E-Financial Assistant

E-Financial Assistant is an information system offered to individuals and small enterprises. The system acts as an intermediary to the specialized information systems exposed by the banks and financial institutions.

The system is first configured to have access to the open accounts of the user, to one or more banks, and to receive information regarding regular payments the user does, for example for cable internet or postpaid telephone.

The system is fully customizable, allowing for each account read or write access. For read access, the system can be configured with a number of notifications: when transactions over a sum x occur, when new payments are due or can use machine learning techniques to learn and spot unusual transactions.

If the system has write access, it can automatically pay the due bills from the accounts.

Another function of the system is to act a financial advisor, presenting a list of possible actions to the user such as applying for credit or opening a savings account. When the user selects an action he is asked interactively for more details and preferences.

Then the system queries all available bank information systems in order to find the best deals. The result list is presented to the user and if he chooses one item the system takes care of all the formalities. The ranking algorithms the system makes must be completely transparent to the user.

In addition the system can be used to increase the knowledge of financial terms of the user. The user can complete a self-assessment test, and, depending on the result, can be presented with instructional material appropriate for his knowledge and for the tasks he does most often.

You are encouraged to increase the complexity of the problem statement in order to fulfil the following requests:

1. **You can add new business objects, new use cases starting from the preliminary problem description. Develop the business architecture.**

2. **Develop the domain model that should emphasize the business information resources. Develop the business information architecture. Map it on the business architecture.**

3. **Design three software architectures using different styles and architectural patterns. Justify your decisions in writing. Select the most suitable architecture for the information system objectives and business constraints and declare it as your application architecture.**

4. **Implement an architectural prototype. A working test system must be produced using a component-based architecture implemented in Enterprise Java Beans 3.0. Develop the information technology architecture and map it on the previous application architecture.**

5. **A prototype of a new architectural application version based on web services will be also welcomed.**