M02-A01 Project Module & API Design

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API Outline

The following inputs and outputs are the initial requirements for our financial application:

**Inputs**

* Credit report
* Personal Info (SSN, DOB, Name, ADDRESS) for authentication
* Bank account details (for applicant - to make payments)
* Customer loan application details(ex homeowner, 50k per year, outstanding loans, etc)

**Outputs**

* Customer status with bank
* Credit Reporting company: applicant data for Credit Score
* Credit Reporting company: applicant data for Credit Report
* Credit History (bankruptcies, foreclosures, severely past due etc.)
* Total loans with bank

**For Credit Company API (to request a credit report):**

* Authorization
* Identity
* Product (Credit Score, credit report, both)

**For Bank API (For linking a bank account - will need to persist)**

* Authorization
* Identity
* Transaction id#
* Bank Account #
* Routing #
* Transaction amount

**Cohesion Assessment**

At this initial stage of designing and planning we have determined the following packages to be the first iteration of modules in our design:

**mFinanceApp**: This package will contain the main method and UI components

**Banks**: This package will contain the bank APIs for transferring funds and requesting applicant balances. This package will also contain an interface to access bank data (including url, keys, country, etc).

**Customers**: This package will contain all of the classes pertaining to a customer or visitor. The classes will likely include accounts, account type, and account history (mFinance loan history, status, settings etc)

**Employees**: This package will contain all of the classes pertaining to mFinance employees including account type, authorization/access type, account, hr information, etc.

**externalCreditBureaus**: This package will contain the credit reporting company API’s for requesting credit history, credit scores and credit documents for applicants. This package will also contain an interface to access credit bureau data (url, keys, country, bureau rating score, etc).

**Loans**: this package will contain the classes associated with the loan including loanOfferDetails, loanStatus, LoanType, LoanRecord, etc. Methods included will be to add, edit, update, and delete loan records. It will also be possible to assign the loans to an agent or department based on necessity.

**LCOM4 Calculation:**

Given that we have just started our initial design and API analysis we have yet to fully complete the class diagram and application architecture and therefore much of our packages have no class methods. We do see that many of our classes could be contained in good groupings with the intention to increase cohesion while limiting coupling. This will inevitably be unavoidable as some classes (such as account) will likely be used by multiple packages (employee, customer). This will likely be the case as well, with Loans. For instance, the customer class will use various classes within the loan package and loans will be linked to customer accounts.