FlowMeter WebApp

Overview

The goal of the project is to migrate functionality of the “FlowMeter Desktop” functionality to web application and take advantage of internet availability of the system, by integrating end-consumer actions into the system.

All the functionality that was available in the desktop version for the organization admin (accounting system, automatic calculations) should remain.
Additionally, the end-consumer will be able to see information related to his services and consumes, and provide his data to the system, bypassing admin-consumer interaction that was necessary in the desktop action.

Roles:

Role	Description
Admin	Guest -> log in /log out. View, add, delete and change all meters, services, payments data and receipts. Might add new account for consumer
User	Guest -> log in /log out, submit counters, view information on his meters, services and receipts
Guest	Log in like a admin or log in like a consumer

Authentification

Admin
Since admin can operate with the entire database freely, to a certain extent, admin functionality should be well protected. It's important to understand that the organization admin has no personal data, multiple employees of the organization can use a single account. Given that, creating a password for the admin manually in the database is considered.

User
User can provide his confidential information related to the services provided by the organization. This information directly affects calculation of the service charges, so it is vital to give control over the consumer’s authorization to the admin of the organization. It can be done with the consumer’s email. Organization admin should register consumer email, specify authorization to the resources. After that, the owner of the email can proceed with the registration of a personal cabinet.

Guest

A guest can view the main page of the website, where there is an option to log in or register as an administrator or consumer. However, the guest does not have access to other functions or confidential information without logging into the system. To grant access to the platform, the guest needs to choose the appropriate account type (administrator, consumer) during login or registration.

Accounting System

Role	Use case	Description
Admin	Create house	Add address to house, set count of flats, set heating area, set count of resident
Admin	Create meter for each service provided to the consumer	Set initial record, set meter to chosen house, set consumer, set service, set date
Admin	Create service	Set price of service, set house, set title.
Admin	Create consumer record	Set house, set owner's full name, set flat number, set heating area of flat, set personal account, set count of residents
Admin	Read house info	View address of house, count of flats, heating area and count of resident
Admin	Read meter info of each service	View initial record, meter to chosen house, consumer, service and date
Admin	Read service info	View price of service, house, title and type
Admin	Read consumer record info	View house of consumer, consumer's full name, flat number, heating area of flat, personal account and count of residents
Admin	Update house	Update house data
Admin	Update meter data for each service	Update meter data for each service of the
Admin	Update service	Update service data

Role	Use case	Description
Admin	Update resident record	Update resident record data
Admin	Delete house	Delete house from the system
Admin	Delete meter of each service	Delete meter of each service from the system
Admin	Delete service	Delete service from the system
Admin Admin	Delete consumer record Add service to the consumer	Delete consumer record
User	Read Meters	
User	Read Services	
User	Read Personal record info	

Calculation System

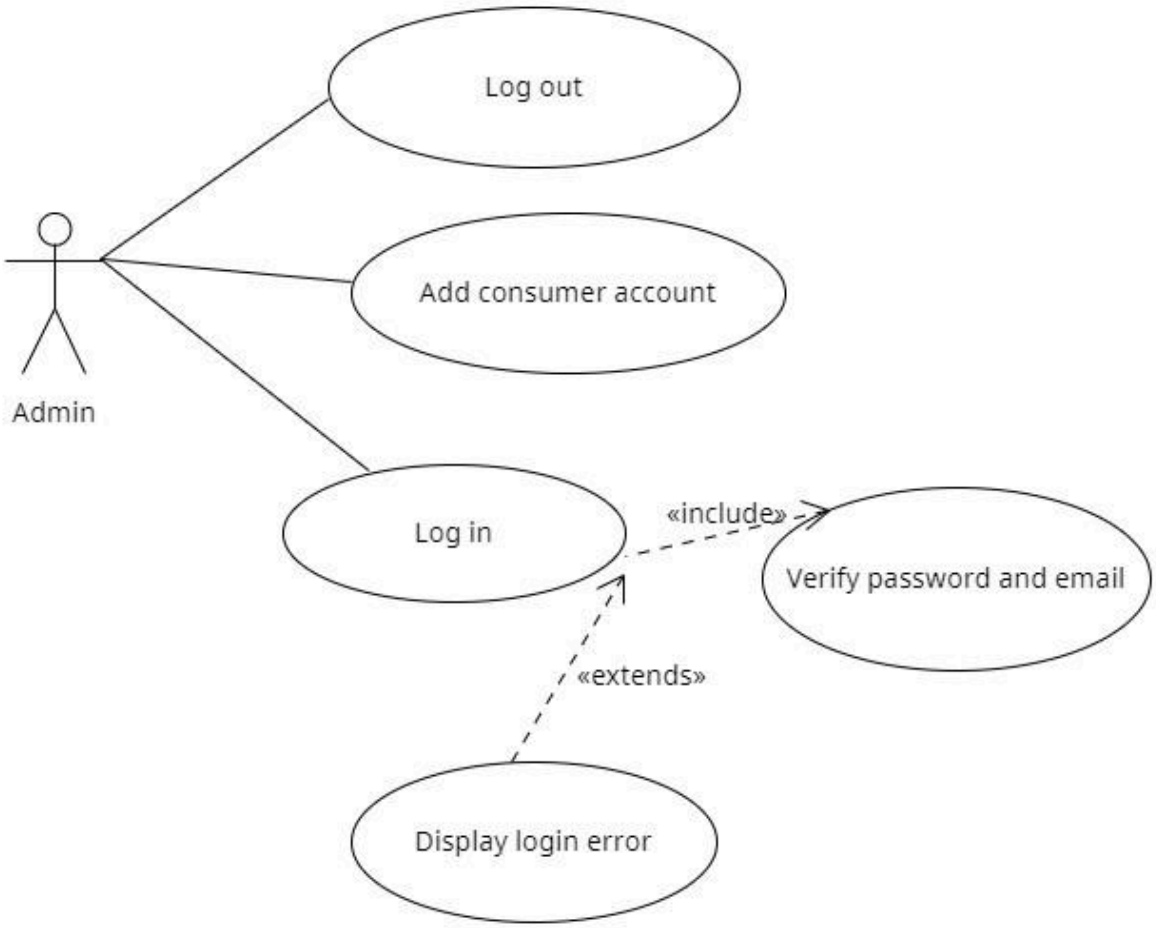
Role	Use case	Description
User	Provide indicator value	
User	Read his receipts by month	Optional downloading
Admin	Register payment from consumer	Set amount, consumer
Admin	Read receipts of the consumers	Optional downloading
Admin	View results of calculations for all consumers by month	View info about consumer debts, postponing the meter indicator values submission.
Admin	Fix results of calculations	Add amount of charge (+ or -)

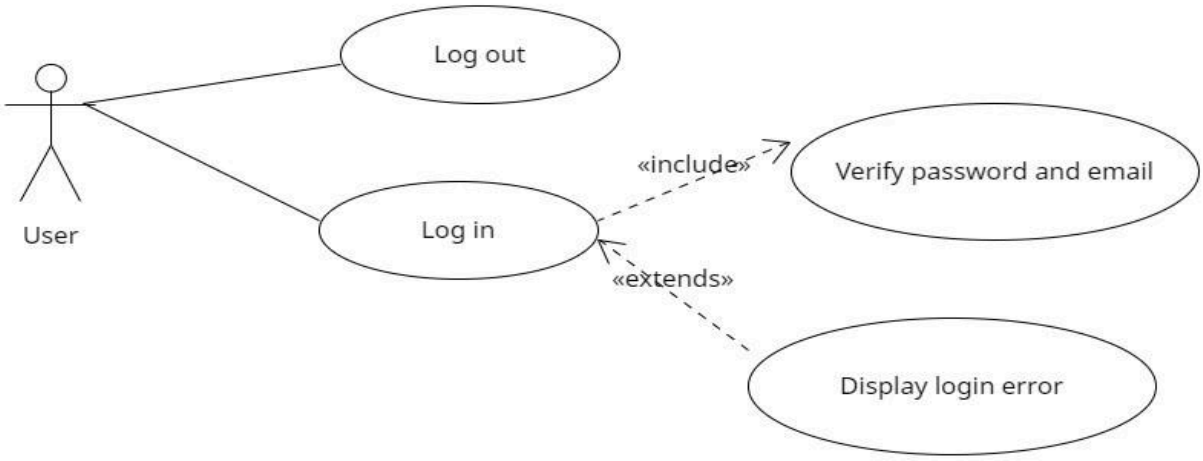
Auth System

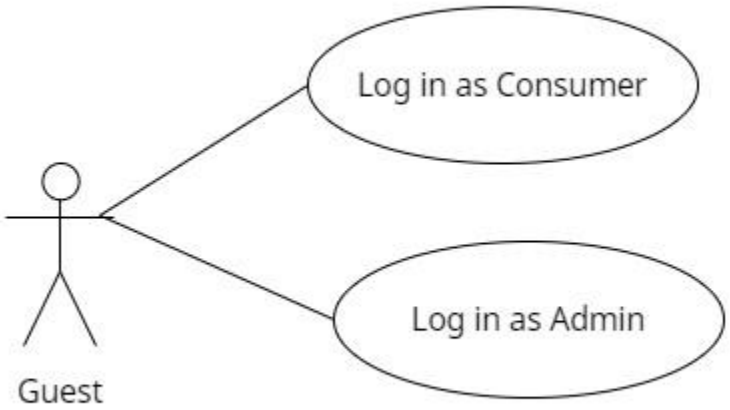
Role	Use case	Description
Admin	Log out	Log out of a system
Admin	Add consumer account	Register an email for the consumer
User	Log out	Log out of a system
Guest	Log in as Admin/Customer	To grant access to the platform, the guest needs to choose the appropriate account type. Verify password and email
Guest	Register as a Customer	Create an account, using registered email. Verify email, then enter the password.

System modularization

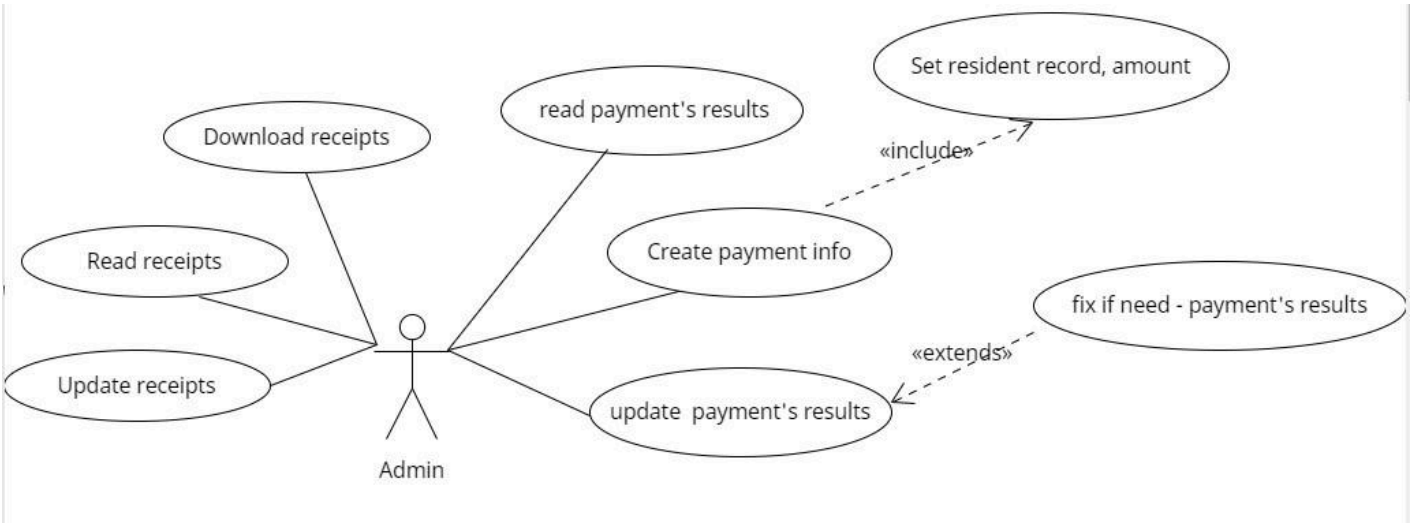
Auth system:

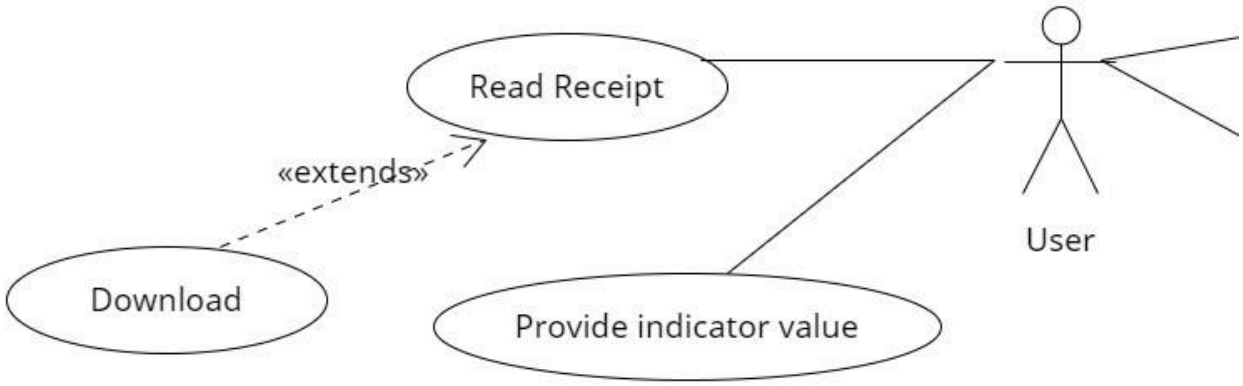



Log out
User
Log in
«include»
Verify password and email
«extends»
Display login error

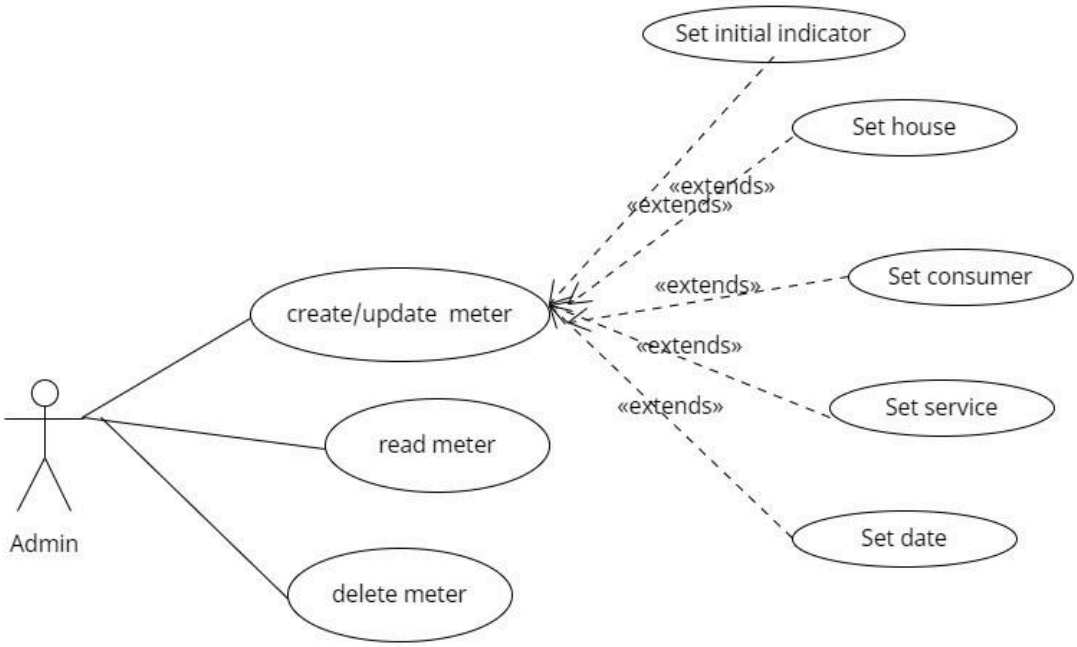

Log in as Consumer
Log in as Admin
Guest

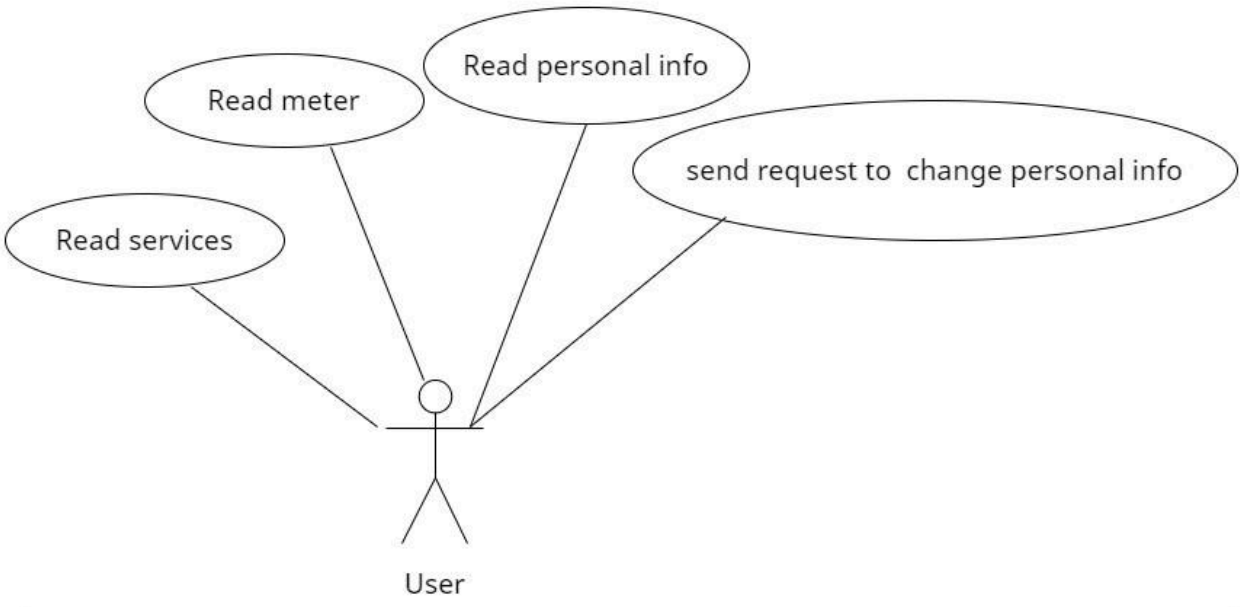
Calculation system:



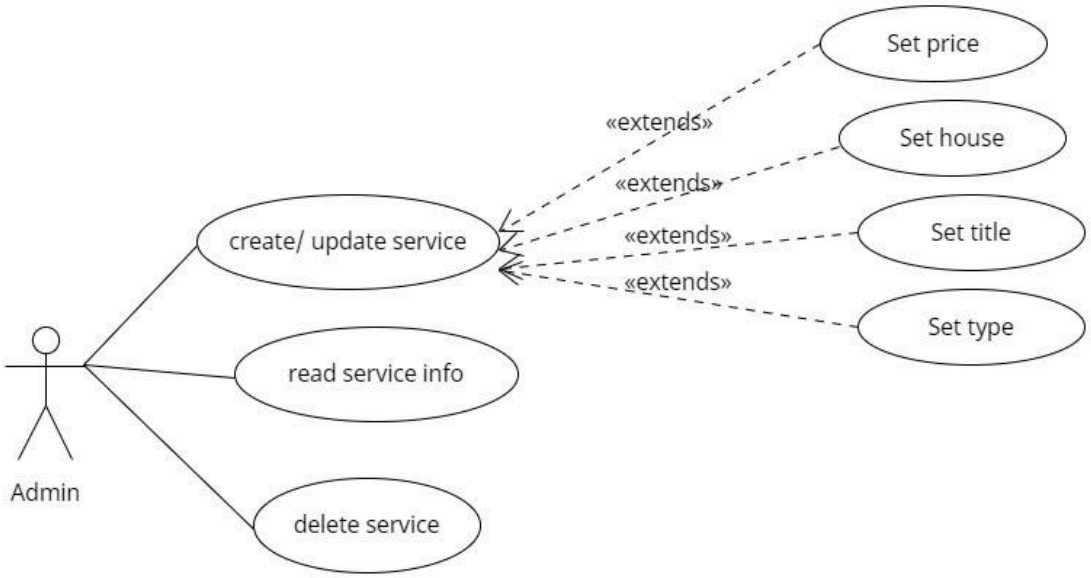


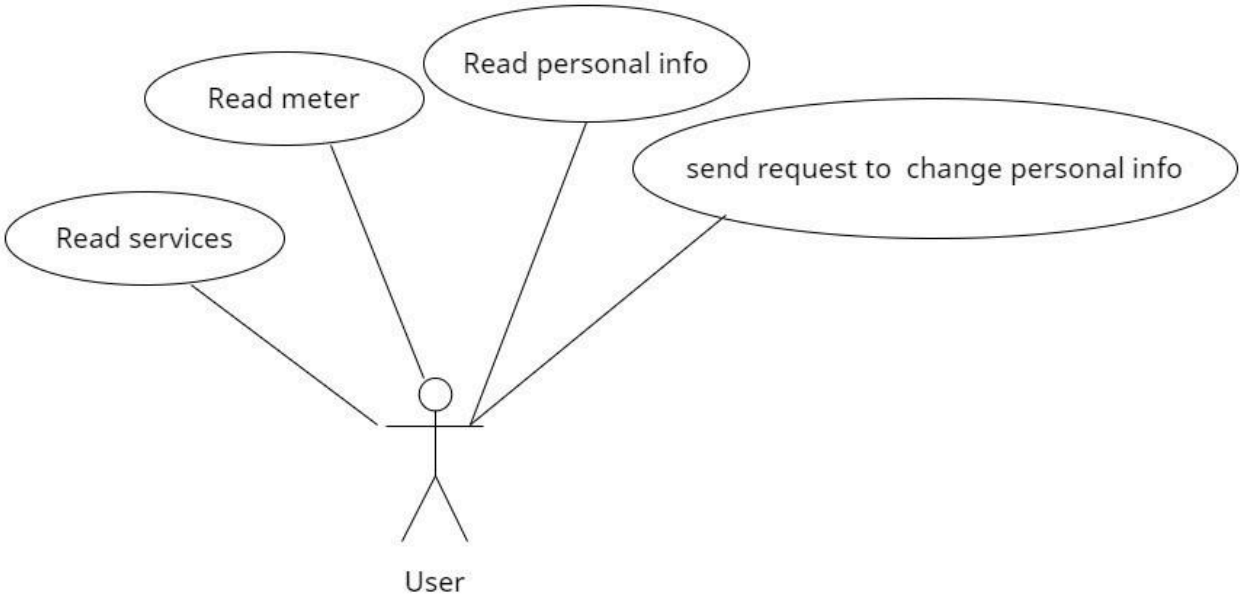
Accounting system



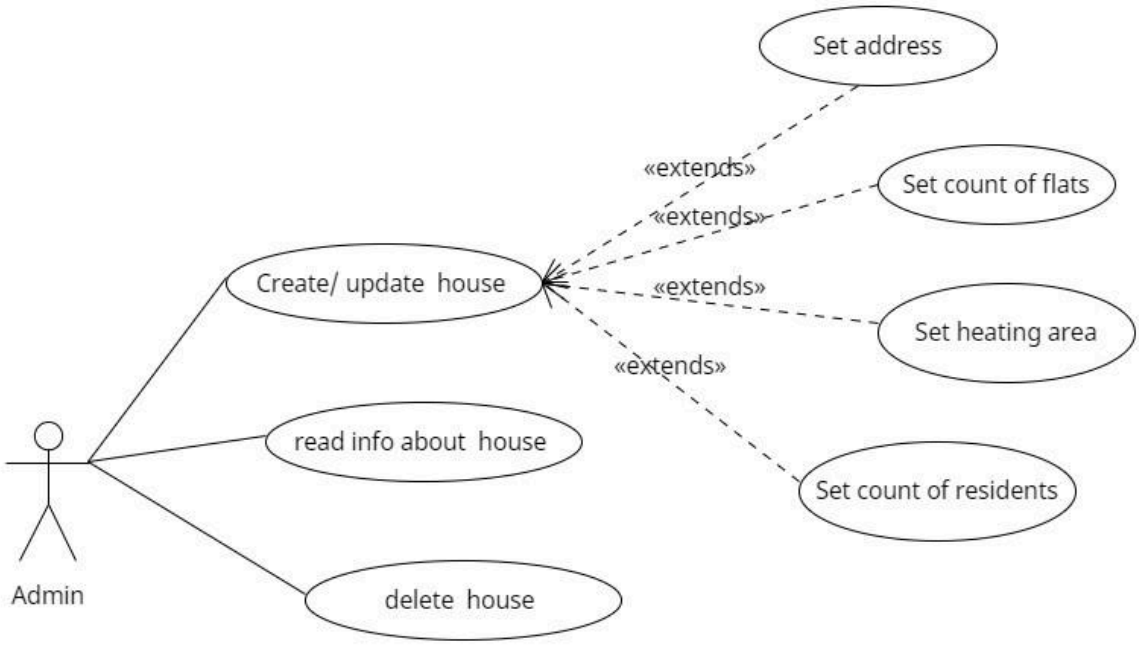


Service system

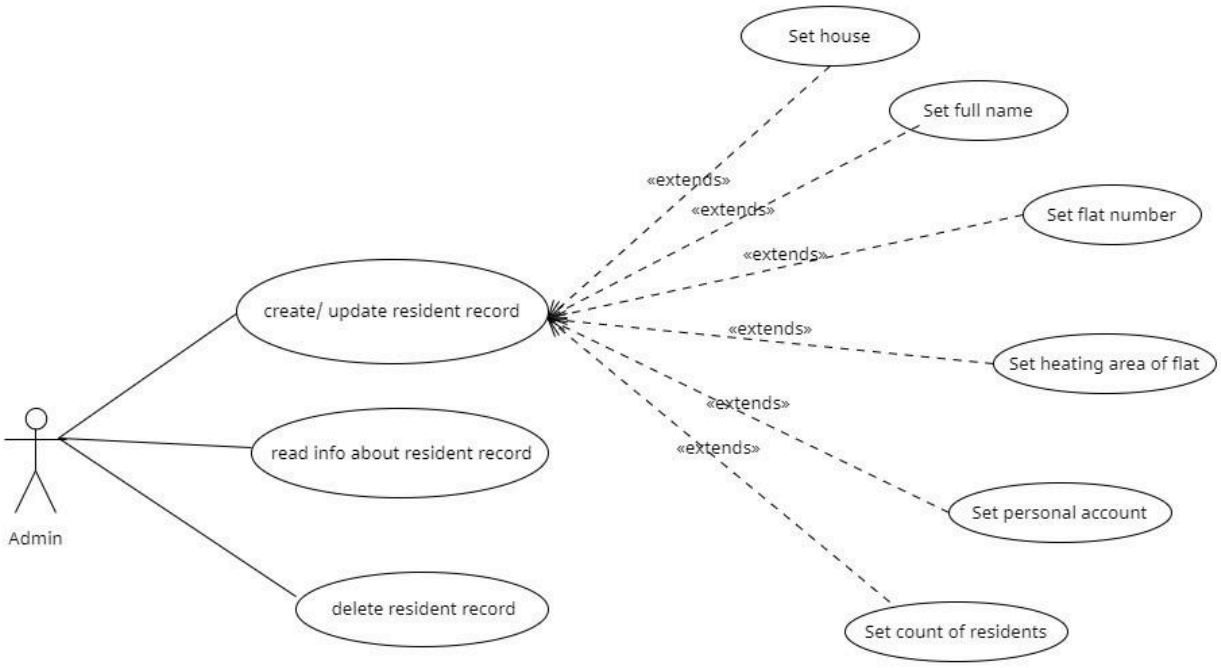




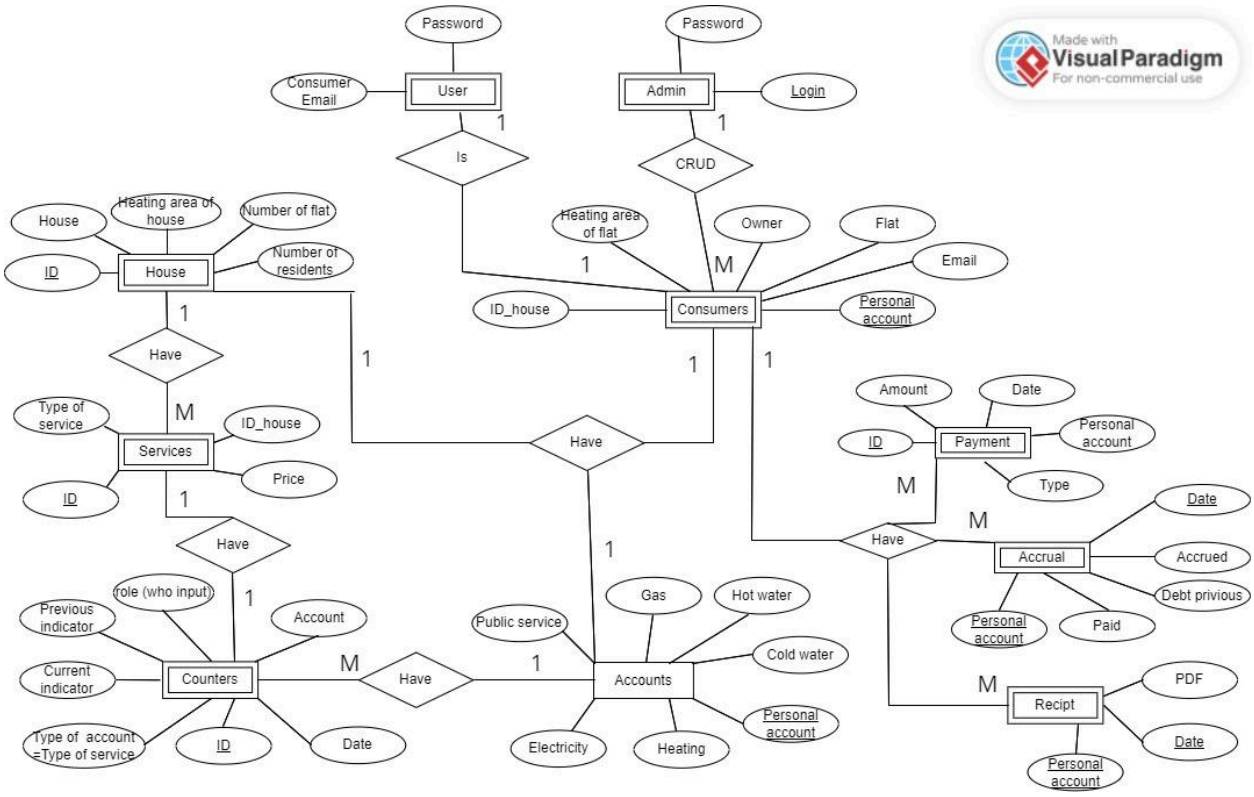
Accounting houses system



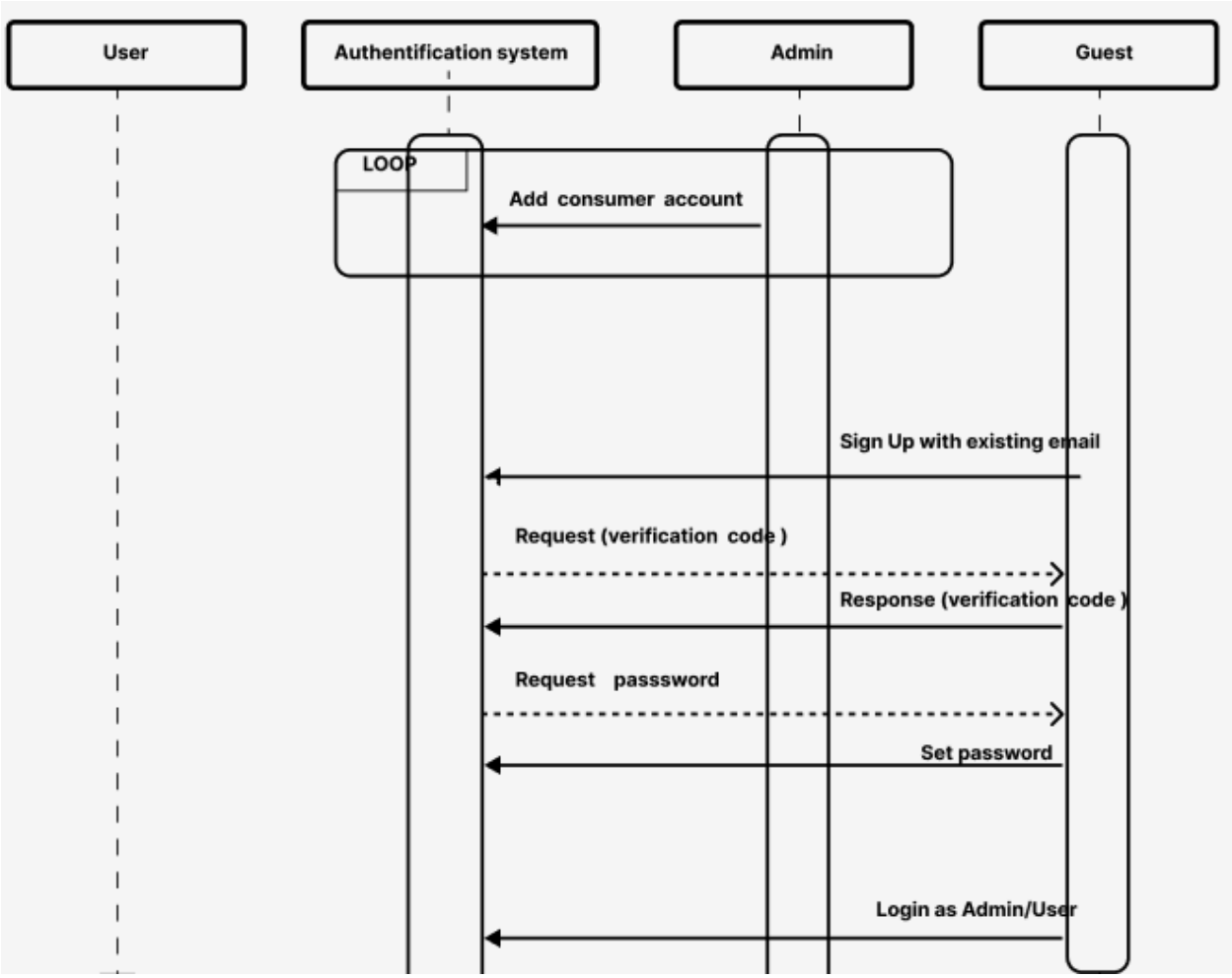
Accounting residents system



ER-Diagram


Password
Consumer Email
User
Is
Password
Admin
Login
CRUD
House
Heating area of house
Number of flat
ID
House
Number of residents
Have
Heating area of flat
Owner
Flat
Email
ID_house
Consumers
Personal account
Type of service
ID_house
Services
ID
Price
Have
Amount
Date
ID
Payment
Personal account
Type
Have
Accrual
Date
Accrued
Debt privious
Personal account
Paid
role (who input)
Previous indicator
Account
Current indicator
Counters
Type of account =Type of service
ID
Date
Have
Public service
Gas
Hot water
Cold water
Accounts
Personal account
Electricity
Heating
Have
Recipt
PDF
Date
Personal account
Made with Visual Paradigm
For non-commercial use

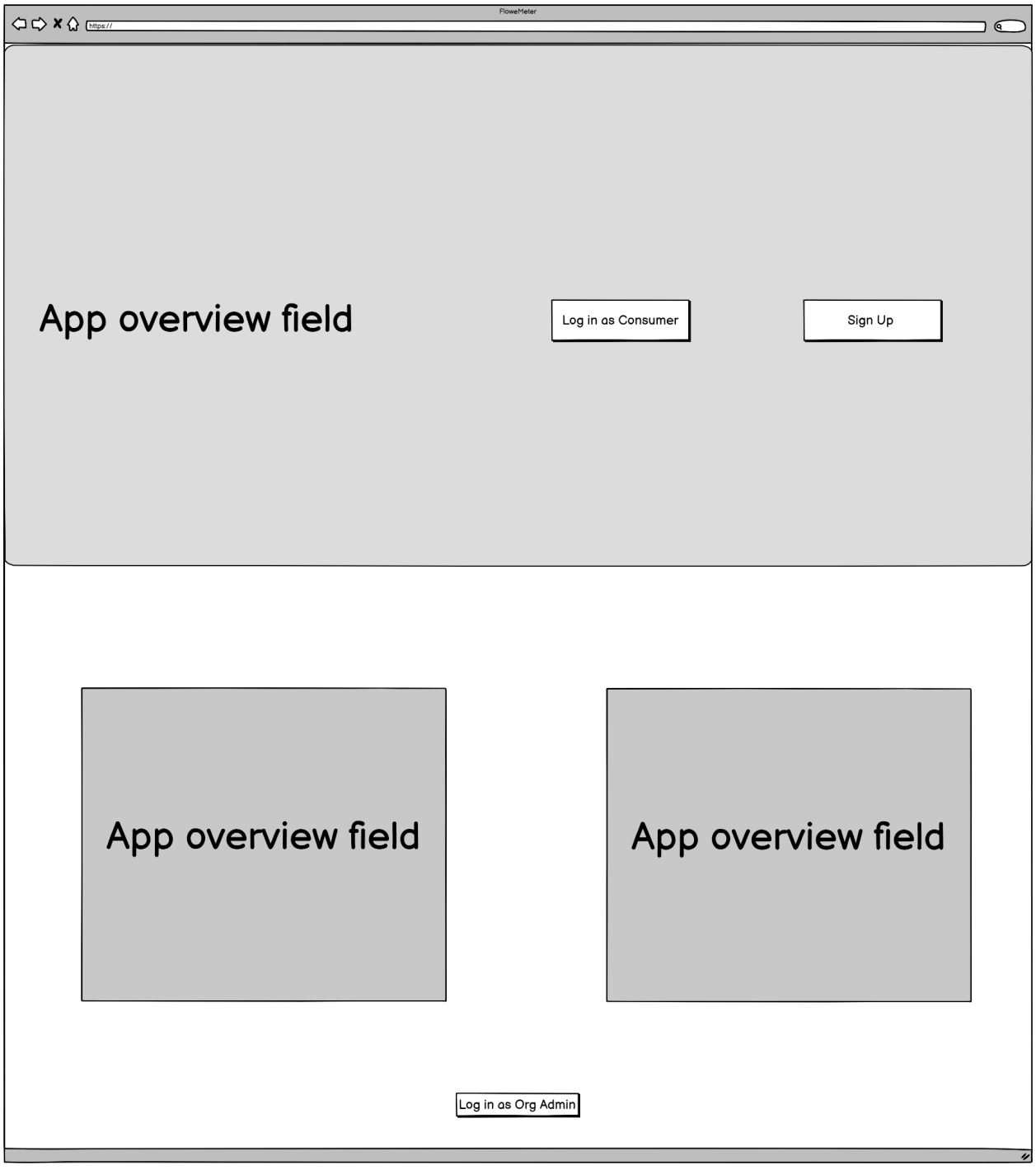
Sequence diagram



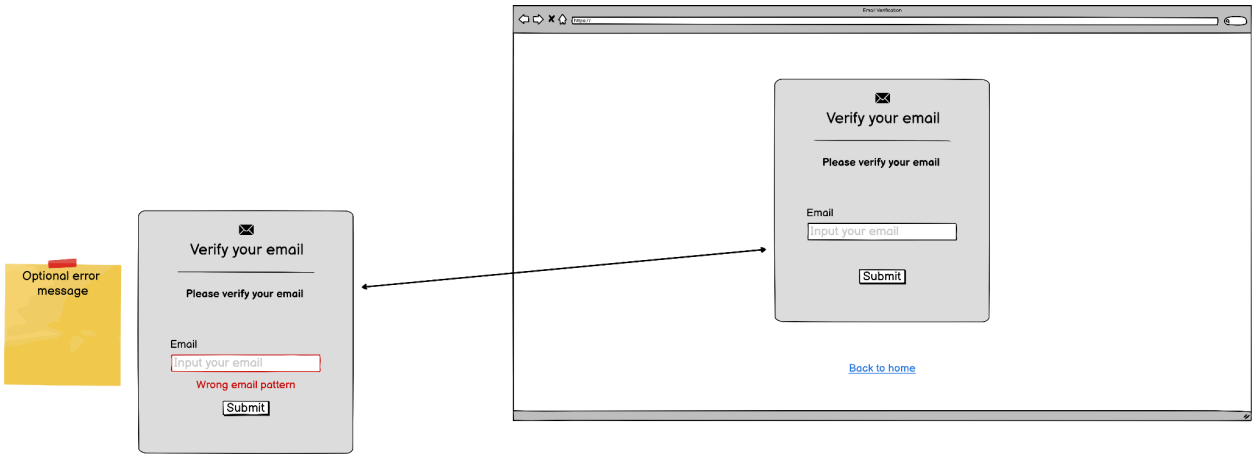
See more in “Application 1 - Sequence diagram”.

MOCKUPS

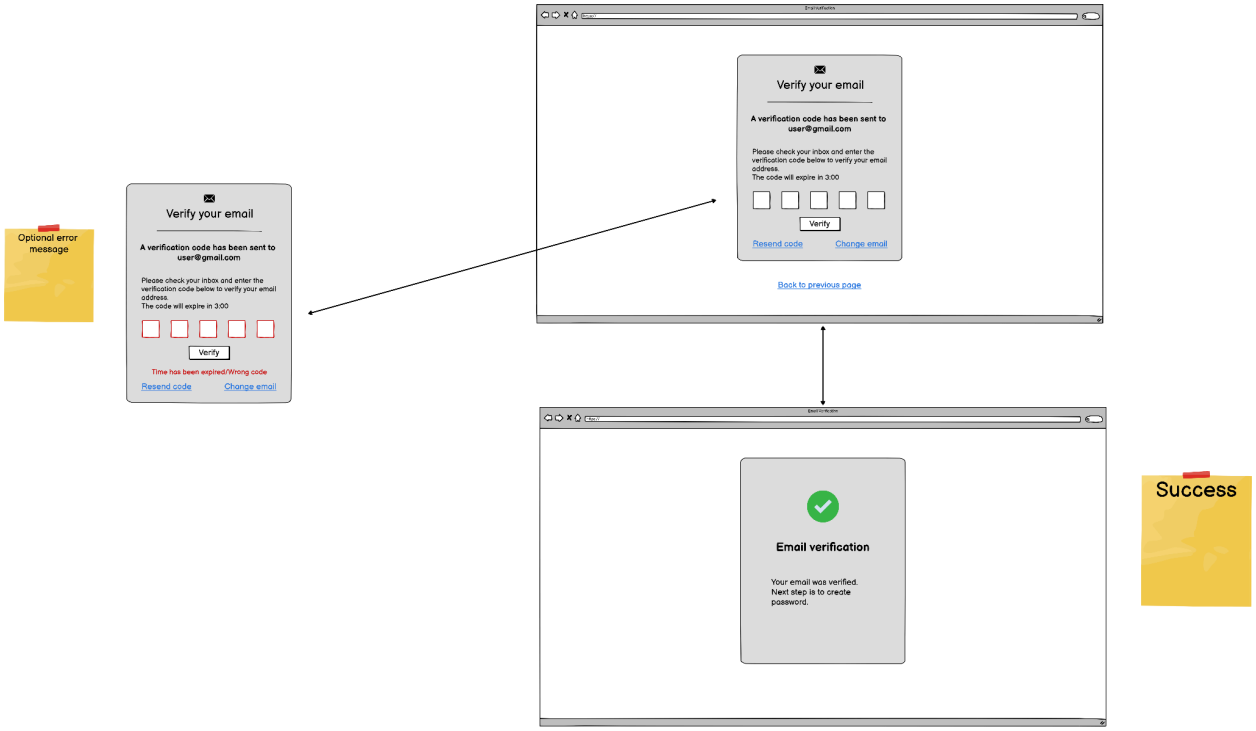
Home page



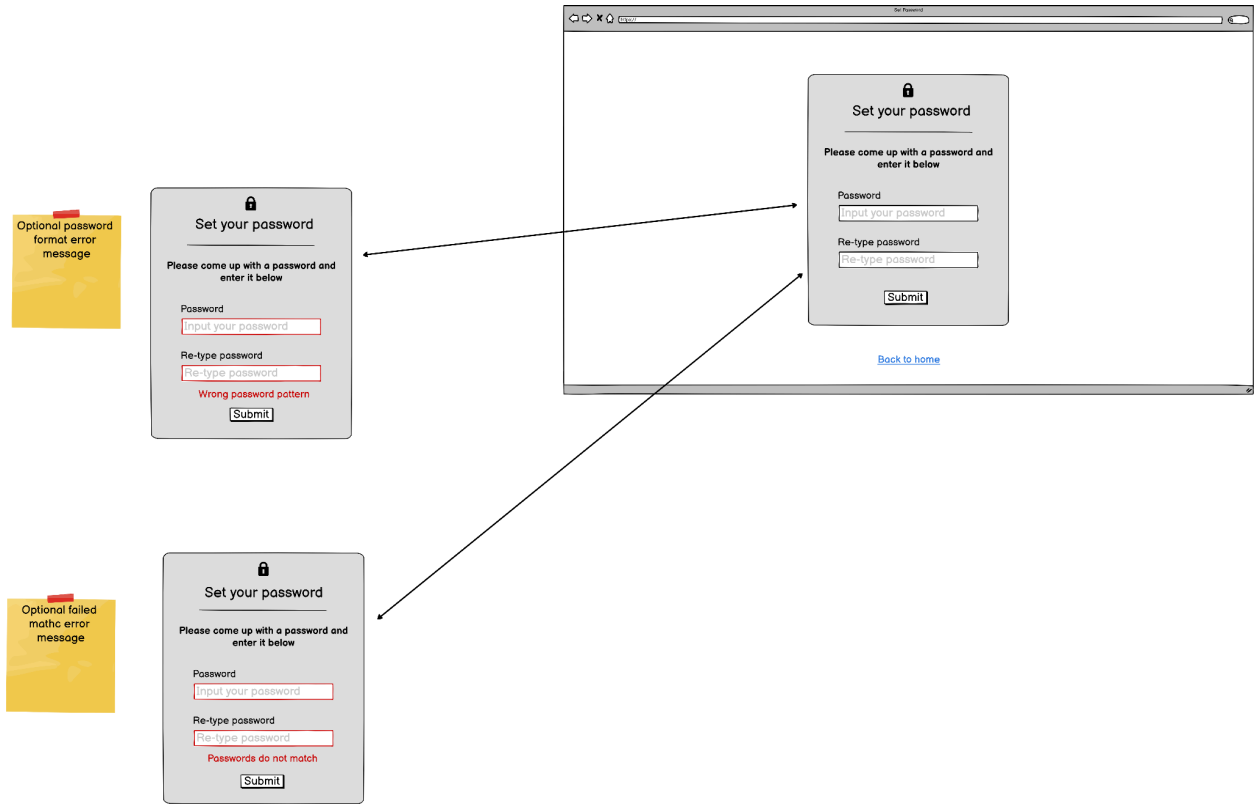
Email input



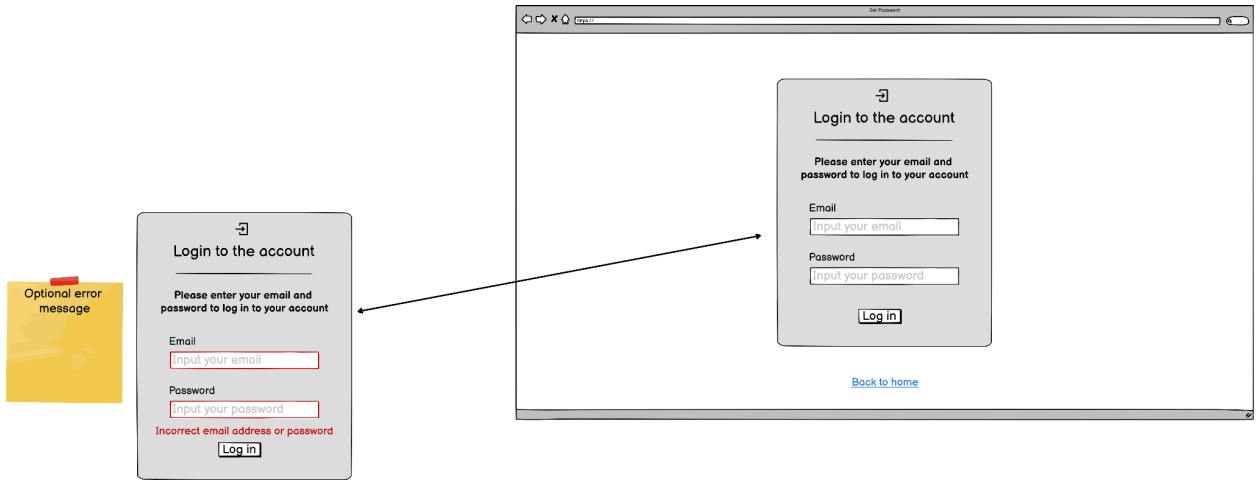
Email verification



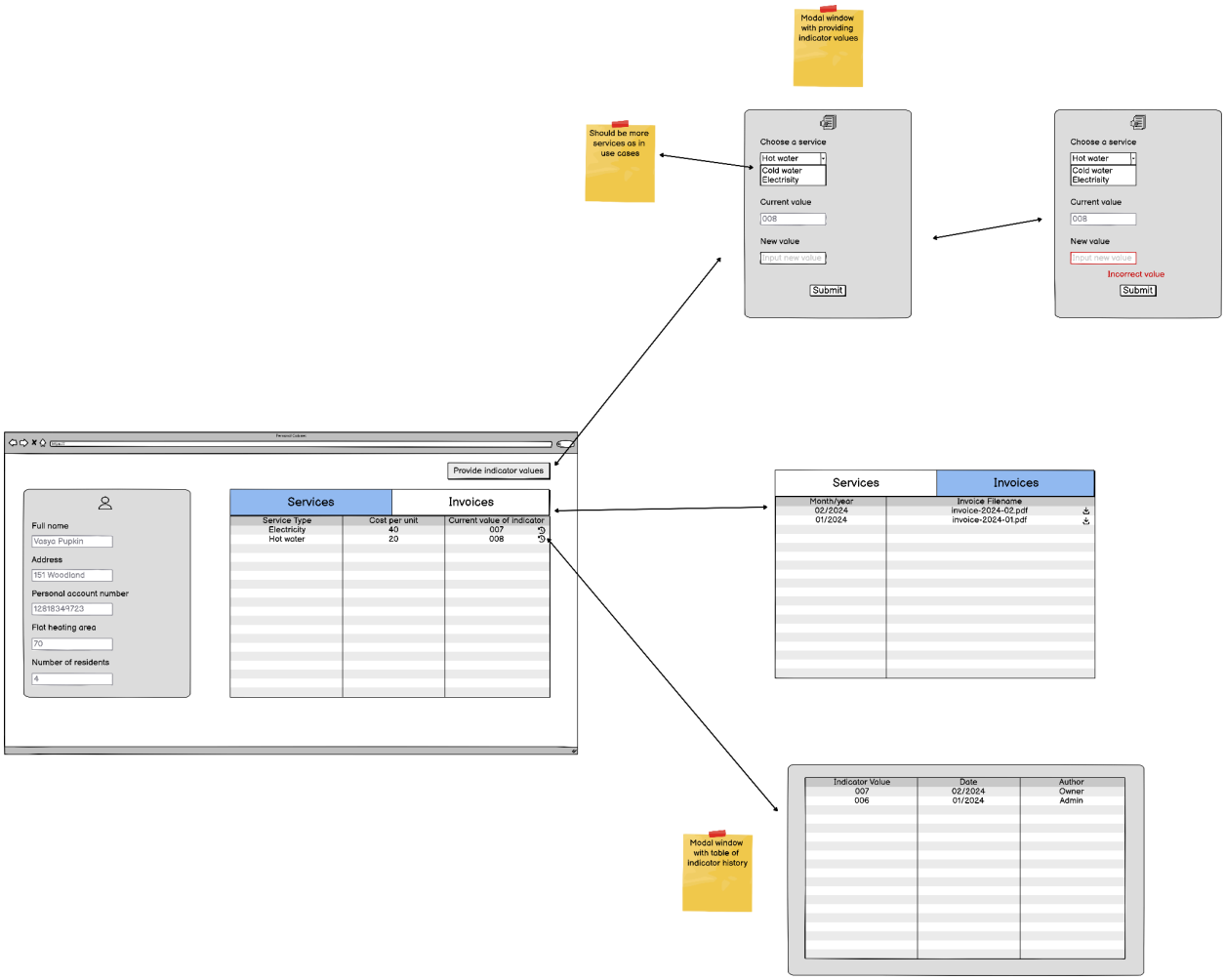
Set password



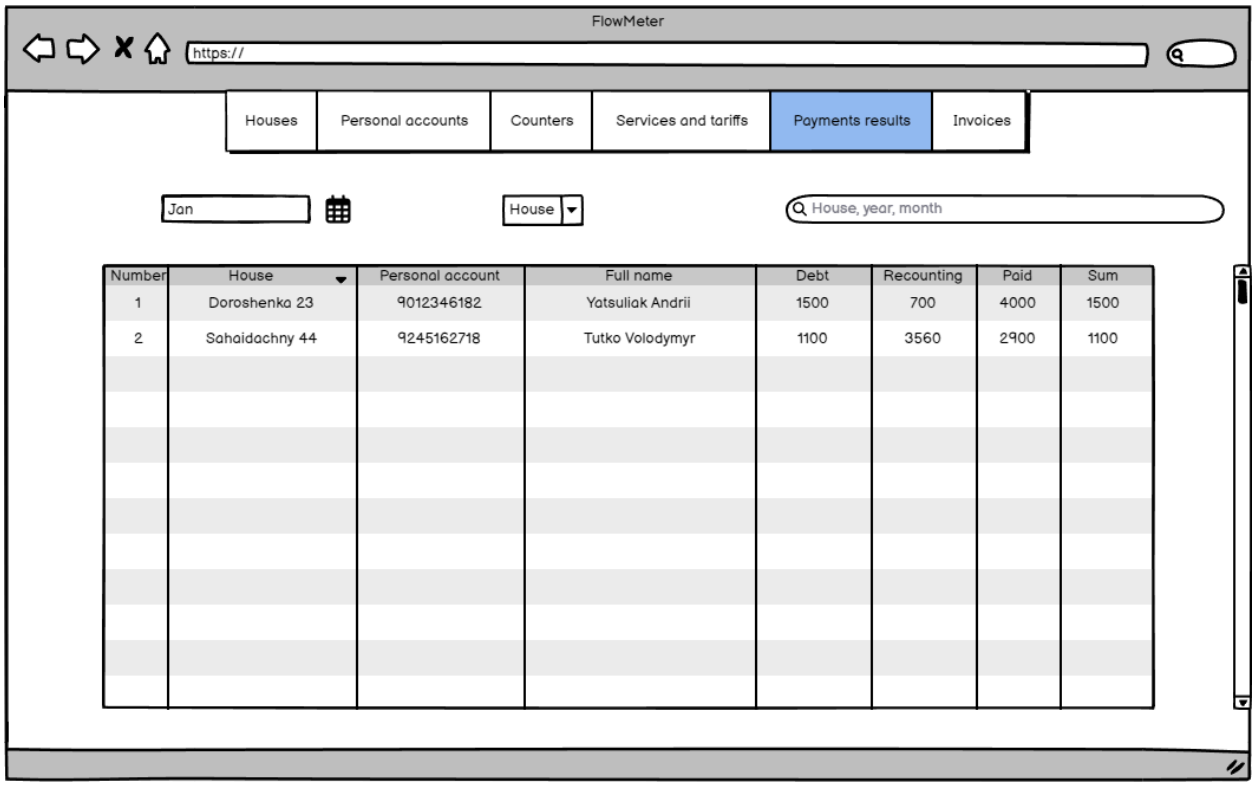
Log in



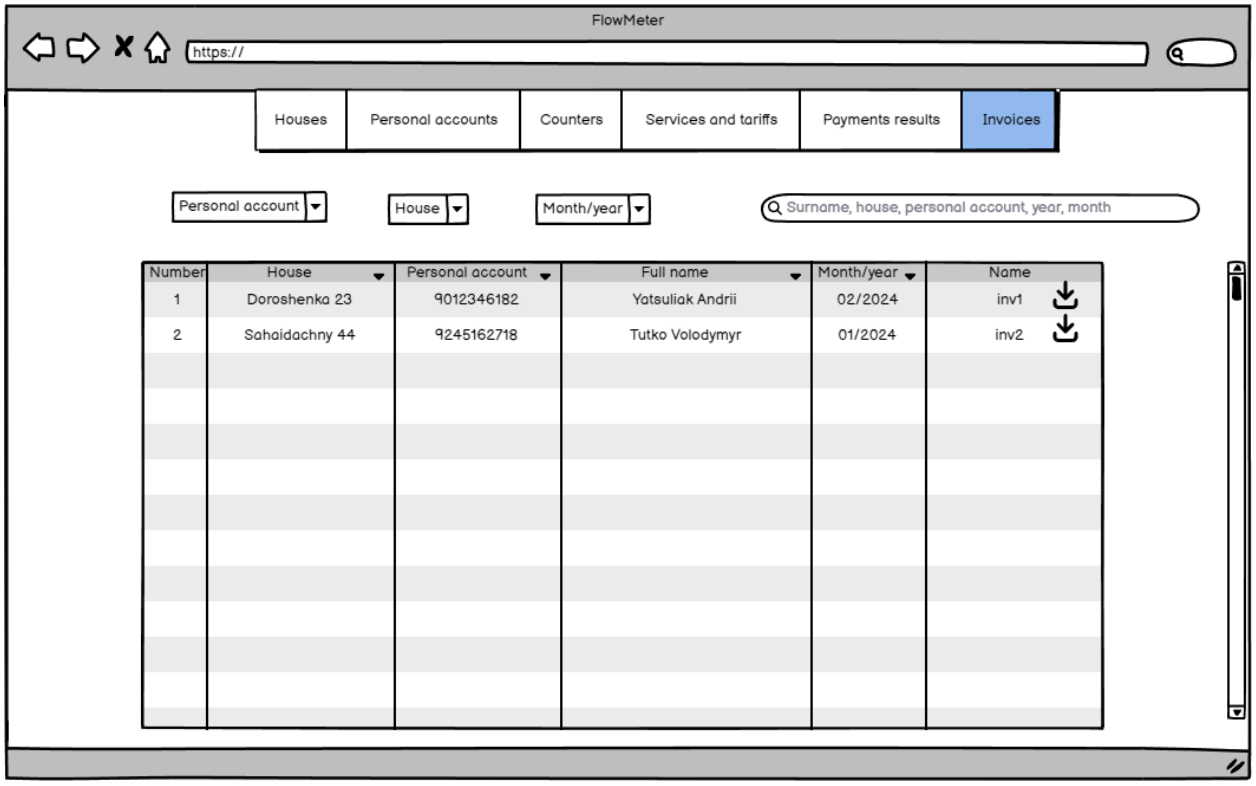
Consumer’s personal cabinet



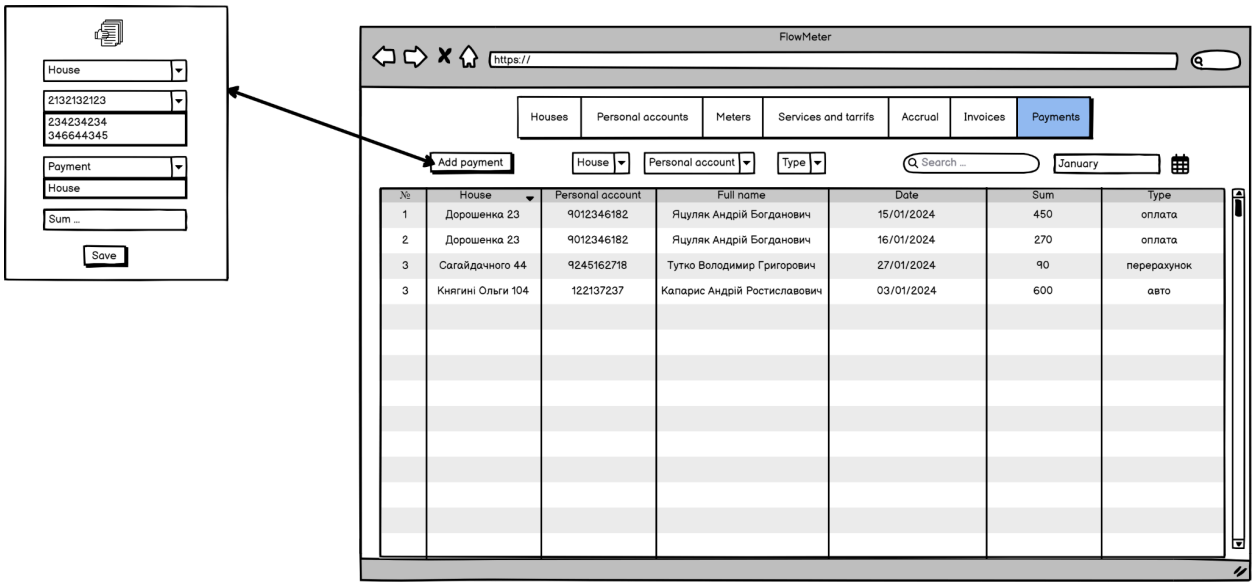
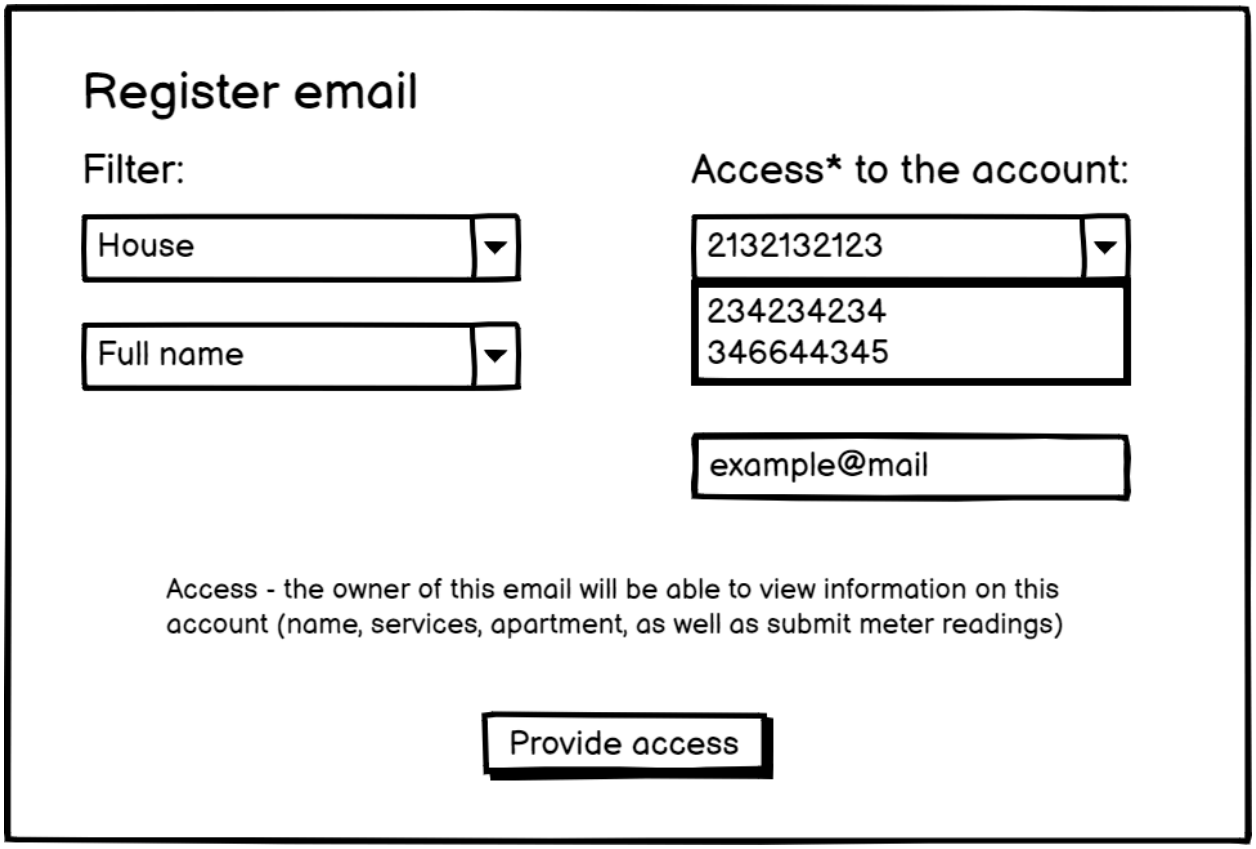
Payments results(admin)



Invoices(admin)



Payments (admin view)



Register email