

# Information Systems Development

Coursework 2

Requirements for SocialUniOnline, a social networking  
part of UniOnline, a university learning environment

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## **PART A - REQUIREMENTS**

### **10 general user requirements**

#### Requirement 1

The users of the system shall be able to communicate with each other through direct messages, chat or video.

#### Requirement 2

The system shall support discussion boards on a broad group of themes.

#### Requirement 3

The system shall have general areas that all users have access to, and some parts with restricted access based on given user groups.

#### Requirement 4

The system shall support file sharing (file upload and file download).

#### Requirement 5

The system shall be optimized for user accessibility, and not exclude users with special needs.

#### Requirement 6

The system shall have an integrated help function on each part, with help information written in natural English.

#### Requirement 7

The system shall be browser based, and shall not exclude any browser.

#### Requirement 8

The system shall be administrated by dedicated users with access all areas.

#### Requirement 9

The user interface shall be customizable by the users, without interfering with the system's content.

#### Requirement 10

The system shall be easy to learn, and it's navigation shall be based on other popular social media sites that the students might use.

### **3 non-functional requirements**

#### Requirement 11 - reliability

The system shall always be online

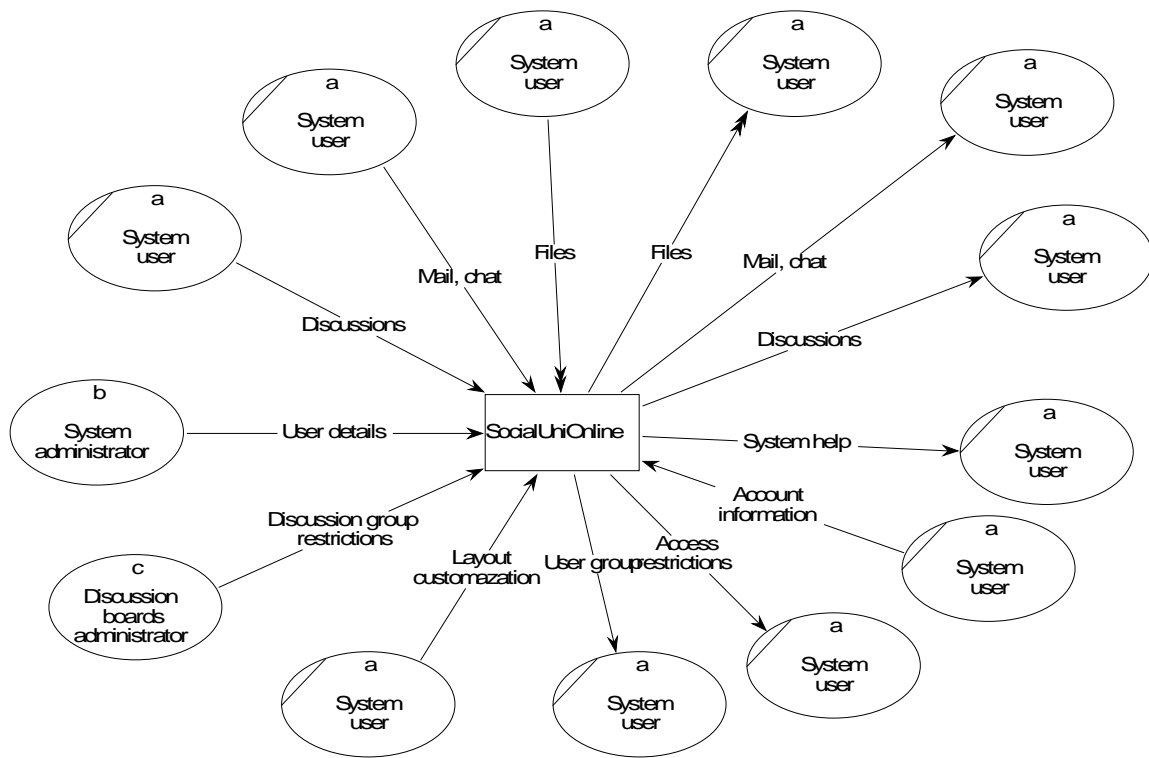
#### Requirement 12 - performance

The system shall support up to 5000 user logged in at the same time, without any noticeable delays in the system

#### Requirement 13 – security

Only accredited users shall be able to access the system, and only to predetermined parts

## Context Diagram



## PART B – REQUIREMENTS DOCUMENT

### 0. Preface

This document is a requirement document for SocialUniOnline, the social network extension of UniOnline. Its content is intended to assist the project management and the technical staff of the system, in the technical development and implementation of the system.

### 1. Introduction

SocialUniOnline (SUO) shall be the social networking extension of UniOnline (UO), an existing and already implemented virtual learning environment. SUO will be used by both students and teaching staff to interact with each other, both in an academic and social sense. The system will provide interactivity that UO is not supporting today, and will be a multimedia tool for its many users.

The system will have the same users as UO, but will expect a higher activity than UO since it will be used to not only school activities. The user interface of the system will be web browser based.

The systems core function will be a communication tool, allowing the users to communicate with each other, either through direct messages, chat, video conferencing, or posting to message boards. In addition, the users shall be able to share school related files.

### 2. Glossary

AJAX	<b>Asynchronous JavaScript and XML.</b> Common term for techniques that often combines HTML, CSS and JavaScript to interactive web application.
CSS2	<b>Cascading Style Sheets.</b> A styling language used in addition to HTML in a webpage to give properties to the layout. CSS2 is the second version of the language.
Data flow model	A presentation of how data is exchanged in an information system.
Entity relationship model	A presentation of data that show what type of data is used in the information system.
Flash	Multimedia platform widely used in web pages to create animations and interactive features.
Functional software requirement	Description of the system's functionality, based on the user requirements.
General user requirement	Description of how the users want to experience the system.
HTML 4.01/XHTML 1.x	<b>HyperText Markup Language</b> is the language that is used to write web pages. XHTML is an extension of HTML with XML properties, making the language stricter. These are the latest stable versions of these languages.
Java	Programming language often used to create web applets, small programs executed on web pages. Requires java installed on the user's computer.

JavaScript	Scripting language used on web pages to create dynamic web pages. Not related to Java.
jQuery	Popular JavaScript library that emphasises the interaction between JavaScript and HTML
Legacy browser	Old version of a web browser that do no longer support the latest web technologies.
Non-functional software requirement	Description of the system's functionality that is not directly communicated by the user.
Page attribute	Defines how a web page is displayed. A web page consists of many attribute, like different font attributes, table attributes. Commonly controlled by CSS.
SMTP	Simple Mail Transfer Protocol. The protocol used to send email. Usually a dedicated server is used for the email need of an organization.
Web widget	Small program implemented on a web page. Can be created by several programming languages.

### 3. General user requirements

The development of SocialUniOnline shall be based around these following user requirements:

- 1 - The system shall be browser based, and shall not exclude any browser
- 2 - Only accredited users shall be able to access the system, and only to predetermined parts
- 3 - The users of the system shall be able to communicate with each other through direct messages, chat or video
- 4 - The system shall support discussion boards on a broad group of themes
- 5 - The user interface shall be customizable by the users, without interfering with the system's content

These are the requirements that define the core of the system, and show a basic "who" and "what" of the system.

### 4. Hardware specifications

The system will be web based, and therefore the system must be based around a web server. The server and it connection must be configured to handle 5000 users logged on simultaneous. The configuration and OS of the web server will be addressed based on the final solution for the system.

In addition to the web server, there must be a dedicated SMTP-server to the system. The messages sent will be based around the current university email addresses, so the current SMTP server can be used.

The system also support file upload and download, and the web server must handle file sizes up to 50 MB.

## 5. Functional software requirements

These are the functional software requirements derived from the general user requirements (GUR) listed in section 3.

GUR 1 - The system shall be browser based, and shall not exclude any browser.

### **The system shall be accessible by all browsers supporting HTML 4.01/XHTML 1.x and CSS2.**

To ensure that no user is excluded based on hardware or operating system, no browser shall be preferred over others. The system will be tested and built for all the browsers that support the latest stable versions of HTML/XHTML and CSS2. No newer versions of these languages will be used, even features that are supported by some browsers.

### **No additional software or plug-ins (like java or flash) should be needed to access the system.**

The user should not need to install or change anything on their computer to access the system. To log on to the system shall not involve anything more complicated than remembering your password.

### **Users with legacy browsers or other unsupported browser, will be warned about their shortcomings, and will only have access to a skeleton version of the system.**

When users with unsupported browsers try to access the system, they will be told about why their system configuration is not compatible with our, and what they need to do to experience the system in full. However, they will be able to log on and access a stripped down version, based on what their system can handle. They must be able to access core functionality like mail and the discussion boards, but they cannot expect the same functionality.

GUR 2 - Only accredited users shall be able to access the system, and only to predetermined parts.

### **The user access shall be integrated with the user access of the current UniOnline system, and all users of the old system will have access to this.**

The users will automatically have access to the new system, and they will use the same credentials for both.

### **The user can access the system directly through a portal with his credentials, or via the old system.**

Once logged in to one system, they should be able to access the other without entering the credentials once more. The two systems shall feel as one for the user.

### **The users will be given one or more user groups based on their registered courses.**

The user groups will be based on the courses registered on the users. Combined honour students will require more than one user group. The user groups will be used for sorting the users in the address book and to set up group discussions on the discussion boards.

GUR 3 - The users of the system shall be able to communicate with each other through direct messages, chat or video.

### **The users will have the ability to read, compose, send and receive internal and external email in the system. The email address used for each user is the student email address.**

The university email will be integrated in the system, and the user will have access to a fully

functional web based email.

**The users will have access to an email address book containing all the users of the system, for easy access to recipients, sorted by role (student, lecturer, and staff) and courses (studying, teaching, supporting).**

This address book shall be easily searchable, and contain all the users of the system. The users should also be able to add other addresses in a private part of the book.

**The users shall be able to see which users of the same user groups is online at the same time as they, and be able to chat in same time with other users, either one to one or one to many.**

This information should be displayed on every page, like the access to the chat. When two or more people are in the same chat, they should be able to invite more active users in to their discussion.

GUR 4 - The system shall support discussion boards on a broad group of themes.

**Each user shall have access to a discussion page with accessible discussions, based on his user groups.**

The discussion page should only list discussions that are for all or for the user's user group. This page should also display information like the latest activity in the different groups and give access to the listed discussions.

**The discussion board will be administered by appointed administrators, and they will create and delete discussion groups.**

These administrators can be normal users of the system as well as dedicated administrators.

**A user will be able to create discussion threads under his groups, and read and comment on the threads in the groups he has access to.**

GUR 5 - The user interface shall be customizable by the users, without interfering with the system's content.

**The user shall be able to change some of the page's attributes, like font size, font type, font colour and background colour. These changes will be stored and remembered to the next change.**

The changes should not affect the performance or the accessibility of the system.

**The start page of the system shall be customizable with summary widgets for all the pages in the system. These widgets can be added or dropped after the user's wishes.**

These widgets will be used to be held up to date on news, mail or discussions. However, even without these widgets, the user should be able to easily access all the parts of the system.

**The system shall have an option to set the system back to the original settings.**

This button must be easily accessed from the start page.

## 6. Non-Functional software requirements

These non-functional requirements are like the functional software requirements derived from the five general user requirements and the numbering reflect these.

### **1 - The user interface shall rely heavily on the use of AJAX for the best user experience.**

This will give the system a possibility for great interactivity, without demanding too much of neither the server nor the client.

### **2 - The passwords for the system will follow the password standard used in the rest of the university.**

This means eight characters or more and a mixture of capital letters, small letters and numbers. The password must be changed at least every three months, and the new password cannot be the same as any of the five previous.

### **3 - All mail will be sent through a dedicated SMTP server for the system.**

To maintain control over the mail, the SMTP server must be used, even if the web server should provide send mail functionality.

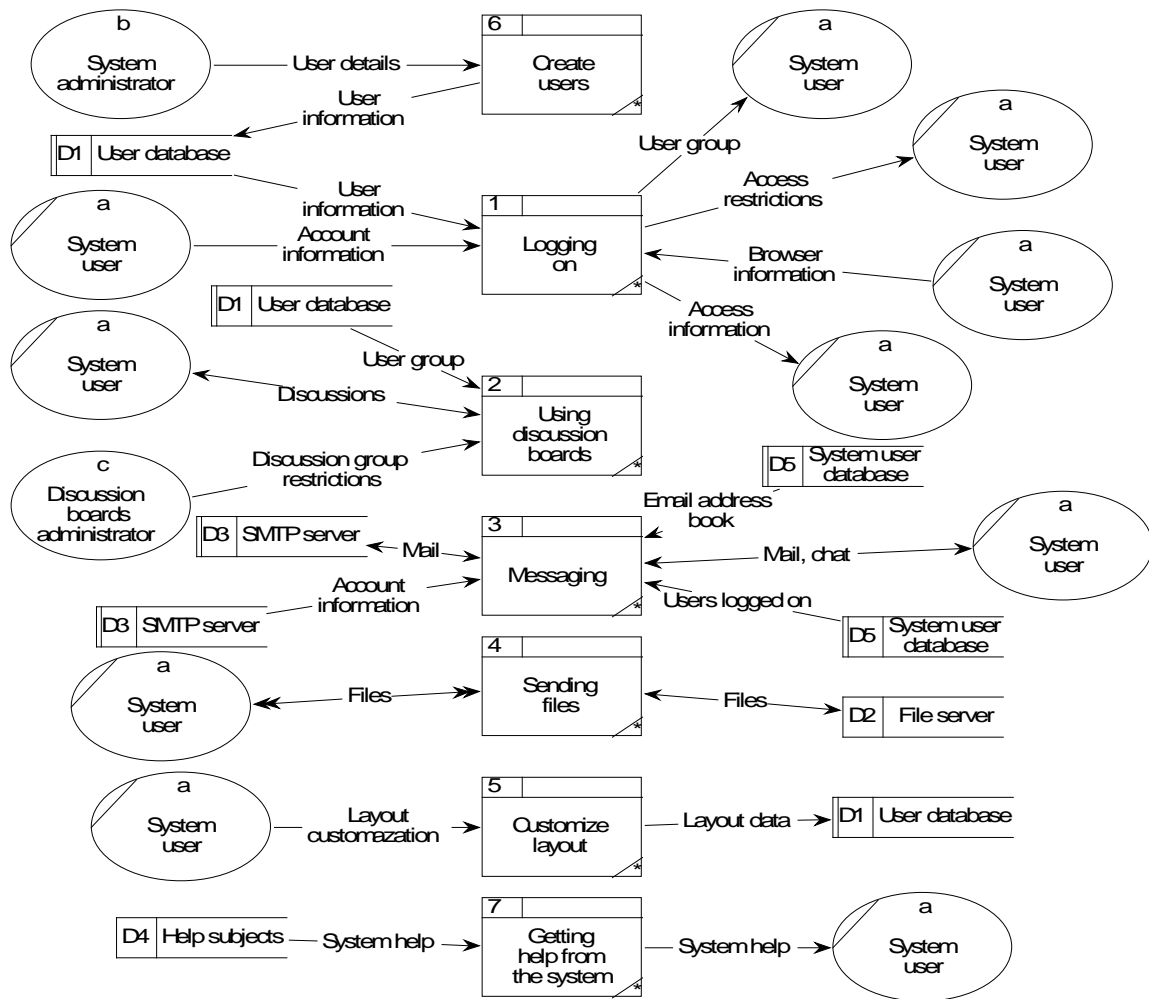
### **4 - The discussion groups will be administrated by the library staff.**

This staff will also be users of the system, but will use the systems mainly for mail and their discussion duties.

### **5 - The front page widgets will be implemented using jQuery.**

This will, combined with AJAX, not demand too much of the system, and is supported by the standard users.

## 7. Data-flow model of the software system



## 8. Entity-relationship model of the software system

