



StudyAbroad Requirements Specification

Version 1.2.0

StudyAbroad	Version: 1.2.0
Requirements Definition	Date: 2012-12-14

Revision History

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1. Introduction

1.1 Purpose of this document

This document provides the foundation for the StudyAbroad system. It details the understanding of the business need and its break down into discrete requirements. These requirements will be clearly defined, reviewed, modified and agreed as needed upon with the project stakeholders. Hence it will be the roadmap that will determine the next phases and offer a general overview of the project.

1.2 Intended Audience

Includes:

- Team members
- Team leader
- Project leader
- Project supervisor
- Customers (students)

1.3 Scope

This document presents the use case scenarios and requirements descriptions for the StudyAbroad system. StudyAbroad will be a website that presents a collection of information gathered from different data sources in an organized and easily readable format. Additionally it will supply the user with powerful recommendation options based on different types of criteria (parameters) such as: language, country, university, city, climate, social life, finances, culture, people of interest etc.

Initially the system will provide information about specific programs and geographies. Students, with interest to study abroad, will benefit from having a singular location where they can get all the necessary information they need to make a decision.

1.4 Definitions and acronyms

1.4.1 Definitions

Keyword	Definitions
<i>NFR</i>	<i>Non-functional Requirements</i>

1.4.2 Acronyms and abbreviations

Acronym or abbreviation	Definitions
<i>XML</i>	<i>Extensible Markup Language</i>
<i>DS</i>	<i>Data Source</i>
<i>API</i>	<i>Application programming interface</i>
<i>DB</i>	<i>Database</i>

1.5 References

[1] Project Homepage: <http://www.fer.unizg.hr/rasip/dsd/projects/studyabroad>

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2. Overall Description

2.1 Product Perspective

The final product is a complete system and it is not part of any other larger system. It consists of two basic components: the server and the client interface. The user of the system communicates with the server using Question-Response principle via user interface. Communication between client side and server takes place over Internet using predefined interfaces. However, the product depends on external systems that provide open data. Communication with external systems is provided via Internet using mainly the application programming interface (API).

2.2 Product Functions

In the final product users should be able to search for information and suggestions via the user interface. Users must be able to access the application using a browser on their home computer. Users must be able to search for universities based on geographical location, their own preferences, or by keywords. Also, users should be able to register in order to save their preferences, to get personalized recommendations, but also to comment and rate universities.

2.3 User Characteristics

Our users are mainly students, prospective students or students who are finishing their studies and plan to go to PhD program, regardless of age. It is assumed that these people have finished high school and they know the basics of using the computer. No additional technical skills are required.

2.4 Constraints

2.4.1 Open data sources

The availability of open source data affects the system. If any of the systems that provide open data is not available, the usability of StudyAbroad service is reduced.

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3. Requirements Description

3.1 Introduction

The purpose of our project is to make a service that will provide information and recommendations to people who want to go to study in a foreign country. Our service should be available on the Internet and easy to use for all kinds of users. The user will enter his personal preferences, and the system will provide recommendations of the universities based on those preferences. With each recommendation, there will be some basic information about the city and country where the university is located.

3.2 General requirements

3.2.1 Functional requirements (high priority)

- Viewing selected university information (basic) (UC3)
- Viewing selected city information (basic) (UC4)
- Explore interactive map (UC1)
- Getting university suggestions (UC2)

3.2.2 Functional requirements (medium priority)

- Direct university search (UC15)
- Viewing selected university information (advanced) (UC17)
- Viewing selected location information (advanced) (UC18)
- User registration (UC5)
- User log in (UC6)
- User log out (UC7)
- Viewing user's profile and preferences (UC8)
- Editing user's profile and preferences (UC9)
- Viewing university recommendations (UC16)

3.2.3 Functional requirements (low priority)

- Delete user's account (UC10)
- Commenting university (UC11)
- Commenting city (UC12)
- Rating university (UC13)
- Rating city (UC14)
- Delete user's comments (UC19)
- Modify user's comments (UC20)
- Delete/Modify user's account (UC21)
- Reviewing university (UC22)
- Reviewing city (UC23)
- Discover how recommendation system works (UC24)

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3.3 Requirements on external systems

The StudyAbroad service depends on the service of external systems.

3.3.1 External Data Acquisition

- DS1: <http://www.4icu.org/>
- DS2: <http://dev.mendeley.com/> (dropped)
- DS3: <http://www.freebase.com/>
- DS4: <http://www.numbeo.com/>
- DS5: <http://www.panoramio.com/>
- DS6: <http://www.google.com/places/>

3.4 Server requirements

- Parsing data source - DS1
- Developing application domain model
- Interfacing server with client
- Saving user's preferences to database
- Developing a recommendation system
- Dynamic loading of data from data sources
- Interfacing with data source – DS3
- Interfacing with data source – DS4
- Data access layer
- Direct search using keywords
- Interfacing with data source DS2 (dropped)
- Defining and implementing the database
- Populating the database with data

3.5 User interface requirements

- General Template
 - Header
 - Navigation Menu
 - Login/Register Buttons
 - Search button
- Home page
 - General descriptions
 - Entry point for map exploration and suggestions
 - Top universities and city access
- Suggestion page
 - Questions wizard
 - Data visualization map (not interactive)
- Exploration map page
 - Interactive Map
 - Top universities Boxes
 - Basic universities descriptions
- University Page template
 - Global information
 - Tabbed pane (for basic and advanced contents)
 - General Tab

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- Interfacing with data source – DS5
 - Comment/Reviews Box
- City Page template
 - Global information
 - Tabbed pane (for basic and advanced contents)
 - General Tab
 - Interfacing with data source – DS5
 - Interfacing with data source – DS6
 - Comment/Reviews Box
- Direct search results page
- User's preferences Page
 - Saved preferences
 - Personal information
- User's registration page
- User's login page

3.6 Non Functional requirements

3.6.1 Usability requirements

- Intuitive interfaces (easy to use)
- Correct and up to date information.
- Presenting data in clear and logical way
- Fast access to content (in terms of number of clicks)

3.6.2 Security requirements

- Confidentiality of users' information
- Integrity of users' information
- Availability (in terms of robustness against denials of service)

3.6.3 System requirements

- The service should work on all major platforms (in their latest versions)
- The service should work on all major web browsers (in their latest versions)
- The server should work with .Net (version 4.5) and C#

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4. Use Cases

4.1 Use case diagram

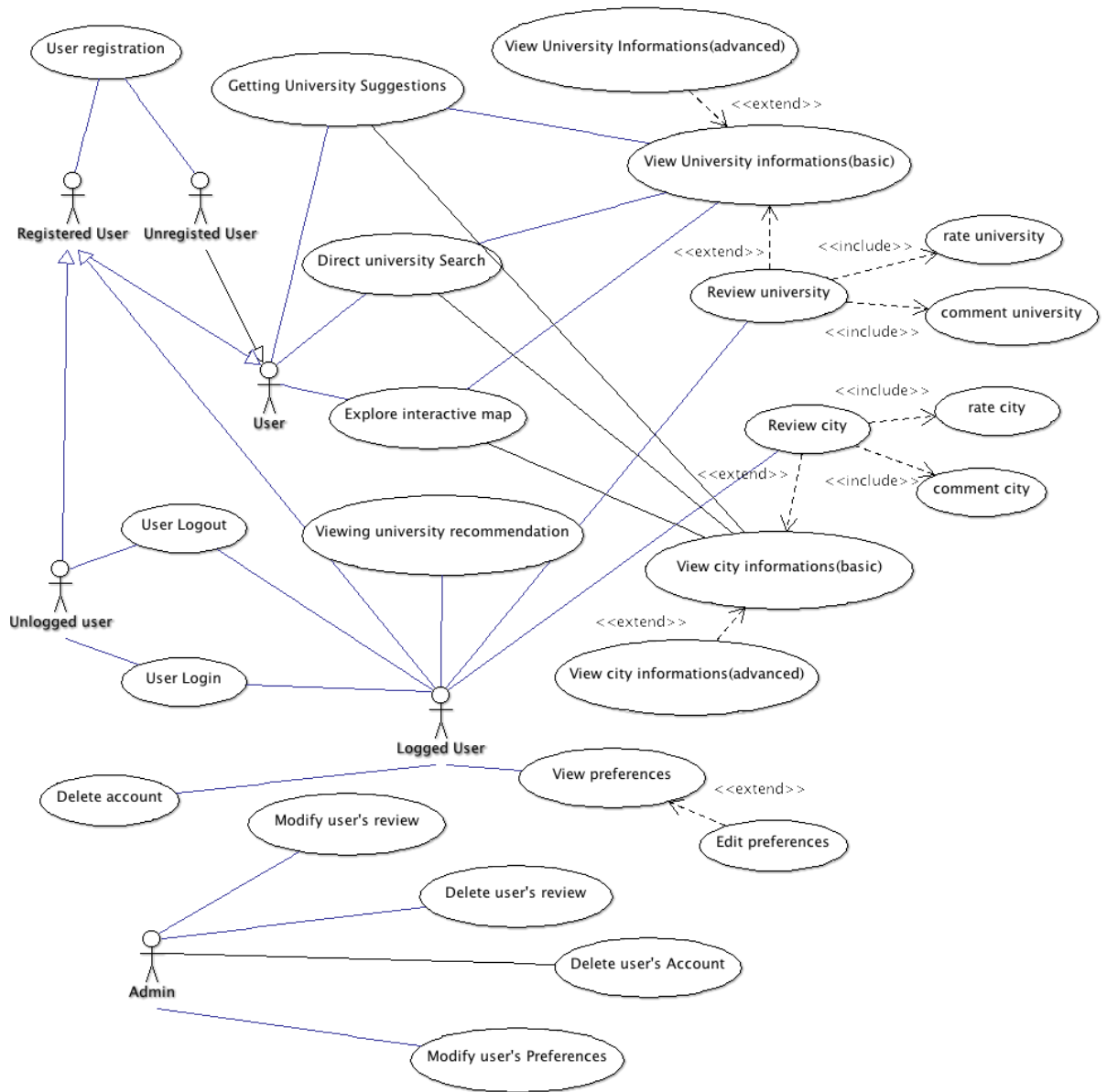


Figure 1. Use case diagram

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4.2 Use cases

4.2.1 Explore interactive Map

Use case ID	UC1
Name	<i>Explore interactive Map</i>
Priority	High
Goal	<i>The user can find basic information about university directly playing with the interactive map. The map presents 4 different levels of zoom: World, Region, Continent, and Country. Landmarks with universities locations are shown at Country level zoom. Top university list for the corresponding zoom level is displayed on the page</i>
Participating actors	User (registered, unregistered)
Precondition	User must be on the explore page
Main scenario	<i>1. he selects a continent 2. the map of selected continent, list of continent and top universities in that continent are displayed 3. he selects a region 4. the map of selected region, list of regions and top universities in that region are displayed 5. he selects a country 6. The map of selected country top universities in that country is displayed. Landmark for universities location (cities) are shown on the map. (Note2) 7. he clicks on a city landmark 8. Basic information about that city are shown (name, abstract) and universities list for that city 9. he clicks on a university link and start UC3 (viewing university information)</i>
Exceptions	if there are no universities in selected continent/region/country a warning message is displayed
Extensions	First case: 2. 4. 6. if user selects one link from top universities list UC3 starts Second case: 9bis. he clicks on a city link and start UC4 (viewing city information)
Notes	<i>Note1: at every level of zoom there is the possibility for the user to go back using the breadcrumb present into the page Note2: if the selected country is USA there will be an additional level of zoom. States view. City landmarks are shown on that view</i>
Dependent UC	

4.2.2 Getting university suggestions

Use case ID	UC2
Name	<i>Getting university suggestions</i>
Priority	Medium
Goal	<i>The goal of this page is to help our user to understand what the best suited university is for him. The will display a list of questions used in order to understand user's preferences and a map (not interactive) that helps to visualize the university locations</i>
Participating actors	User (registered, unregistered)
Precondition	User must be on suggestion page
Main scenario	<i>1 a list of questions will be presented to the user (Note1) 2. he answers them (finite number of choices) and submits 3. The map is updated to help data visualization 4. a List of suggested universities is presented (Note3) 5 .he clicks on a university link and start UC3 (viewing university information)</i>
Exceptions	If no universities, for the selected preferences, are found a warning message is shown

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Extensions	1bis. if the user is registered and logged in, last suggestion is displayed 4bis. if the user is registered and logged in, the recommendations are stored. 9bis. he clicks on a location link and start UC4 (viewing location information)
Notes	<i>Note1: the notes can be presented sequentially or all together on the same page. In the latter case 1. 2. Are repeated N times, where N is the number of the questions.</i> <i>Note2: a button to reset the preferences is present into the page</i> <i>Note3: the map will use different colour scheme to reflect the given suggestions, and highlight with markers the location of suggested universities</i>
Dependent UC	

4.2.3 Viewing selected university information (basic)

Use case ID	UC3
Name	<i>Viewing selected university information (basic)</i>
Priority	High
Goal	<i>Show university basic information to the user.</i> <i>For basic information we mean name, category, location, abstract and a long textual description</i> <i>*Other information on this page has to be Decided*</i>
Participating actors	User (registered, unregistered)
Precondition	User must be on a university page
Main scenario	<i>1. Basic information of the university is shown into the page(Note1)</i>
Exceptions	
Extensions	2. he clicks on one other tab of the Tabbed pane and start UC17 (viewing selected university (advanced)) 3. he clicks on the related city name and start UC4 (viewing city information)
Note	Note1: the page shows name, location abstract in the higher part. The central part of the page contains a tabbed pane. In this use case we consider only “general” pane that only contains a long textual description.
Dependent UC	UC17

4.2.4 Viewing selected city information (basic)

Use case ID	UC4
Name	<i>Viewing selected city information (basic)</i>
Priority	High
Goal	<i>Show city basic information to the user.</i> <i>For basic information we mean name, country, abstract and a long textual description.</i> <i>*Other information on this page has to be Decided*</i>
Participating actors	User (registered, unregistered)
Precondition	User must be on a city page
Main scenario	<i>1. Basic information of the city is shown into the page(Note1)</i>
Exceptions	2. he clicks on one other tab of the Tabbed pane and start UC18 (viewing selected city (advanced))

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	3. he clicks on one of the universities presented into the page and start UC3 (viewing university information)
Extensions	
Notes	<i>Notes1: the page shows name, country, flag and abstract in the higher part. The central part of the page is a tabbed pane. In this use case we consider only "general" pane that contains a long textual description.</i>
Dependent UC	UC18

4.2.5 User registration

Use case ID	UC5
Name	<i>User registration</i>
Priority	Medium
Goal	<i>Let the user create an account to our service. The account is needed in order to save his preferences and to comment/rate universities and cities.</i>
Participating actors	User (unregistered)
Precondition	<i>Can be on any page, user can't be logged in</i>
Main scenario	<i>1. he presses „register“ link located under the header 2. he is redirected to registration page 3. he enters his personal information, username and password (Note1) 4. he pressed „register“ button 5. he is redirected to the personal page and DB is updated (Note2)</i>
Exceptions	<i>If the data inserted is in a wrong format, error message may be displayed If the username is already taken, error message is displayed.</i>
Extensions	
Notes	<i>Note1: password must be conform to our security policy Note2 the user after the registration is logged in. (no email confirmation?)</i>
Dependent UC	

4.2.6 User log in

Use case ID	UC6
Name	<i>User log in</i>
Priority	Medium
Goal	<i>Identify guest in order to give him personalized services</i>
Participating actors	User (registered)
Precondition	<i>Can be done from any page, User can't be logged in</i>
Main scenario	<i>1. he presses „login“ link located under the header 2. he is redirected to login page 3. he enters his username and password 4. he pressed „login“ button 5. he is redirected back to the page where he pressed the „login“ button (Note1)</i>
Exceptions	<i>if the data are not valid, an error message will be displayed</i>
Extensions	<i>4bis. he presses "lost password" to reset password</i>
Notes	<i>Note1: from this step the user is logged in</i>
Dependent UC	

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4.2.7 User log out

Use case ID	UC7
Name	<i>User log out</i>
Priority	Medium
Goal	<i>Let the user exit from our service and not being identified anymore</i>
Participating actors	User (registered)
Precondition	<i>Can be done from any page, User must be logged in</i>
Main scenario	<i>1. he presses „log out“ link located under the header 2. page is reloaded (Note1)</i>
Exceptions	
Extensions	
Notes	<i>Note1: from this step the user is logged out from our service</i>
Dependent UC	

4.2.8 Viewing user's profile and preferences

Use case ID	UC8
Name	<i>Viewing user's profile and preferences</i>
Priority	Low
Goal	<i>Show to the user his personal information and preferences</i>
Participating actors	User (registered)
Precondition	<i>User must be logged in</i>
Main scenario	<i>1. he presses on „personal page“ button located under the header 2. he is redirected to his personal page</i>
Exceptions	
Extensions	
Notes	
Dependent UC	

4.2.9 Editing user's profile and preferences

Use case ID	UC9
Name	<i>Editing user's profile and preferences</i>
Priority	Low
Goal	<i>let the user edit his personal information</i>
Participating actors	User(registered)
Precondition	<i>User must be logged in, must be on his personal page</i>
Main scenario	<i>1. he presses the “edit” button near the data he wants to edit 2 the page is updated letting the user edit that field 3. edit data 4. press “ Ok “ Button 5. page will be updated with the new data and changes are made into the DB</i>

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Exceptions	<i>If the data inserted are in a wrong format and error message may be displayed</i>
Extensions	
Dependent UC	

4.2.10 Delete user's account

Use case ID	UC10
Name	<i>Delete user's account</i>
Priority	Low
Goal	<i>let the user remove himself from our service's database</i>
Participating actors	User (registered)
Precondition	User must be logged in, must be on his personal page
Main scenario	<i>1. he presses the „delete account“ button 2 he is redirected to a confirmation page 3 he presses „ok“ button in the confirmation page 4. the account is removed from the database 5 he's redirected to the homepage(Note1)</i>
Exceptions	
Extensions	<i>3bis. he presses „back“ button in the confirmation page 4bis. he's redirected to his personal page</i>
Notes	<i>Note1: the user now is not logged anymore into our system</i>
Dependent UC	

4.2.11 Reviewing university

Use case ID	UC22
Name	<i>Reviewing university</i>
Priority	Low
Goal	<i>let the user interact by reviewing the university</i>
Participating actors	User (registered)
Precondition	User must be logged in, must be on an university page
Main scenario	<i>1. do UC11 2. do UC13</i>
Exceptions	
Extensions	
Notes	<i>In order to review the university, the user must comment and rate the university.</i>
Dependent UC	UC11, UC13

4.2.12 Reviewing city

Use case ID	UC23
Name	<i>Reviewing city</i>
Priority	Low
Goal	<i>let the user interact by reviewing the city</i>
Participating actors	User (registered)
Precondition	User must be logged in, must be on a city page

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Main scenario	1. do UC12 2. do UC14
Exceptions	
Extensions	
Notes	<i>In order to review the city, the user must comment and rate the city.</i>
Dependent UC	UC12, UC14

4.2.13 Commenting university

Use case ID	UC11
Name	<i>Commenting university</i>
Priority	Low
Goal	<i>let the user interact by commenting the university</i>
Participating actors	User (registered)
Precondition	User must be logged in, must be on an university page
Main scenario	1. write his comment into the dedicated text box 2. press comment button 3. page will be updated showing the comment and DB will be updated (Note1)
Exceptions	<i>If the data inserted are in a wrong format and error message may be displayed (Data Validation)</i>
Extensions	
Notes	<i>Note1: the comments are global to that university. It means the box doesn't change if a user switch tab to display different content about that university.</i>
Dependent UC	

4.2.14 Commenting city

Use case ID	UC12
Name	<i>Commenting city</i>
Priority	Low
Goal	<i>let the user interact by commenting the city</i>
Participating actors	User (registered)
Precondition	User must be logged in, must be on a city page
Main scenario	1. write the comment into the dedicated text box 2. press comment button 3. page will be updated showing the comment and DB will be updated (Note1)
Exceptions	<i>If the data inserted are in a wrong format and error message may be displayed (Data Validation)</i>
Extensions	
Notes	<i>Note1: the comments are global to that city. It means the box doesn't change if a user switch tab to display different content about that city</i>
Dependent UC	

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4.2.15 Rating university

Use case ID	UC13
Name	<i>Rating university</i>
Priority	Low
Goal	<i>Let the user interact giving his feedback on a university</i>
Participating actors	User (registered)
Precondition	User must be logged in, must be on a university page
Main scenario	1. <i>The user click on the rating panel (Note1)</i> 2. <i>The rating is stored into the database and the page is updated accordingly</i>
Exceptions	
Extensions	
	<i>Note1: the rating choice will be from 1 (bad) to 5 (excellent) using classical stars display</i>
Dependent UC	

4.2.16 Rating city

Use case ID	UC14
Name	<i>Rating city</i>
Priority	Low
Goal	<i>Let the user interact giving his feedback on a city</i>
Participating actors	User (registered)
Precondition	User must be logged in, must be on a city page
Main scenario	1. <i>The user click on the rating panel (Note1)</i> 2. <i>The rating is stored into the database and the page is updated accordingly</i>
Exceptions	
Extensions	
Notes	<i>Note1: the rating choice will be from 1 (bad) to 5 (excellent) using classical stars display</i>
Dependent UC	

4.2.17 Direct search

Use case ID	UC15
Name	<i>Direct search</i>
Priority	Medium
Goal	<i>let the user search a university using some kind of keywords (E.g. university name, city name)</i>
Participating actors	User (unregistered, registered)
Precondition	User can be on any page
Main scenario	1. <i>write the keyword into the search box</i> 2. <i>press "search" button</i> 3. <i>he will be redirected to the result page</i> 4. <i>he clicks on the university name from the result page</i>

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	<i>5 he will be redirected to the university page and UC3 starts</i>
Exceptions	<i>If the data inserted are in a wrong format and error message may be displayed (Data validation) In case of no result an error page is displayed</i>
Extensions	<i>5bis. he clicks on the city name displayed near the related university link. 6bis he is redirected to the city page and UC4 starts</i>
Notes	
Dependent UC	

4.2.18 Viewing university recommendations

Use case ID	UC16
Name	<i>Viewing university recommendations</i>
Priority	Low
Goal	<i>Let the user get advanced recommendations based both on his preferences and to the preferences of similar users of the system. (Note1)</i>
Participating actors	User (registered)
Precondition	User must be logged in, he has saved preferences into the system
Main scenario	<i>1. [TBD] where to put the recom. box is still to be defined. 2. he clicks on the university name from the box 3 he will be redirected to the university page and UC3 starts</i>
Exceptions	
Extensions	<i>2bis. he clicks on the city name displayed near the related university link. 3bis he is redirected to the city page and UC4 starts</i>
Notes	<i>Note1: more detail about the design of that system will be defined in a separate document</i>
Dependent UC	

4.2.19 Viewing selected university information (advanced)

Use case ID	UC17
Name	<i>Viewing selected university information (advanced)</i>
Priority	Medium
Goal	<i>Show university advanced information to the user. The advanced information heavily depends on the data source. At the moment we don't know exactly what we can get, for further details refer to data source document. * information on these sub-pages has to be Decided*</i>
Participating actors	User (registered, unregistered)
Precondition	User must be on a university page
Main scenario	<i>2. user click on a tab (different from „general“) of the tabbed pane displayed in the central part of the page 3. That box is updated in order to display the selected content.</i>
Exceptions	
Extensions	
Note	
Dependent UC	

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4.2.20 Viewing selected city information (advanced)

Use case ID	UC18
Name	<i>Viewing selected city information (advanced)</i>
Priority	Medium
Goal	<i>Show city advanced information to the user. The advanced information heavily depends on the data source. At the moment we don't know exactly what we can get, for further details refer to data source document. * information on these sub-pages has to be Decided*</i>
Participating actors	User (registered, unregistered)
Precondition	User must be on a city page
Main scenario	<i>2. user click on a tab (different from „general“) of the tabbed pane displayed in the central part of the page 3. That box is updated in order to display the selected content.</i>
Exceptions	
Extensions	
Note	
Dependent UC	

4.2.21 Delete reviews

Use case ID	UC19
Name	<i>Delete reviews</i>
Priority	Low
Goal	<i>Let the user delete the reviews he made. Let the admin delete a user's review.</i>
Participating actors	User (registered) Admin
Precondition	User must be logged in, must be on a city page or on a university page. Admin must be on a city page or university page
Main scenario	<i>1. press delete button near the review he made (Note1) 2. confirmation popup appears 3. he press „Ok “ on the confirmation popup 4. Review is deleted and the page is updated accordingly</i>
Exceptions	
Extensions	<i>3bis. he presses „cancel“on the popup. 4bis. the popup is closed</i>
Notes	<i>Note1: admin have a delete button near all comments, not only the ones he made</i>
Dependent UC	

4.2.22 Modify reviews

Use case ID	UC20
Name	<i>Modify reviews</i>
Priority	Low
Goal	<i>Let the user modify the reviews he made. Let the admin modify a user's review.</i>
Participating actors	User (registered)

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	Admin
Precondition	User must be logged in, must be on a city page or on a university page. Admin must be on a city page or university page
Main scenario	1. <i>press modify button near the review he made (Note1)</i> 2. <i>a text area open up, allowing the modification of the comment</i> 3. <i>he press „Ok“ button on the text area</i> 4. <i>Review is modified and the page is updated accordingly</i>
Exceptions	
Extensions	3bis. he presses „cancel“ button in the text area. 4bis. the text area is closed and all the changes are lost
Notes	<i>Note1: admin have a modify button near all comments, not only the ones he made</i>
Dependent UC	

4.2.23 Delete/Modify user's account

Use case ID	UC21
Name	<i>Delete/Modify user's account</i>
Priority	Low
Goal	<i>Let an admin modify information on a user's account or delete it</i>
Participating actors	Admin
Precondition	
Main scenario	1. <i>he presses „admin“ button under the header</i> 2. <i>a page with the list of all the users is shown</i> 3. <i>he presses „delete“ button near the name of the user</i> 4. <i>confirmation popup is displayed</i> 5. <i>he clicks on „ok“ button</i> 6. <i>that user's account is deleted and page is updated</i>
Exceptions	
Extensions	2bis. <i>he presses „Modify“ button near the user's name</i> 3bis <i>he redirected to the user's preferences page</i> 4bis <i>UC9 (Editing user profile) (Note1)</i>
Notes	<i>Note1: admin has the power of viewing and modifying every user account</i>
Dependent UC	

4.2.24 Discover how recommendation system works

Use case ID	UC4
Name	Discover how recommendation system works
Priority	Low
Goal	<i>Let the user understand our recommendation system works</i>
Participating actors	User (Registered)
Precondition	UC16
Main scenario	1. <i>he presses question mark button near recommendation box</i> 2. <i>a popup appears containing all the detail about our system</i>
Exceptions	
Extensions	
Notes	
Dependent UC	

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5. Requirements Definition

5.1 Requirement Group Definitions

Identification	Requirement Group	Rem.
EDA	External Data Acquisition	
SC	System Core	
UIF	User Interface Functional	
UIV	User Interface Visualization	
RUA	Registered User Add-ons	
FR	Functional Requirements	

5.2 Requirement Sources

Source	Description	Rem.
Ctm	Customer (Ivana Bosnic)	
PMS	Project Member Suggestion	
Sys	Required as a consequence of the system design	

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5.3 Requirement definitions

Identity	Status	Priority	Reference	Description	Source
				External Data Acquisition	
EDA-1	I	1	Requirements on external systems	Acquire raw data from DS1: http://www.4icu.org/	PMS
EDA-2	D	2	Requirements on external systems	Acquire raw data from DS2: http://dev.mendeley.com/	PMS
EDA-3	I	1	Requirements on external systems	Acquire raw data from DS3: http://www.freebase.com/	PMS
EDA-4	A	2	Requirements on external systems	Acquire raw data from DS4: http://www.numbeo.com/	PMS
EDA-5	I	3	Requirements on external systems	Acquire raw data from other data sources	Ctm, PMS
				System Core	
SC-1	I	1	Server requirements	Dynamic loading of raw data	Ctm
SC-1.1	I	1	Server requirements	Mapping of raw data to an higher abstraction layer	Sys
SC-1.1.1	I	1	Server requirements	universities	Sys
SC-1.1.2	I	1	Server requirements	location/continent/region/country/state/city	Sys
SC-1.1.3	D	2	Server requirements	postdocs publications	Sys
SC-1.1.4	I	2	Server requirements	cost of living	Sys
SC-2	I	1	Server requirements	Provide interfaces to request data to the UI	Sys
SC-3	I	2	Server requirements	Save user's preferences	PMS

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SC-3.1	I	2	Server requirements	Provide a recommendation system based on user's preferences	PMS
SC-4	I	2	Server requirements	Authenticate a user by his Username/Password	Sys
SC-5	I	1	Server requirements	Database definition and implementation	Sys
SC-6	I	1	Server requirements	Domain model definition	Sys
				User Interface Functional	
UIF-1	I	1	User interface requirements	Interface with the server	Sys
				User Interface Visualization	
UIV-1	I	1	User interface requirements	General template	Ctm
UIV-2	I	1	User interface requirements	Home page	PMS
UIV-3	I	1	User interface requirements	Suggestion page	Ctm
UIV-4	I	1	User interface requirements	Exploration map page	PMS
UIV-5	I	1	User interface requirements	University Page	PMS
UIV-6	I	1	User interface requirements	City Page	Ctm, PMS
UIV-7	I	2	User interface requirements	Direct Search Page	Ctm, PMS
				Registered User Add-ons	
RUA-1	I	2	User interface requirements	Preference page	PMS
RUA-1.2	I	2	User interface requirements	Registration page	PMS

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RUA-2	I	2	User interface requirements	Login page	PMS
RUA-2.1	I	3	User interface requirements	Recommendation system page	PMS
RUA-3	I	3	User interface requirements	Provide a visual interface to add reviews and ratings	PMS
RUA-3.1	I	3	User interface requirements	to universities	PMS
RUA-3.2	I	3	User interface requirements	to locations	PMS
				Functional Requirements	
FR-1	I	1	Functional Requirements	Explore interactive map	PMS, Ctm
FR-2	I	1	Functional Requirements	Getting university suggestions	PMS, Ctm
FR-3	I	1	Functional Requirements	Viewing selected city information (basic)	PMS, Ctm
FR-4	I	1	Functional Requirements	Viewing selected city information (basic)	PMS, Ctm
FR-5	I	2	Functional Requirements	User registration	PMS, Ctm
FR-6	I	2	Functional Requirements	User log in	PMS, Ctm
FR-7	I	2	Functional Requirements	User log out	PMS, Ctm
FR-8	I	2	Functional Requirements	Viewing user's profile and preferences	PMS, Ctm
FR-9	I	2	Functional Requirements	Editing user's profile and preferences	PMS, Ctm
FR-10	A	3	Functional Requirements	Delete user's account	PMS, Ctm

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FR-11	I	3	Functional Requirements	Commenting university	PMS, Ctm
FR-12	I	3	Functional Requirements	Commenting city	PMS, Ctm
FR-13	A	3	Functional Requirements	Rating university	PMS, Ctm
FR-14	A	3	Functional Requirements	Rating city	PMS, Ctm
FR-15	I	2	Functional Requirements	Direct university search	PMS, Ctm
FR-16	I	3	Functional Requirements	Viewing university recommendation	PMS, Ctm
FR-17	I	2	Functional Requirements	Viewing selected university information (advanced)	PMS, Ctm
FR-18	I	2	Functional Requirements	Viewing selected university information (advanced)	PMS, Ctm
FR-19	A	3	Functional Requirements	Delete users' comments	PMS, Ctm
FR-20	A	3	Functional Requirements	Modify users' comments	PMS, Ctm
FR-21	A	3	Functional Requirements	Delete/Modify user's account	PMS, Ctm
FR-22	A	3	Functional Requirements	Reviewing university	PMS, Ctm
FR-23	A	3	Functional Requirements	Reviewing city	PMS, Ctm
FR-24	A	3	Functional Requirements	Discover how recommendation system works	PMS, Ctm

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Requirement status:

- I = initial* (this requirement has been identified at the beginning of the project),
- D = dropped* (this requirement has been deleted from the requirement definitions),
- H = on hold* (decision to be implemented or dropped will be made later),
- A = additional* (this requirement was introduced during the project course).

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5.3.1 Change Log

Identity	Action	Date	Comments
EDA-4	A	2012-12-04	A new data source for financial information was added
FR-10	A	2012-12-04	Part of a selection of admin functionalities that were added
FR-13	A	2012-12-04	Ratings were introduced as a variable of the recommendation system
FR-14	A	2012-12-04	Ratings were introduced as a variable of the recommendation system
FR-19	A	2012-12-04	Part of a selection of admin functionalities that were added
FR-20	A	2012-12-04	Part of a selection of admin functionalities that were added
FR-21	A	2012-12-04	Part of a selection of admin functionalities that were added
FR-22	A	2012-12-04	Reviewing was introduced as a combination of commenting and rating
FR-23	A	2012-12-04	Reviewing was introduced as a combination of commenting and rating
FR-24	A	2012-12-14	A wizard to help the user with the recommendation system functionalities
EDA-2	D	2012-12-14	Data source dropped for not being useful to the project
SC-1.1.3	D	2012-12-14	Functionality dropped because of a lack of necessary data source

Requirement status:

D = dropped (this requirement has been deleted from the requirement definitions),

H = on hold (decision to be implemented or dropped will be made later),

A = added (this requirement was introduced during the project course).

R = resurrected (dropped or on hold requirement was reactivated)

6. Future Development

As there will be always the need to get information from new countries and parameters, providing a configuration based extensibility mechanism will allow easy integration of new data sources.