HR Páver
Þarfagreiningarskýrsla

Verklegt Námskeið 2

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1 Introduction

1.1 Purpose of the system

The purpose of **HR Páver** is to simplify all social interactions between students, teachers and other staff of Reykjavík University. This will be accomplished by combining the pros of existing websites that are not a part of MySchool or the **RU** mail system.

1.2 Scope of the system

The system includes all the social aspects of Reykjavík University. Ranging from asking questions to signing up for events and creating a good social environment, where it is easy to interact with fellow students or staff.

1.3 Definitions, acronyms and abbreviations

HR Páver is the name of our system.

Páver rank is the status high rated posts get, such posts are highlighted.

RU is short for Reykjavík University.

Wall is where users can see status updates and questions by anyone within the relevant group.

Q & A is question and answer **wall** within a **course group**.

Course group is a specific closed group created and administered by a teacher. It has separate **walls** for posts and a **Q & A** section.

1.4 References

Student, teachers and other staff members have many social media platforms to interact with each other. We chose to focus on their two most frequently used websites, Facebook and Piazza

1.5 Overview

We want to create a user friendly social website for all students and teachers in Reykjavík University. Our system will be based on the functionalities of Facebook and Piazza while staying true to the needs of our user groups.

2 Current systems

Students, teachers, and other staff members use various websites to communicate, whether to socially interact, relay questions about problems or chat. So before we delve deeper into this project we will look at the pros and cons of the two websites that are relevant to the project. Finally we will gather information to prepare the questions for our user groups.

2.1 Facebook

Facebook is one of the most used social network in the world and is immensely popular among the Icelandic people. Facebook allows the user to friend, follow and share status updates with other users. Additionally user can share photos, videos, create polls, groups and events. However some of Facebook's features, like advertisements and game invites, make for a poor work environment.

Cons:

Privacy is an issue for some people and may prevent them from using the system or signing up.

Facebook has unwanted and **distracting features**.

Comment system is hard to grasp when the comments reach a certain amount.

Pros:

Facebook is well designed and is **user friendly**.

The site has a quick **response time**.

Facebook has many good features such as allowing people to easily **connect** with each other.

Facebook offers good tools for **collaboration**.

2.2 Piazza

Piazza is an environment used by students, teachers and other staff members all around the world. It is used to ask and answer questions concerning course material. Reykjavík University uses Piazza and in some courses it may be the only way to reach out for assistance. Piazza offers some great design qualities but the system is restricted to questions only. Piazzas greatest quality is that you can post anonymously and get quick answers from students and teachers alike. It offers a simple but efficient rating system and can be categorized effectively. The user interface is complex, hard to navigate and unappealing.

Cons:

The site is restricted to **questions only**.

User interface is **complex and cluttered**.

Piazzas default settings **spam your email** inbox with notifications.

Pros:

The site allows users to **ask questions anonymously**.

Generally **quick answers** from students and teachers.

Simple but **efficient rating system**.

Questions can be **categorized effectively**.

2.3 Results

After researching Facebook and Piazza we found both positive and negative qualities. The focus of our system should be to make social experience the best for the user, limited restrictions and easy access. The system should not allow consumable advertisements but personal advertisements would be allowed.

The feature of anonymity should be restricted to the **Q & A** section. Our system should use comment design that is easier to read than the Facebook's current comment system.

3 User groups

3.1 About user groups

The user groups for this system are based on their roles in Reykjavík University. The following table will define the user groups of our system.

The system must cater to all different user groups and above all else strive to be user friendly. These user groups have been analysed and their information can be seen in the table below.

3.2 User group analysis

User group	Background	Use of system	Context	Main task
Teachers Importance: Essential	**Age:** 25 or older **Gender:** Both **Education:** Master diploma **Disabilities:** Varies **Computer Skills:** Varies	**Use:** All year round **Training:** None **Attitude:** Positive **Number of users:** Around 100	**Technical environment:** Environment varies but usually good network connection. **Real environment:** Could be anywhere but most often in work or at home	**Socialize with students and help them with their studies.**
Students Importance: Essential	**Age:** 16 or older **Gender:** Both **Education:** High School diploma **Disabilities:** Varies **Computer Skills:** Intermediate	**Use:** All year round **Training:** None **Attitude:** Varies **Number of users:** Around 3000	**Technical environment:** Environment varies but usually good network connection. **Real environment:** Could be anywhere but most often in school or at home	**Socialize with other students and ask questions.**
Other Staff Importance: Not important	**Age:** 21 or older **Gender:** Both **Education:** Varies **Disabilities:** Varies **Computer Skills:** Varies	**Use:** All year round **Training:** None **Attitude:** Varies **Number of users:** n/a	**Technical environment:** Environment varies but usually good network connection. **Real environment:** Could be anywhere	**Socialize with other staff and students.**

User group	Background	Use of system	Context	Main task
Assistant teachers Importance: Above average	**Age:** 20 or older **Gender:** Both **Education:** High School diploma **Disabilities:** Varies **Computer Skills:** Intermediate	**Use:** All year round **Training:** None **Attitude:** Positive **Number of users:** Around 150	**Technical environment:** Environment varies but usually good network connection. **Real environment:** Could be anywhere but most often in work or at home	**Socialize with other teachers, students and answering questions.**
User Importance: Essential	**Age:** 16 or older **Gender:** Both **Education:** Varies **Disabilities:** Varies **Computer Skills:** Varies	**Use:** All year round **Training:** None **Attitude:** Varies **Number of users:** n/a	**Technical environment:** Environment varies but usually good network connection. **Real environment:** Could be anywhere	**Socialize with other teachers, students and answering questions.**
Admin Importance: Essential	**Age:** 21 or older **Gender:** Both **Education:** High School diploma **Disabilities:** Varies **Computer Skills:** Expert	**Use:** All year round **Training:** None **Attitude:** Positive **Number of users:** n/a	**Technical environment:** Environment is usually very good. **Real environment:** Could be anywhere but most often in work or at home	**Administers the website**

4 Interviews

4.1 About interviews

In this chapter we will introduce our interviewees and summarise the outcome of the interviews. We will start by talking about the outcome of the students, teachers and finally chairmen of social organisations.

4.2 Interviewees

Role	Age	Gender	Education	Abilities/ Disabilities	General computer knowledge
Student	21	Male	Studying computer science at Reykjavík University	n/a	Intermediate
Student	24	Male	Studying computer science at Reykjavík University	n/a	Expert
Teacher	30	Female	Bsc in Engineering	n/a	Intermediate
Chairman of social organisation	21	Male	Studying computer science at Reykjavík University	n/a	Expert
Chairman of social organisation	23	Female	Studying psychology at Reykjavík University	n/a	Intermediate

4.3 Outcome from the interviews

After interviewing five people, both students and teachers. We asked them a couple of questions about their perspective on social media and their use of Facebook and Piazza.

We found that not everyone uses social media to the same degree, however most students are in every Facebook group for their respective courses. They feel that these groups contain valuable information regarding their studies. The students also use Piazza to a different degree and some would use it more if it were more accessible.

Students want to see a good rating system where the most popular posts would be highlighted which would provide an easy way to sort posts by their importance. Most students would rather use our system on a desktop than a mobile platform. They found that being able to conduct and take part in user generated polls is a good feature and being able to upload pictures is a must. Additionally they found it important to have an instant chat function to chat with one or many users simultaneously. They thought your profile should contain standard information about yourself and which courses you have participated in and optionally what groups you are a part of.

Teachers would like to see a good environment for questions and answers that is accessible to users. They found it crucial that a users profile would contain a photo, general information. They would like a simple and efficient way to find teaching assistants. They found it a good idea to combine features of MySchool and Facebook to get a better overview of important information and the system should be aesthetically pleasing.

The Chairmen of social organisations at Reykjavík University had differing opinions regarding the current systems correlating to their computer knowledge. The more technologically experienced parties despised the current system and wanted quicker and more manageable functionalities. The other parties were less demanding of a meticulous system and were okay with current methods of event management.

From these interviews we gathered a lot of useful data that will be helpful with the design of our proposed system. It is essential for the system to have groups which are easy to manage and relay information effectively. The system should be accessible via both mobile devices and desktop platforms.

5 Proposed system

5.1 Overview

This system should be a social media website for Reykjavík University where users will be able to register with their university email.

Users will be able to post content on **walls** including standard messages, asking and answering questions and creating polls. Users will additionally be able to friend other users or follow them and send them private messages. They will also be able to create events and form open, closed and private groups for other users to join. Users will be able to apply for assistant teacher position where teachers have made it available. Teachers will be able to create specific **course groups** and search for assistant teachers. Users can rate posts and the highest rated posts receive a **Páver rank**. Other staff of **RU** will be able to advertise events.

Priority description

    A is critical to have.

    B is good to have.

    C is nice to have.

5.2 Functional requirements

Number	Description	Use case number(s)	Priority (A/B/C)	Status
1	User shall be able to create a new account	1	A	n/a
2	User shall be able to log in with his account.	n/a	A	n/a
3	User shall be able to create a group (open, closed and private)	3	A	n/a
4	User shall be able to join a open group	n/a	A	n/a
5	User shall be able to apply to join a closed/**course group**	4	A	n/a
6	User shall be able to accept an invitation to join a private group	n/a	A	n/a
7	Group moderator shall be able to invite another user to a private group	n/a	A	n/a
8	Group moderator shall be able to accept another users application to join a closed group	4	A	n/a
9	User shall be able to post to a **wall**	2	A	n/a
10	User shall be able to send another user a friend request	n/a	A	n/a
11	User shall be able to accept a friend request	n/a	A	n/a
12	User shall be able to follow another user	n/a	A	n/a
13	Teacher shall be able to create a **course group**	6	A	n/a

Number	Description	Use case number(s)	Priority (A/B/C)	Status
14	Student shall be able to post a question on a **course group**	n/a	A	n/a
15	User shall be able to answer questions.	n/a	A	n/a
16	User shall be able to create a question poll	n/a	A	n/a
17	User shall be able to send a personal message to another user.	n/a	A	n/a
18	User shall be able to edit his profile	n/a	A	n/a
19	Users shall be able to reset their password	n/a	A	n/a
20	Users shall be able to search for other users or groups	n/a	A	n/a
21	User shall be able to unfriend another user	n/a	A	n/a
22	User shall be able to unfollow another user	n/a	A	n/a
23	User shall be able to browse his friend and following list	n/a	A	n/a
24	Teacher shall be able to open applications for teaching assistant position	n/a	B	n/a
25	Teacher shall be able to browse users that have signed up for teaching assistant	n/a	B	n/a
26	Users shall be able to sign up for teaching assistant position	n/a	B	n/a
27	Teacher shall be able to accept users that have signed up for teaching assistant	n/a	B	n/a
28	Teacher shall be able to remove teaching assistants from **course groups**	n/a	B	n/a
29	Teacher shall be able to request specific users to enroll for a teaching assistant position	n/a	B	n/a
30	Users shall be able to respond to teachers' request to enroll as a teaching assistant	n/a	B	n/a
31	User shall be able to sort his **wall**	n/a	B	n/a
32	Users shall be able to choose to show/hide certain parts of their profile	n/a	B	n/a
33	Students shall be able to post questions on **course groups** anonymously	n/a	B	n/a

Number	Description	Use case number(s)	Priority (A/B/C)	Status
34	User shall be able to rate posts and questions	n/a	B	n/a
35	Users shall be able to edit their posts and questions	n/a	B	n/a
36	Users shall be able to comment on posts	n/a	B	n/a
37	Users shall be able to answer questions	n/a	B	n/a
38	Teacher shall be able to add categories in **course group**	n/a	B	n/a
39	Teacher shall be able to remove categories in **course group**	n/a	B	n/a
40	Teacher shall be able to edit categories in **course group**	n/a	B	n/a
41	Student shall be able to categorize his question with a specific assignment tag	n/a	B	n/a
42	Teacher and other users shall be able to create a public announcement	5	B	n/a
43	Each group shall have it's own open chat room	n/a	C	n/a
44	Users shall be able to view statistics about questions and answers.	n/a	C	n/a
45	Teachers shall be able to view students and teaching assistants activity on their **course group**	n/a	C	n/a

5.3 Non-Functional requirements

Number	Description	Use case number(s)	Priority (A/B/C)	Status
1	The system shall be accessible on multiple devices	n/a	A	n/a
2	The system shall adhere to defined coding standards	n/a	A	n/a
3	The system shall have a minimum response time of 100 ms	n/a	B	n/a
4	The system shall offer icelandic and english translations	n/a	B	n/a
5	The system shall log all errors	n/a	B	n/a
6	The system shall have an uptime of 99%	n/a	B	n/a
7	The system shall have minumum hardware requirements	n/a	B	n/a
8	The system shall offer scalable text	n/a	C	n/a
9	The system shall offer different color schemes	n/a	C	n/a
10	The systems database shall be backed up daily	n/a	C	n/a
11	The system shall be able to handle a throughput of about 2500 users per day	n/a	C	n/a
12	The system shall have a restore time of a maximum 1 hour	n/a	C	n/a

5.4   System models

5.4.1   Use cases

Name	User creates new account
Number	1
Priority	High
Precondition	User must have an @ru.is email
Description (base-flow)	The user visits the front page and is prompted to either sign in or sign up. User proceeds to sign up with his @ru.is email and decides on a password of length 6-16 characters. After user confirms he is prompted to activate his account with a link he got in an email message.
Alternative flow	User does not have an @ru.is email and does not get the activation email.
Postcondition	The user account is created and ready to be logged on with.
Source(requirements)	1
Actors	Non-User
Author	Ragnar Már

Name	User creates new post
Number	2
Priority	High
Precondition	User must be signed into his account.
Description (base-flow)	User navigates to his front page or the group page he wishes to post on. User inputs the content of his post (text, pictures, poll) and submits.
Alternative flow	n/a
Postcondition	The post has been uploaded and is visible to relevant people.
Source(requirements)	9
Actor	User
Author	Ragnar Már

Name	User creates new group
Number	3
Priority	High
Precondition	User must be signed into his account.
Description (base-flow)	User navigates to the page where he can create a group. User inserts the relevant information for the group and confirms its creation.
Alternative flow	User does not insert necessary information and gets prompted what is needed.
Postcondition	The group has been created and users can join it.
Source(requirements)	3
Actor	User
Author	Ragnar Már

Name	User joins a **course group**
Number	4
Priority	High
Precondition	User must be signed into his account.
Description (base-flow)	User searches for the **course group** he wishes to join. When user finds the **course group** he applies to join it. A teacher or a moderator of the specific **course group** accepts the user's application to join.
Alternative flow	n/a
Postcondition	Student has joined the **course group** and can now interact with fellow students or teachers in the specific group.
Source(requirements)	5, 8
Actor	User
Author	Birkir Freyr

Name	Teacher posts an announcement
Number	5
Priority	Low
Precondition	User must be signed into his account and have accessibility of other user or higher
Description (base-flow)	User navigates to the page to create an announcement. User inserts the relevant information for the announcement he is creating and confirms its creation.
Alternative flow	User does not insert necessary information and gets prompted what is needed.
Postcondition	The announcement has been created and is visible to other user.
Source(requirements)	42
Actor	User
Author	Kristófer Andri

Name	Teacher creates a **course group**
Number	6
Priority	High
Precondition	User must be signed into an account with teacher privileges.
Description (base-flow)	User navigates to the page to create a course. Teacher inserts the relevant information for the **course group** he is creating and confirms its creation.
Alternative flow	User does not insert necessary information and gets prompted what is needed.
Postcondition	The course has been created and other users can join it.
Source(requirements)	13
Actor	User
Author	Ríkarður

5.4.2 Use case diagram
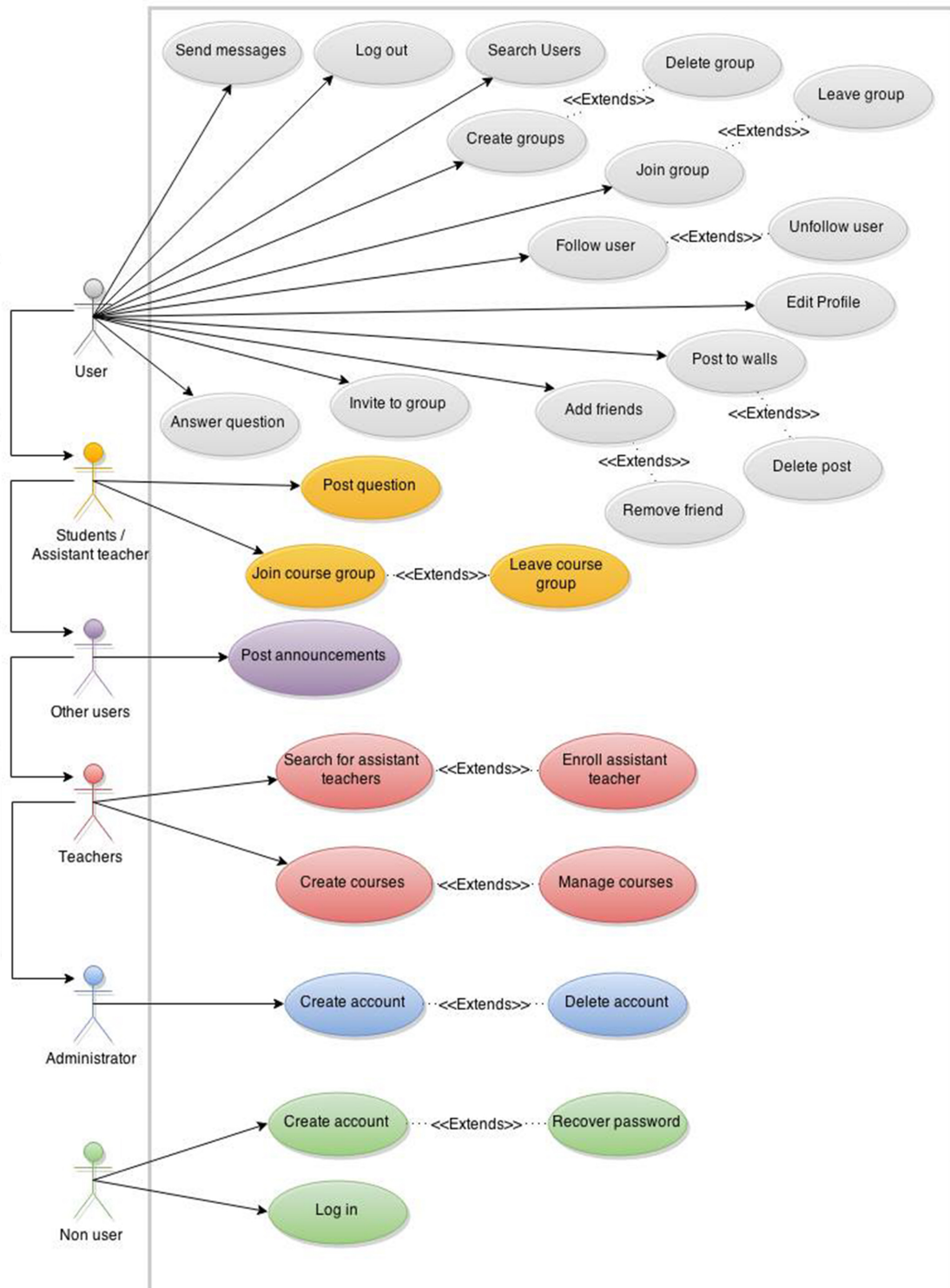
Use case diagram showing the use and access of our system.

5.4.3 Scenarios

Goal : User creates a group

Jón is a student at Reykjavik University and wants to get assistance with his home assignment in Discrete Mathematics. Jón decides to use the **HR Páver** website and create a study group with his colleagues. When Jón has invited his colleagues to join the group he posts his question about inverse matrices. Immediately Jón sits back and relaxes while he waits for his colleagues response.

Goal : Non-user creates an account

Anna is a freshmen in computer science at **RU**. Her teacher recommended her to make an account on the **HR Páver** website. Anna goes onto the website and navigates to the register page. She inputs the necessary information. She does not feel the need to complete her profile yet and proceeds to register her account. She receives a confirmation email about the registration.

Goal : Teacher creates a course group

Luca is teacher in Discrete Mathematics at **RU**. New semester is starting and therefore he decides to make **course group** on **HR Páver**. He navigates to the create a course page. He inputs all the necessary info. At the beginning of the course he recommends joining his **course group**.