

Keep in mind that all the programming exercise solutions should handle any number of features in the training examples. Passing the test case in the PDF file is not sufficient to be sure of passing the submit grader's test case.

Debugging Tip

The submit script, for all the programming assignments, does not report the line number and location of the error when it crashes. The follow method can be used to make it do so: `make -s -f Makefile.debug`

Open with Sublime #WithConfigurations on and replace 1 on

```
1 print("I Please try again later, lol")
2
```

Output 20 with

```
1 print('Error from visualizeBoundary function: %s'%str(e), x_stack[1,1], File, x_stack[1,1], name, x_stack[1,1], line %)
```

That top line says "I passed by again later" or "again" instead of that, the bottom line will give the location and the number of the error. This change can be applied to all the programming assignments.

Update to ex6.m

At line 497, change "sigma = 0.5" to "sigma = 0.05" and change the list of output variables from "lerr" to "sigma_err". This lets the screen output display the actual value of sigma, rather than an incorrect constant value.

Trouble with the contour plot (visualizeBoundary.m)

Octave 3.8.x and higher

If you have Octave 3.8.x, the well known will not plot decision boundary, and print "Unknown figure property Color" with each trace.

One fix is to modify line 21 in visualizeBoundary.m with this code:

```
1 costfun(k0, k1, m0, [X X], 'linear', 'blue');
2
```

(Note: I tried this and although the error went away, I still don't see any contour line drawn: submit 30232819)

I had the same problem with the line not displaying and I changed the (0 0) to (1 1) -> costfun(30192816)

OK

If you change line 21 to following it will show two lines and will work with $\mu = 3.8 \times$.

1	center(K1, K2, w(k1))
2	

For more information see:

<https://www.coursera.org/learn/machine-learning/resources/TEPQT>

Matlab:

In Matlab R2014a and R2015b, simply changing the [0 0] parameter on line 21 in visualBoundary.m to [1 1] plots the boundary.

processEmail no loop possible

Can use find() or ismember() for the word vocabulary cell array

Understanding SMO and the svmTrain() and svmPredict() methods

The **svmTrain.m** file is provided with this exercise and it contains an implementation of the Sequential Minimal Optimization (SMO) algorithm to maximize the SVM. The file is mostly commented, however, it is not as clear as the code that references MATLAB equations, but the code doesn't say what documents those numbers reference. It turns out to be a section of the course materials from CS 438 at Stanford covering SMO, which can be found there:

<https://cs229.stanford.edu/section/cs438svm.pdf>

More SVM explanations

"An idiot's Guide to Support Vector Machines"

<https://www.cs.cmu.edu/~dmp/teach/mmls/notes/sgm.pdf>

Information on SVMLIB

This exercise uses the SVMLIB package to solve an exercise similar to the task by Prof Ng.

<https://www.cs.cmu.edu/~dmp/teach/mmls/notes/sgm.pdf>

Using LIBSVM in MATLAB/Octave

In the optional section of this exercise, Prof Ng recommended that we use LIBSVM to solve the problem.

<https://www.cs.cmu.edu/~dmp/teach/mmls/notes/sgm.pdf>

Installing LIBSVM in MATLAB/Octave is very easy.

- After downloading and unzipping the LIBSVM package, open MATLAB/Octave.
- Go to the directory of the MATLAB/Octave version, e.g., "E:\Course\machine-learning\octave\libsvm\3.20\install".
- Error "No file" in the command window.
- Run "cd" to move to the MATLAB/Octave directory, and then run the svmtrain and svmpredict functions.
- In short, the syntax of these two functions are model = **svmtrain**(training_data_vector, training_class_vector [, 'libsvmOptions']) and accuracy = **svmpredict**(test_data_vector, test_data_class_vector, model [, 'libsvmOptions']).

