Homework 1
Linear Regression

Goal

- Given dataset and label
- Use linear regression to predict $\hat{y}$
- Calculate Error Rate
- Explain the graph

Hint

- Browser: Chrome
- Preprocess dataset and label
  - tf.constant
  - Head 90% for training set
  - Tail 10% for testing set
- Add bias
- Matrix matmul
  - tf.matmul
  - Implement Weight
- Calculate error rate
  - average of ($y - \hat{y}$)/y

```python
###### Implement Data Preprocess here ######
housing = fetch_california_housing()
print("Shape of dataset:", housing.data.shape)
print("Shape of label:", housing.target.shape)



###### Implement Data Preprocess here ######


###### Start TF session ######
with tf.Session() as sess:




    show_graph(tf.get_default_graph().as_graph_def())
###### Start TF session ######
```

Rule

- Upload to ilms: 40%
  - "屍體" is okay
- Error rate correct: 30%
- Explain graph: 30%
- Bonus: Use data preprocessing improve error rate: 20%
  - Normalized?
  - Standardized?
  - Any skill is allowed

Rule

- Deadline: 10/20 23:59
- Naming: Team01_HW1.ipynb
- Add comment on your code
- Copy will get 0 point
- Delay will get 0 point

Latex submit

- Naming: Team01_Ch2.2.zip

- Include Ch2.2.tex + FIG + main.tex + dfn.tex

- Click "Download as zip"

- Context include

  - Summary texts: don't just copy the original texts. Please rewrite and summarize.

  - Equations: all equations need to be included. Detailed derivations are welcome.

  - Figures: all figures need to be included.

  - Tables: all tables need to be included.