## Assignment 3-2: Regularized Logistic Regression

### Problem Description

Suppose you are the product manager of the factory and you have the test results for some microchips on two different tests.

1. From these two tests, you would like to determine whether the microchips should be accepted or rejected.
2. To help you make the decision, you have a dataset of test results on past microchips, from which you can build a logistic regression model.

### **Dataset Introduction**

File Assignment3data2.txt is the dataset. The first and second columns represent two different test results for the chip, and the third column represents whether the chip has passed quality assurance.

### **Requirements**

1. Visualize dataset.
2. Implement regularized logistic regression cost function and gradient.
3. Draw decision boundaries.
4. Calculate the accuracy of a regularized logistic regression model on the training set.
5. How many and which parameters can be adjusted? State the values for results obtained in a~d.
6. Choose at least one parameter to explore how its value affects the performance and try to optimize it.