

# Project Description

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Computer Technologies for the Web

Course 2018-2019

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## Introduction

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The main objective of the practice is to demonstrate and develop all the skills and knowledge gained in lectures and practices. To do this, students are asked to develop a Web application from scratch and according to the specifications of J2EE. The application will be an online property rental marketplace. Students can take as a reference of the application to develop the “Airbnb” site.

In order to simplify the project development, we will consider that the site will only be accessed from desktop computers: no front-end for mobile devices will be required.

## Description of the Application

As stated above, the software to be developed is a web application that implements the most important features of an online property rental marketplace.

The application will implement functionalities for 3 types of users:

- Non-registered user (guest), who will only be able to query the homes available in the platform.
- Registered users, who will be able to use most of the functionalities of the application, including:
  - Manage user's profile:
    - Registration
    - Modify the user's profile information
    - Delete profile
  - Rent a home:
    - Find homes
    - Book homes
    - Show all the homes the user rented so far.
    - Exchange messages with the host.
  - Offer a home:
    - Register a home
    - Modify its information: change price per night, the description, etc.
    - Delete it.
    - Show all the homes offered by the user.
    - Obtain information about the reservations
    - Exchange messages with the guests.
    - Exchange messages with the administrator.
- Administrator, who will be in charge of guaranteeing that all the processes are carried out in accordance to the site policy.
  - Manage users: modify information and delete.
  - Manage homes: modify information and delete.
  - Exchange messages with the hosts.

The details of each functionality are specified below.

### User Profile

#### Registration

The application must allow new users to register themselves on the platform. The registration form must include at least the following information:

- User and surname
- Email
- Password

### Modify user information/profile

Once the user has logged in the application he/she will be able to update at any time his/her profile information, except the email, which will be used for identification purposes.

### Delete profile

Users should be able to delete their application profile (un-registration). Users who are currently offering homes to rent will not be allowed to carry out this operation.

### Log in

Registered users will access the site using their email and password.

## Rent a home

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### Find a home

Both guest and registered users should be able to check the homes available in the platform. The main application page should include a form to search for homes filtering by city, available dates, price, type of home (apartment, room...), number of guests...

As a result of the search, the application will display a list including name, brief description, price per night and photo of all the homes that satisfied the conditions specified.

### Show full description of a home

It should be possible to access the full description of a home from the result list. This should include photo/picture, detailed description, etc. The user should also be able to initiate from here the booking process.

### Communication

The user should be able to send messages to the host of a specific home.

### Show homes rented

Registered users should be provided with a button or link to access the list of homes rented so far.

## Home Management

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### Offer a home

Registered users should be able to offer homes to rent. The minimum information required to register a home in the platform should include:

- Name
- Full description
- Short description
- Type (apartment or private room)
- Nº of guests
- Photo
- Price per night
- Dates available: initial and final date the place is available

+ In order to simplify the project, the dates available simply indicate the range of days the place is available for renting. The application will not check if the homes are already rented in the dates introduced in the search form.

### Show homes offered

The host should be able to list the homes he/she offers in the application. From this list the user should be able to check the information of a given home and its reservations.

### Modify the information of a home

The host should be able to update the information of a home, modifying its price, description, etc.

### Delete a home

If a home has never been reserved the host should be able to remove it from the application. As soon as a booking is made, this operation cannot be performed.

### Communication

The host should be able to:

- send and receive messages from the system administrator
- respond to messages from other users

## Administrator

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### Manage users

The administrator must be able to have full control on the user registration: access the users data, modify the information, and delete profiles.

### Manage homes

In the same way, the administrator should be able to access the homes registered, modify them and delete them.

### Communication with event managers

The administrator should be provided with a “mail box” to send and receive messages to/from the hosts, and to display the list of messages previously exchanged with them.

## Booking

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### Booking Request

Users should be able to send booking request to the host of a given home. When requesting a booking, the application will ask to introduce the payment info, including a card number (16 digits), expiration date and CV2 code (3 digits).

### Booking Confirmation

Hosts can accept or reject the booking requests received. In both cases a message should be sent to the user to let him/her know of the result of the request.

## Technologies

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Students are expected to make use of the following APIS/Technologies:

- Servlet & JPSs
- JMS
- Data Persistence: JDBC & JPA

Middleware used in the development should include:

- BB.BB: MySQL
- Application Server: GlassFish
- MOM (Message-Oriented Middleware): embedded with GlassFish

The development will include:

- Application for the users
- Application for the administrator

Each of these applications will comprise the JEE modules for managing:

- Application Front-end application
- High, low and modification of users and homes through a DB MySQL and JPA
- Communication via chat, based on JMS

## Evaluation Criteria

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The final grade is composed of a shared marking for the team and an individual marking. For shared marking the following criteria are taken into account:

- Correct operation of the application.
- Satisfaction of the requirements listed in this document.
- Structure of the solution to facilitate maintenance and adaptation of the system.
- Clarity and interface design.
- Clarity and code documentation.
- Quality of project management (Recommended use SCRUM).
- Additional features

The individual marking is based on the following criteria:

- Practice defence. All members should be able to answer questions related to the implementation of any of the functions of the application.
- Possible workload differences among the different members of the team.
- Knowledge of the developed by all.