**Software Requirement Specification**

**Project Name: ESE**

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**Customer: Osman**

Revision History

| **Version** | **Date** | **Revision Description** |
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# Introduction

## Purpose

The purpose of this document is to present a detailed description of the Application Room4You It will explain the purpose and features of the system, the interfaces of the system and what the system will do. This document is intended for both the stakeholders and the developers of the system and will be proposed to the client for its approval.

## Stakeholders

The stakeholders of the project are the team members of team 3 and the client (represented by Osman, assistant of the ESE lecture).

## Definitions

|  |  |
| --- | --- |
| **Term** | **Definition** |
| Database | Collection of all the information about the users and ads. |
| Field | A cell within a form. |
| Software Requirements Specification | A document that completely describes all of the functions of a proposed system and the constraints under which it must operate. For example, this document. |
| Stakeholder | Any person with an interest in the project. |
| User | A user is either an ad searcher or an ad placer |
| Ad Searcher | An ad searcher is a user who searches for an apartment or a room in a shared apartment |
| Ad placer | An ad placer is a user who places ads. |

## Ad Definition

The ad consists of two parts; a short description with all essential information, which is mandatory, and a more detailed part with additional information, which is optional.

The first part consists of the following data:

Ad Title

* Date
  + The date describes, from when (optionally until when, if there is a time limit) the room can be hired.
* Price in CHF
  + The amount of money the user has to pay for his room and the sharing of the flat.
* Location
  + Address or ZIP code
  + Size (in pieces/rooms) of the apartment
* Roommates
  + The number of other persons who live there, their name, (gender) and age.

The second part, the detailed description, includes optional information.

* Location
  + In which district/quarter the apartment is situated. Shops, public transport
* Roommates
  + Their interests and hobbies
* Restrictions
  + Pets allowed
  + Smoking allowed
  + Instruments allowed
* Demands on the new roommate
* Further, non specified Information

## System Overview

This software system will be a web marketplace for searching and placing apartment ads and shared flat rooms respectively. This system will be designed to provide ads for apartments and rooms in shared apartments at one place.

More specifically, this system is designed to allow the users to search for apartments and rooms in shared apartments by many criteria, watch user profiles of the ad placer or prospective roommates, contact ad placers and manage scheduled visits. In addition to place ads, ad placers can manage enquiries and organize onsite visits, compile lists of the most promising candidates. The application will facilitate the search for a place to live as well as the selection of a new roommate or tenant respectively. The system also contains a relational database containing the users and the ads

## References

## Overview of Document

The next chapter, the Overall Description section, of this document gives an overview of the functionality of the product. It describes the informal requirements and is used to establish a context for the technical requirements specification in the next chapter.

The third chapter, the specific requirements section, of this document is written primarily for the developers and describes in technical terms the details of the functionality of the product.

# Overall Deskription

## Use Cases

## Macintosh HD:Users:Sven:Downloads:UseCasesESE (1).jpg

*Figure 1: Overview Use Cases*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | Use Case Name | Primary Actor | Complexity | Priority |
| 1 | Sign up | User/Ad placer |  | 1 |
| 2 | Sign in | User/Ad placer |  | 1 |
| 3 | Edit user profile | User/Ad placer |  | 1 |
| 4 | Watch User Profile | User/Ad placer |  |  |
| 5 | Delete account | User/Ad placer |  |  |
| 6 | Change password | User/Ad placer |  |  |
| 7 | Place ad | Ad placer |  |  |
| 8 | Edit ad | Ad placer |  |  |
| 9 | Manage enquiries | Ad placer |  |  |
| 10 | Organize onsite visits | Ad placer |  |  |
| 11 | Compile a list of most promising candidates | Ad placer |  |  |
| 12 | Search relevant ads | User |  |  |
| 13 | Watch detailed ad information | User |  |  |
| 14 | Send enquiry | User |  |  |
| 15 | Manage scheduled visits | User |  |  |
| 16 | Bookmark interesting ads | User |  |  |
| 17 | Watch/Edit Bookmarks | User |  |  |
| 18 | Subscribe to alerts | User |  |  |
| 19 | Watch new alerts | User |  |  |

### Sign up

|  |  |
| --- | --- |
| Classification | Secondary Use Case |
| Actors | User |
| Description | As a user I want to have the possibility to sign up to the application, by setting a username (email) and a password and giving additional information for my user profile. I want to be able to indicate what information will be publicly displayed on my user profile. |
| Trigger | The user clicks the sign up button at the welcome page. |
| Pre-conditions | * The user hasn’t sign up yet / the email address is not yet registered to the application. * The password has six characters at least. |
| Post-conditions | * Email and password are registered and the user is able to use this account for a later sign in. * After the sign up, the user will be signed in automatically. |
| Main Scenario | 1. Users clicks on the sign up button. 2. User enters the email address and the password 3. System prompts the confirmation that the registration has succeeded. 4. System shows form to complete the user profile 5. System shows the main page. |
| Alternative Scenario | 2a. Email address is not valid   1. System will prompt user to enter a valid email address 2. User enters a valid email address 3. Use Case resumes on step 3   2b. Password is not valid (e.g. has less than six characters)   1. System will prompt user to enter a valid email address 2. User enters a valid password 3. Use Case resumes on step 3 |
| Special Requirements | - |
| Notes | - |

### Sign in

|  |  |
| --- | --- |
| Classification | Secondary Use Case |
| Actors | User |
| Description | As a user I want to have the possibility to sign in to the application, by entering the username (email) and the correct password. |
| Trigger | The user clicks the sign in button at the welcome page. |
| Pre-conditions | * The user has already created an account. * The user has entered the username and the password |
| Post-conditions | * Email and password are validated |
| Main Scenario | 1. Users clicks on the sign in button. 2. User enters the email address and the password 3. System prompts that the username and password were correct. 4. System shows the main page. |
| Alternative Scenario | 2a. Email address is not valid   1. System will prompt user to enter a valid email address 2. User enters a valid email address 3. Use Case resumes on step 3   2b. Password is not valid (does not match the password saved in the database)   1. System will prompt user to enter a valid username or password. 2. User enters a valid password. 3. Use Case resumes on step 3 |
| Special Requirements | User has 3 tries to enter the correct password. After that, the account will be blocked. |
| Notes | * How many tries? Is the blocking functionality really necessary? * If yes, how the password reset has to work? |

### Edit user profile

|  |  |
| --- | --- |
| Classification | Secondary Use Case |
| Actors | User |
| Description | The users shall have the possibility to edit their user profile. |
| Trigger | The user clicks the “edit user profile button” at the welcome page. |
| Pre-conditions | * The user is logged in |
| Post-conditions | * The changes in the user profile are saved |
| Main Scenario | 1. Users clicks on the “edit profile” button 2. The user can change the profile entries 3. The user can save or discard the changes 4. System shows the main page again. |
| Alternative Scenario | - |
| Special Requirements | - |
| Notes | - |

### Watch user profile

|  |  |
| --- | --- |
| Classification | Secondary Use Case |
| Actors | User |
| Description | As a user I want to have the possibility to see someone’s user profile (the public fields). |
| Trigger | The user can watch another users profile by clicking on the name of the user, wherever the name is indicated. |
| Pre-conditions | * The user is logged in |
| Post-conditions | * The public fields of the user profile are displayed |
| Main Scenario | 1. User clicks on the username whose profile he wants to see.  2. User closes the user profile.  3. System shows the last page. |
| Alternative Scenario | - |
| Special Requirements | Only fields are displayed that the profile owner has set to public |
| Notes | - |

### Delete account

|  |  |
| --- | --- |
| Classification | Secondary Use Case |
| Actors | User |
| Description | As a user I want to have the possibility to delete the account |
| Trigger | The user clicks on the “delete account” button in the edit profile section. |
| Pre-conditions | * The user is logged in |
| Post-conditions | * The user is logged out |
| Main Scenario | 1. The user clicks on the “delete account” button.  2. The user enters his password.  3. The account is deleted and the user will be logged out. |
| Alternative Scenario | 2. Password is not valid  1. System will prompt to enter the correct password  2. User enters the correct password |
| Special Requirements | Use has 3 tries to enter the password. After that, he will be logged out. |
| Notes | - |

### Change password

|  |  |
| --- | --- |
| Classification | Secondary Use Case |
| Actors | User |
| Description | A user will change his password by entering his old one and his new one twice |
| Trigger | The user clicks on the “change password” button in the edit profile section. |
| Pre-conditions | * The user is logged in |
| Post-conditions | * The user is logged in with his new password. * The password is changed in the database |
| Main Scenario | 1. The user clicks on the “change password” button.  2. The user enters his new password and confirms it.  3. The user enters the old password and confirms the action |
| Alternative Scenario | 1. The new password is not valid   1. The System will prompt to enter a valid password 2. User enters a valid password   2. Old Password is not valid   1. System will prompt to enter the correct password 2. User enters the correct password |
| Special Requirements | User has 3 tries to enter the correct old password. After that, he will be logged out. |
| Notes | - |

### Place Ad

|  |  |
| --- | --- |
| Classification | Secondary Use Case |
| Actors | Ad placer |
| Description | The Ad placer will create an advertisement for a (shared) apartment. He will able to give a lot of information about it (location, photos, size, price), although not everything of this information is obligatory to give. |
| Trigger | The user clicks on the “create ad” button in the edit profile section. |
| Pre-conditions | * The user is logged in |
| Post-conditions | * The ad is saved in the database. * The ad can be found by other users. |
| Main Scenario | * The ad placer clicks on the “create ad” button.   + The ad placer fills out all information that is mandatory.   + The ad is created. |
| Alternative Scenario | * The ad placer forgot to fill in all mandatory information.   + The system will prompt to fill in the missing information.   + The user fills in the information. |
| Special Requirements | - |
| Notes | - |

### Edit ad

|  |  |
| --- | --- |
| Classification | Secondary Use Case |
| Actors | Ad placer |
| Description | The ad placer can edit all information about an ad whenever he wants. |
| Trigger | The ad placer clicks on the “edit ad” button, while he’s looking at the ad information of his own ad. |
| Pre-conditions | * The user is logged in * The user has already placed an ad |
| Post-conditions | * The ad is updated. * 2. Users, which bookmarked this ad will be informed about the update. |
| Main Scenario | * The ad placer clicks on the “edit ad” button. * The ad placer edits the information he wants. * The ad placer saves the changes. * The ad is updated. |
| Alternative Scenario | - |
| Special Requirements | - |
| Notes | - |

### Manage enquiries

|  |  |
| --- | --- |
| Classification | Secondary Use Case |
| Actors | Ad placer |
| Description | The ad placer will probably receive several enquiries on an ad. He will be able to have an overview on all of them, so he can already decline the ones he doesn’t like or mark some as promising candidates. |
| Trigger | The ad placer clicks on the “manage enquiries” tab. |
| Pre-conditions | * The user is logged in * The user has already placed an ad |
| Post-conditions | * The ad is updated. * 2. Users, which bookmarked this ad will be informed about the update. |
| Main Scenario | * The user looks at the enquiries. |
| Alternative Scenario | - |
| Special Requirements | - |
| Notes | - |

### Organize onsite visits

|  |  |
| --- | --- |
| Classification | Secondary Use Case |
| Actors | Ad placer |
| Description | The ad placer can set certain times, when interested people will be able to visit the apartment. He can also set a deadline, when users will be able to register for a visit at the latest. |
| Trigger | The ad placer clicks on the “organize visits” button. |
| Pre-conditions | * The user is logged in * The user has already placed an ad |
| Post-conditions | - |
| Main Scenario | * The ad placer clicks on the “organize visits” button * The ad placer sets times for possible visits. * The ad placer sets a deadline. |
| Alternative Scenario | - |
| Special Requirements | - |
| Notes | - |

### Compile a list of most promising candidates

|  |  |
| --- | --- |
| Classification | Secondary Use Case |
| Actors | Ad placer |
| Description | The ad placer can compile a list of the most promising candidates according to his preference. |
| Trigger | The ad placer clicks on the “Compile list” button. |
| Pre-conditions | * The user is logged in * The user has already placed an ad * The ad placer has some enquiries for the ad |
| Post-conditions | - |
| Main Scenario | * The ad placer compiles a list |
| Alternative Scenario | - |
| Special Requirements | - |
| Notes | - |

### Search relevant ads

|  |  |
| --- | --- |
| Classification | Primary Use Case |
| Actors | Ad searcher |
| Description | The ad searcher is able to search for ads. He can search by different criteria like price, location, size, etc… He can also set what the compiled list should be ordered by. |
| Trigger | The user fills in all the search criteria and then clicks on “search”. |
| Pre-conditions | * The user is logged in |
| Post-conditions | - |
| Main Scenario | * The user fills in search criteria. * User clicks on search. * Apartments fitting the criteria will be displayed. |
| Alternative Scenario | * The user doesn’t fill in any search criteria   + All apartments will be displayed. * No apartments fit the search   + No apartments will be displayed. |
| Special Requirements | - |
| Notes | - |

### Watch detailed ad information

|  |  |
| --- | --- |
| Classification | Primary Use Case |
| Actors | User |
| Description | The user is able to watch detailed information about an ad. This includes stuff like a map with the location, roommates, price, photos and more. |
| Trigger | The user clicks on an ad. |
| Pre-conditions | * The user is logged in |
| Post-conditions | - |
| Main Scenario | * The user clicks on an ad. * User watches information. |
| Alternative Scenario | - |
| Special Requirements | - |
| Notes | - |

### Send enquiry

|  |  |
| --- | --- |
| Classification | Secondary Use Case |
| Actors | Ad searcher |
| Description | The user can show interest in an ad by sending an enquiry. The ad placer will receive the enquiry without giving about personal information like e-mail or name. The user will automatically give all the information of himself, which he filled in while registering his account. He can also add a message with the enquiry. |
| Trigger | The user clicks on “send enquiry” button while watching detailed information about an ad. |
| Pre-conditions | * The user is logged in |
| Post-conditions | - |
| Main Scenario | * User fills out form of the enquiry. * User sends enquiry. |
| Alternative Scenario | - |
| Special Requirements | - |
| Notes | - |

### Manage scheduled visits

|  |  |
| --- | --- |
| Classification | Secondary Use Case |
| Actors | Ad searcher |
| Description | The user can register for visits at multiple apartments. Here he can watch all scheduled visits and manage them. |
| Trigger | TODO: The user clicks on the “manage scheduled visits” tab. |
| Pre-conditions | * The user is logged in * User has scheduled visits |
| Post-conditions | - |
| Main Scenario | * User clicks on “manage scheduled visits” tab. * User watches his scheduled visits. |
| Alternative Scenario | - |
| Special Requirements | - |
| Notes | - |

### Bookmark interesting ads

|  |  |
| --- | --- |
| Classification | Secondary Use Case |
| Actors | Ad searcher |
| Description | The user can bookmark ads he like. Like this, he can easily navigate to those ads and he will also get informed whenever those ads will be updated or removed. |
| Trigger | The user clicks on the “Add bookmark” button while watching an ad. |
| Pre-conditions | * The user is logged in |
| Post-conditions | - |
| Main Scenario | * The user is looking at an ad. * The user is bookmarking the ad. |
| Alternative Scenario | - |
| Special Requirements | - |
| Notes | - |

### Watch/edit bookmarks

|  |  |
| --- | --- |
| Classification | Secondary Use Case |
| Actors | Ad searcher |
| Description | The user can watch his bookmarked ads and also remove the bookmark again. |
| Trigger | TODO: The user clicks on the “Watch bookmark” tab |
| Pre-conditions | * The user is logged in * The user has bookmarked ads |
| Post-conditions | - |
| Main Scenario | * User clicks on “watch bookmark” tabs. * User looks at his bookmarks. |
| Alternative Scenario | - |
| Special Requirements | - |
| Notes | - |

### Subscribe to alerts

|  |  |
| --- | --- |
| Classification | Secondary Use Case |
| Actors | Ad searcher |
| Description | A User is able to save his preferences for an apartment. Like this, he can get informed whenever someone sets up a new ad fitting the preferences of a user. |
| Trigger | The user clicks on the “subscribe to alerts” button, and then enters the search criteria he wants to save, and then clicks on “subscribe”. |
| Pre-conditions | * The user is logged in * The user has bookmarked ads |
| Post-conditions | * Subscription is saved |
| Main Scenario | * User clicks on “subscribe to alerts” * User enters preferences. * User clicks on “subscribe” |
| Alternative Scenario | - |
| Special Requirements | * The User can only have one subscription. |
| Notes | - |

### Watch new alerts

|  |  |
| --- | --- |
| Classification | Secondary Use Case |
| Actors | Ad searcher |
| Description | In this tab, the user can watch if any new advertisement fit his subscription to alerts. |
| Trigger | The user clicks on “watch new alerts”. |
| Pre-conditions | * The user is logged in * The user has subscribed to alerts |
| Post-conditions | - |
| Main Scenario | * User clicks on “watch new alerts” * User looks at his alerts. |
| Alternative Scenario | * There are no new alerts.   + No ads are displayed. |
| Special Requirements | - |
| Notes | - |

## Actor characteristics

The User is expected to be Internet literate and be able to use a search engine and search forms respectively. The main screen of the application will have a search function to search for ads.

The ad placer is expected to be Internet literate and to be able to functionalities to place ads (e.g. fill in web forms).

# Specific requirements

## Functional Requirements Specification

See section use cases.

## Non-Functional Requirements

The application will be on a server with TODO Internet capability. The physical machine to be used will be determined by TODO. The software developed here assumes the use of a tool such as Tomcat for connection between the Web pages and the database. The speed of the Users connection will depend on the hardware used rather than characteristics of this system.

The application has to run 24/7 with 5% of down time for maintenance purposes.

* Archive?
* Reliability
  + Data is recoverable after system failure
* Look and Feel
  + No specifications
* Corporate Design
  + No specifications
* Usability
  + The system is provided in English (I18N?)
  + The system prevents wrong entries
  + The system is self explaining and no instruction/manual is needed
* Performance and Efficiency
  + The system works fluently with 500 user accesses at once
* Maintainability
* Extensibility
  + Possibility to extend the system with additional real estate functionality (e.g. selling houses/apartments)

Requirements Specification

### External Interface Requirements

Database, Google Map

### Logical Structure of the Data

The data descriptions of each of these data entities is as follows:

**User Entity**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data Item** | **Type** | **Description** | **Comment** |
| UserId | Int |  |  |
| UserName | Varchar |  |  |
| Email Address | Varchar |  | Unique/not nullable |
| Hobbies | Varchar |  |  |
| Profession | Varchar |  |  |
| Photo | BLOB |  |  |
| Timestamp | Timestamp |  |  |
|  |  |  |  |

**Registration Entity**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data Item** | **Type** | **Description** | **Comment** |
| UserId | Int |  |  |
| Password | Varchar |  |  |
|  |  |  |  |

**Ad Entity**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data Item** | **Type** | **Description** | **Comment** |
| ID | Int | ID | Key / not nullable |
| Header | Varchar |  |  |
| Price | Currency |  |  |
| Size | Integer |  |  |
| ZIP Code | Integer |  |  |
| City | Varchar |  |  |
| Roommates | Set |  |  |
| Restrictions | Set | Pets, Instruments, Smoking |  |
| Timestamp | Timestamp |  |  |

**Ad Types Entity**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data Item** | **Type** | **Description** | **Comment** |
| TypeId | Int |  |  |
| Type | Varchar |  |  |
| Timestamp | Timestamp |  |  |

### Security

TODO