COEN 140L Lab 4 Intro

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matplotlib package: visualization in python

- **Install matplotlib package(if you have not installed in your python environment)**
  - `pip install -U matplotlib` Or `conda install matplotlib`
- **Example :**

```
import matplotlib.pyplot as plt
fig, ax = plt.subplots()
ax.plot(x, y,'r-',label="Error Function",linewidth=2)
plt.xlabel('Iteration Number')
plt.ylabel('label_name',color="blue")
plt.grid(True)
plt.show()
```

Linear regression with gradient descent

For k in max iteration:

    # update gradient
    # update weight
    # update prediction
    # check stopping criterion, if true, jump out, or do next iteration

You could get some idea from lecture notes page 8 and the example gradient_descent_parabola.py code.

Lab Tasks

- **Need demo** for week 4 assignment(10% points).
- Submit to Camino a pdf report with answers(60% points), the report contains some **results** which required by lab document, you also need to add some **observations** for the questions.
- Submit all the source code needed to generate these answers to Camino(30% points).