STAT 628 Credit Risk Project: Installment 2 (technical)

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You should submit a 2-page document with your executive summary on page 1, and your reference & contributions on page 2. The executive summary should present your conclusions and be free of technical jargon, figures, graphs, and code. In other words, you should describe and interpret your results and should not describe the process by which you obtained your results. The executive summary should convey the main conclusions of your modeling efforts in language that is accessible to someone who may not have taken STAT 628 before. Your executive summary should • List the factors that drive substantial variation in PRSM. You should not exhaustively list all variables that have a statistically discernible effect. It is possible that a predictor has a statistically discernible effect but not a practically relevant (significant) one. • Introduce a baseline potential borrower by selecting values of each predictor in your final model. Report the predicted PRSM (along with relevant uncertainty intervals) of your baseline borrower. • Describe the main drivers of PRSM and indicate which are associated with greater or lesser credit risk relative to the baseline. • Use conveniently rounded numbers when forming a baseline borrower and highlighting changes relative to that baseline. Similarly, 1 unit changes in some predictors may not be that relevant; consider using more realistic or practically relevant changes. Your executive summary should not be longer than 1 page. Do not adjust the page margins or use an extremely small font size to achieve this.

```
installment2_id01 <- read.csv("installment2_id01.csv")
# TODO: add Bohyoon's mutate here
```

```
# TODO: after deciding the model, print the most easy to understand
# version of it. Table? Just the model?
fullmodel <- lm(PRSM ~ ., data = installment2_id01)
kable(summary(fullmodel)$coefficients, digits = 2)
```

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	-0.34	0.09	-3.62	0.00
FICO	0.00	0.00	11.17	0.00
TotalAmtOwed	0.00	0.00	24.68	0.00
Volume	0.00	0.00	-0.15	0.88
Stress	0.48	0.03	14.93	0.00
Num_Delinquent	0.02	0.01	1.65	0.10

	Estimate	Std. Error	t value	Pr(>|t|)
Num_CreditLines	0.00	0.00	-0.54	0.59
WomanOwned	0.28	0.01	41.03	0.00
CorpStructureLLC	0.23	0.01	26.34	0.00
CorpStructurePartner	0.15	0.01	16.52	0.00
CorpStructureSole	-0.03	0.01	-3.00	0.00
NAICS	0.00	0.00	-0.77	0.44
Months	0.00	0.00	3.54	0.00

```
stepmodel <- step(fullmodel, trace = 0)
kable(summary(stepmodel)$coefficients, digits = 2)
```

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	-0.35	0.09	-3.87	0.0
FICO	0.00	0.00	11.31	0.0
TotalAmtOwed	0.00	0.00	31.96	0.0
Stress	0.49	0.03	17.28	0.0
Num_Delinquent	0.02	0.01	1.64	0.1
WomanOwned	0.28	0.01	41.11	0.0
CorpStructureLLC	0.23	0.01	26.36	0.0
CorpStructurePartner	0.15	0.01	16.52	0.0
CorpStructureSole	-0.03	0.01	-3.00	0.0
Months	0.00	0.00	3.52	0.0

```
stress_model <- lm(PRSM ~ Stress, data = installment2_id01)
kable(summary(stress_model)$coefficients, digits = 2)
```

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	0.71	0.01	61.13	0
Stress	0.49	0.05	9.64	0