Domain Model

# Version 0.1.2

This document represents the “first pass” at a domain model for the SLC Electronic Management Service. The purpose of this document is to identify some of the classes required to complete the project.

Initially, relevant statements from the provided literature shall be laid out with various words highlighted according to the following key:

Nouns which will be considered for use as domain objects are marked in yellow.

Verbs which will be later considered for use as operations are marked in green.

Possessive phrases which will be later considered for use as attributes are marked in red.

* **Estate/Development**

An estate or a development should usually have a name and comprises of multiple thoroughfare and properties. Each estate will always have a contact perhaps, the estate manager who is in-charge and manages the development affairs. The development will have a location in a specific area of the country among other features

* **Thoroughfare**

Every development is made up of multiple thoroughfare with a name and properties in one or both sides. In this instance, a type of thoroughfare in a development can be a street, close, avenue, crescent etc.

* **Property**

A property is a building on a thoroughfare within a development. A Property type may be in form of a detached house, semi-detached, terrace and a block of flats etc. A property also comprises of a single or multiple households (see index d below for a household). A property will always have an address (usually building name, number and thoroughfare name), associated owner or custodian, and completion date among other features. A property may be owned, rented or managed by a body.

* **Household**

A household refers to property occupants regarded as a single unit for example, a detached house may be a single household, so as a block of flat. Any form of individual unit of a property is regarded as a household. Each household will have a custodian who usually, will be solely responsible for activities related to the household.

* **System users**

Users are considered to be the system actors, who will be required to carry out different activities using the system. The system users are considered in three categories namely:

1. **Basic System User**

A basic user will always be associated to a development with basic functionalities including the following:

1. view, add and modify thoroughfare on dedicated development
2. view, add and modify of a property to a thoroughfare on a development
3. view, add and modify a household and associated custodian to a property on thoroughfare
4. view generated invoice for a specific household
5. take payment on behalf of a custodian and generate receipt (please note this will only be a payment simulation and not a real payment system solution)
6. print invoices and receipts for payments any made (Note: an output a receipt on the screen and not actually printing – simulation again!)

Note: all modification does not include delete access.

1. **Manager**

A manager will be able to complete all basic system user tasks (as above) and the following:

1. generate a service charge invoice for specific household on the development (a multiple invoice may be generate for similar household)
2. delete household, thoroughfare, property, household and associated custodians
3. create a basic system user, which will be restricted to the development the manager is in charge
4. view total invoice for only associated development.
5. **Admin**

Admin user will be able to complete the above basic system user, manager’s tasks and the following:

1. create, modify and delete developments and include users in capacity of a Manager and basic system user.
2. View, modify and delete development invoices and payments
3. View total invoice and payment receipt for all estate within the system.

Nouns will now be listed in alphabetical order, duplicates will be removed and plurals made singular.

**Prospective classes**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Avenue | Country | Estate Manager | Individual Unit | Semi-Detached |
| Block of Flats | Crescent | Feature | Instance | Side |
| Body | Custodian | Flat | Owner | Street |
| Building | Development | House | Property | Terrace |
| Close | Estate | Household | Property Occupants | Thoroughfare |
| Payment | Invoice | Receipt | SystemUser | Admin |
| BasicSystemUser | Manager |  |  |  |

These prospective domain objects will now be further reviewed to assess suitability.

1. *Avenue, Close, Crescent, Street & Terrace* are all types of *Thoroughfare*. These are candidates for generalization and so will be put to one side for now.
2. *Block of Flats, Flat, House and Semi-Detached* are all types of *Property*. These are candidates for generalization and so will be put to one side for now.
3. *Custodian & Owner* are both types of *Body*. These are candidates for generalization and so will be put to one side for now.
4. *Building* and *Property* refer to the same entity and so *Building* shall be discarded.
5. *Country* is an entity that falls outside the scope of the project. There is no indication that SLC intend the EMS to be used for *Developments* outside of the United Kingdom. *Country* will therefore be discarded.
6. *Estate* and *Development* refer to the same entity and so *Estate* shall be discarded.
7. *Estate Manager* is an actor and so shall be used on Use Case diagrams. This may also be of use as an attribute in the *Development* class.
8. *Feature, Individual Unit, Instance & Side* are too vague to be of use at this time.
9. SLC have given no indication for a requirement to record the occupants of a *Property* other than the *Custodian*, therefore *Property Occupants* shall be discarded at this time.
10. SLC contains multiple *Developments* therefore a class will need to be created to represent the entity *owning* the *Developments.* This class shall be called *Council* for now.
11. *BasicSystemUser, Manager and Admin* are all types of *SystemUser*. These are candidates for generalization and so will be put to one side for now.

The revised table of prospective classes is as follows:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Council | Body | Development | Property | Thoroughfare |
| Payment | SystemUser | Invoice | Receipt | Household |

There is now sufficient information to form the first pass Domain Model. Note that as Block-of-Flats (a *Property)* contains Flats (also a *Property*) the *Property* class can contain objects of its own type.

