Problem Statement

Conceive an application for managing expenses. The application must allow its user to manage expenses that have a description, a cost, date (optionally time) when it was taken and a category. The user can add any number of categories, rename them and remove a category only if there are no expenses in that category. Categories have only a name and are used to group expenses for reports.

The user can manage incomes or recurrent incomes (e.g.: salary) having an amount, date (optionally a time) when it was received. In addition to recurrent income, recurrent expenses can also be set up by the user (e.g.: electricity bill). The user can also set up reminders (or mementos) for incomes or expenses because not all receipts or bill comes in the same currency as the one set within the application. The user can manage expenses and incomes in only one currency which is also used for reports.

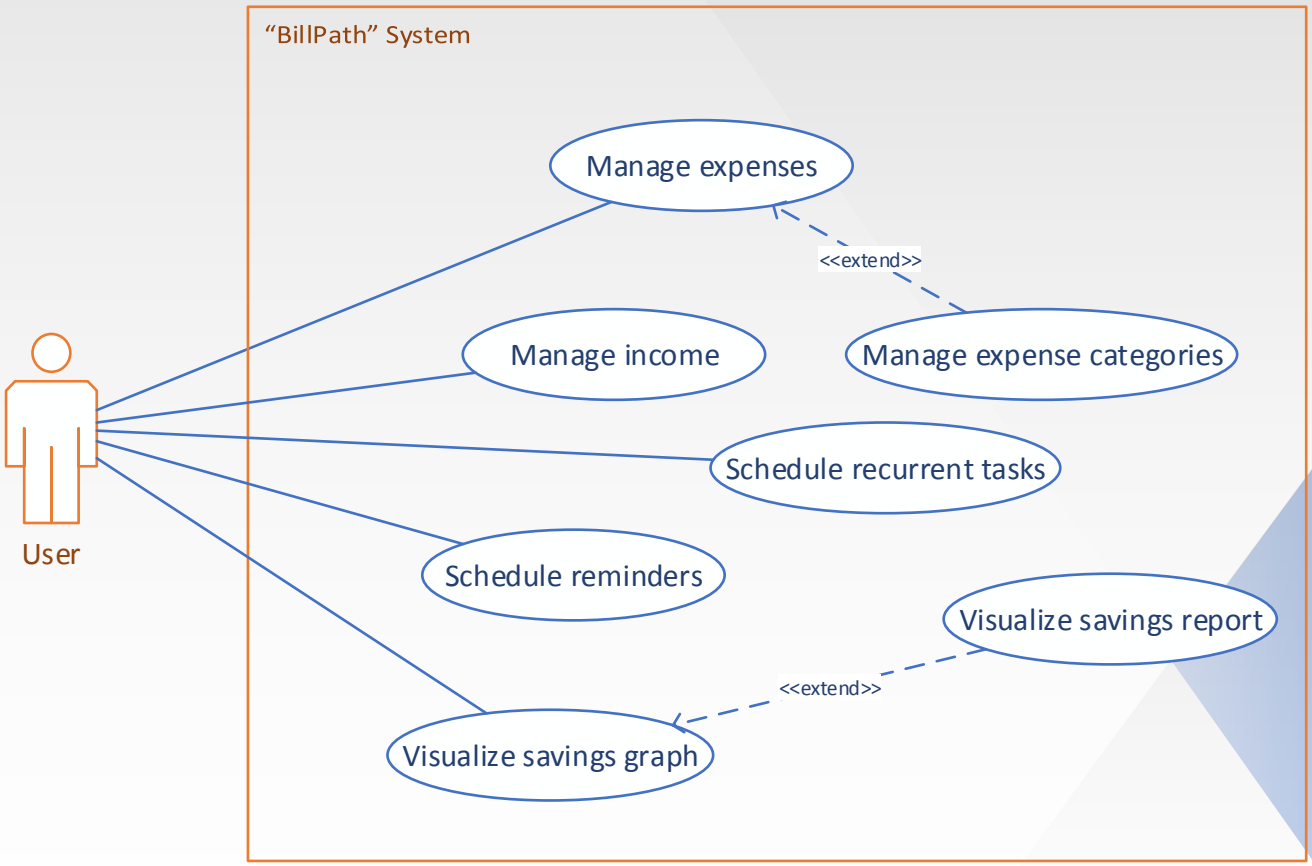
At the end of the month or year one would want to visualise his or her savings. The user can view over a period of time, for selected categories, a graph of total expenses (per category) compared to expenses. Also the user can opt for option of visualising a report rather than a graph.

Technical Requirements

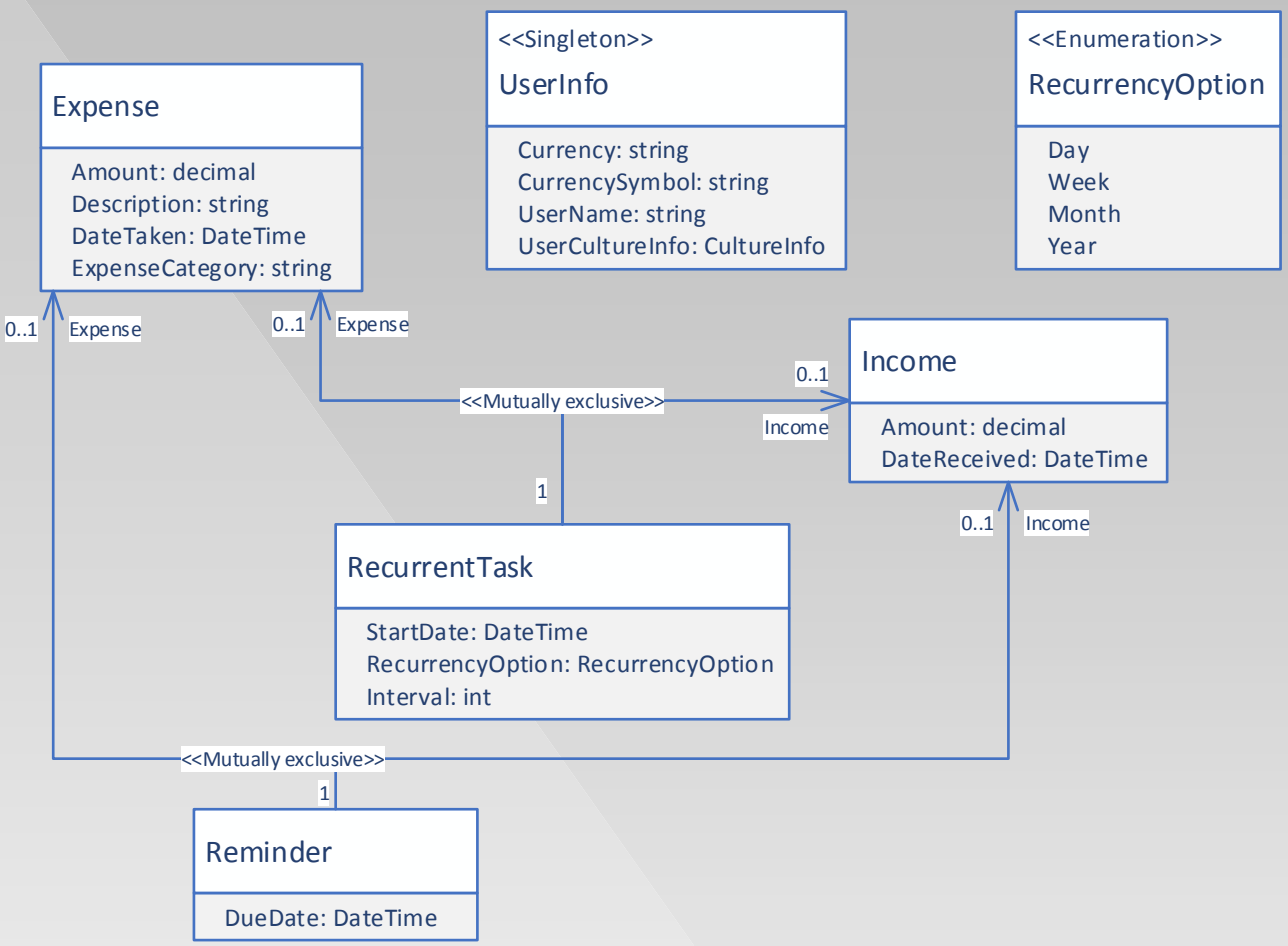
The user data is sensitive as it contains information about income and expenses. The privacy of the user must be ensured. This should be done by storing files locally, eventually offering the option of import and export the user data in one form or another (XML, CSV, Spreadsheet and so on) and also keeping them encrypted and in a restricted folder (not in a place where anyone can see).

Another technical requirement relates to the architecture of the application. In order to favour maintainability and scalability, the architecture of the application to be layered as follows: User Interface, Business Logic and Data Access. This way the logic is split into smaller more reliable and less error prone components.

Use Case Diagram

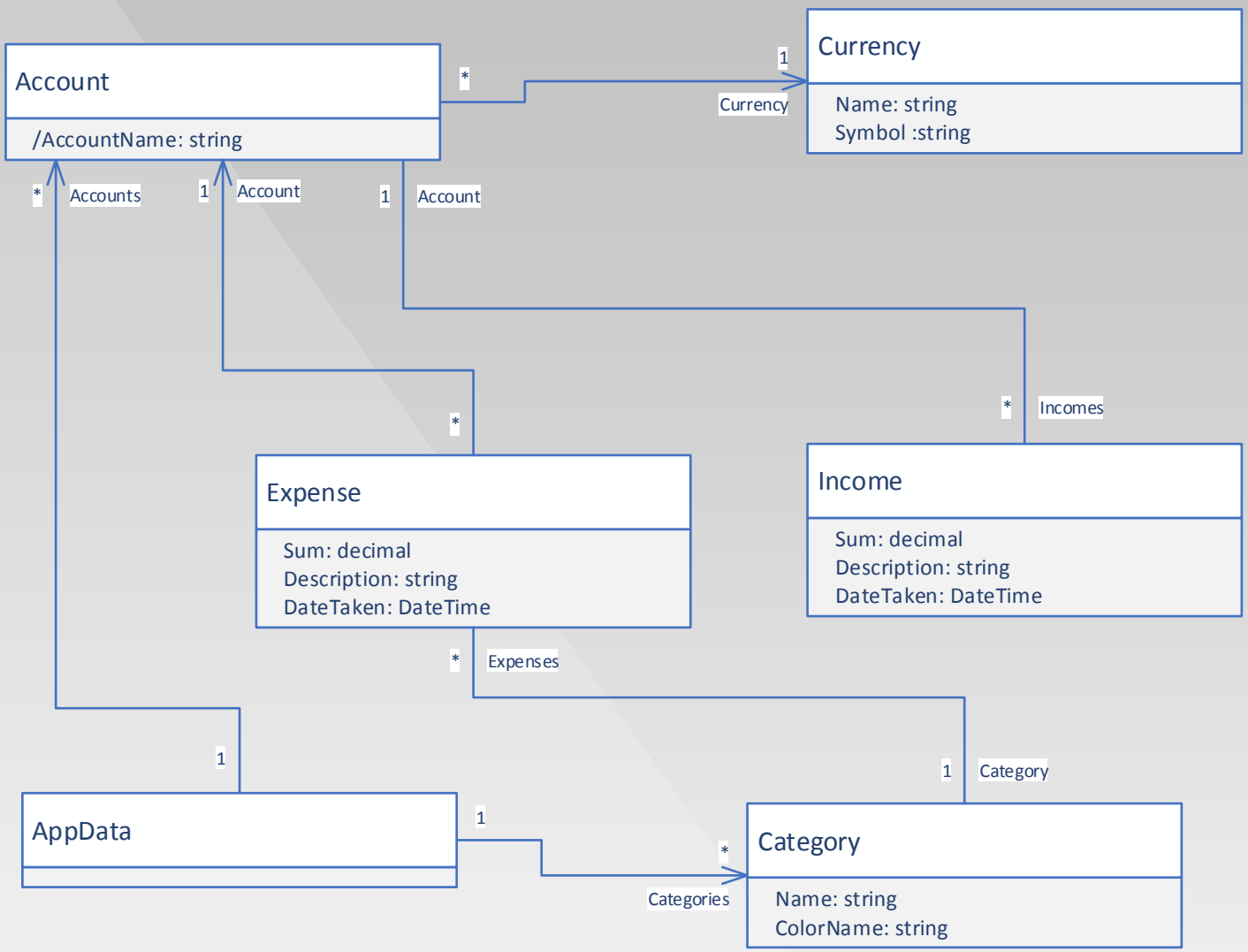


Business Model Diagram

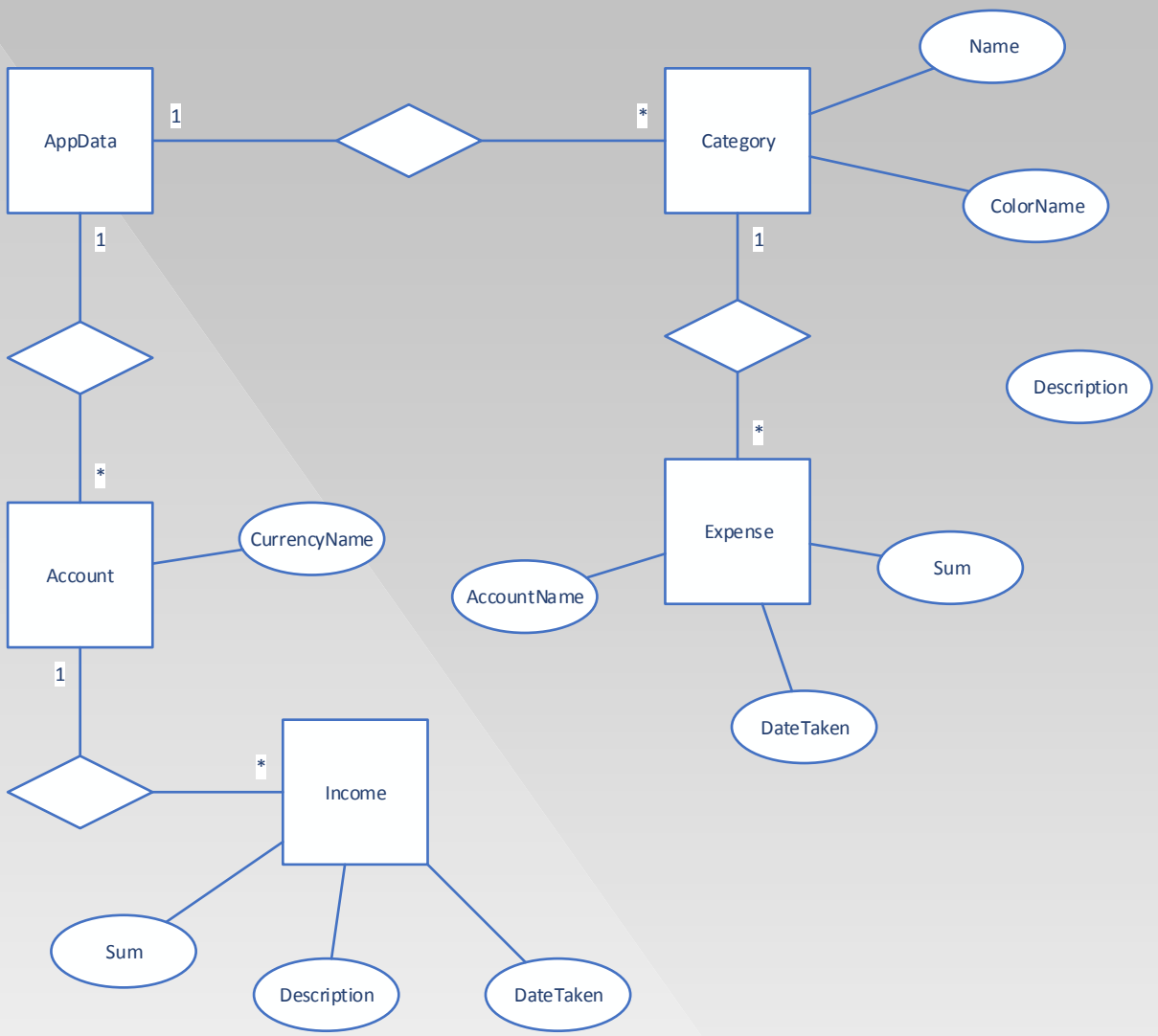


Revision 1

Business Type Model



Database Schema



Application Architecture