# Property Investment Crowdfunding Platform

Version: 1.0

Author: Aseel Ashraf

Brief: This document highlights the system requirements necessary for the development of a full scaled investment crowding platform.

Tools:

- MSWord 2019
- StarUML 2.8

## Introduction:

This project consist mainly on the development of a property investment crowdfunding platform and a reselling annex website for only selling/buying properties. This web portal requires the integration of one if not many payment APIs and the implementation of a referral system to enhance the telemarketing capabilities of the entire project.

# 1. Specification and Requirements Analysis:

## 1. Functional:

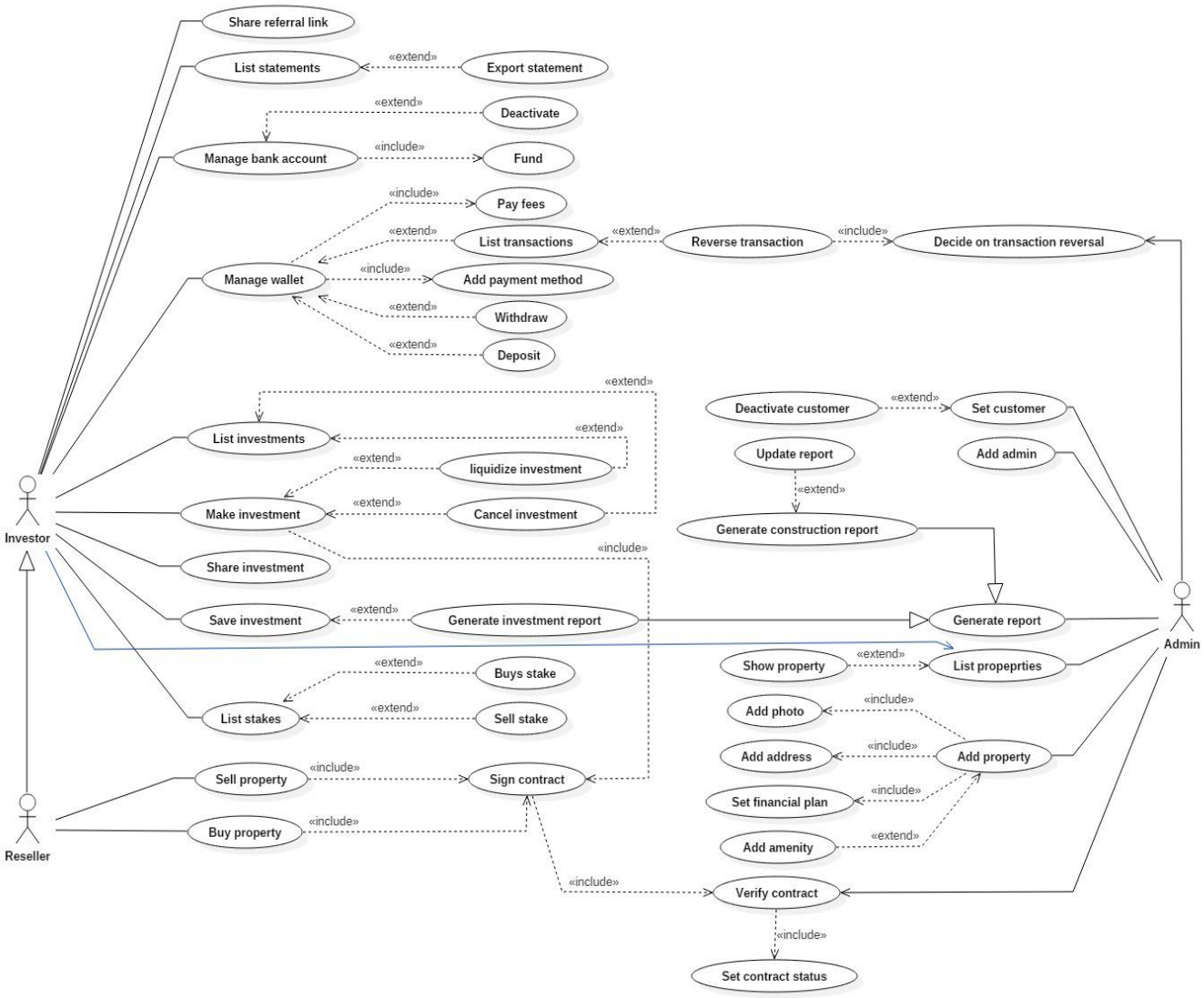
- Investor invest in to build properties
- Investor list investments
- Investor manage investments (Cancel, liquidize)
- Investor share/save or export investments
- Investor list properties, show property
- Investor list stakes, sell/buy stakes
- Investor manage wallet (Deposit, withdraw, pay fees, add payment methods and list transactions)
- Investor can cancel transaction after admin approval
- Investor manage bank account (Fund, deactivate)
- Investor list statements, export statement
- Investor invite friends with referral link
- Reseller can do anything an investor does in the main platform
- Reseller like the name suggest buy/sell properties & sign contracts doing so
- Admin verify reselling contracts
- Only an Admin can add new Admins
- Admin edit/deactivate customer account (Customer can be either Investor or reseller)
- Admin generate investment report
- Admin generate construction report
- Admin update construction status in report
- Admin list properties, show property
- Admin add property(Add address, photo, amenity and set a financial plan)

## 2. Non-functional:

- Accurate investment calculator
- Attractive referral system
- Shared database with reselling platform
- Scalability
- Secure web app/database interactions
- Good looking UI as it has to show properties in best conditions and tour like UX
- Optimized reports management

# 2. Behavioral diagrams:

## 1. Use cases diagram:




Description:

All users should be logged in with already created accounts in order to access these functionalities. Within the crowdfunding platform a reseller inherit all investment privileges while a reseller does not in the stand alone reselling website.

## 2. Use cases:

| Name | Actor | Precondition | Postcondition |
|---|---|---|---|
| Login | User | Logged out | Logged in |
| User action | | System response | |
| Enter username and password **ALT** | | Redirect to new interface | |

**ALT:** Wrong credentials, system prompt error.

| Name | Actor | Precondition | Postcondition |
|---|---|---|---|
| Add Admin | Admin | New admin nonexistent | Admin account created and added to database |
| User actions | | System response | |
| Admin enter new admin details | | System verify new admin details **ALT1** | |
| Admin submit admin identity documents | | System verify new admin identity **ALT2** | |

**ALT1:** Invalid new Admin details, renter account details

**ALT2:** Invalid identification document, resubmit new document

| Name | Actor | Precondition | Postcondition |
|---|---|---|---|
| Generate report | Admin | Report nonexistent | Report file generated |
| User actions | | System response | |
| Select report type | | Confirm choice | |
| Enter reports requirements(Property_id) **ALT** | | Confirm details | |
| - | | Generate event report/add report to database | |
| Export report | | Display available formats | |
| Save report file | | Confirm download | |

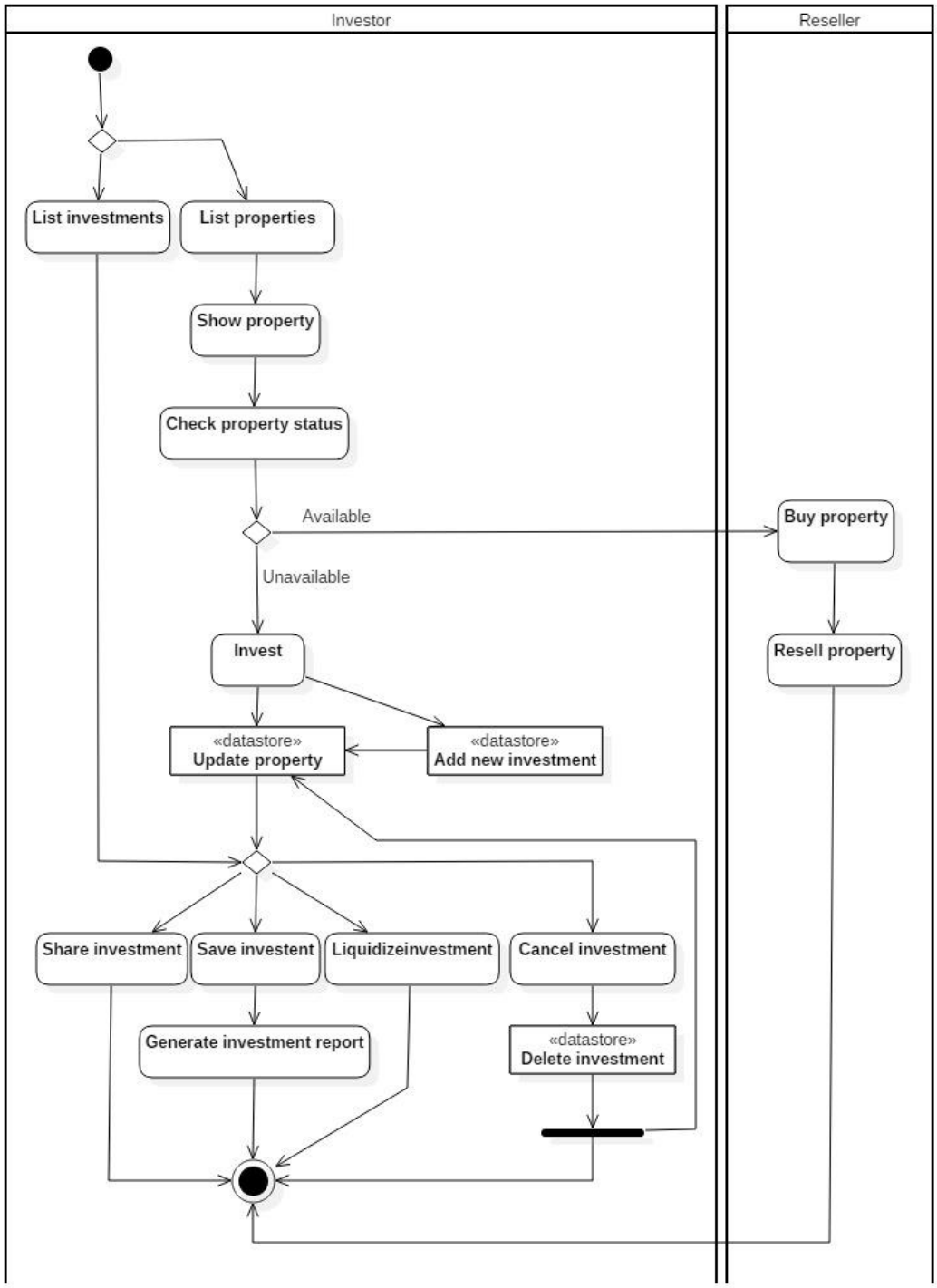
**ALT:** Invalid report requirements, renter

| Name | Actor | Precondition | Postcondition |
|---|---|---|---|
| Review contract | Admin | Contract not reviewed | Contract reviewed |
| User actions | | System response | |
| Select contract | | Confirm choice | |
| Review contract | | Store contract status | |

| Name | Actor | Precondition | Postcondition |
|---|---|---|---|
| Deposit into wallet | Investor/Reseller | Wallet not funded | Wallet funded |
| User actions | | System response | |
| Select payment method | | Verify payment method details **ALT** | |
| Specify amount | | Execute transaction | |

**ALT:** Invalid bank details, renter

## 3. Activity diagram:

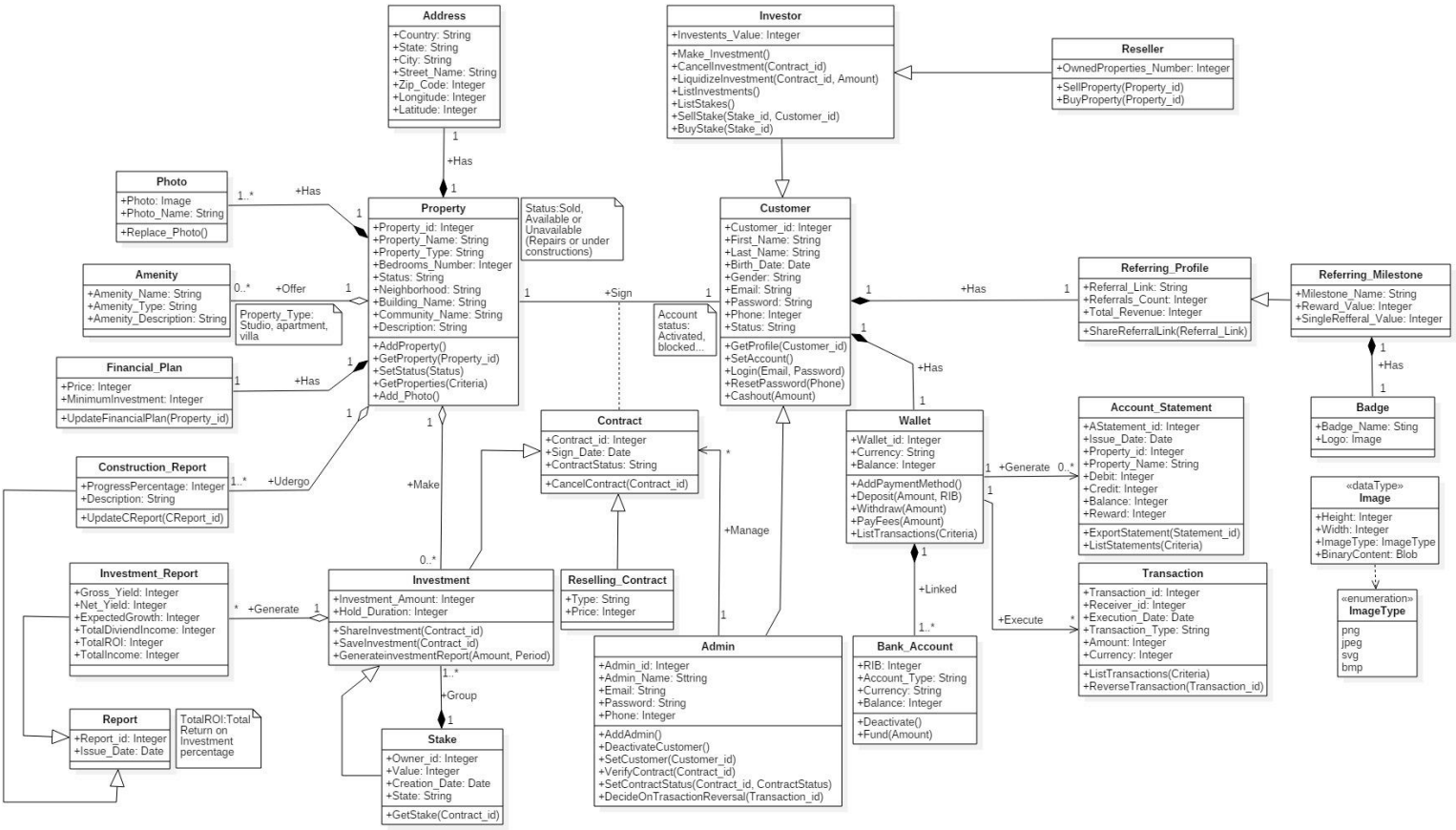



Description:

This diagram illustrates the different activities an investor has access to within the crowdfunding platform and how it can converge to a reseller activities as well.

# 3. Structural diagrams:

## 1. Class diagram (Crowdfunding platform):




### Description:

Customer class is an abstract class which is used as a parent class for Admin and Investor. Investor class is a parent class for Reseller class. The attributes of Customer class are common attributes for Admin, Investor and Reseller alike.

A Property can have an amenity but it must have at least one photo and one construction report.

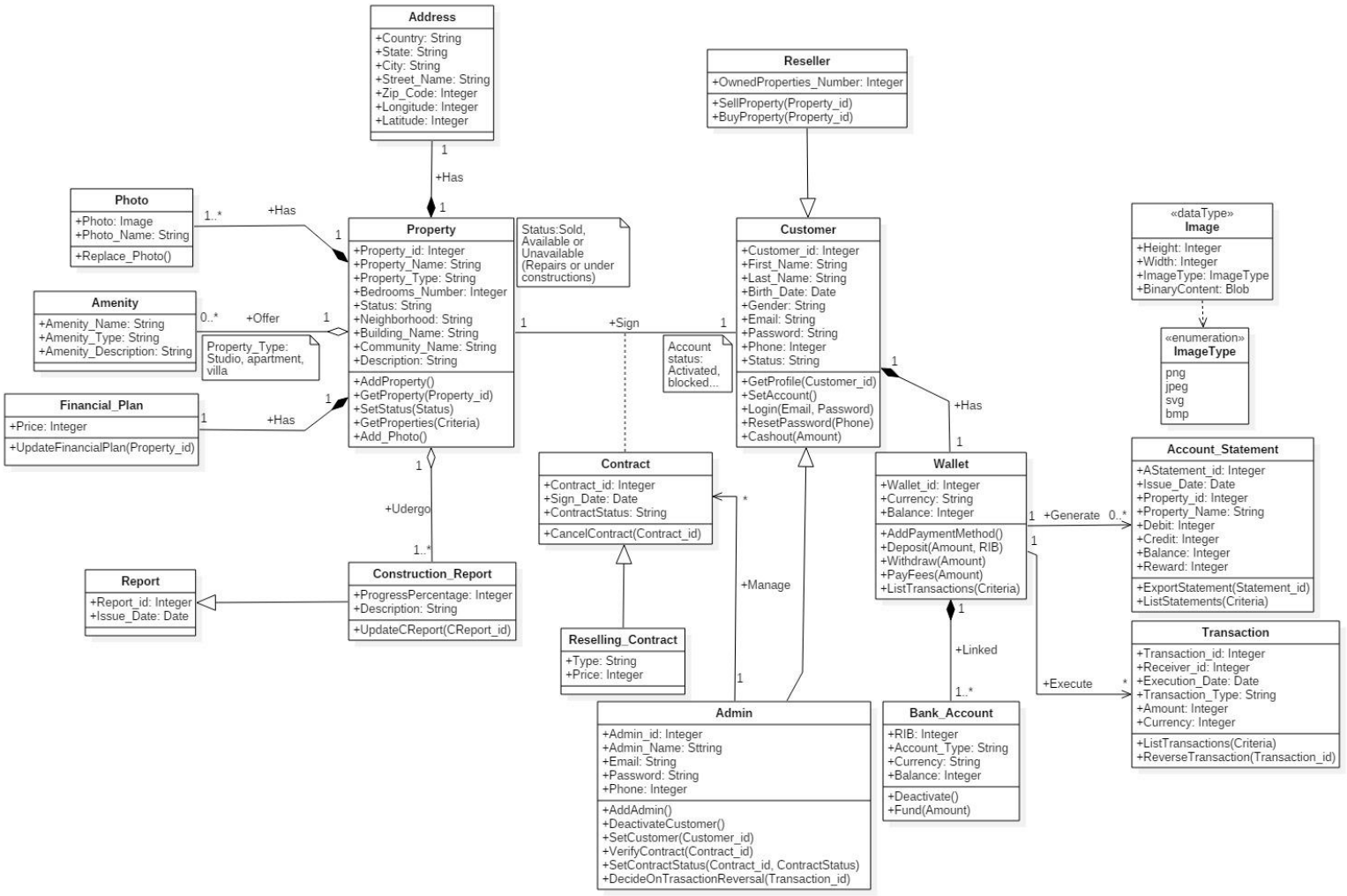
A property must have a financial plan and an address.

A Stake is similar to “position” in the trading domain, it has the properties of an investment but it can be composite of multiple investments.

Every referral milestone (based on referrals number) has a unique badge that shows automatically in a customer home page. Image is a custom datatype.

Class diagram should not be confused with database design. For example a contract should get two additional attributes(Foreign keys) referring to a Customer and Property.

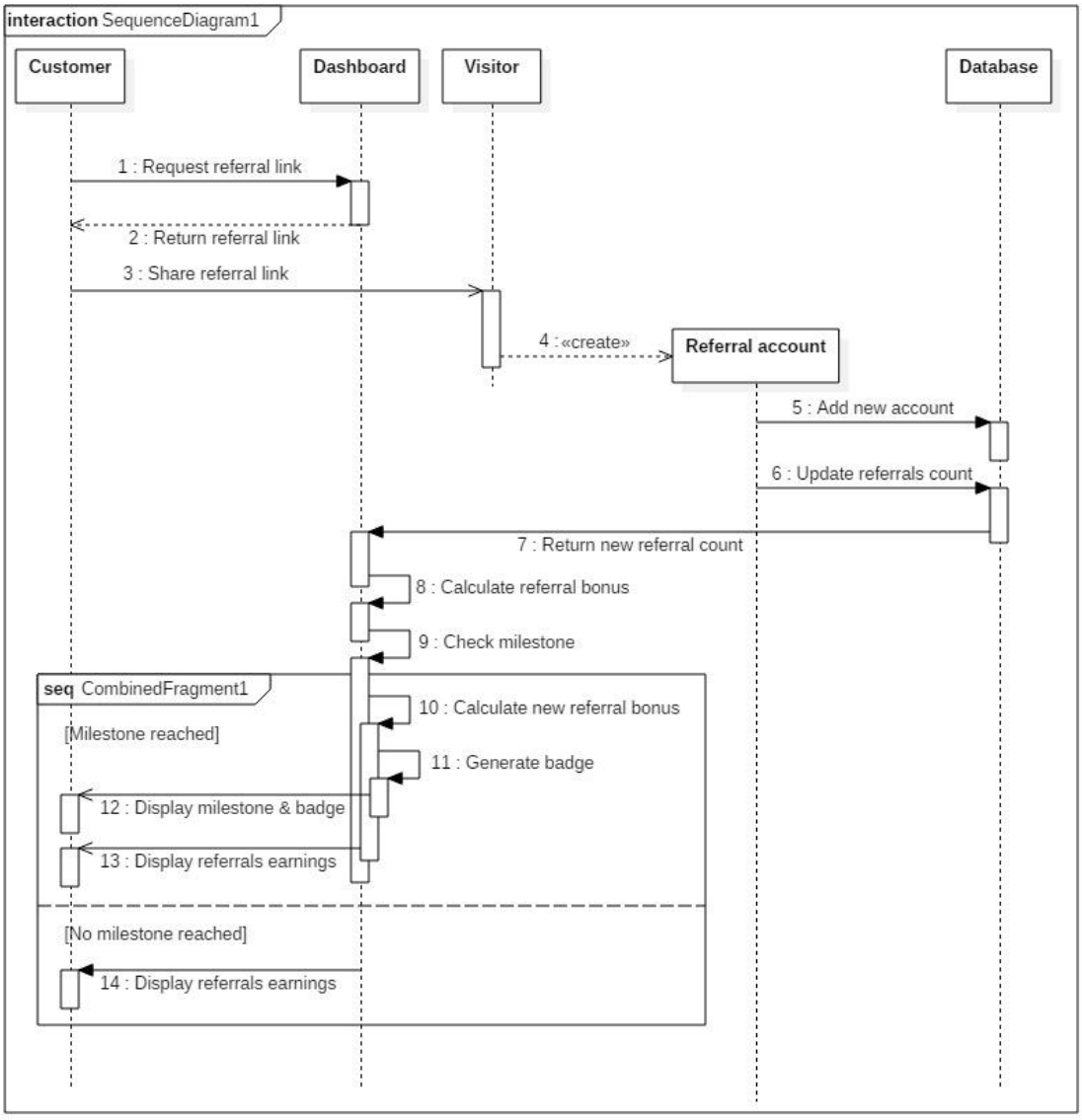
## 2. Class diagram (Reselling website):




### Description:

This class diagram represents the shared portions of the global class diagram (used in the crowdfunding platform) between the platform and the additional reselling website.
A property status should be updated and shown the same in both websites.
The database design will also follow the same principle, granting the reselling website access to certain Tables from the whole database.

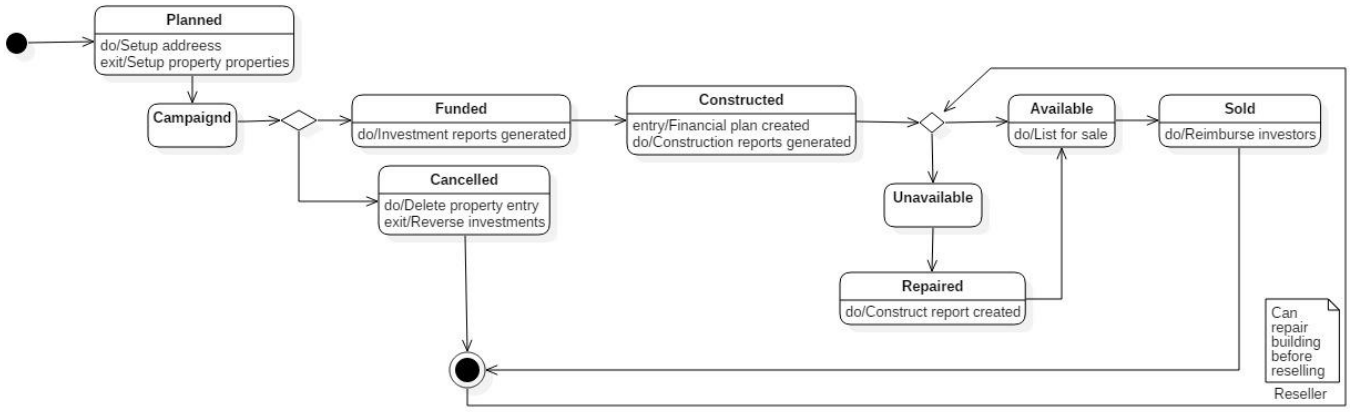
## 3. Sequence diagram:




### Description:

This diagram shows how the referral system works and the process of inviting a visitor into the crowdfunding platform via a custom referential link.

## 4. State chart machine diagram:




## Description:

This diagram illustrates the various states a property can fall on within the system. After reaching the end, a reseller can restart the whole process, he can make new construction work and repairs to the property before posting it as available for sale.