Functional Specification

Project: Insurance profiling from social media
Client: RetroRabbit

Team: Valknut Solutions

Version: 1.3

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Contents

Revision History

Revision	Date	Author(s)	Description
1.0	27.05.2016	CJvV,KH,QW	Original Architectural document without Functional requirements
1.1	27.07.2016	CJvV,KH,QW	Added Functional requirements and separated Architectural requirements
1.2	09.09.2016	CJvV,KH,QW	Added better scoping requirements, updated use cases, updated each subsystem, added descriptions to each section
1.3	05.11.2016	CJvV,KH,QW	Added logo,Marketing use cases, marketing activity diagram, updated some styling and added service contract specification for marketing case

1 Functional requirements and application design

This document is related to the design requirements related to the Insurance profiling project, for a more thorough overview of the system see the Architectural Specification's scope and overview.

1.1 Document overview

The functional requirement specification of this system is separated into different sections, namely:

- The overall scope of the system from a high level stand point
- The smaller subsystems of the high level scope including
    1. A use case diagram of that subsystem
    2. A service contract
    3. The required functionality for that use case
    4. A process specification if the use case functionality is complex
- Domain models based on the use cases - See Section 1.9
- Any related open issues - See Section 1.10

1.2 Overall System Scope

The system consists of five modularized subsystems namely:

- Administration Section 1.5
- Notifications Section 1.8
- Analysis Section 1.4
- Persistence with regards to data Section 1.7
- Social media Section 1.3

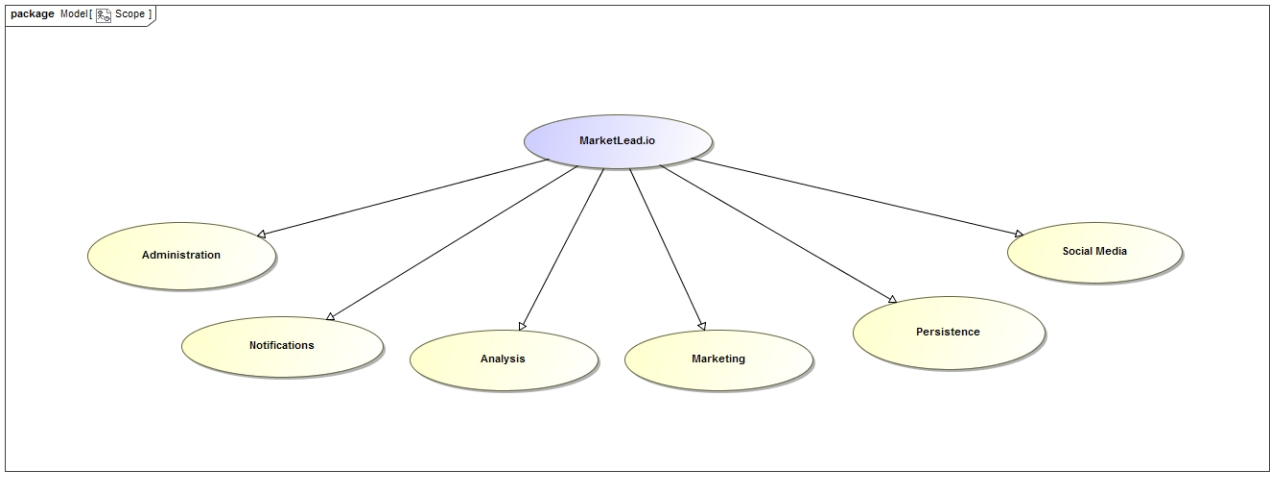

Figure 1: Scope : Insurance Profiling

1.3 Social Media subsystem

The social media subsystem forms a major part of the system's functionality.
The included modules handle the receiving of data from the Facebook advertisement lead form, the Wechat messenger bot and the Facebook messenger. The social media aspect further includes the website's lead form integration point.

1.3.1 Use cases

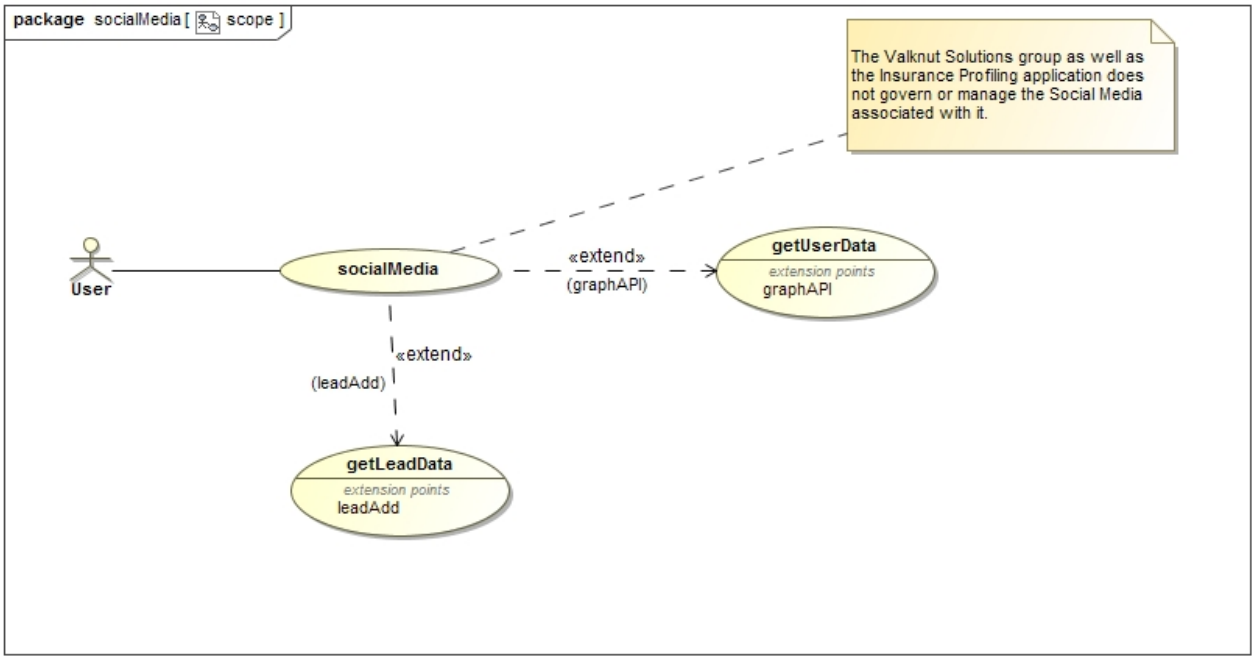

Figure 2: Use Case Diagram : Social Media

Critical

- validateCustomer
- createCustomer
- getCustomer

Important

- validateCustomer

Nice-To-Have

- getAnalyst
- analyseUser

1.3.2 Services Contracts

- Pre-conditions
  - The information is valid
- Post-conditions
  - The user's information will be saved in the database
  - A new lead will be created in the database to follow up on

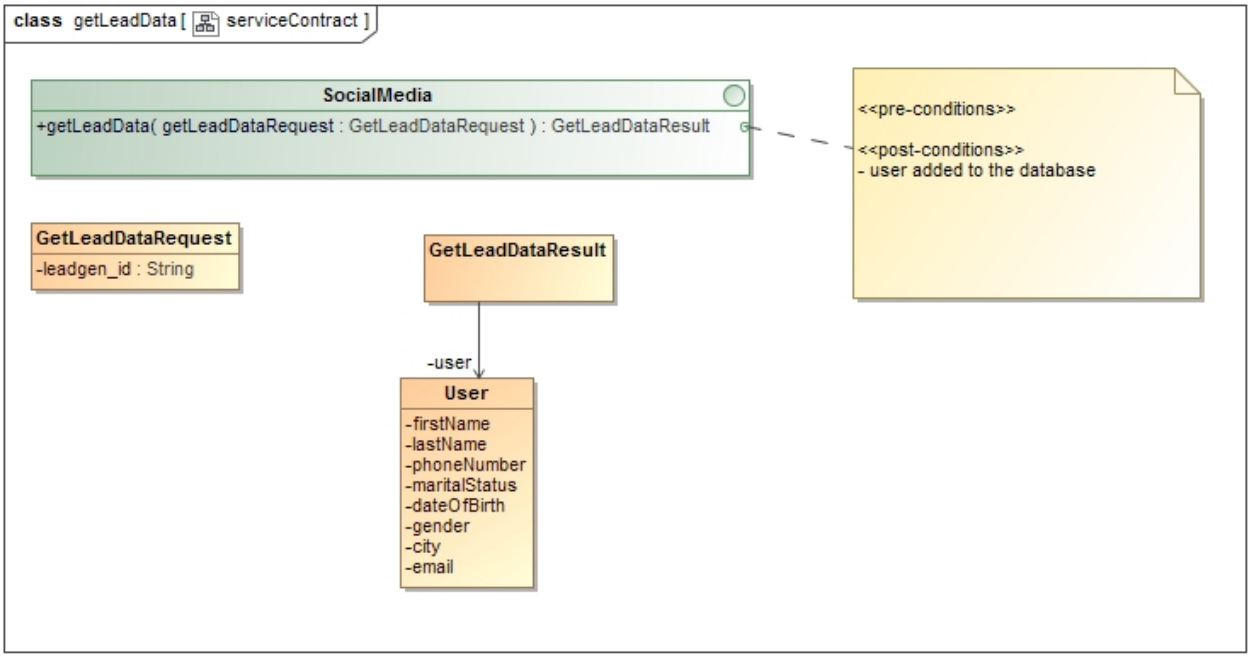

Figure 3: Service Contract : getLeadData

1.3.3 Required Functionality

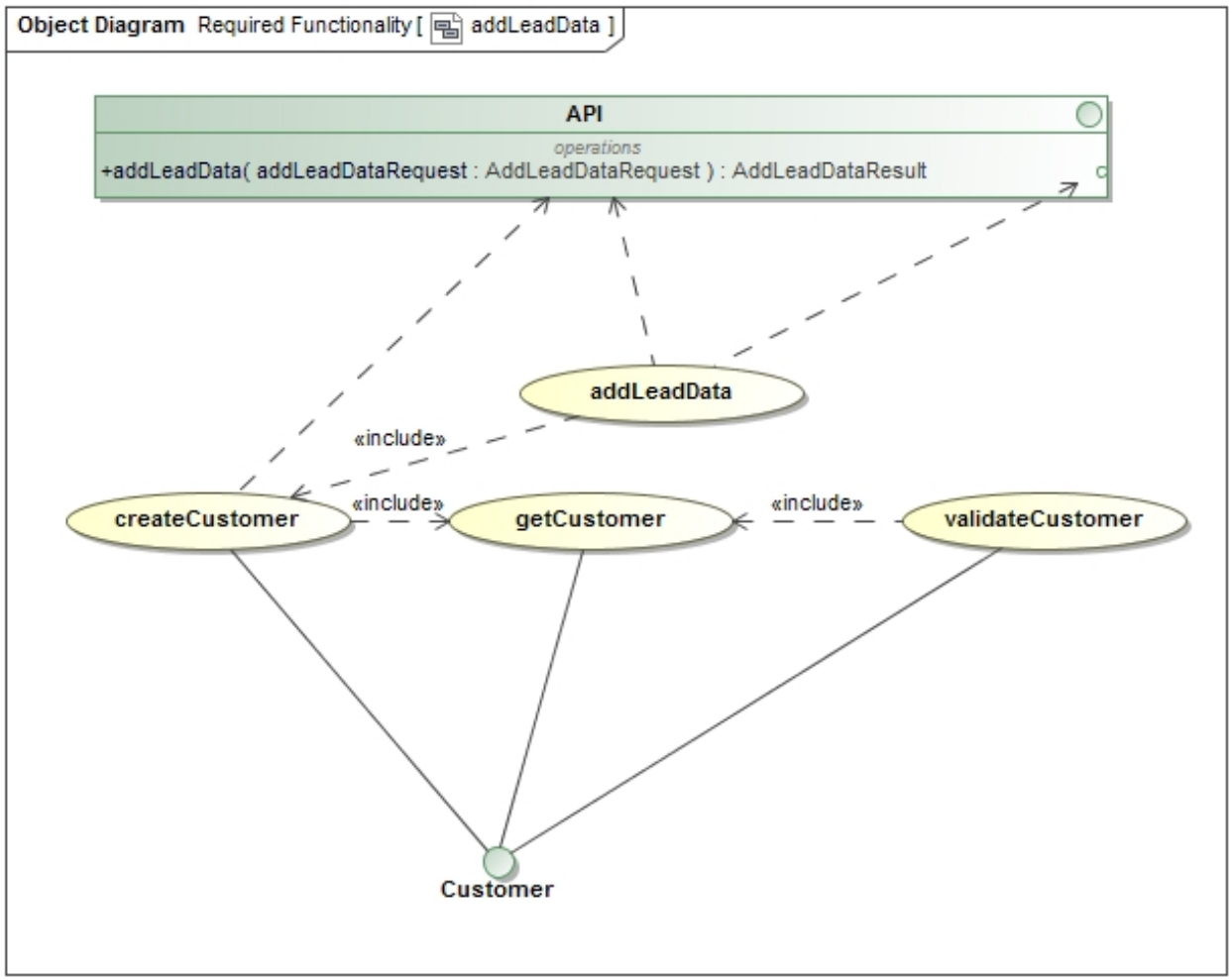

Figure 4: Required Functionality : getLeadData

1.4 Analysis subsystem

The analysis subsystem handles another core functionality of the system, analysis of the retrieved data. This includes the ability to generate reports in the form of different graphs, filtered by different fields. Analysis and reporting forms a major feature from a marketing and risk analysis standpoint.

1.4.1 Use cases

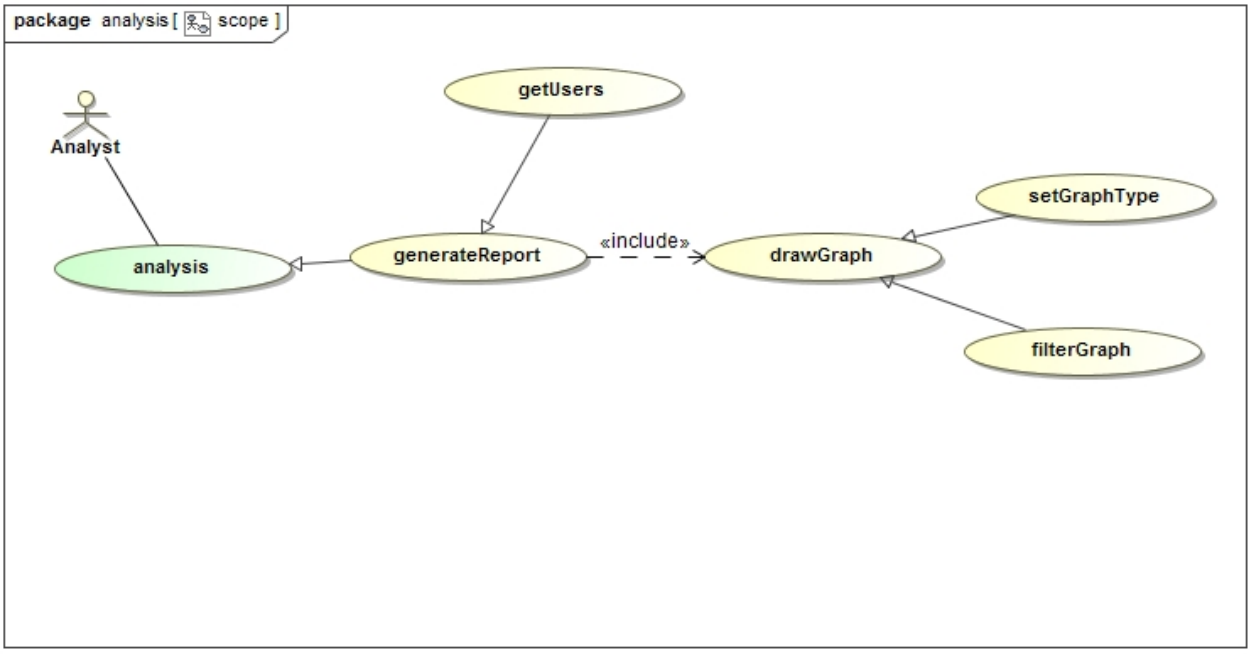

Figure 5: Use Case Diagram : Analysis

Critical

- getUsers
- generateReport
- drawGraph

Important

- setGraphType
  - Pie graph
  - Bar graph
  - Line graph

Nice-To-Have

- filterGraph - Including:
  - Gender

- Age
- Location
- Marital status
- The amount of signups per year

1.4.2 Services Contracts

- Pre-conditions
  - The analyst is logged in
  - The analyst must choose the graph data to filter by
  - The analyst must choose the graph type to generate
- Post-conditions
  - A report is generated. This report includes
    - The graph types the analyst chose
    - The graph data the analyst chose

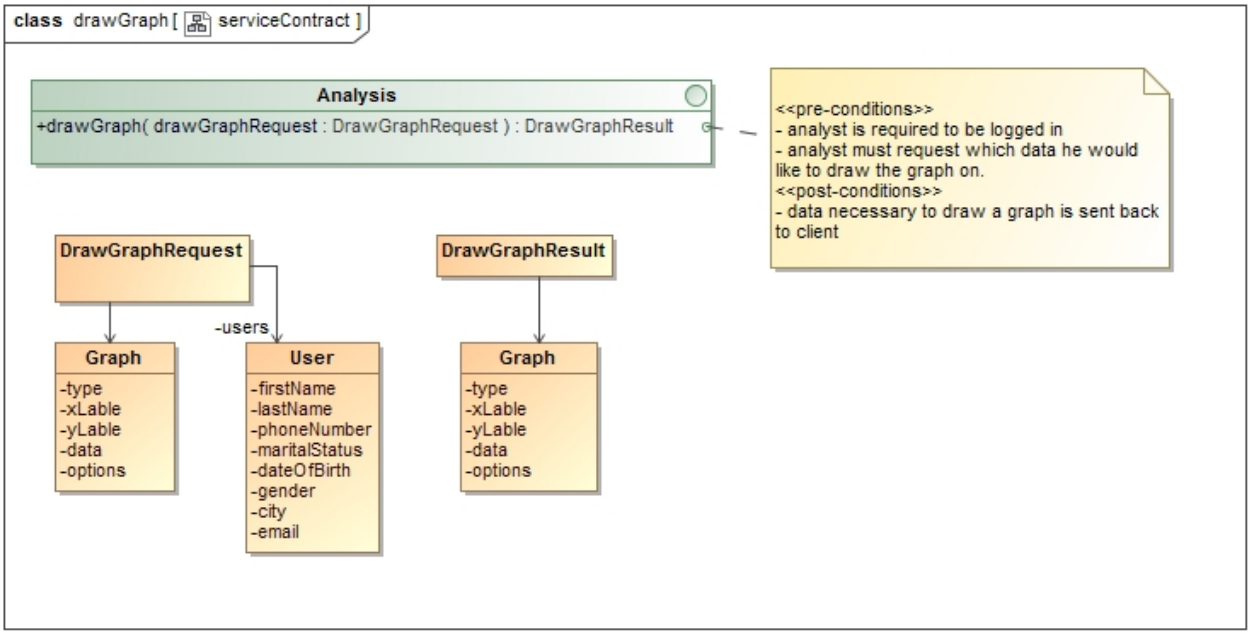

Figure 6: Service Contract : generateReport

1.4.3 Process specifications

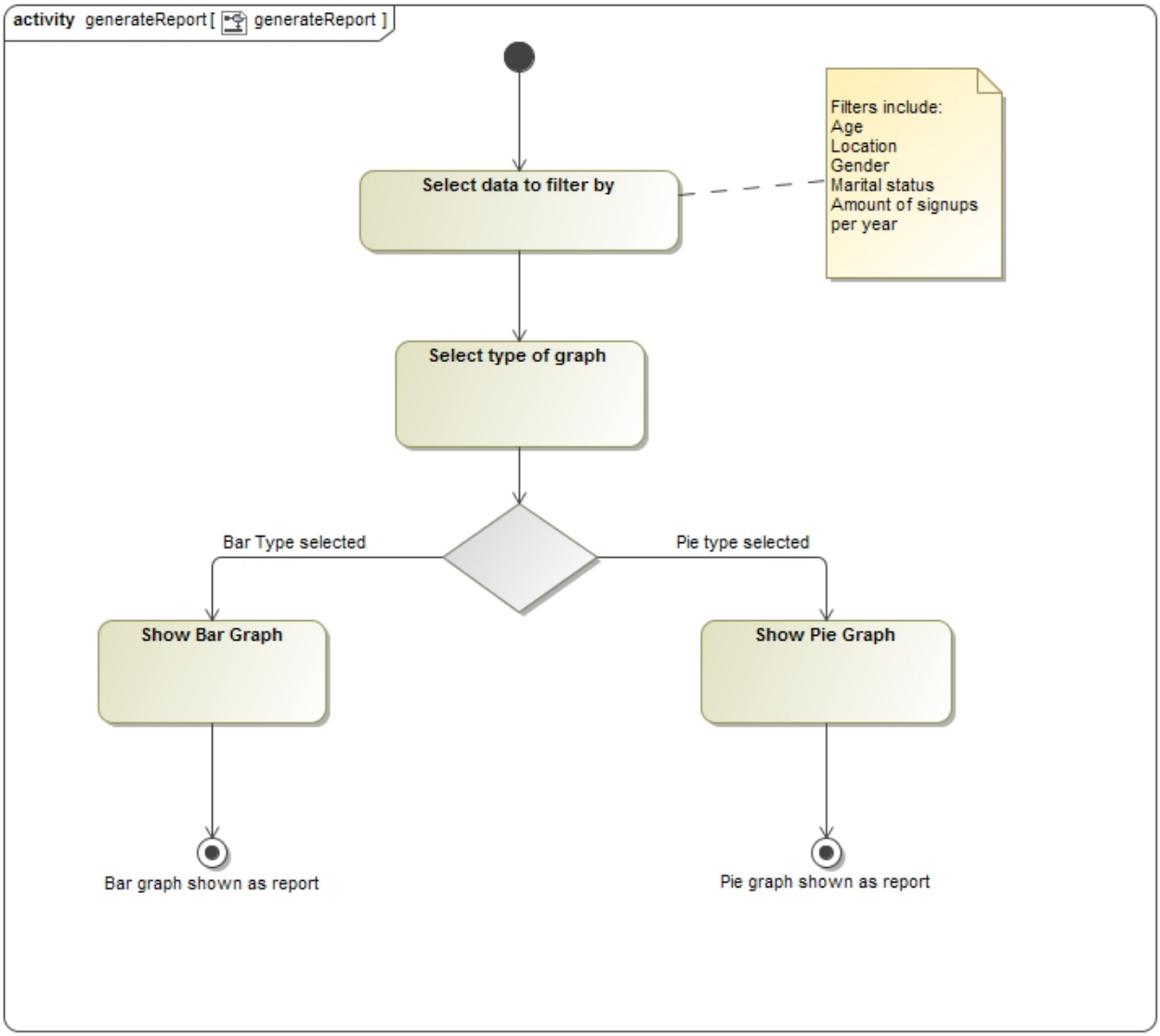

Figure 7: Process specification : generateReport

1.5 Administration subsystem

The administration subsystem handles the authentication and management of the analysts and administrators of the system.

1.5.1 Use cases

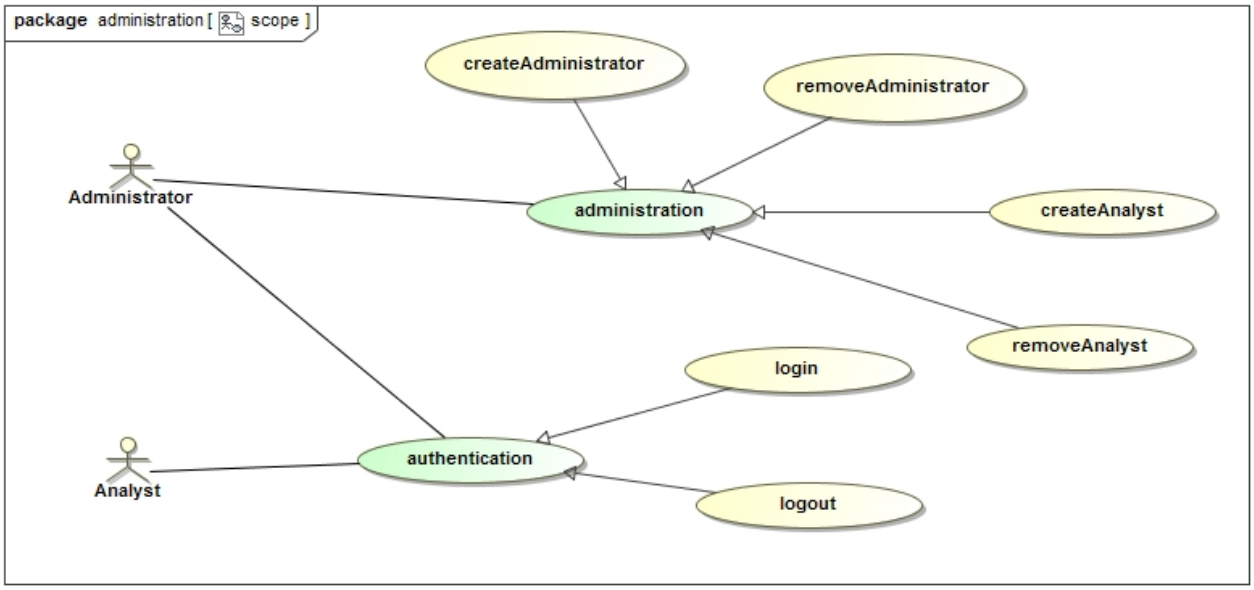

Figure 8: Use Case Diagram : Administration

Critical

- createAdministrator
- createAnalyst
- login
- getUser

Important

- removeAnalyst
- removeAdministrator

Nice-To-Have

- logout
- analyseUser

1.5.2 Services Contracts

- Pre-conditions
  - The admin is logged in Figure 9
  - An analyst is logged in Figure 10
  - A valid request is made
- Post-conditions
  - The analyst receives the results of the valid request

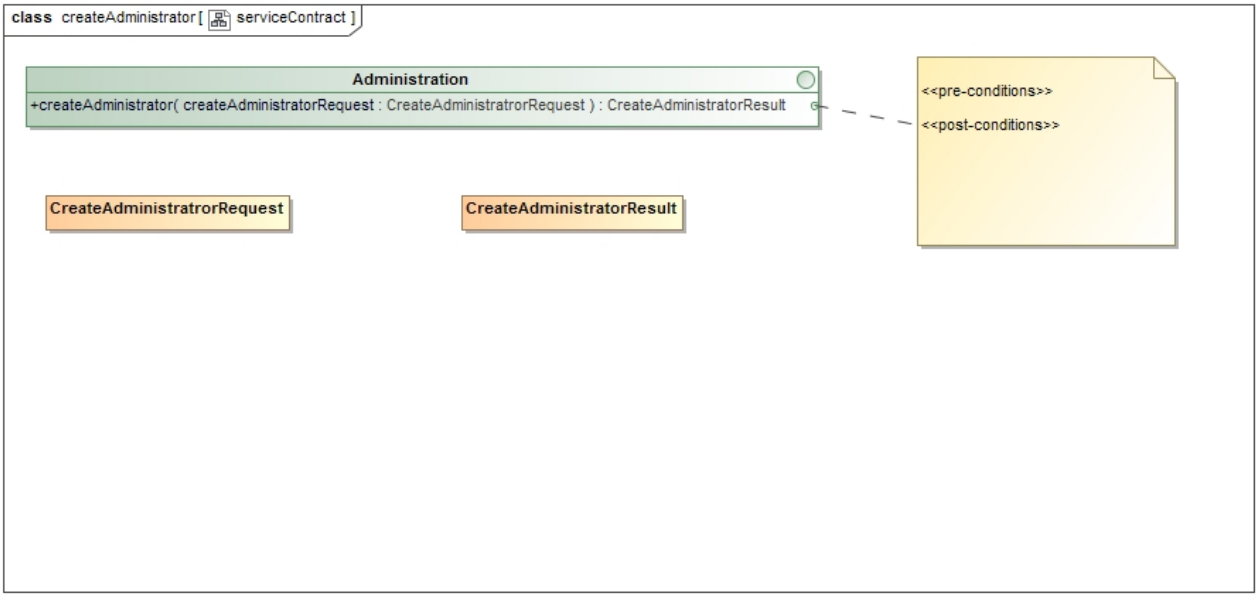

Figure 9: Service Contract : createAdministrator

1.5.3 Authentication module

The authentication module, as part of the higher level Adminstrator subsystem, handles the identification and access control of Analysts. An analyst must login before any features available to them are available.

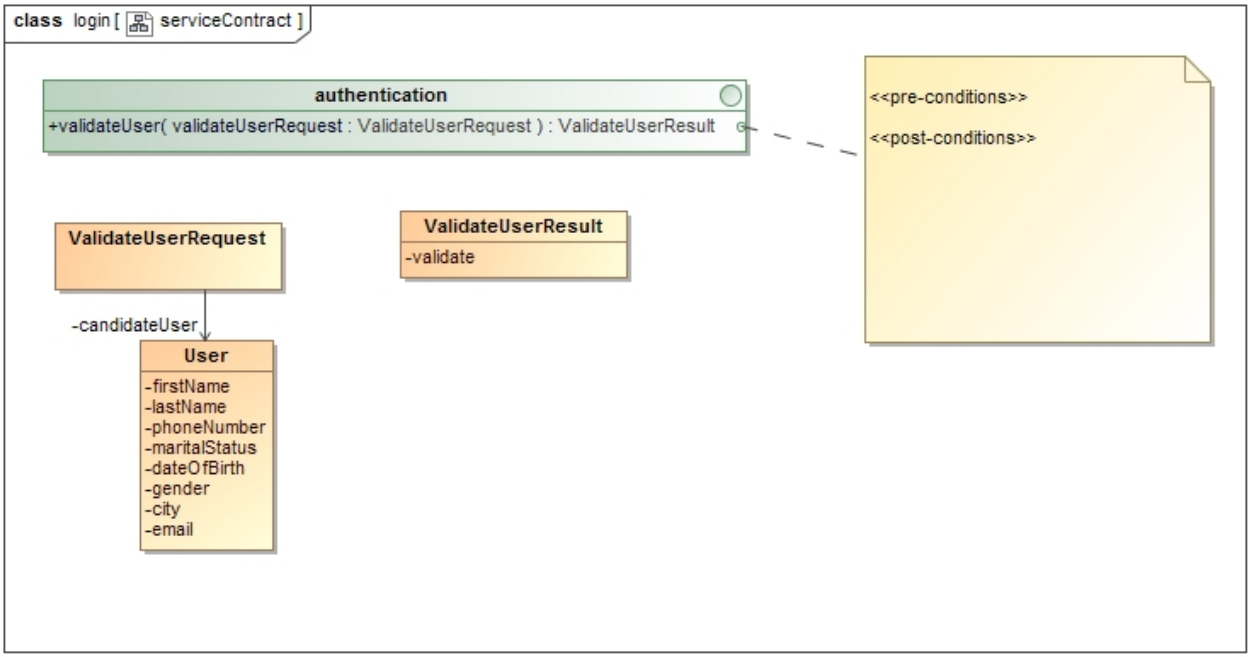

Figure 10: Service Contract : Authentication

1.6 Marketing subsystem

The Marketing subsystem handles the ability to process new user leads.
This includes updating user's information and marking the user as processed. Uninterested users can decline the processing, removing that user's information.

1.6.1 Use cases

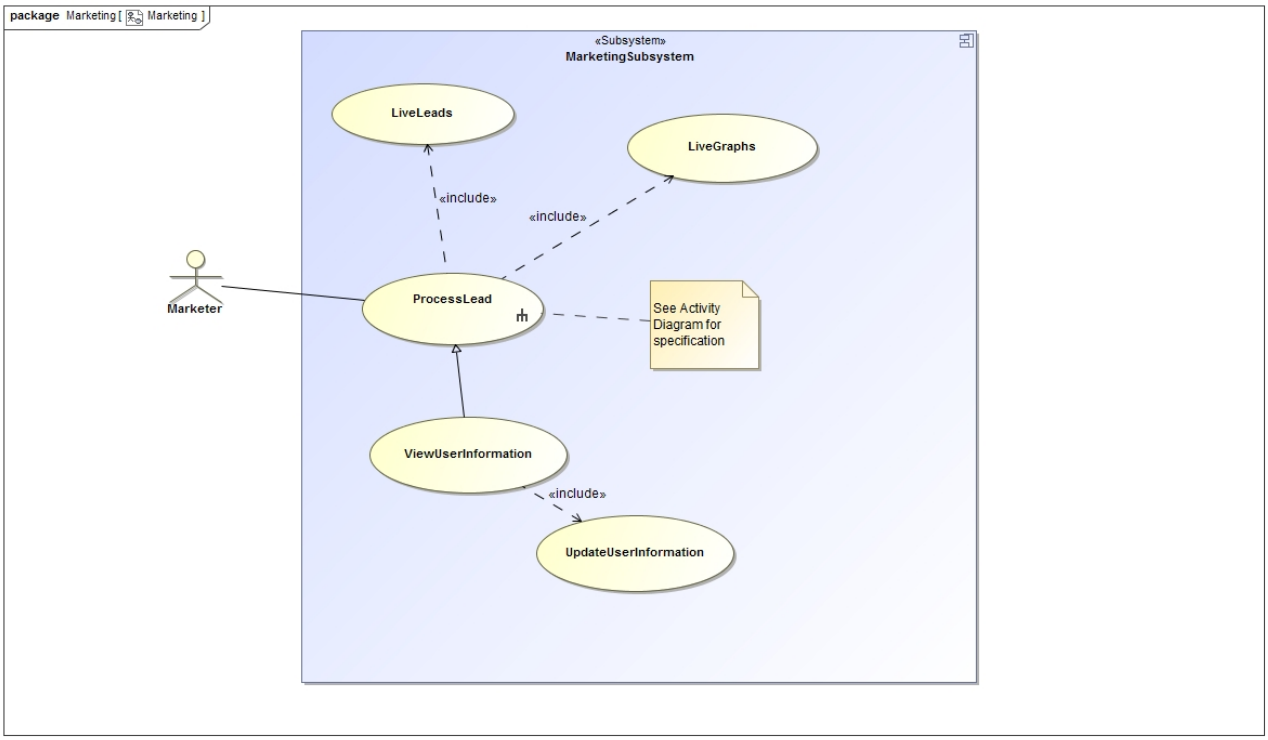

Figure 11: Use Case Diagram : Marketing

Critical

- ProcessLead
- ViewUserInformation

Important

- LiveLeads
- UpdateUserInformation

Nice-to-have

- LiveGraphs

1.6.2 Services Contracts

The pre and post conditions for the marketing processing of a lead is described below:

- Pre-conditions
  - The marketer is logged in.
  - A user lead is created (from any integration)
- Post-conditions
  - The marketer processes the lead. See Figure 12 for more information.

1.6.3 Process specifications

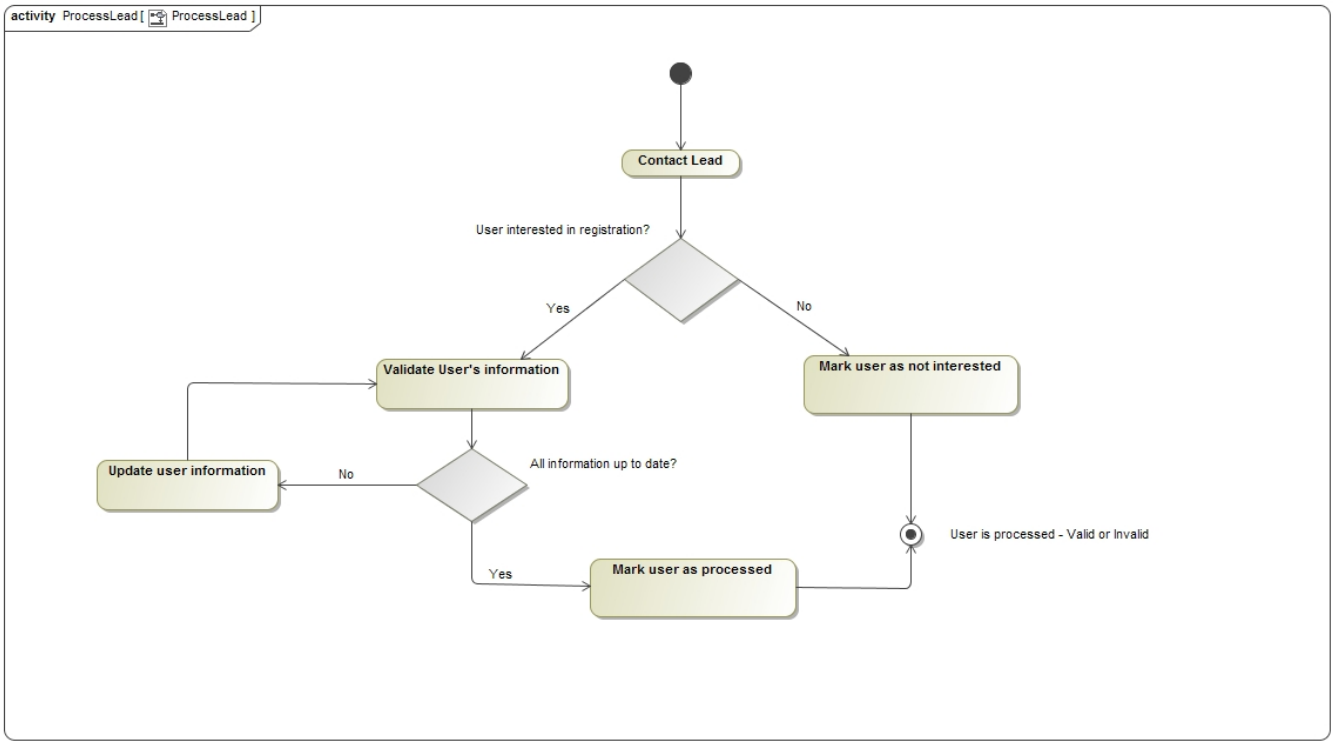

Figure 12: Process specification : ProcessLead

1.7 Persistence subsystem

The persistence subsystem handles the throughout persisting of information in the system.
Persistence in this case related to the information passing between database and system.
Users, analysts and Adminstrators data are all persisted throughout the system.
This ensures any changes to a user, analyst or admin's data, is synchronized with the database system.

1.7.1 Use cases

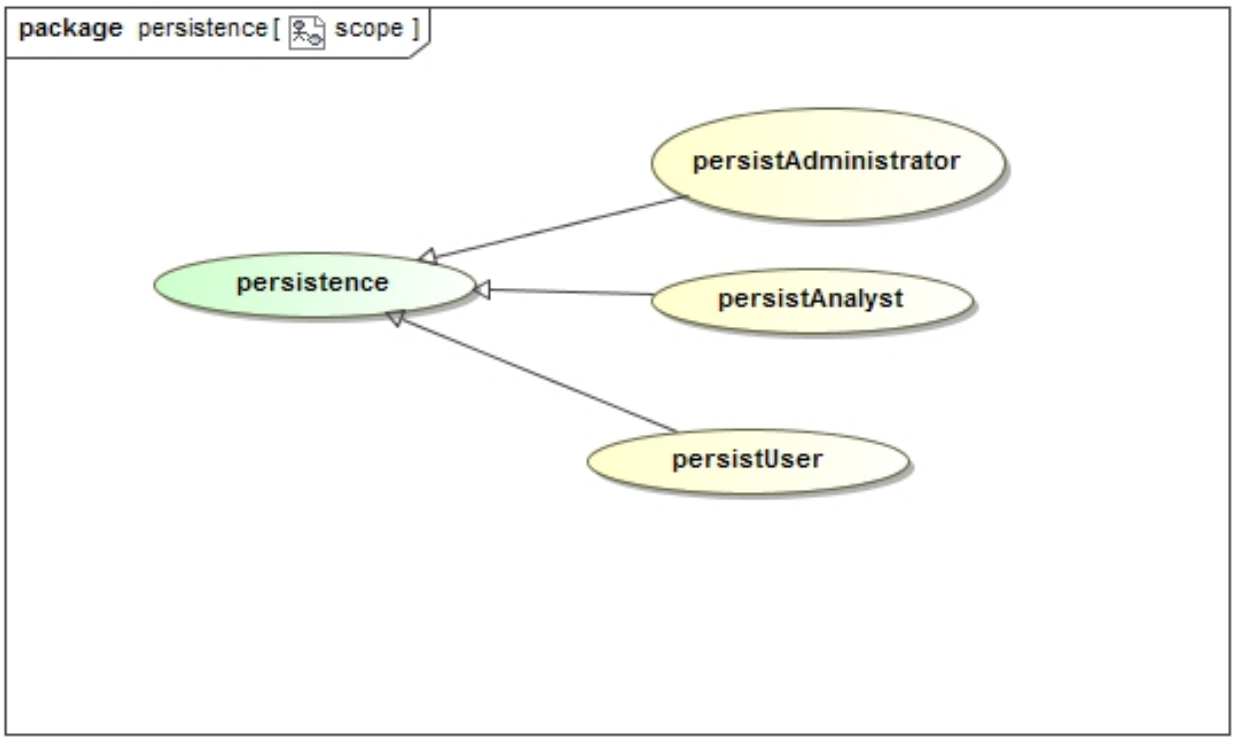

Figure 13: Use Case Diagram : Persistence

Critical

- persistAdministrator
- persistAnalyst
- persistUser

1.8 Notifications subsystem

The notification subsystem handles the ability to send responses to customers and analysts.
The use case might seem simplified, but this design allows for different notification channels.
The notify module can be specialized in the format of Email, SMS and JSON responses or any other accessible notification module.

1.8.1 Use cases

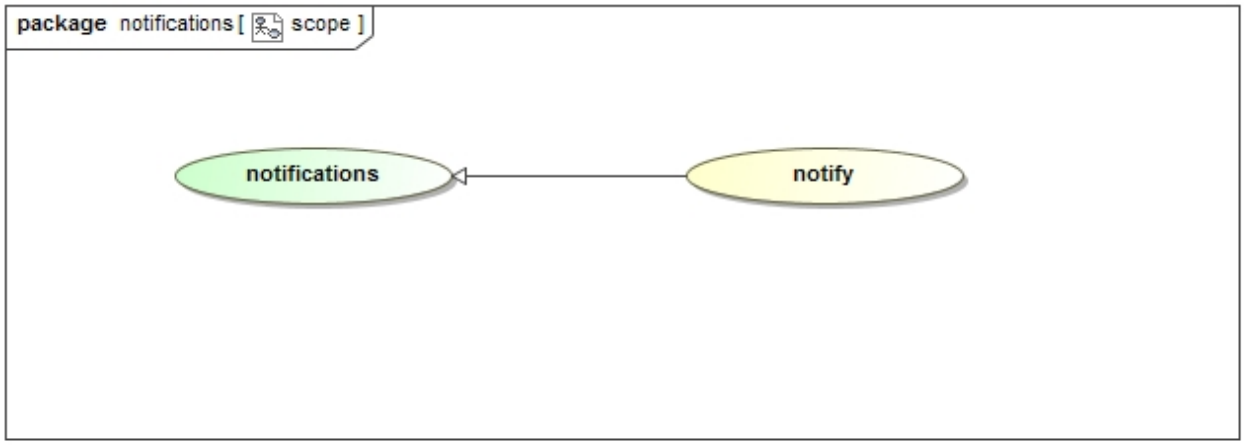

Figure 14: Use Case Diagram : Notifications

Critical

- Notify

Important

- Email

Nice-to-have

- SMS
- JSON Objects

1.8.2 Services Contracts

- Pre-conditions
  - The sender's notification point is valid
  - The recipient's notification point is valid
  - eg. Valid email addresses
- Post-conditions
  - A success message will be received

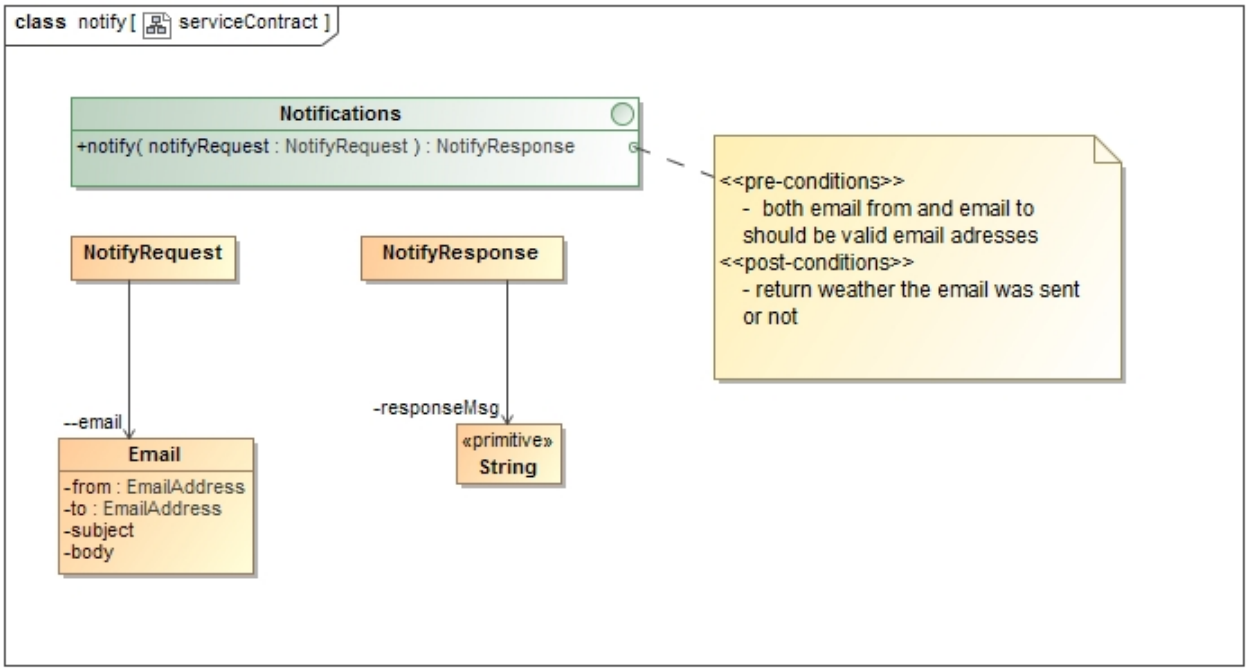

Figure 15: Service Contract : notify

1.9 Domain model

The domain model shows the objects, their attributes and the relationships between these objects.
The included domain models specify the Analysis model Figure 16 and the LeadAd/User model Figure 17.

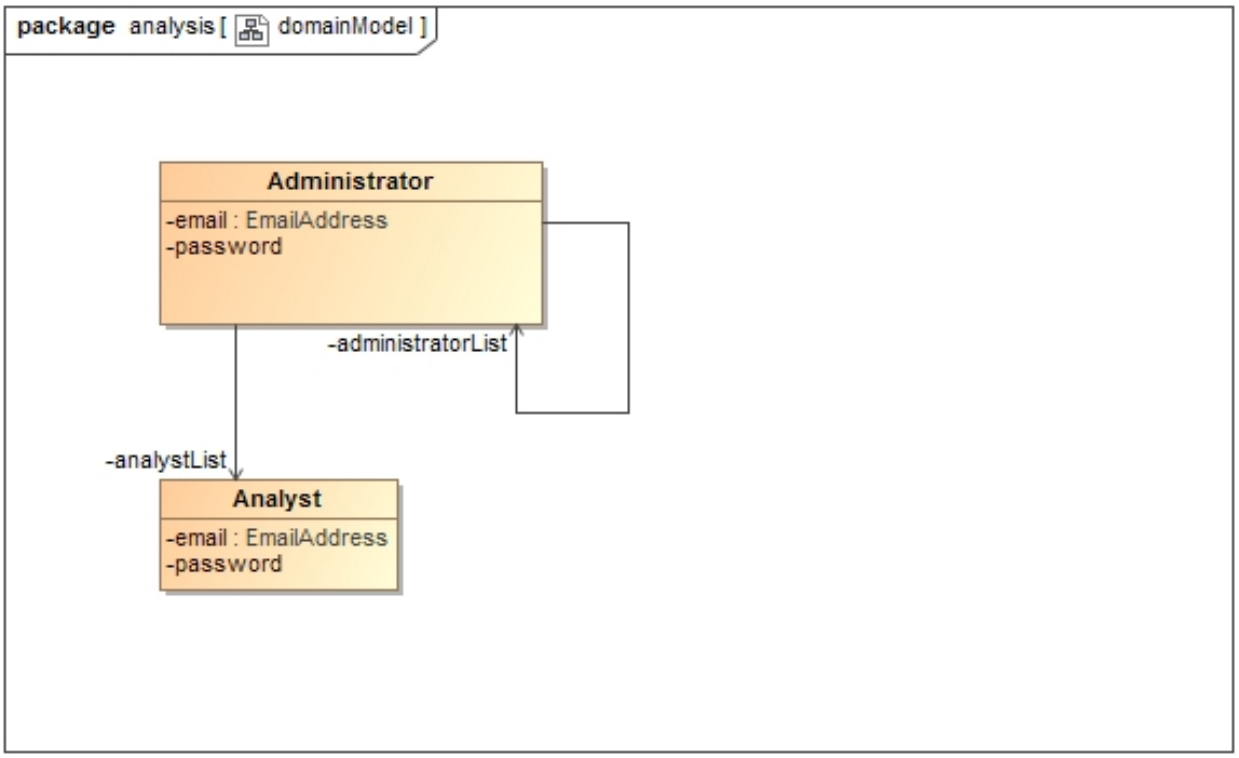

Figure 16: Domain Model : Analysis

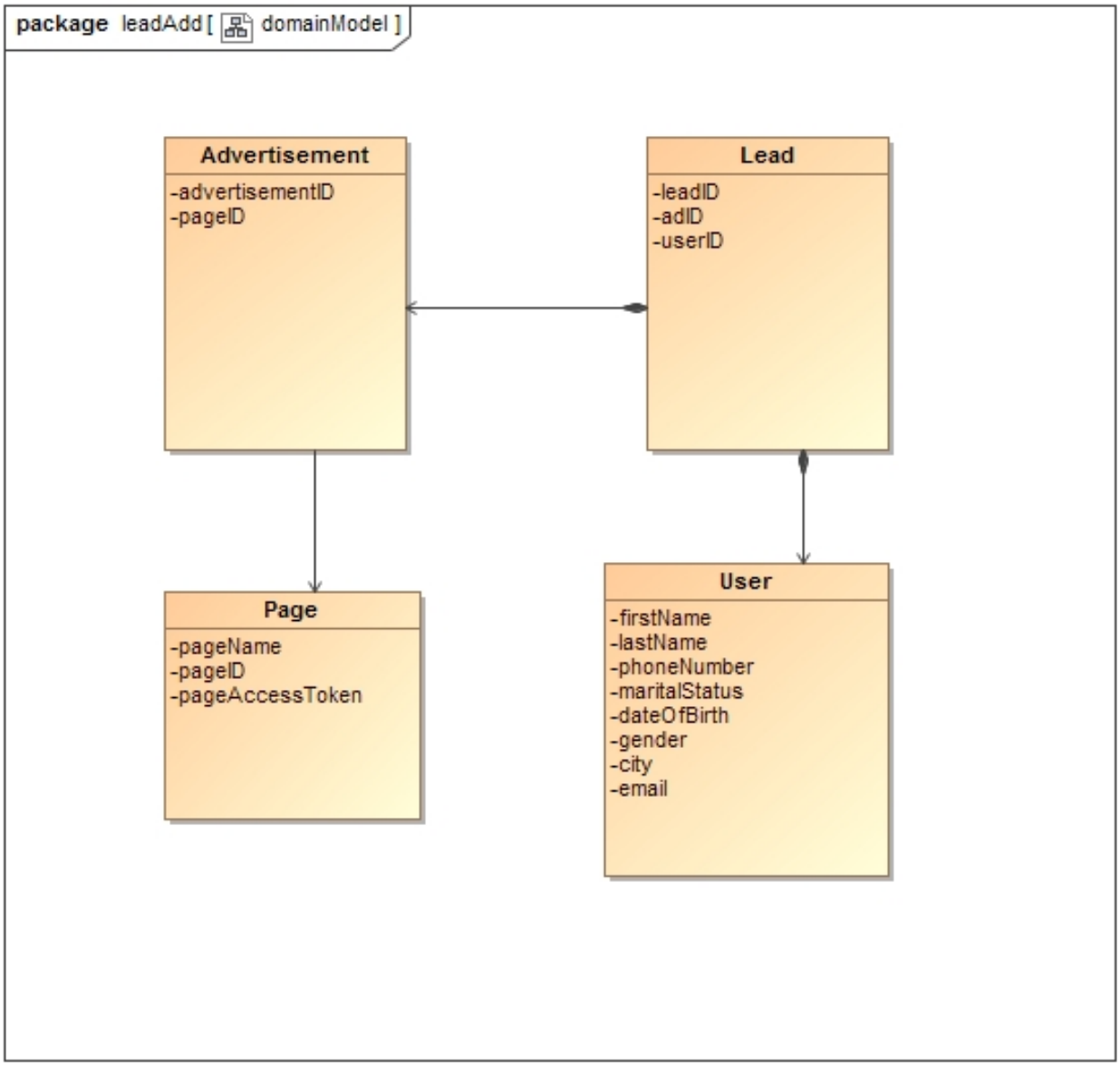

Figure 17: Domain Model : Social Media

1.10 Open Issues

At the current version of the system, all the requirements are addressed and all previous issues were clarified by our client.