Observer Design Pattern

Notification
- notificatoinType: NotificationType
- subscribers: Subscriber[ ]

+ subscribe(notficationType, subscriber: User)
+ unsubscribe(notficationType, subscriber: User)
+ notify(notificationType, description: String)
+ setType(type: String)
+ getType()

<<enumeration>> NotificationType
IssueResponse
BankAnnouncements

<<Interface>> Subscriber
+ update(notificationType: String, description: String)

<<Interface>> Reminder
+ remind(serviceType: String, description: String)

Services
- serviceType: ServiceType
- subscribers: Subscriber[ ]

+ subscribe(serviceType, subscriber: User)
+ unsubscribe(serviceType, subscriber: User)
+ notify(serviceType, description: String)
+ setType(type: String)
+ getType()

<<enumeration>> ServiceType
Gas
Water
Telephone
Electricity

Singleton Design Pattern

Bank
- code: String
- name: String
- address: String
- bank: Bank
- users: User[ ]

+ Bank()
+ respondToIssue(techIss: TechnicalIssue, user: User, description: String)
+ issueACreditCard(cc: CreditCard, user: User)
+ issueALoan(loan: Loan, user: User)
+ remindUserOnBills(user: User)
+ addUser(user: User)
+ getName()
+ getBank(): Bank
+ getAddress()

User
- username: String
- password: String
- name: String
- email_address: String
- registration_date: String
- national_id: String
- bankAccounts: BankAccount[ ]
- creditCard: CreditCard
- bills: Bill[ ]
- loans: Loan[ ]

+ User(national_id: String, email: String, username: String, Password: String)
+ update(description: String)
+ remind(description: String)
+ reportTechIssue(type: String, description: String)
+ reportCreditCardProb(type: CreditCardRepType, description: String)
+ applyForALoan(type: LoanType, ammount: Double)
+ applyForACreditCard()
+ setCreditCard(cc: CreditCard)
+ payCreditCardBill(money: Double)
+ addLoan(loan: Loan)
+ addBankAccount(bacc: BankAccount)
+ getUsername()
+ getPass()
+ getName()
+ getEmail()
+ getRegDate()
+ getNatID()
+ getBankAccount()

CreditCardReport
- ID: String
- type: CreditCardRepType
- description: String

+ CreditCardReport(type: CreditCardRepType, description: String)
+ method(type): type

<<enumeration>> CreditCardRepType
Loss
Damage
Theft

Strategy Design Pattern

Adapter Design Pattern

Loan
- loan_id: String
- status: String
- type: LoanType
- amount: Double
- interestRate: String
- startDate: Date
- endDate: Date

+ Loan(type: LoanType, amount: Double, interestRate: String)

<<enumeration>> LoanType
Personal
Car

TechnicalIsseus
- id: String
- type: String
- description: String

+ TechnicalIssues(type: String, description: String)

Context
- payStrategy: Pay
- viewStrategy: View

+ setPayStrategy(strategy)
+ setViewStrategy(strategy)
+ makeTransaction()
+ view()

<<Interface>> MakeTransaction
+ makeTransaction(money: Double)

<<Interface>> View
+ view()

BankAccountTransaction
- id: String
- amount: Double
- transferToAcc: BankAccount
- to: String

+ BankAccountTransactoin(amount: Double, transferToAcc: BankAccount)
+ BankAccountTransaction(amount: Double, to: String)
+ makeTransaction(money: Double)
+ view()

BankAccount
- accountNo: String
- status: String
- balance: Double

+ BankAccount()
+ payForAService(money: Double)
+ getBalance()

<<Interface>> BAInterface
+ payForAService(money: Double)

Bill
- id: String
- dueDate: Date
- remindDate: Date
- billType: BillType

+ Bill(billType: BillType)
+ remindUser()

<<enumeration>> BillType
CreditCard
Loan

CreditCardTransaction
- id: String
- amount: Double
- to: String

+ CreditCardTransaction(amount: Double, to: String)
+ makeTransaction(money: Double)
+ view()

CreditCard
- cardNo: String
- availableCredit: Double
- limit: Double
- points: Integer

+ CreditCard()
+ getPoints()
+ getCreditCardNo()
+ getLimit()
+ getAvailable()

CreditCardPayment
- paymentId: String
- paymentAmount: Double
- paymentType: String
- paymentDate: Date
- user: User

+ CreditCardPayment(user: User, amount: Double, type: String)

TPAdapter
- adaptee: ThirdParty

+ TPAdapter(T: ThirdParty)
+ payForAService(money: Double)

ThirdParty
- id: String
- type: String

+ ThirdParty(type: String)
+ payForAServ(money: Double)