

## Churn Prediction in Direct Debit

To take payments via Direct Debit, a Direct Debit *Mandate* must be set up between the payer (customer) and the payee (a business) - effectively a permission from the payer for the payee to take payments from them from that moment onwards. If you pay any of your bills through Direct Debit, the Mandate is the form you signed when you set up the payment.

Attached is a partially pre-processed dump of mandates and payments that a subset of businesses have taken during 2014, along with some extra details about the businesses themselves. We want to know which businesses are likely to churn in the near future - that is, those whose payment activity is about to drop off.

1. Please create a model that predicts which businesses are likely to churn at the start of 2015 based on the vertical and incorporation\_date.
2. We have an inkling that a dropoff in the number of mandates added might be an advance indicator of someone churning. Please can you assess whether this might be true, and if you think it is useful, incorporate it into your model from part (1).

You're free to use whatever tools suit you. Please submit the models in an archive (e.g. a .zip or similar) along with instructions for how we should use them so we can try them out over at our end. Please also include a brief write-up explaining how you went about the problem. This can be an annotated version of any exploratory code (e.g. a html export of an ipython notebook), or another format of your choosing.

Please try to spend no more than 2 hours on this, and let us know if you've got any questions.



