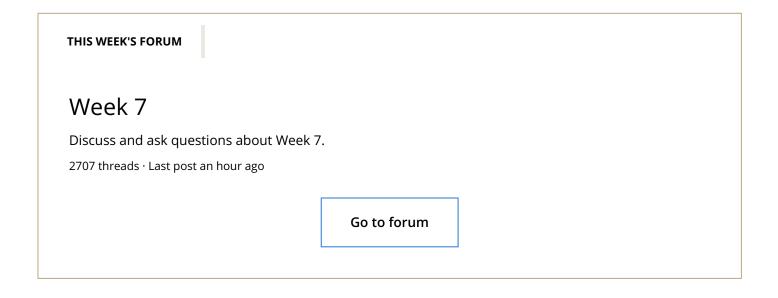
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ex5 test case linearRegCostFunction

Tom Mosher Mentor Assignment: Regularized Linear Regression and Bias/Variance \cdot 3 years ago \cdot Edited

Here is a test case for linearRegCostFunction().

```
X = [[1 \ 1 \ 1]' \ magic(3)];
    y = [7 6 5]';
 2
    theta = [0.1 0.2 0.3 0.4]
 3
    [J g] = linearRegCostFunction(X, y, theta, ?)
 5
 6 %--- results based on value entered for ? (lambda)
 7
   lambda = 0 \quad l \quad lambda = 7
 8
 9
10 J = 1.3533 | J = 1.6917
11 g = I g =
     -1.4000 | -1.4000
-8.7333 | -8.2667
-4.3333 | -3.6333
-7.9333 | -7.0000
12
13
14
15
```

Here is a test case with just one training example in X.

· helps with debugging problems in learningCurve()

```
X = [1 \ 2 \ 3 \ 4];
 y = 5;
 3 theta = [0.1 \ 0.2 \ 0.3 \ 0.4]';
   [J g] = linearRegCostFunction(X, y, theta, 7)
 5
 6 % results
 7
    J = 3.0150
 8
   g =
 9
     -2.0000
10
    -2.6000
      -3.9000
11
      -5.2000
12
13
14
```

=======

keywords: ex5 test case linearregcostfunction

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David Gill · 2 years ago · Edited

This may be helpful to others as it's a convenient way to to test via octave unit test. Here's the unit test version of the test case (just run with "test linearRegCostFunction"). Add to very bottom of code after end in file:

```
1 %!test
2 %! X = [[1 1 1]' magic(3)
3 \%! y = [765]';
   %! theta = [0.1 0.2 0.3 0.4]';
5 \%! \ lambda = 0
6 %! [J0 g0] = linearRegCostFunction(X, y, theta, lambda);
7 %! [J7 g7] = linearRegCostFunction(X, y, theta, 7);
8 %! Jexpected_lambda0 = 1.3533;
9 %! Gexpected_lambda0 = [-1.4000; -8.7333; -4.3333; -7.9333;];
10 %! Jexpected_lambda7 = 1.6917;
11 %! Gexpected_lambda7 = [-1.4000; -8.2667; -3.6333; -7.0000;];
12 %! assert(J0, Jexpected_lambda0, .0001);
13 %! assert(g0, Gexpected_lambda0, .0001);
14 %! assert(J7, Jexpected_lambda7, .0001);
15 %! assert(g7, Gexpected_lambda7, .0001);
16
```



Li Lei · 2 years ago

Thanks a lot!!

An error come up when I submit: "Submission failed: unexpected error: A(I) = X: X must have the same size as I." And the most interesting part is that it passed ex5.

And this test help me find the root cause!

Thanks again!

EZ E. Kevin Zembower · 2 years ago

I've been working on the Ex 5 regularize gradient for the last two hours, but still can't get the right answer for the test case:

```
1 > X = [[1 1 1]' magic(3)];

2 y = [7 6 5]';

3 theta = [0.1 0.2 0.3 0.4]';

4 [J g] = linearRegCostFunction(X, y, theta, 7)

5 >> J = 1.6917

6 g =

7 -9.8000

8 -60.6667

9 -29.6333

10 -54.6000

11 >
```

As you can see, the Cost is correct, but the gradient is wildly wrong.

In words, this is what I do to calculate the regularized gradient: