Assessment information regarding job position of Data Scientist at Data Science & Innovation within DFC - ABN AMRO Bank

**Introduction**

As part of the application process for the job position Data Scientist an assessment is taken. In this assessment you are asked to develop and present a case to the team. This document will explain the case you need to work on.

You may use either R or Python to develop your solution, however we prefer Python as this is our main development language for data science.

**Case description**

Relationship managers at ABN AMRO who operate in the small business segment have a large customer portfolio (about 225 customers). Because of this, he/she can currently only reactively serve customers. The current experiment is set up to look for solutions that can help the relationship manager to more proactively serve his customers.

**You are requested to build a model that predicts who will be applying for credit (a loan) based on internal customer data.**

**Data**

Along with this assignment we send you two datasets that contain a selection of customer data. The data you receive covers a time period of 32 months in total (January 2014 until August 2016).

The first dataset “customers” contains features like credit volumes, debit volumes, number of transactions, etcetera.

The second dataset “credit\_applications” contains information regarding current and historic credit applications.

The “credit\_application” field indicates that in the given month (see column “yearmonth”) has a value of 1 if a client in that month applied for credit with ABN AMRO and otherwise it has the value 0. Field “nr\_credit\_applications” indicated how many times a client applied for credit in a given month.

**Assignment**

Your assignment is to develop a working prototype of a predictive model for customer credit applications. Our relation managers can then use the results of the model to proactively engage customers.

You have one week to complete your assignment and in addition you are expected to present your results to the DSI team.

**Deliverables**:

You are asked to share after one week the following deliverables:

* (Powerpoint) presentation covering both the business aspects as well as the data science aspects.
* The code used to calculate the results.
* Any relevant intermediate products such as tables, statistics, visualizations if applicable.

**Presentation**:

After one week you are asked to present your work to your future data science colleagues. This presentation can be the same or a modified version of the presentation handed in as part of the deliverables. Next to the presentation you’re asked to do a small **code walk through** of the most important parts of your (cleaned) code. You’ll have in total 45 min. for the presentation and code walk through.

**Evaluation**

Your solution will be evaluated with respect to the following key points:

* Understanding of the problem, from a business and analytical perspective
* The process you followed and experiment design (data processing, model selection, etc)
* Recommendation on how you would implement this in ABN AMRO
* Coding style
* The way you present your outcomes

You may ask questions related to the assignment without any penalties.

The DSI team wishes you much luck and we look forward to your presentation.