Technical Solution Description

eCare mobile

Version 1.0

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Status done

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Imprint

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# Introduction

Mobile operator website must be developed. Essential functionality includes plans and features management (CRUD and managing links and dependencies), processing customers and contracts for providing mobile services (each customer can have any amount of contracts with unique phone numbers), personal accounts where customers can block and unblock their contracts (only if respective contracts are not blocked by system’s manager). While proceeding with contract changes all data must be stored in basket on the clientside. Only authenticated users with must be able to use personal account features. Only users with privileges of manager or admin must be able to use CRUD functions. Only users with privileges of admin must be able to change privileges.

# Technologies

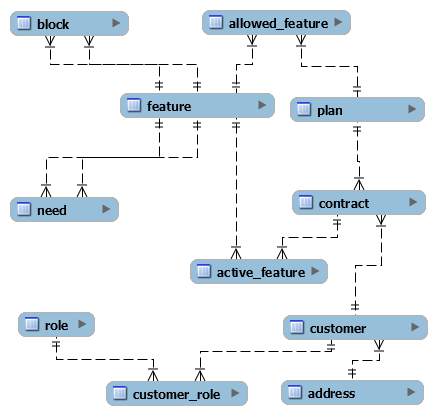
* Hibernate
* Spring MVC
* Spring Security
* HTML5, CSS3, JQuery

# Database description

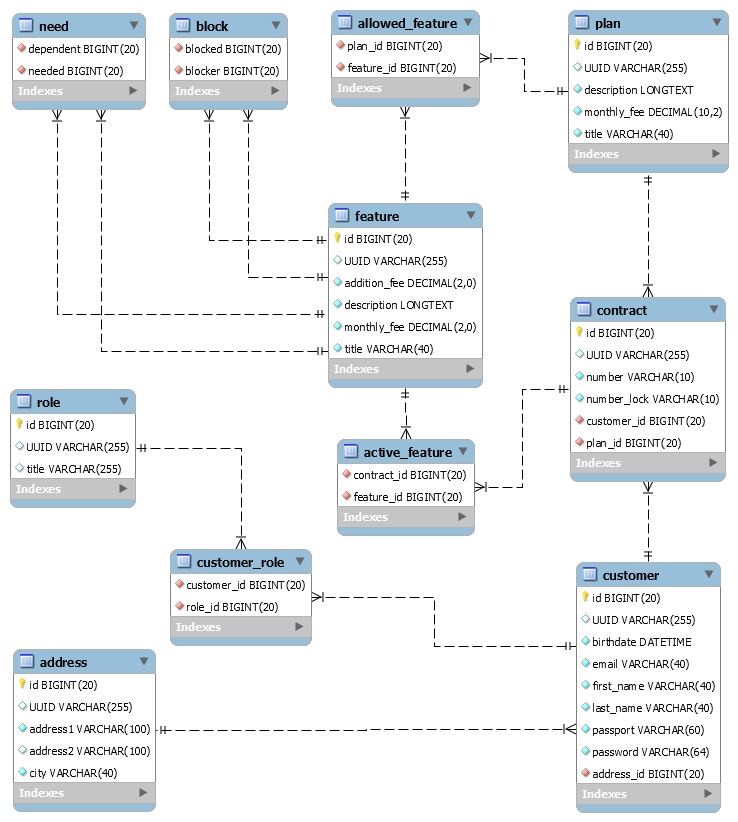
Tables list

|  |  |
| --- | --- |
| **Column** | **Description** |
| id | Automatically generated primary key |
| UUID | Unique value for every entity that is used for providing equals and |

Minified database diagrams is show at Picture 1. Following tables present many-to-many relation: allowed\_features, active\_feature, customer\_role, block, need. Full database diagram with fields and types is shown at Picture 2.



Picture 1 – Database diagram (minified)



Picture 2 – Database diagram (full)

# Entities and DAO layer

Abstract Entity is a base for all other entities. It provides an equals and hashcode that will always work correctly in all circumstances. This avoids frequent errors related to the implementation of those same methods.

|  |  |
| --- | --- |
| **Column** | **Description** |
| id | Automatically generated primary key |
| UUID | Unique value for every entity that is used for providing equals and |

Role – represents access role in system. Only two predefined roles exist at the moment, but separate entity is designed to make access system to be extendable.

|  |  |
| --- | --- |
| **Column** | **Description** |
| title | Automatically generated primary key |

Feature – represents option that can be applied to contract in addition to plan. One contract can have any amount of options being active simultaneously. Options may block each other from usage or depend from other options.

|  |  |
| --- | --- |
| **Column** | **Description** |
| title | Title for the option |
| description | Description for the option |
| additionFee | Cost of switching option on |
| monthlyFee | Cost per month of using option |
| blockers | List of options that block this option |
| blockedFeatures | List of options blocked by this option |
| neededFeatures | List of options that needed for this option |
| dependentFeatures | List of options that dependent from this option |

Plan – represents mobile plan that (one and only one) must be applied to each contract. Plan may have any options allowed to add to contracts with this plan.

|  |  |
| --- | --- |
| **Column** | **Description** |
| title | Title for the plan |
| description | Description for the plan |
| monthlyFee | Cost per month of using option |
| allowedFeatures | List of options that are allowed for this plan |

Address – represents address of customers.

|  |  |
| --- | --- |
| **Column** | **Description** |
| address1 | Address line 1 |
| address2 | Address line 2 |
| city | City part of address |

Customer – perpesents customer of mobile operator. Each customer can have any amount of contracts.

|  |  |
| --- | --- |
| **Column** | **Description** |
| firstName | First name |
| lastName | Last name |
| birthdate | Date of birth |
| passport | Passport data |
| email | Email of customer |
| password | Hash of password |
| contracts | List of contracts owned by customer |
| address | Address of customer |
| roles | List of roles applied to customer |

Contract – contract between mobile operator and customer with unique phone number.

|  |  |
| --- | --- |
| **Column** | **Description** |
| number | Unique phone number |
| customer | Customer who owns this contract |
| plan | Plan applied to contract |
| activeFeatures | Options activated for contract |
| numberLock | State of number (can be unlocked, locked by user, locked by manager) |

1. Open points

The issues that have not yet been described in this document or which are needed for other cooperation requirements are listed below. Some will be included in the next version of this document and some will be described and continued in separate documents. The maintenance in separate documents is selected for content that must be updated several times in a year.

| **Consec. no.** | **Open points** | **Cooperation with** | **Responsible person** | **Date** | **Documentation** |
| --- | --- | --- | --- | --- | --- |
| 1 |  |  |  |  |  |
| 2 |  |  |  |  |  |
| 3 |  |  |  |  |  |
| 4 |  |  |  |  |  |

Table B.1: Open points

List of Abbreviations

|  |  |
| --- | --- |
| Abbreviation | Description |
| SE Book | Software Engineering Book |
| PM Book | Project Management Book |
| IS | Integration Service |