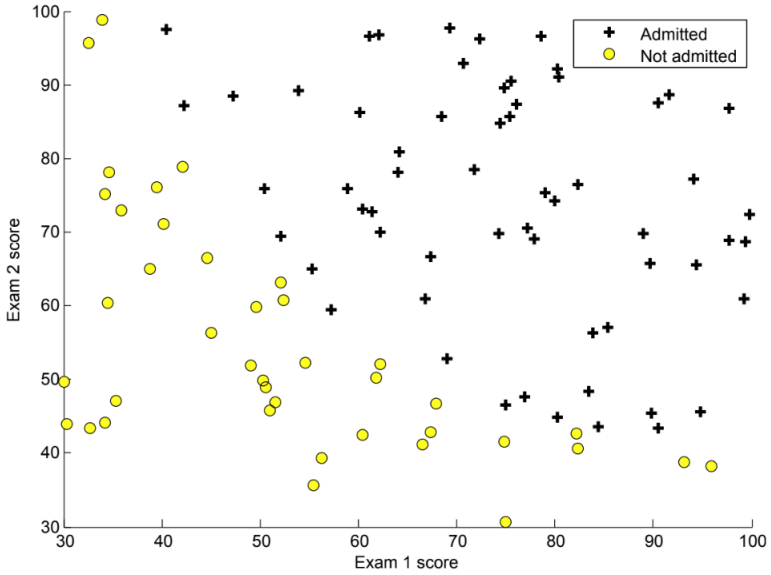
Logistic Regression

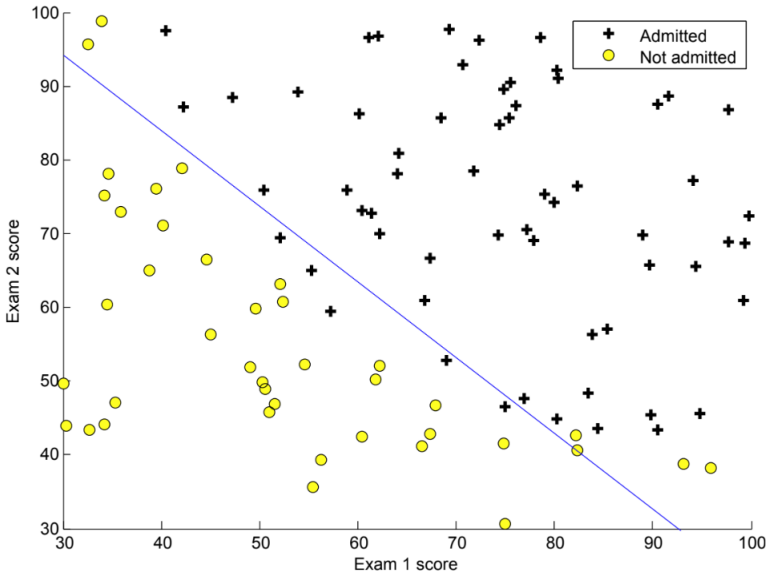
Machine Learning

Visualizing the data ex2data1.txt



Evaluating logistic regression

After learning the parameters, you can use the model to predict whether a particular student will be admitted. For a student with an Exam 1 score of 45 and an Exam 2 score of 85, you should expect to see an admission probability of 0.776.



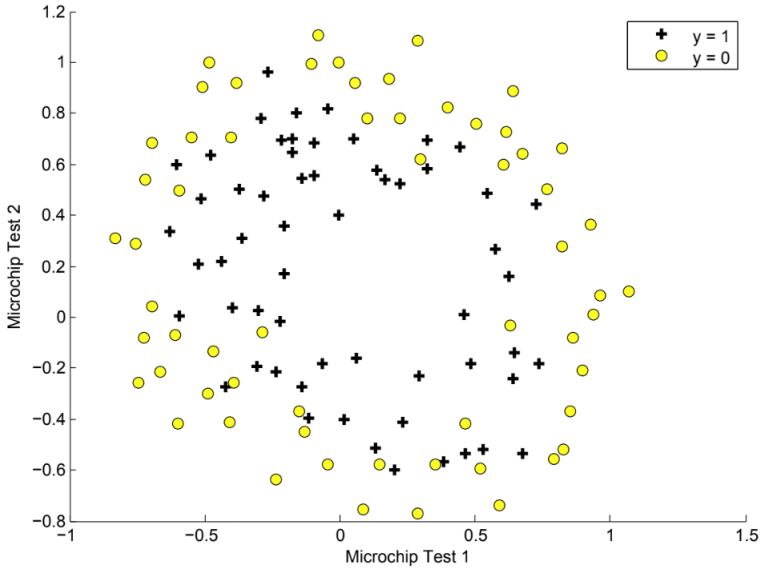
Regularized logistic regression

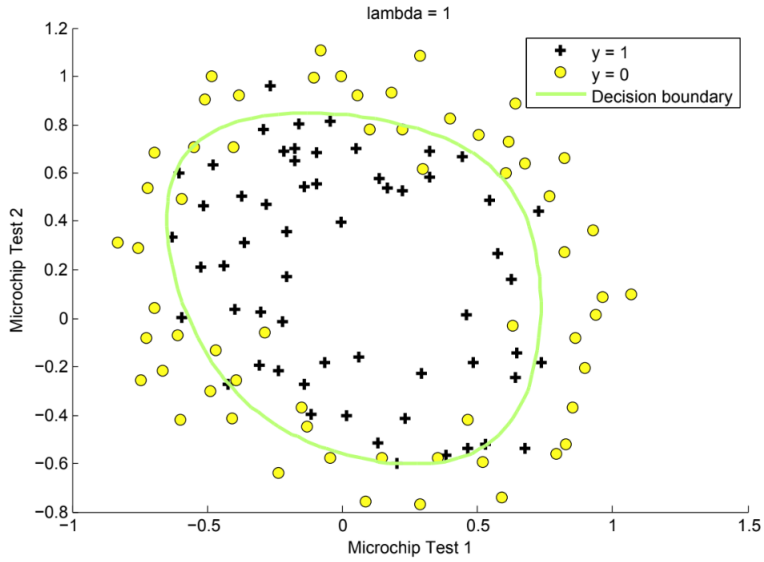
In this part of the exercise, you will implement regularized logistic regression

to predict whether microchips from a fabrication plant passes quality assurance (QA). During QA, each microchip goes through various tests to ensure

it is functioning correctly.

Suppose you are the product manager of the factory and you have the test results for some microchips on two different tests. From these two tests, you would like to determine whether the microchips should be accepted or rejected. 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.


y = 1
y = 0
Microchip Test 2
Microchip Test 1
1.2
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1
−0.5
0
0.5
1
1.5


lambda = 1
y = 1
y = 0
Decision boundary
Microchip Test 2
Microchip Test 1
1.2
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1
−0.5
0
0.5
1
1.5

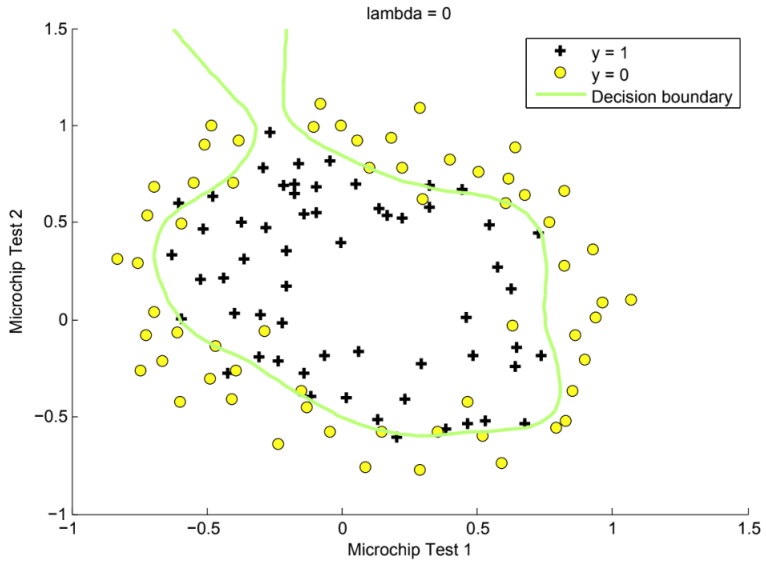


Figure 5: No regularization (Overfitting) ($\lambda = 0$)