調整參數 & 評估結果

```python
from sklearn.model_selection import cross_val_score

neighbors = [x for x in range(1,50) if x%2!=0]

cv_scores = []


for k in neighbors:
    knn = KNeighborsClassifier(n_neighbors=k)
    scores = cross_val_score(knn, X_train, y_train, cv=10, scoring='accuracy')
    cv_scores.append(scores.mean())

# changing to misclassification error
MSE = [1 - x for x in cv_scores]
```
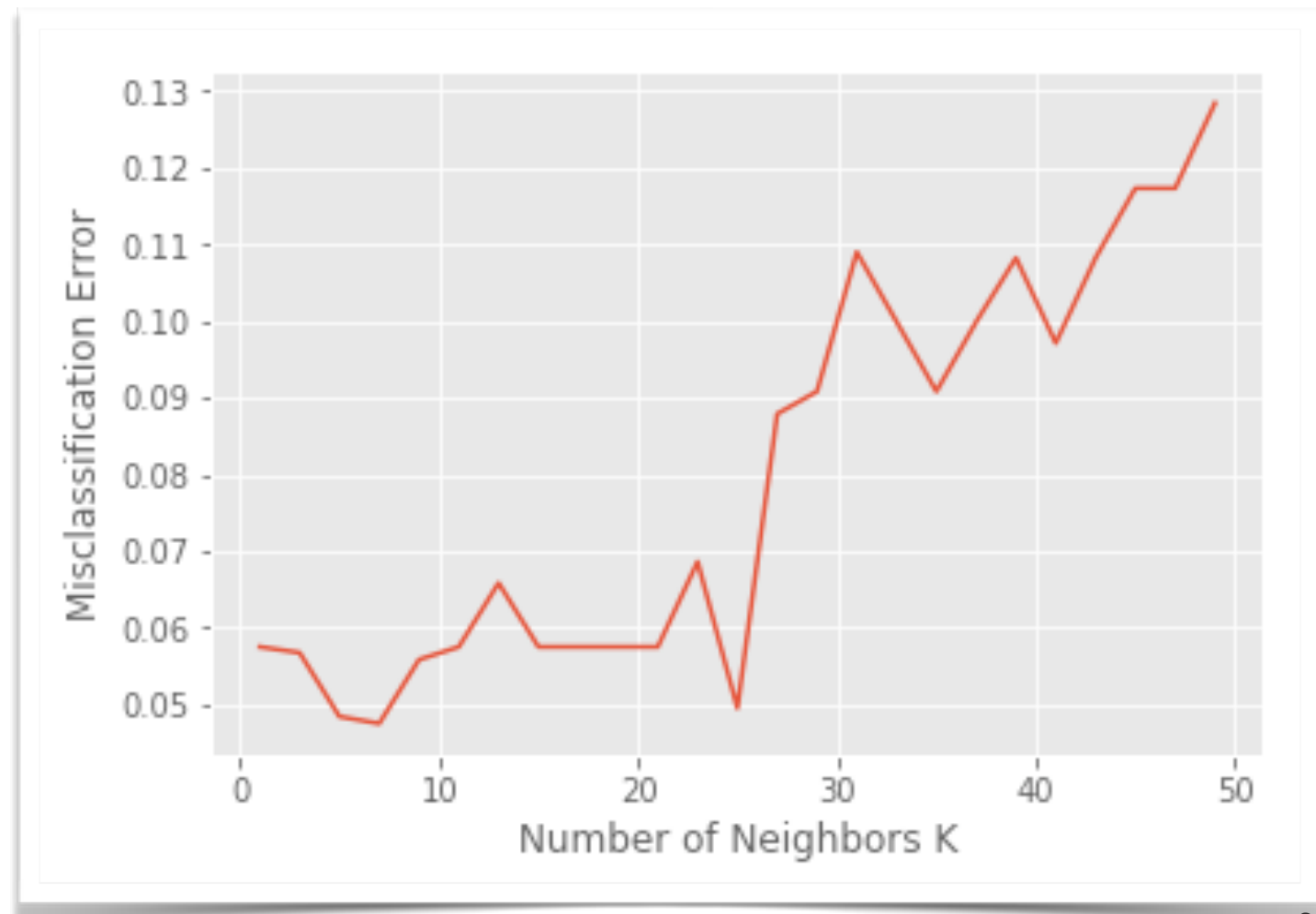
```python
# determining best k
optimal_k = neighbors[MSE.index(min(MSE))]
print("The optimal number of neighbors is %d" % optimal_k)
```

調整參數 & 評估結果

```python
# plot misclassification error vs k
plt.plot(neighbors, MSE)
plt.xlabel('Number of Neighbors K')
plt.ylabel('Misclassification Error')
plt.show()
```

The optimal number of neighbors is 7