**Literature Review**

A baseline is a method that uses heuristics, simple summary statistics, randomness, or machine learning to create predictions for a dataset. We can use these predictions to measure the baseline's performance (e.g., accuracy)-- this metric will then become what you compare any other machine learning algorithm against. In more detail: A machine learning algorithm tries to learn a function that models the relationship between the input (feature) data and the target variable (or label). When you test it, you will typically measure performance in one way or another. For example, your algorithm may be 75% accurate. But what does this mean? You can infer this meaning by comparing with a baseline's performance. [1]

It is OK if your baseline is a poor result. It may indicate a particular difficulty with the problem or it may mean that your algorithms have a lot of room for improvement.

It does matter if you cannot get an accuracy better than your baseline. It suggests that the problem may be difficult. You may need to collect more or different data from which to model. You may need to look into using different and perhaps more powerful machine learning algorithms or algorithm configurations. Ultimately, after rounds of these types of changes, you may have a problem that is resistant to prediction and may need to be re-framed.[2]

**Implementation**

A Baseline is implemented to compare the result to the network output. The solution to implement it in this case of our group task is calculate the average of the column of Sale and put this average value into all the list of the column of Sale of “X\_train.csv” data file. Then use this data file to calculate the RMSE and compare with the network output RMSE to evaluate the network performance.

**Reference**

[1] Lathia, N. (2016). What does 'baseline' mean in machine learning? - Quora. [online] Quora.com. Available at: https://www.quora.com/What-does-baseline-mean-in-machine-learning [Accessed 14 Jan. 2019].

[2] Brownlee, J. (2014). *How To Get Baseline Results And Why They Matter*. [online] Machine Learning Mastery. Available at: https://machinelearningmastery.com/how-to-get-baseline-results-and-why-they-matter/ [Accessed 14 Jan. 2019].