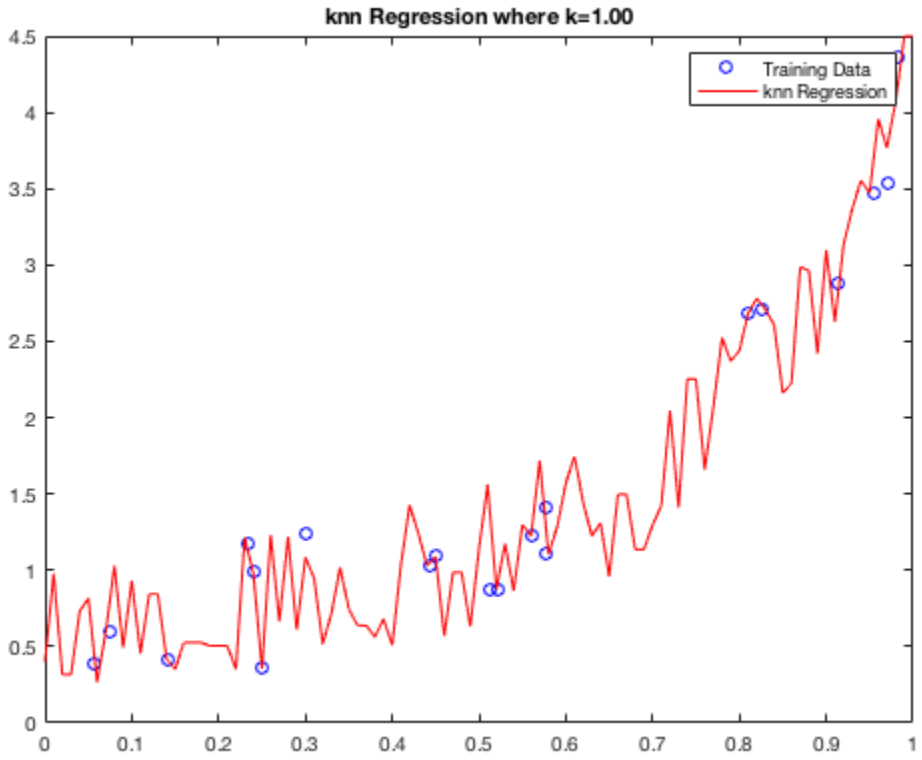
Set up Data

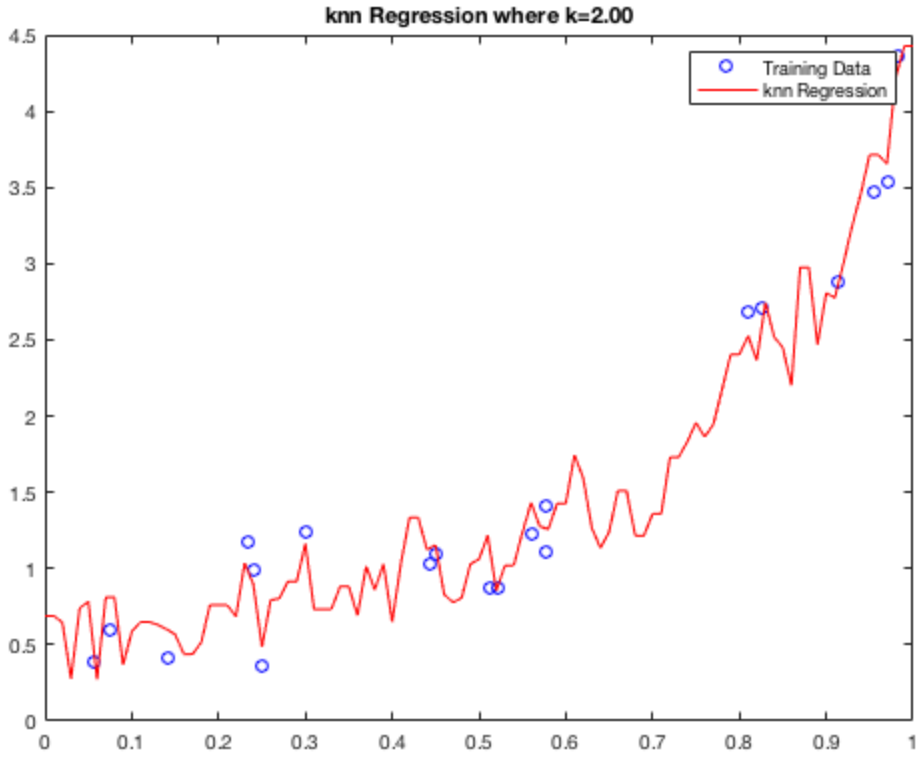
```
clear
mTrain=load('data/mTrainData.txt');
mTest = load('data/mTestData.txt');

Xte=mTest(:,1); Yte=mTest (:,2);
```

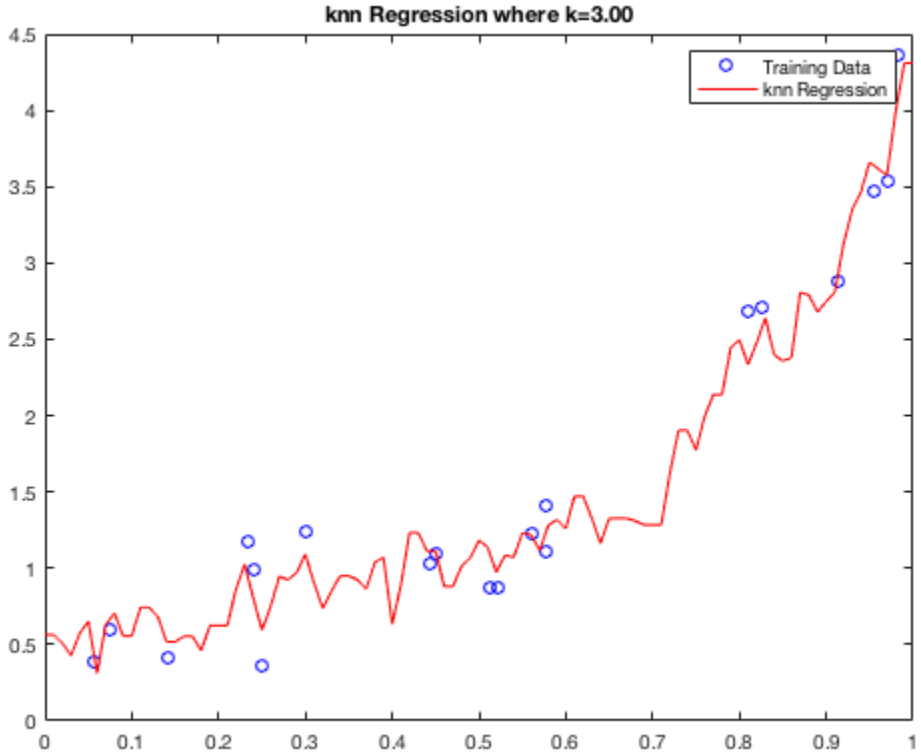
b)

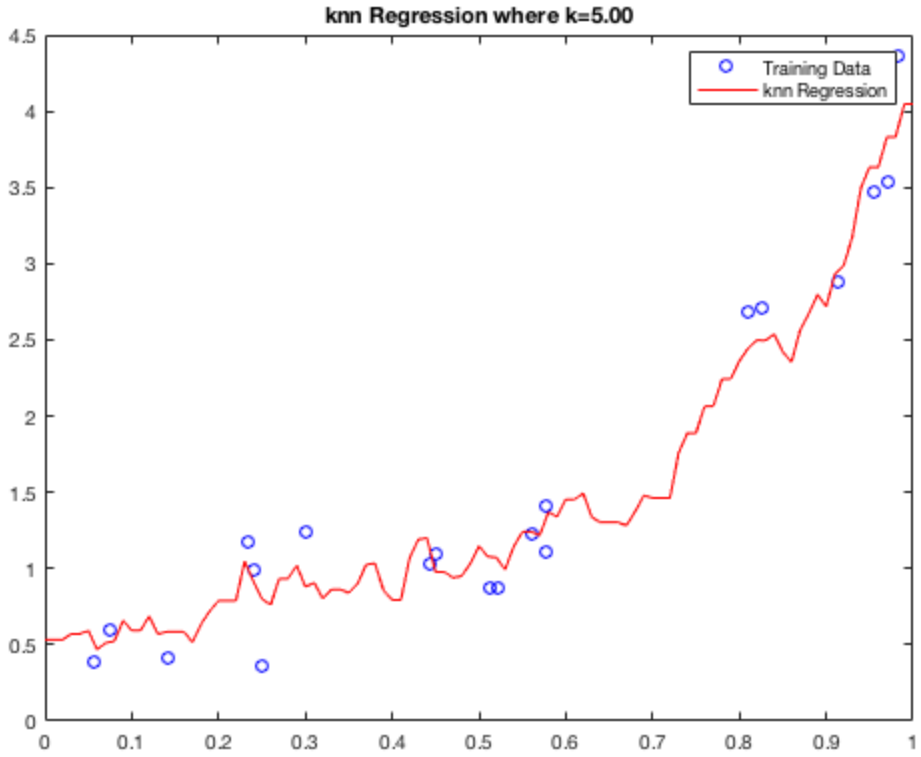
```
for k=[1 2 3 5 10 50]
    figure
    Xtr=mTrain(:,1); Ytr=mTrain (:,2);
    plot(Xtr(1:20),Ytr(1:20),'bo');
    hold on
    title(sprintf('knn Regression where k=%.2f', k));

    learner = knnRegress(k,Xtr,Ytr);
    xline = [0:.01:1]';
    yline = predict( learner , xline);
    plot(xline, yline, 'r-');
    legend('Training Data','knn Regression');
end
```

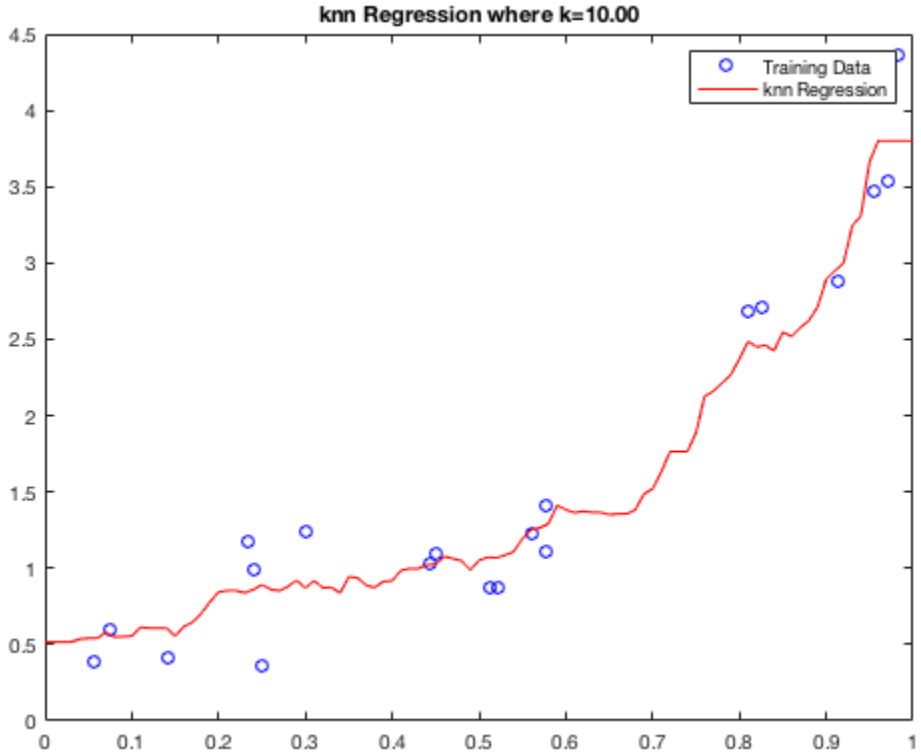
Lower k values produce more complex functions

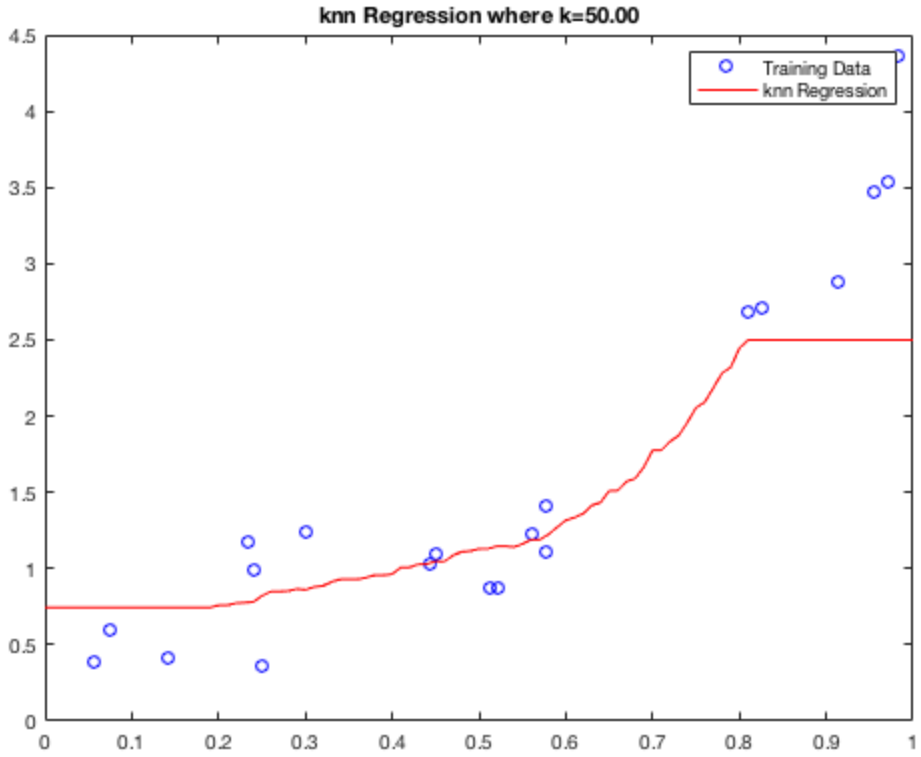



knn Regression where k=2.00
Training Data
knn Regression
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1


knn Regression where k=3.00
Training Data
knn Regression
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1


knn Regression where k=5.00
Training Data
knn Regression
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1


knn Regression where k=10.00
Training Data
knn Regression
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1



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