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Yhistu – A Web Application to Manage an Apartment Association

ICD0021 – Building Distributed Apps

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Author’s declaration of originality

I hereby certify that I am the sole author of this thesis. All the used materials, references to the literature and the work of others have been referred to. This thesis has not been presented for examination anywhere else.

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Introduction

The goal of this project is to create a web application to help manage the vast number of apartment associations (Estonian: *korteriühistu*) in Estonia. Estonia is known as a world leader in different electronic services and creating simple and easy to use web-based solutions from filing taxes to applying for a building permit. Despite all this success, were the reader of this paper to step into an ordinary apartment building, he or she would quickly notice a letterbox with a sign that asks the residents to post their water meter readings on paper on the last day of the month.

The author aims to fil that void in the easy-to-use web-services of Estonia by creating a web-based application that would help to manage everyday tasks of an apartment association like entering utility meter readings, creating invoices, or posting announcements.

The preliminary name of the web application is Yhistu.

Analysis

Managing an apartment association can become quite a difficult and time-consuming activity. Even without considering all the complex and multi-layered relationships that have formed between the occupants of the building. As apartment associations are mostly run by volunteers, the main goal of the web application is to help them use the available time much more productively. For example by simplifying the process of recording the readings from different utility meters and calculating the price on the invoice, time is freed for the management board to focus on renovation projects. But it also hels with the communication between the renters and the tenants for example.

The functionality of the web application can broadly be divided into six categories and is built in a way that extra functionality is easy to implement. The first functionality category holds the information and relationships of the apartment association itself. What is the name of the apartment association and its address and registration number for example. Description of the buildings – number of apartments, total square meters etc. Who are the people living in these buildings, who owns what apartment, which apartments are rented out so the apartment association can contact the tenant if need be. It also holds information about the members of the board and other parties of interest who are dealing with the day-to-day management of the apartment association.

The second functionality is to hold information about different perks that are connected to an apartment or a person. For example, who is allowed to park on a particular parking space, who owns what car if there is an emergency, and the car needs to be moved or who owns a particular storage area in the basement. The perks section is fully customisable, so every apartment association can make use of the feature according to their own needs.

The third broad feature is an online message board that can be used by the members of the board to post announcements or by regular members to post questions to the board. It can also be used as a centralised place to hold general discussions concerning the building or a problem.

The fourth feature could be described as a contact book type solution that is used across all of the web application to hold various types of contact information of different entities.

The fifth functionality category concerns all the different services the apartment association is using or is providing or distributing to its members. This may include garbage collection, heating, running water etc. The occupants are able to enter the readings from different utility meters into the web application which also keeps a history of the readings and amounts used. Calculation rules can be added to the services so the web application can automatically calculate the correct sum charged for the service for an apartment to be included on the invoice. The web application also keeps track of when the meters were last checked and when the next check is due for easy management of the utility meters.

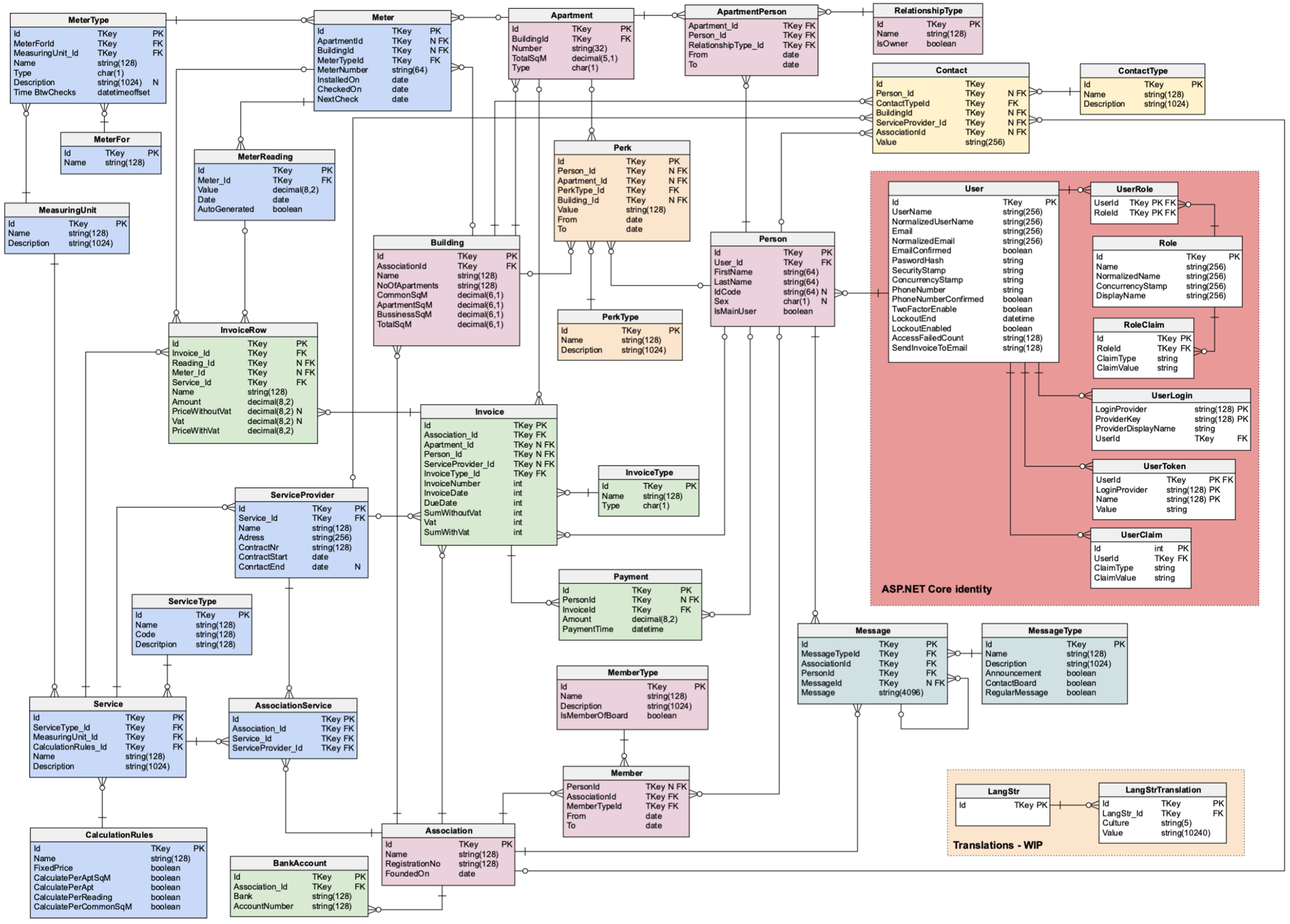
The final functional category deals with invoices. The invoices are automatically generated for each apartment. The invoices contain rows for all the services the apartment association in using and the prices are calculated according to the calculation rules and the readings from the utility meters that the occupants have entered. This category also contains all the invoices that the apartment association has received from the service providers that need to be paid.

The web application also keeps track if an invoice has been paid or not and can send a reminder.

The different types of users the web application supports are the following:

- Administrator – The user who can create, update and delete the information about the apartment association. This is the user who initially creates the barebones structure of the apartment association with all the information about the building, apartments, utility meters etc.
- Member of the board – This user can view information about the members of the apartment association – e.g. their contact information, invoices, readings from the utility meters. They can also create and update the perks.
- Member of the apartment association – This user can enter readings from the utility meters, update their own contact information and add persons connected to their user and apartment. The persons might be spouses or tenants for example who need access to the apartment association message board and the ability to enter readings.
- Regular users – Users who are not members of the apartment association, but live in the building and need access to the message board and want to enter readings from the utility meters.

Entity Relationship Diagram



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Client Flow Diagrams

TBD