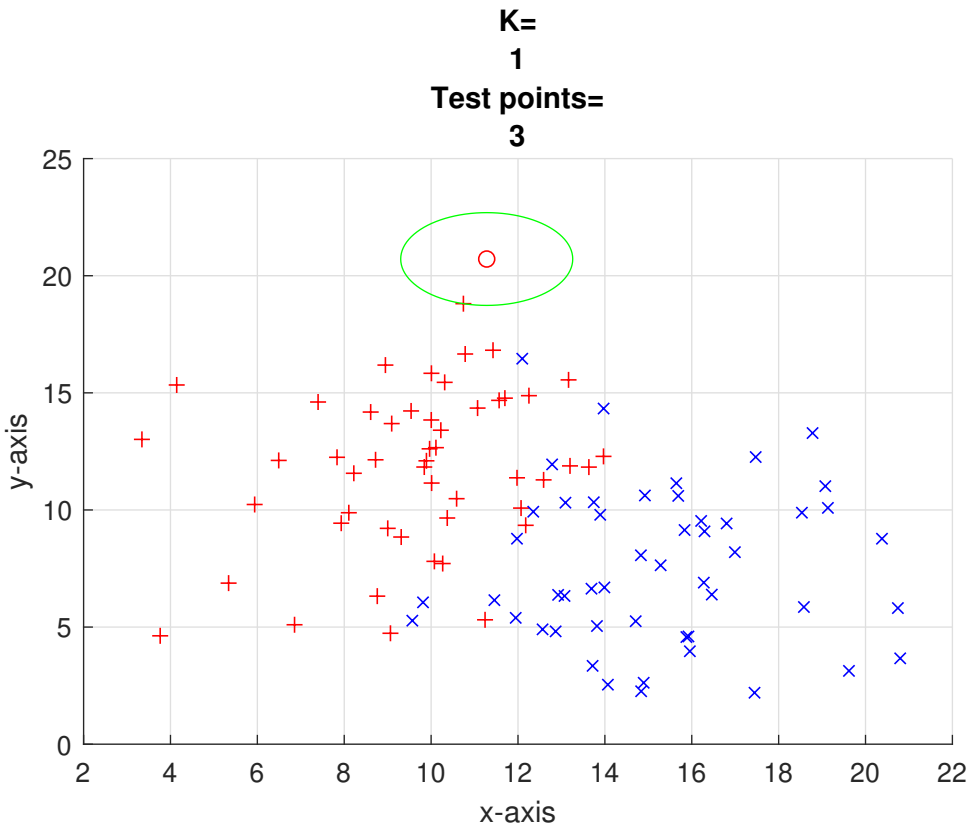
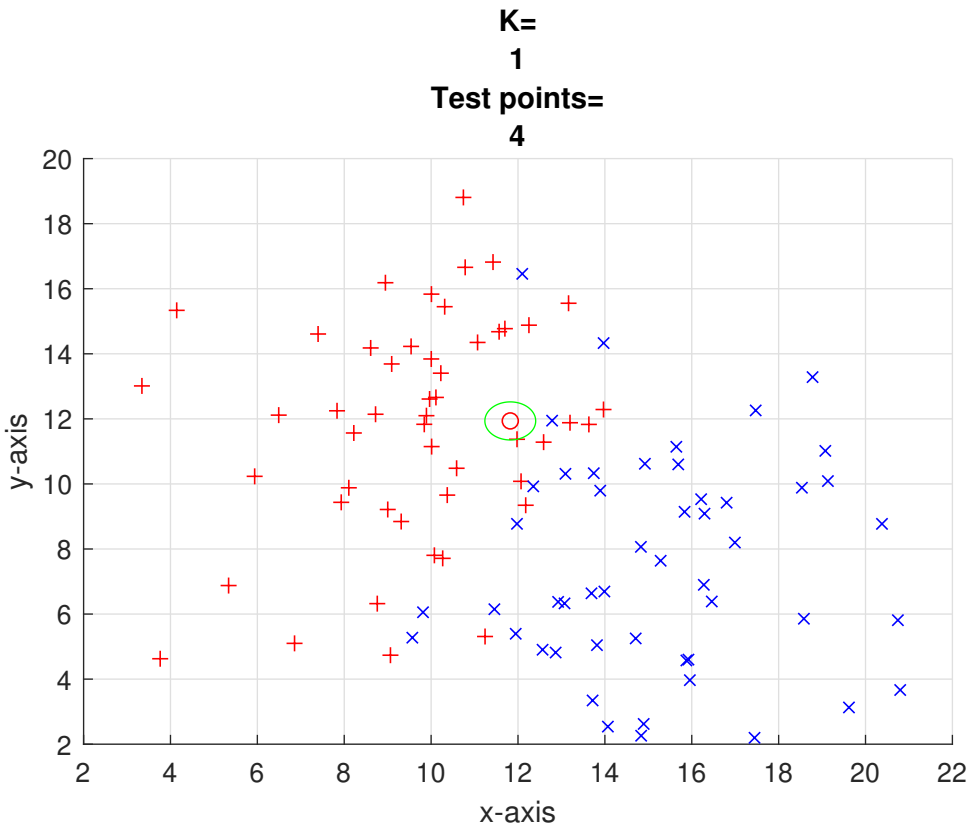

K=
1
Test points=
3
y-axis
x-axis
0
5
10
15
20
25
2
4
6
8
10
12
14
16
18
20
22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Test points=
4
y-axis
x-axis
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10
8
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4
2
2
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8
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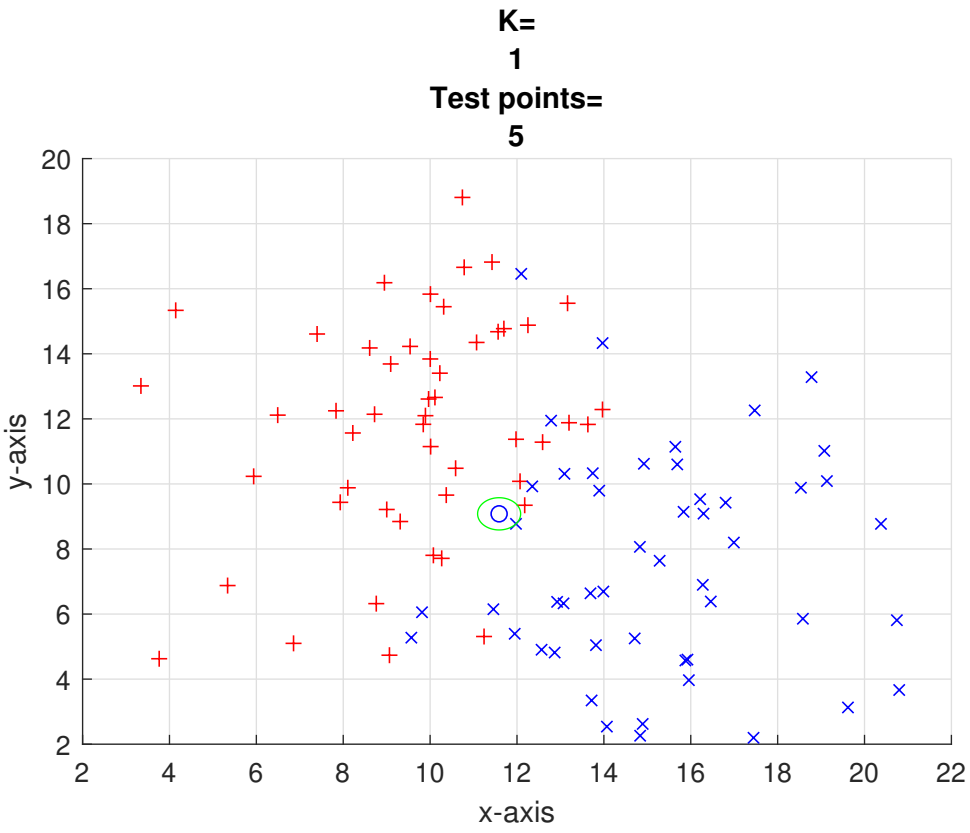
K=
1
Test points=
5
y-axis
x-axis
20
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12
10
8
6
4
2
2
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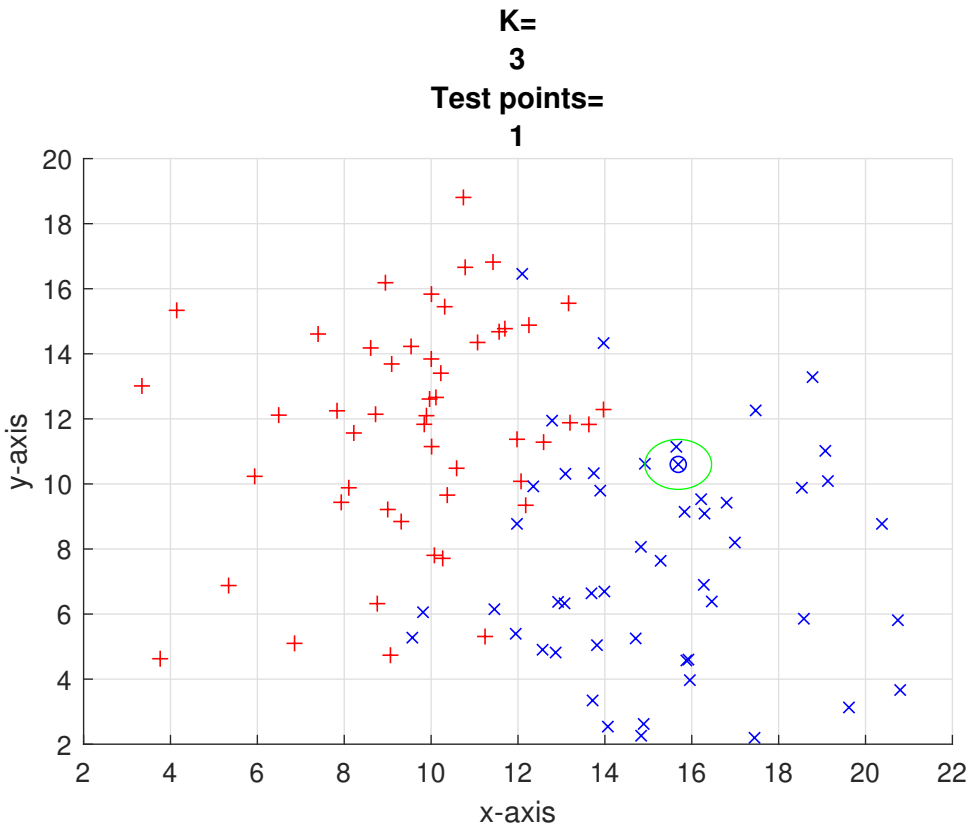
K=
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Test points=
1
y-axis
x-axis
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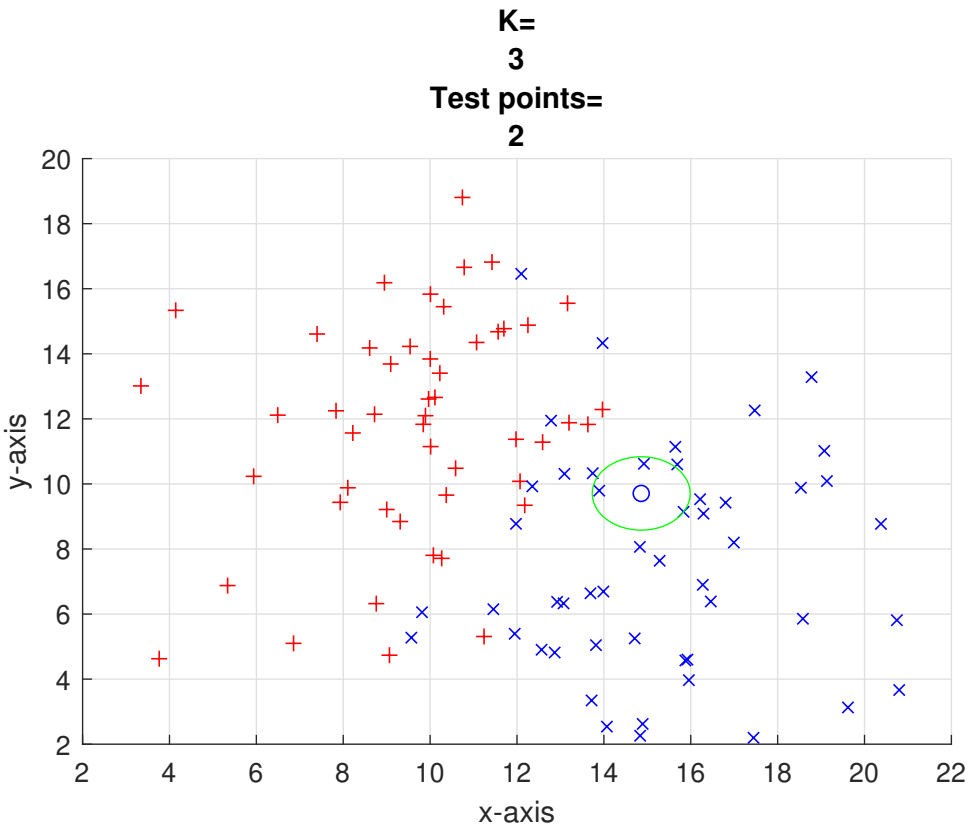
K=
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Test points=
2
y-axis
x-axis
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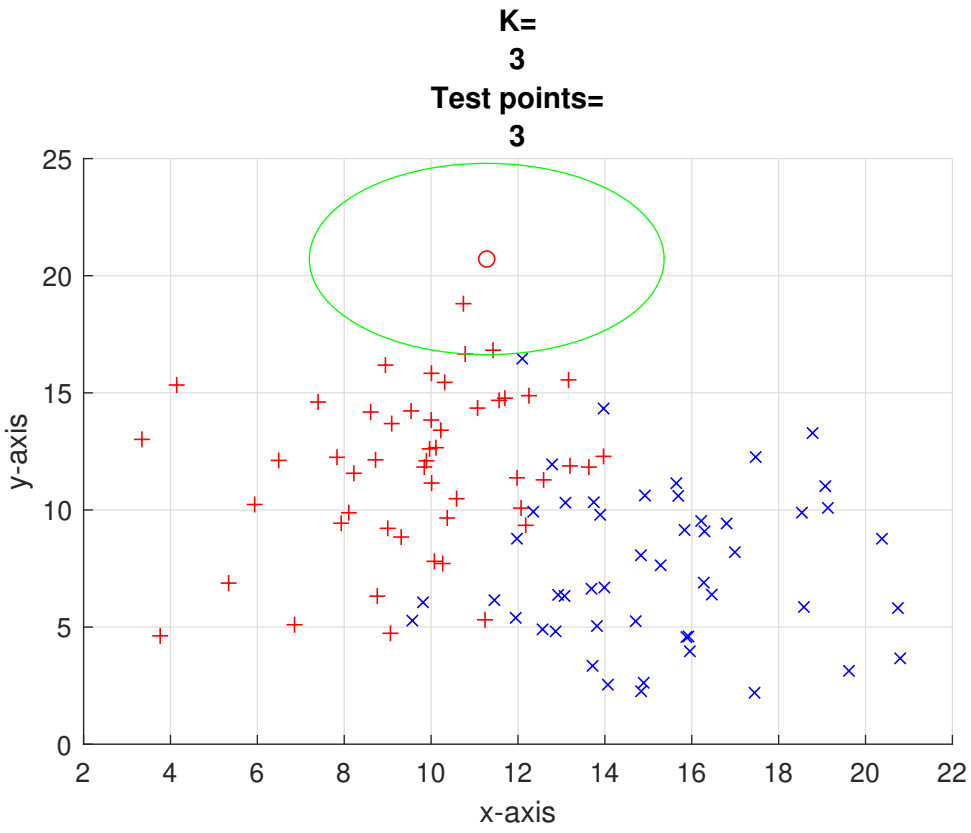
K=
3
Test points=
3
y-axis
x-axis
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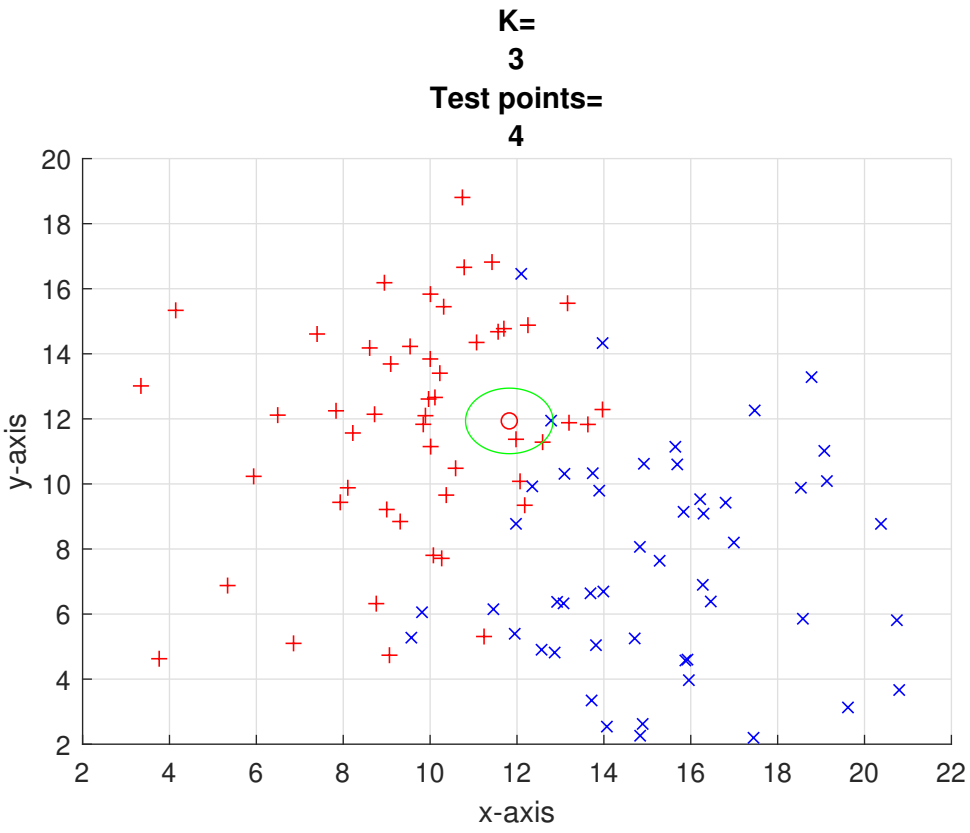
K=
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Test points=
4
y-axis
x-axis
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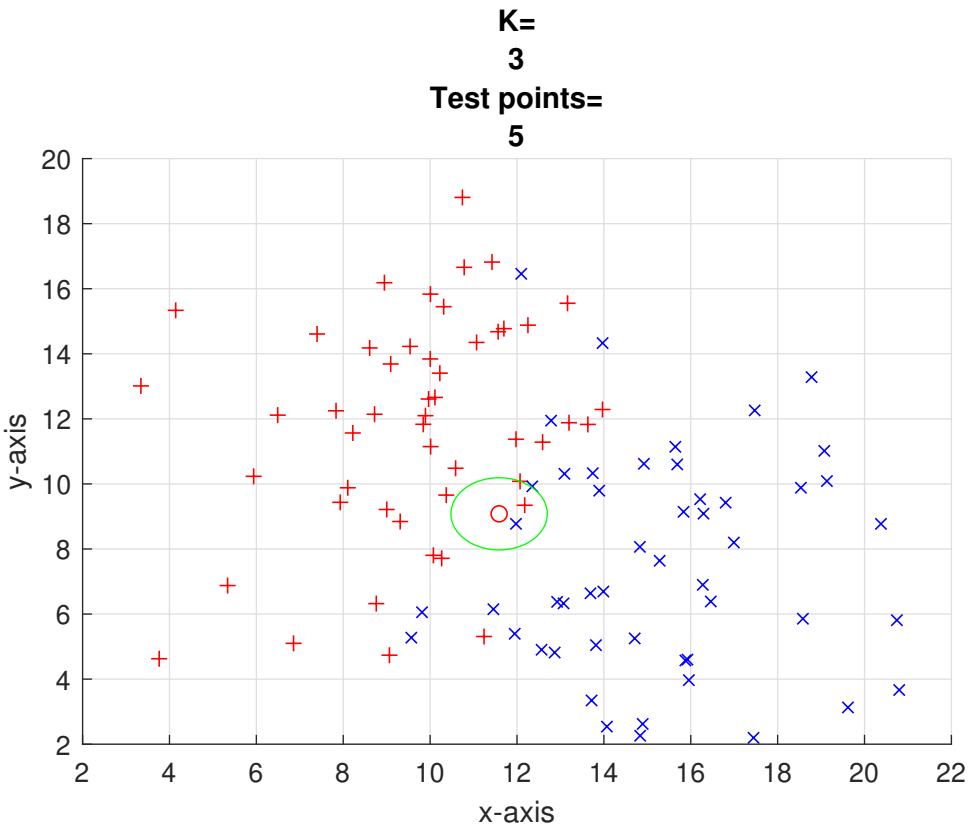
K=
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Test points=
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y-axis
x-axis
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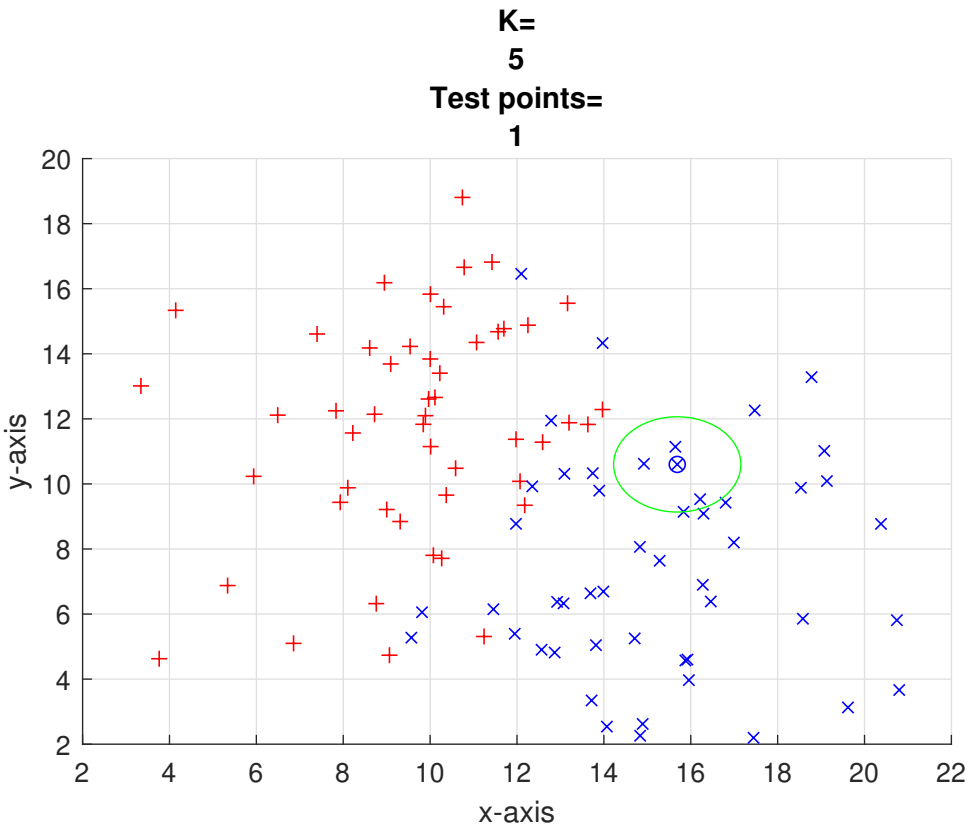
K=
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Test points=
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y-axis
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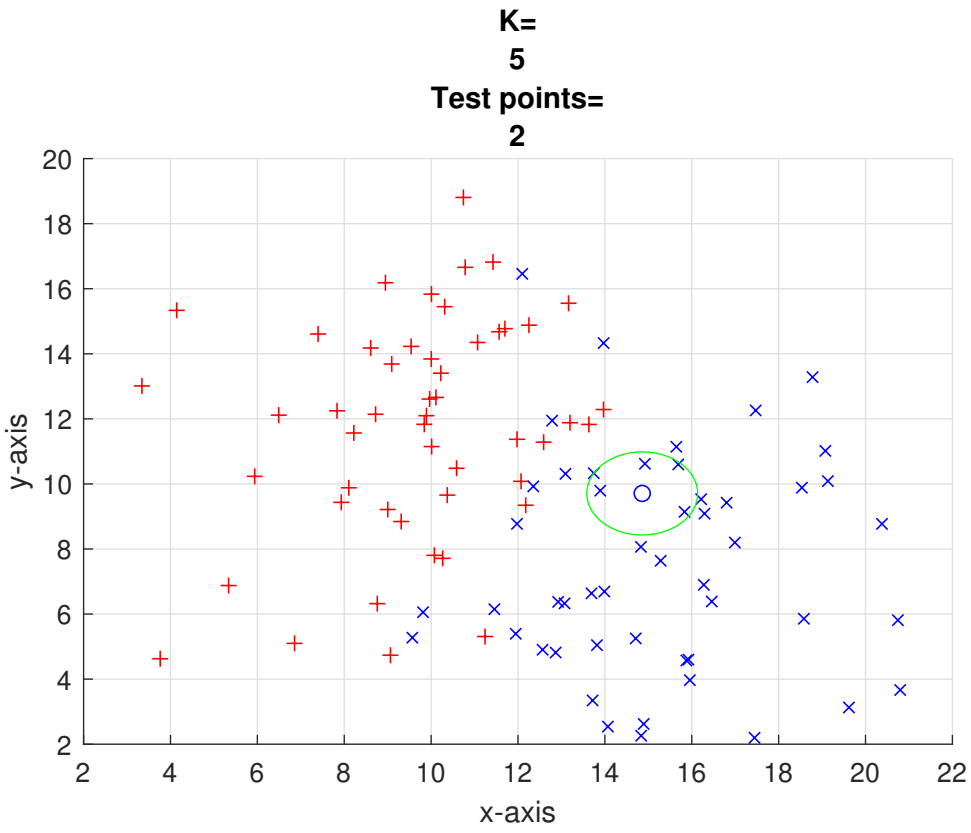
K=
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Test points=
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y-axis
x-axis
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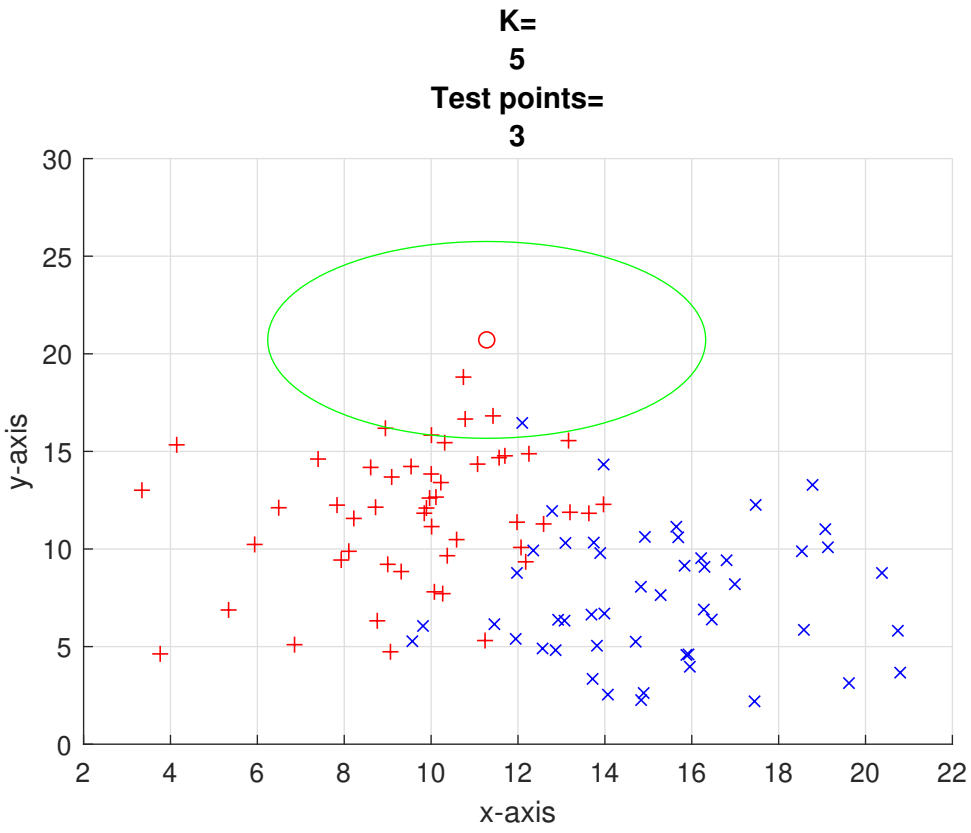
K=
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Test points=
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y-axis
x-axis
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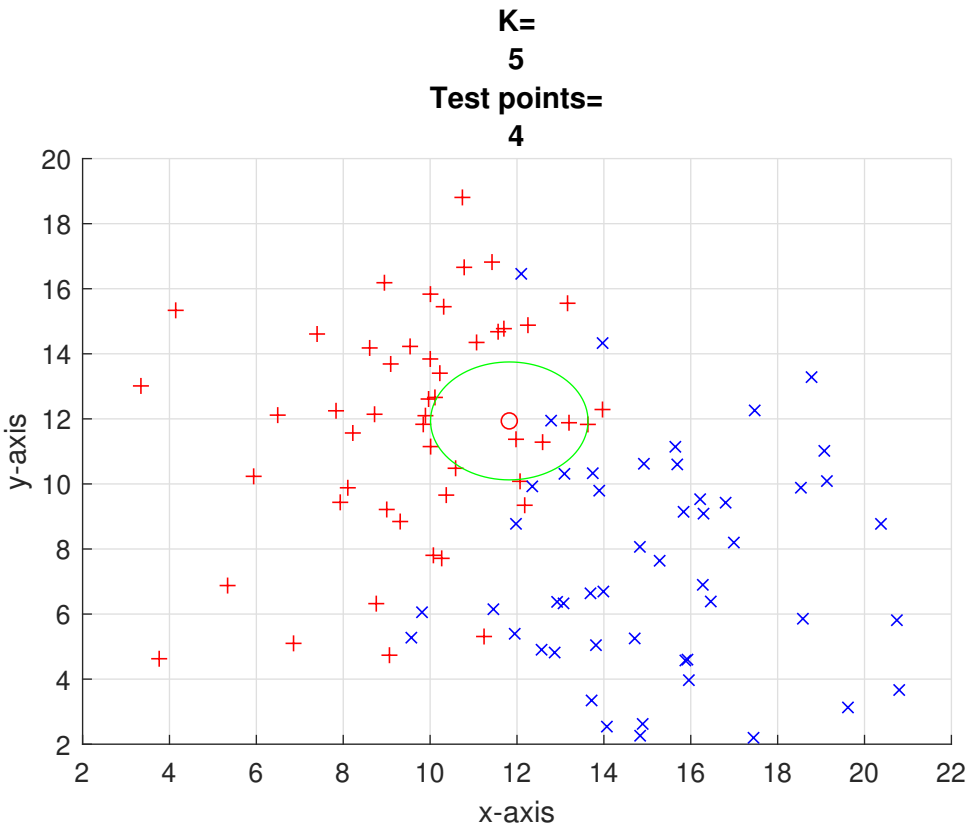
K=
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Test points=
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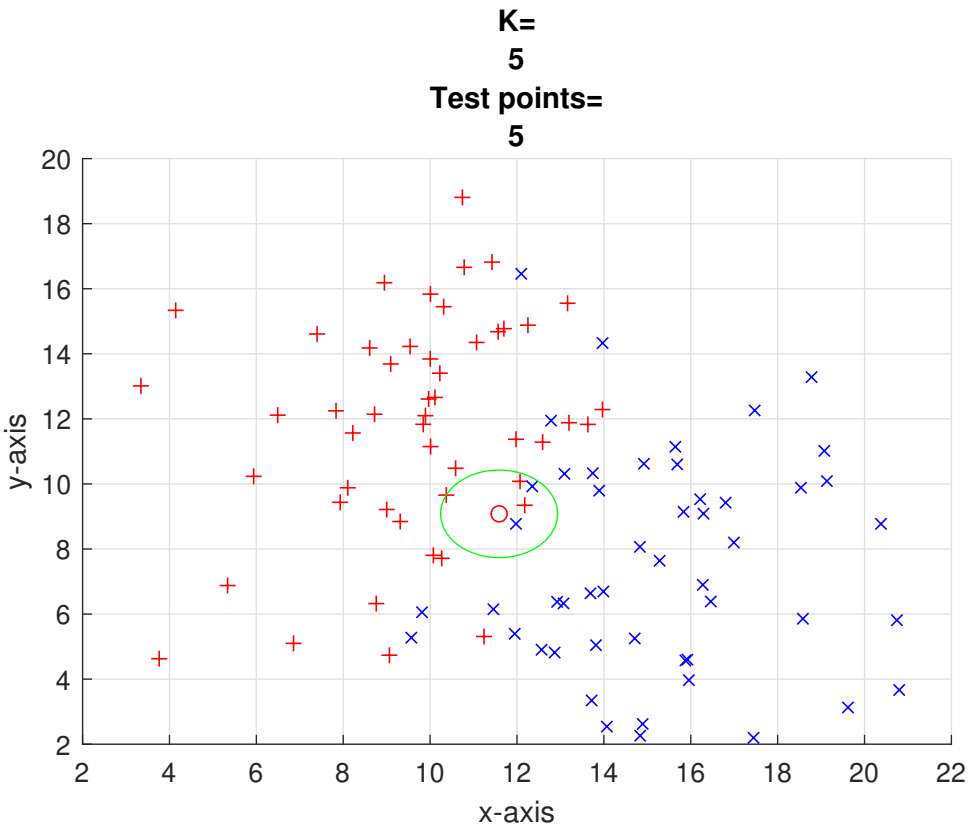
K=
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Test points=
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y-axis
x-axis
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