Homework 5: Project Design

**Team No.1**

Members: Shaohang Hao, Weikun Hu, Ji Peng and Ruiyu Zeng

1. (1 pt) Create your project repository and initial README.md file.

Please see the repository;

1. (3 pt) Create a first draft of your project functional specification. See the [project pages](http://uwseds.github.io/projects.html) for details of the contents of the functional specification. You should have details for at least one use case.

Users: All investors in stock market;

Users hope to receive the prediction of stock price in the following days;

Use Case: Users will provide the top news headlines to the system. After the analysis, the system will come out with a prediction of Dow Jones Industrial Average, which shows whether it will increase or decrease.

1. (3 pt) Create a first draft of your project component specification. See the [project pages](http://uwseds.github.io/projects.html) for details of the contents of the component specification. You should describe at least 3 components.

The system will use Natural Language ToolKit and Scikit-Learn to manage the dataset.Those two will help transfer the dataset into useable vectors.

Matplot and Word Cloud will be our visualization manager. They can provide the 2D distribution and the size of each words indicate their frequency and importance.

As for the machine learning part, Scikit-Learn will help us build the function for machine learning module. And the Keras library will allow us to run it in the neural network system.

The system will do a stock price prediction job；

The inputs will be the daily top 25 news headlines;

The outputs will be a visualization of stock price trend show whether its increasing or decreasing;

With those input, the system will start analysis and provide a prediction on the following day stock price with “0” or “1” to represent its trending.

Preliminary plan. A list of tasks in priority order.

We have a 5 step plan.

1. Data processing;
2. Data Visualization;
3. Module Training;
4. Module Evaluation;
5. Deliverable Python Module;

We will accomplish the rest 3 steps in the following three weeks.

**Provide the TA with the URL of your project repository.**

<https://github.com/pjosh730/Stock-Market-Prediction-with-News>