**Course 2 Task 3: Customer Identification Report – Michelle Giniewicz**

I built several models using Machine Learning to try to predict whether a CreditOne customer will default on their loan. When building these models, I looked at customer limit balance, marital status, age, sex, education level, and payment history. The most precise model I built is 82% accurate in predicting if a customer will default on their loan. Based on this model, payment history is the main factor in determining whether a customer will default. Using this model, I found that the most important factor is if a customer has a payment delay for 2+ months – those customers will likely default.

Graphical user interface

Description automatically generated with low confidence

Aside from payment history, credit limit balance is another factor in predicting if a customer will default, although it is not nearly as strong of a factor as payment history (as seen in the visual above). When analyzing the sample dataset from CreditOne, we can see that most of the customers who default on their loans have a credit limit between $20K-$50K and those with the lowest level of default have a credit limit of $500K+.

Table

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**How do you ensure that customers can/will pay their loans?**

We cannot 100% ensure that customers can/will pay their loans. However, using Machine Learning we are better able to predict default rates among new customers. As mentioned above, we should look at a customers’ previous payment history as the top predictor of whether they will default on their loans. Customers who have payment delays for 2+ months are much more likely to default, and therefore, I would recommend that they not be approved for loans with CreditOne.

**Can we approve customers with high certainty?**

Yes – by using the Machine Learning model that I built, we can determine with 82% accuracy if a new customer will default on their loans. The current default rate of CreditOne customers is 22%, based on the sample dataset I was provided. By using my Machine Learning model to predict default rate among new customers, I am confident that number will be drastically reduced in the future.