1. Group Members:
   1. Zachary Merritt
   2. Paul Sarduy
2. Duties:
   1. Zach: Supervised learning models (Regression, CART, ETC), Date Formatting, Version Control, Creating Intelligent Features
   2. Paul: Unsupervised learning (Clustering, Markov Chain Clickstream Analysis, ETC), Writing this report, Creating Intelligent Features
3. Group Accomplishments and Meetings:
   1. Our group has:
      1. Created a game plan to successfully accomplish goals.
      2. Successfully loaded the data and prepared it for analysis in R.
      3. Explored the data visually with Tableau and R to get an understanding of what we are doing.
      4. Created rudimentary models to explore the data (including regression, decision trees, clickstream, etc)
      5. Began looking at ways to further improve the models and possible engineer new features.
   2. Meetings:
      1. Since our group is only two people and we have every single class together, we have plenty of time to talk about how our duties are going. We have had several brainstorming and productive meetings in and outside of school.
4. Our methods:
   1. Clustering
      1. Both basket and k-means were attempted where applicable
   2. PCA
   3. Markov-Chain Clickstream Analysis
      1. Traditionally used for website data. This process uses first, second or higher order Markov Chains to model the flows from one code to another. We are trying to use this to find associations and common paths between the codes. Preliminary results are encouraging but need work.
   4. Regression
      1. OLS – Simple linear regression
      2. LASSO
   5. Decision Trees
      1. CART / XGBoost
5. Difficulties
   1. Most difficult thing is trying to understand the variables as something other than just numbers or codes. We are flying blind here, relying on only knowledge of statistics and math to get us through.
6. Future Plan
   1. Engineer features that might help prediction capabilities. Apply results to the goals listed in the problem statement. Optimize model and code.