Linear Regression Assignment (Week 3)

Total points 100/100

Greetings from Consulting and Analytics Club, IIT Guwahati.

We hope you had a great learning experience until now. Reaching till Week 3 Assignment is no small feat!
This is your graded assignment/mini project for Week 3.

Here you will apply the algorithms you have learned in week 3 in Python.

You need to write the code in the jupyter notebook. This quiz will thoroughly check your understanding of the Week 3 concepts.

This assignment will check your concepts of Linear Regression, Cost Function, Gradient Descent.

For The Jupyter Notebook refer to the drive link :

https://drive.google.com/drive/folders/1Ivig2bJuvINZiYfWxUmCc3315TUeLn1Q?usp=sharing

Instructions:
1) Go to the Drive link and download 2 files in the same folder(exercise1.ipnyb and ex1data1.txt)
2) Complete the jupyter notebook
3) You do not have to submit any code.
4) After completion of the notebook you can answer the quiz questions

General Guidelines:
1) All questions are compulsory and thus should be attempted.
2) Each Question has weightage and will contribute in the final grading of the course.
3) Please attempt this if you have completed all the 5 days of Week 3.
4) Violation of the honor code will lead to harsh actions being taken.

Note: Some questions may require studying certain topics from the web , no support material will be provided for the same, it is up to the participants to study it on their own.

Warmup Question

10 of 10 points

✓ numpy.eye(n) creates an n*n unit matrix. * 10/10

- (●) True ✓
- ( ) False

Compute Cost.

40 of 40 points

In the exercise 1 notebook, get the data ready and plot it. Then complete the code for computeCost(X, y, theta) function.

✓ Compute the cost with theta = [0, 0]. * 20/20

- (●) Between 30 and 33. ✓
- ( ) Between 22 and 25.
- ( ) Between 17 and 21.
- ( ) Between 43 and 46.
- ( ) Other: _____

✓ Compute Cost With theta = [-1, 2] * 20/20

- ( ) Between 78 and 81.
- ( ) Between 64 and 67.
- (•) Between 52 and 55. ✓
- ( ) Between 47 and 50.
- ( ) Other: _____

Gradient Descent

50 of 50 points

Following the steps in the notebook, complete the function for calculating gradientDescent.

✓ With alpha=0.01,iterations=1500 and initial theta=[0,0], calculate the theta after gradient descent. * 20/20

- ( ) [-3.8781, 1.1913]
- (•) [-3.6303, 1.1664] ✓
- ( ) [-1.5810, 0.9605]
- ( ) [-0.5761, 0.8595]
- ( ) Other: _____

✓ Using the above theta, after gradient descent calculate profit for sizes 35000 and 70000. * 30/30

- (●) 4519.77 and 45342.45. ✓
- ( ) 7519.77 and 35342.45.
- ( ) 3519.77 and 55342.45.
- ( ) 11519.77 and 35342.45.
- ( ) Other: _____

Before Submitting

The next page will lead you to accept the honor code and submit the User ID and Password. Make sure you have these ready.

THE USER ID AND PASSWORD FOR ALL QUIZZES/ASSIGNMENTS IS SAME THROUGHOUT COURSE

Kindly enter correct User ID and Password or else your score will not be taken into account.

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