Table of Content

1. Business Background (What has happened before, why need to develop this model…)
2. Objective (Develop a model to answer what business question)
3. Data
   1. Data Source
   2. Feature Included
   3. Data Cleaning ( how to handle missing value, is their outlier,…)
   4. Feature Engineering (any transformation, binning to category data…)
   5. Dimension Reduction(should we apply dimension reduction in this data or not? )
   6. Variable Selection(use LASSO or Stepwise or correlation,other variable selection? )
   7. Regularization(does the model need to be regularized)

/\*---Note: bullet point e. f. g. may need to mingle with section 4 and iterate several times.

It does not matter whether you put e. f. g. in section 3 or section 4, and the order does not matter either --\*/

1. Methodology Exploration (what are the candidate ML algorithms, not limited to algorithm taught in class, why do you choose this one, any ensemble technique applied…?)
2. Required Assumption (e.g., the correlation b/w dep and indep var holds, or the data is still stationary in production, or the data remain same pattern in production,…)
3. Model Equation (write out the model equation)
4. In-Sample Validation and Performance Metric(what performance metric do you use, how does the model perform in train and test (in-sample validation) data ?)
5. Monitoring and Maintenance Plan (after launch this model, how will you monitor and maintain this model, this section is highly related to section 5, e.g., check the data/feature stability across time)
6. Appendix: any table, figure, or reference article, you can put them here, and you can specify a link/location path for your source code and code runbook