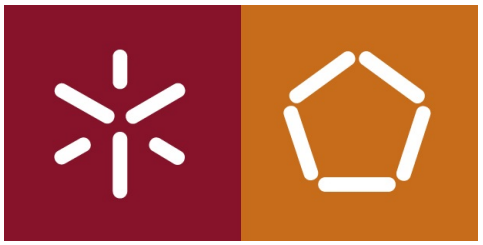

University of Minho

Software Engineering

Requirements Engineering

Sniffler - EU Open Banking Credit Risk Analysis (summarised)

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1 Background to the project

Imagine how awesome would it be to have someone, or something, managing our bank accounts and expenses. Even more, suppose that all money crisis and bankruptcies could be avoided if we just let Open Banking, machine learning algorithms and companies/individuals work together. The EU and many banks are pushing this development with the new Payments Service Directive 2 (PSD2), which has come into force on January 13th of year 2018. Banks face the need to adapt to these changes which open many technical challenges, but also many strategic opportunities, such as collaborating with fintech providers, for the future.

This new directive will open the opportunity for third-parties to consume data through API of bank accounts, with the proper authorisation of the holders. And here is where the magic happens: by providing access to bank movements, it is possible to "calculate" the credit risk of potential clients and thus create better offers.

That's where the "European Open Banking (PSD2 directive) for credit risk analysis" project comes in, suggested by the Scytale company, and made for the course of Requirements Engineering. Scytale already has a Marketplace project - *Capitalise* -, which consists of a digital commercial credit broker for online platforms. They have made it easier to obtain funders (funding search) and receive funding through matching and profiling. Scytale wants our team to make a system which performs cash flow risk analysis of a client, and suggests the use of Capitalise to obtain funders. In the future, the main goal is also to analyse credit risks at *Capitalise* level. Another view would be to, as suggested previously, gather machine learning data with the team's system to predict monthly spending and better analyse cash flow risk.

2 Product identity and purpose

In this line of thinking, the group created ***Sniffler***. With this project, the team aims to provide to all of the system clients' a service where they can have an overview of all of their bank accounts in one location. In addition, with the information of each client, the system should throw alerts related to regular expenses and, in general, help clients manage their money. As such, the team intends, with this project, to study the viability of using this information to predict credit risk of potential clients, and thus to create a better offer.

3 Use Cases Diagram

With this in mind, the group tried to divide tasks and functionalities between the actors of the product (Clients and Admin).

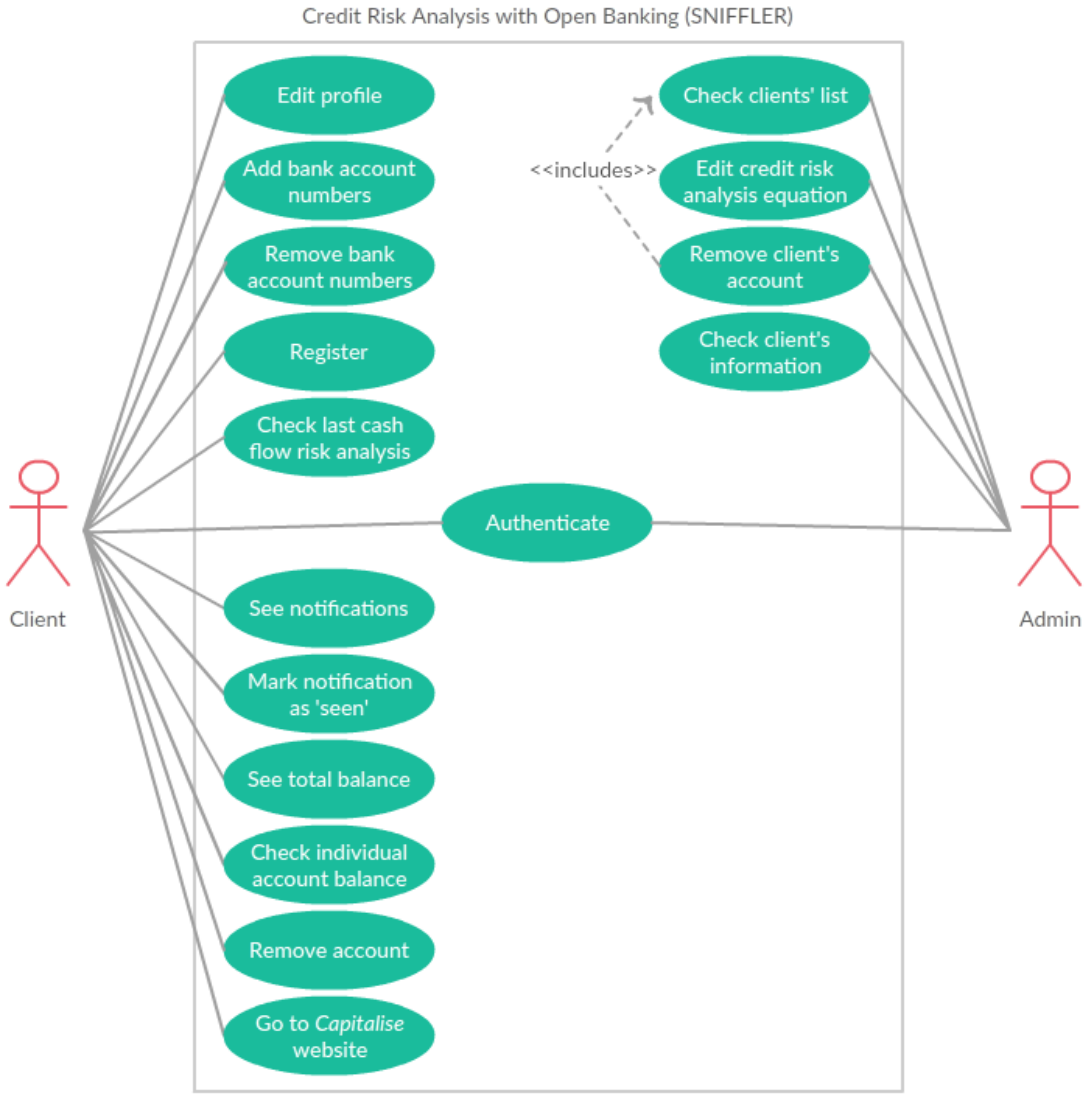

Figure 1: Use Cases Diagram.

Thus, among **the most important functionalities**, those that differentiates the team's system are:

1. Check last cash flow risk analysis;
2. Add/Remove bank account numbers;
3. See total/individual balance.

Focusing on the first functionality mentioned, the main focus of the project is clear to see. The system is responsible for performing monthly cash flow risk analysis, to which the client will have access. Within these, it is possible to verify whether the funds from the client's account(s) is(are) being properly managed or if they are at risk of a cash flow break. If such is the case, the system will suggest that the user make use of Capitalise (Scytale company's) website so that they may obtain investors and credit without resorting to a bank. All of this is done following the norms of Open Banking, of which the client is aware.

Moving on to the second most important functionality, it is here that the client may select the accounts to be analysed by the tool to be implemented. On the other hand, they may also remove a linked account, if they no longer wish to have it analysed.

With the third and final functionality, it is possible for the user to observe an individual accounts balance, as well as the collective balance of all linked accounts. This way, they are able to better monitor their expenses and manage their finances.

It is also vital to expose the administrator's role in the system described by this project. Any system which involves access to banking data must limit the information available to third parties regarding the clients of the system. Amongst the functionality associated to the admin role, we have:

1. Edit credit risk analysis equation;
2. Check clients' list;
3. Check client's information;
4. Remove clients' account.

As such, the admin's capabilities are reduced, seeing as their main role will be to edit the credit risk analysis equation. In it, we find all the necessary mathematical functions and calculations, which may require adjustments over time. In regards to the 'check clients' list' and 'check clients' information' functionalities, we find that these are rather limited, considering that an admin has access exclusively to a client's name and username. Should there be any problems with the bank or with Open Banking, the admin may find themselves obligated to remove a user's account, and as such, the final functionality is presented.