

Case Study: Banking Application – Interest Rate Calculator

A Bank holds different types of accounts for its customers: savings accounts, loan accounts and mortgage accounts.

All accounts have account number, customer, balance, months held and interest rate (monthly based). Savings accounts are allowed to deposit and withdraw money. Loan and Mortgage accounts can only deposit money.

All accounts can calculate their interest amount for a given period (in months). In the common case it is calculated as follows: $\text{number_of_months} * \text{interest_rate}$

Loan accounts have no interest for the first 3 months if they are held by individual and for the first 2 months if are held by a company.

Savings accounts have no interest if their balance is positive and less than 1000.

Mortgage accounts have $\frac{1}{2}$ interest for the first 12 months for companies and no interest for the first 6 months for individuals.

Bank may change the policy of calculating the interest amount for its accounts from time to time.

Your task is to write a program to model the bank system by classes and interfaces. You should identify the classes, interfaces, case classes and abstract actions and implement the calculation of the interest functionality.

