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Lessons Learned Report

The problem of an increased customer default rate needs to be addressed to prevent revenue and customer loss to the clients Credit One serves. If the issue persists, Credit One will eventually lose business. One way to ensure that customers can pay their loans is by limiting the max balance amount of credit they are eligible to receive. Using the data given, we can view the distribution of limit balances belonging to customers that have no default on their record. When training the data using machine learning and employing the random forest classifier, the accuracy score is 81 percent. It makes sense that if customers have less to pay off, they are more likely to stay in good standing and not default. The accuracy score tells us that you can predict, with relatively high certainty, if a customer will default or not. When analyzing a correlation heat map of the data, the strongest correlation to default variable is the limit balance and the second strongest is the variable for the first payment amount. When looking at the limit balance with default, we can tell that the customers with a higher credit limit tend to default more that those with a lower credit limit. The average limit amount for customers who default is around 180,000. That average is about 50,000 more than the customers who are not defaulting. Another analysis observation that is very consistent is relation between customer repayment status'. For instance, when plotting the data for repayment status in the month of May vs the month of June, you can see that customers historically repeat their repayment habits. If a customer pays 8 months late in May, they historically will pay June 8 months later. The repayment status looks like it could point to some concrete facts about customers, but it is not the late payers who make up most defaulting customers. By and large, customers who utilize revolving credit are the ones defaulting on their loans every month based on the data. To uncover more information, we will use proven machine learning methods to examine this occurrence.

The big lessons from this analysis are that defaulting customers borrow more than ones that are in non-default and that the payment status of defaulting customers is overwhelmingly labeled as revolving credit. Some business recommendations to lower the default rate are to limit the balance for the customers using revolving credit by using a more thorough screening process for creditworthiness and establishing a way for them to increase their limit based on good borrowing practices.