INSAID

INSTRUCTIONS:

You are required to come up with the solution of the given business case.

Business Context:

This case requires trainees to develop a model for predicting customer churn at a fictitious wireless telecom company and use insights from the model to develop an incentive plan for enticing would-be churners to remain with company.
Data for the case are available in csv format.
The data are a scaled down version of the full database generously donated by an anonymous wireless telephone company.
There are still 7043 customers in the database, and 20 potential predictors.
Candidates can use whatever method they wish to develop their machine learning model.
The data are available in one data file with 7043 rows that combines the calibration and validation customers. “calibration” database consisting of 4000 customers and a “validation” database consisting of 3043 customers.
Each database contained (1) a “churn” variable signifying whether the customer had left the company two months after observation, and (2) a set of 20 potential predictor variables that could be used in a predictive churn model.
Following usual model development procedures, the model would be estimated on the calibration data and tested on the validation data.
This case requires both statistical analysis and creativity/judgment. I recommend you spend much time on both fine-tuning and interpreting results of your machine learning model.

Expectations from the Candidates:

Your task is to execute the multistage process for proactive churn management. Please answer the following questions:
1. Data cleaning including missing values, outliers and multi-collinearity. Describe your predictive churn model. How did you select variables to be included in the model?
2. Demonstrate the performance of the model.
3. What are the key factors that predict customer churn? Do these factors make sense?
4. What offers should be made to which customers to encourage them to remain with company?
5. Assuming these actions were implemented, how would you determine whether they had worked?