

Concentration, Order and Memory (COM), Mobile- and Web-applications for Adults with Attention Deficit Hyperactivity Disorder (ADHD)

Project Group:
Hyperactivity

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Final Reflective Report

Version 1.0

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Abstract

This report will outline the purpose, scope, features, usage and design of the *Hyperactivity* forum application for the Android operating system. Design decisions and features are discussed and justified by referring to the needs and wants of the intended users as specified in the *Revised User Requirements Document (RURD)*.

The application will be presented as seen from a user perspective by detailing the use of each component followed by an overview of its architecture and technology used.

Reflections upon the cooperation with students from *Berghs School of Communication* and *Veryday*, formerly known as *Ergonomidesign*, and expansion on what methods were employed during the course of the project are given.

Early designs are presented to establish a timeline of the design and is followed by an evaluation of the methods supplied by the *Software Engineering* course.

Document Change Record

Version 0.1, 2013-04-22: Created the document (Martin)

Version 0.2, 2013-04-26: TOC, topics, abstract, images added (Kim)

Version 0.3, 2013-05-01: Project reflection and onwards added (Jennie, Jesper, Kim)

Version 0.4, 2013-05-02: Design overview and conclusion fleshed out (Kim)

Version 0.5, 2013-05-07: Images, proofreading, word changing, finalisation (Kim, Yvonne)

Purpose

The goal with our application, named *Hyperactivity*, is to enable young adults with Attention Deficit Hyperactivity Disorder (ADHD) to connect with like-minded people and to aid in their daily activities in a forum-journal solution. It is written for the Android operating system as this is the most widespread operating system on mobile devices. It is important that the application is mobile as we want to enable our users to use it while on the move.

The application from a user perspective

When a new user starts the application she will be met by a prompt to log in with her *Facebook* credentials in order to set up a new account. After doing so she will be offered to change her username from the name provided by *Facebook* to a screen name of her choosing. The current view is indicated by a corresponding button being highlighted in the persistent menu at the bottom of the screen. The reason for using *Facebook* is that it is extremely common among teens and young adults. As there is a ready made interface for implementation of it, it also makes the development process easier which further justifies its use.

The design does not include any notifications, animated icons or other distracting elements in order to make it as easy as possible to stay focused on the task at hand. Each screen has one purpose and the menu structure is shallow so that distractions are kept at a minimum.

Using the physical menu button on the phone will trigger another menu where you can change setup and view your profile.

Starting screen

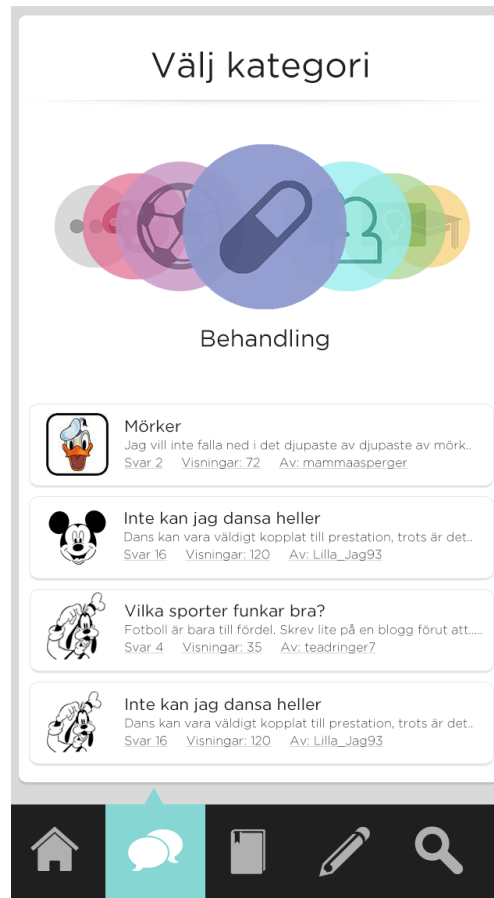
Once a user is logged in they will be presented with the Start screen which will display the latest posts in the public forum.



The Public forum

The public forum is the main feature of the application and functions much like any other online forum; users post threads that other users can see and comment on and old threads are archived whilst remaining available for later view.

It can be quickly accessed by tapping the speech bubbles icon. The circles at the top of the screen can be swiped horizontally to navigate between available categories, stopping at one of them will populate the list beneath with threads from the selected category. Selecting a thread shows all its posts and a reply button is provided at the bottom of the page.



Each post indicates which user posted it by providing their screen name. The name also acts as a link to their profile. When reaching the bottom of a thread the user will be presented with an empty box in which she can write. After entering her desired message she can then tap “post” which will publish her message in the thread. Ordinary users can only view and reply to threads while administrators can edit and delete individual posts and threads. Administrators can also ban users and lock or delete threads altogether.

Behöver jag ett bolltäck?



ungmedadhd94:

Ett tag "boade " in sonen innan sömnen. Att liksom platta till täcket ut med kroppen. Han gillade det

2012-01-15, 15:23



emillarrsson

Det låter jättebra. Jag ska prova det imorgon. Men var köpte ni ert bolltäck ifrån? De säljer på sjukhuset men jag vill hitta ett billigare alternativ på nätet.

2012-01-15, 15:23



ungmedadhd94:

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2012-01-15, 15:23



ungmedadhd94:

Senaste

Tillbaka

Svara



Behöver jag ett bolltäck?

Redigera Läs



ungmedadhd94:

Ett tag "boade " in sonen innan sömnen. Att liksom platta till täcket ut med kroppen. Han gillade det

2012-01-15, 15:23

Redigera Ta bort



emillarrsson

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Redigera Ta bort



ungmedadhd94:

Senaste

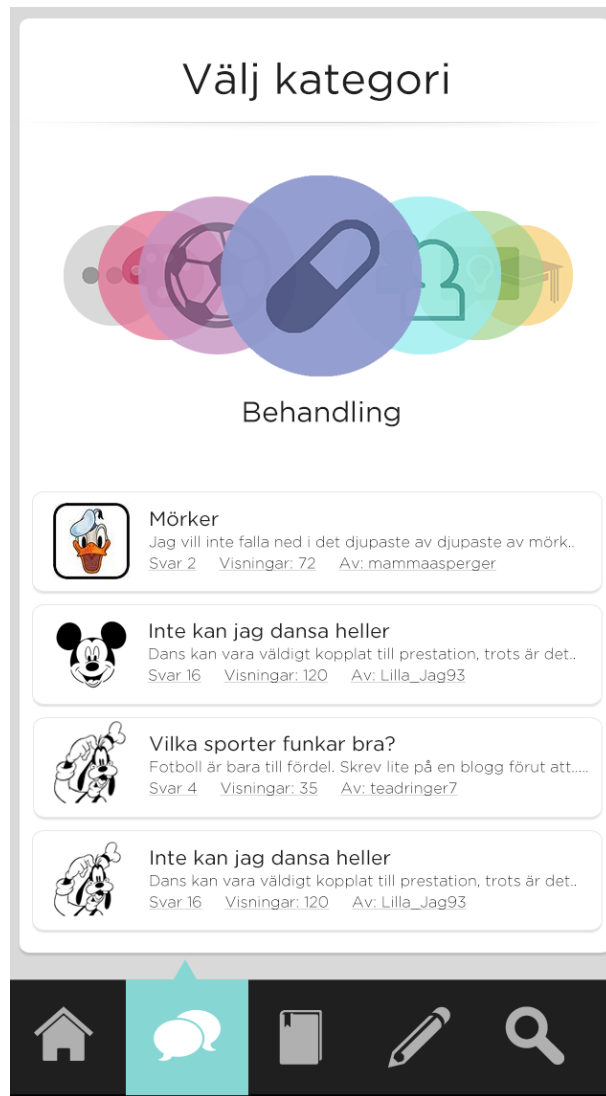
Tillbaka

Svara



The Private forum

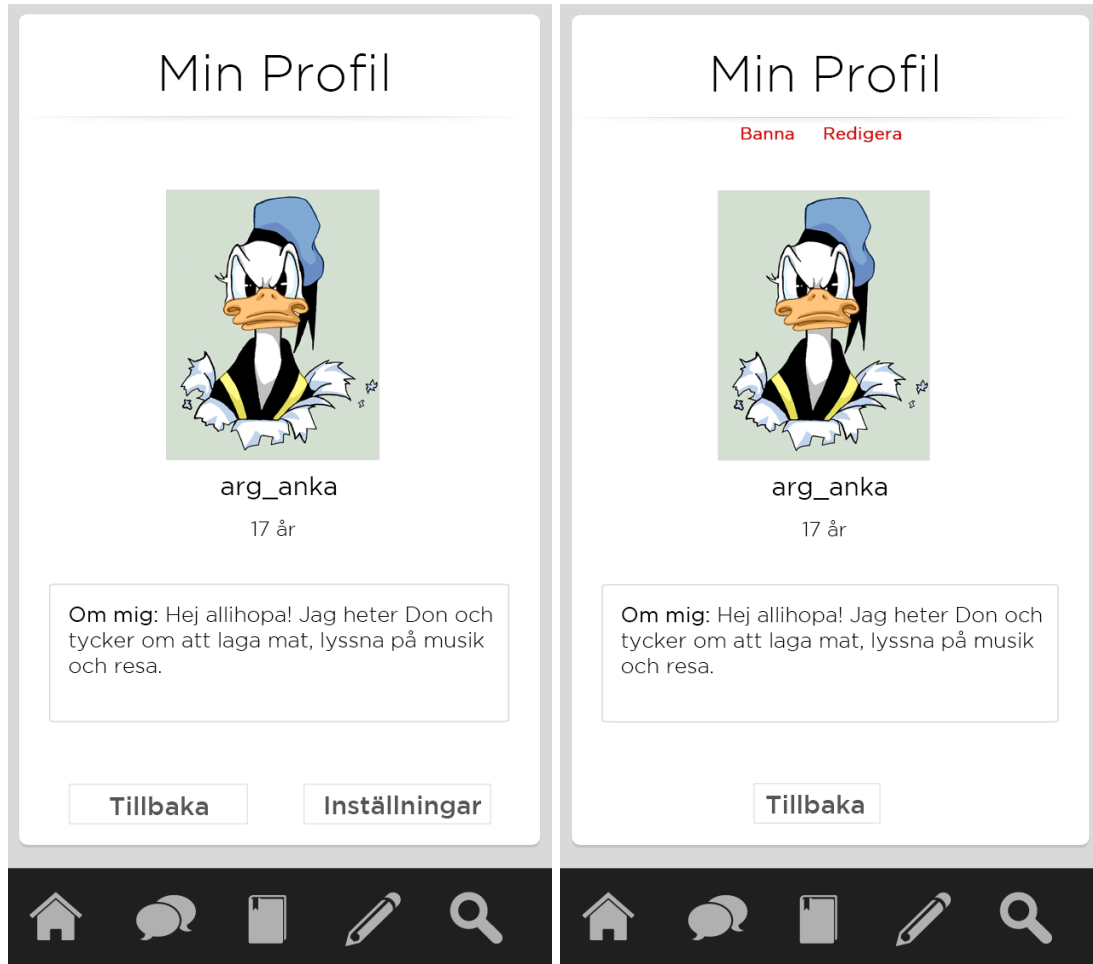
The private forum acts as a journal or personal diary. It stores text messages analogous to diary entries and has the same basic form as the public forum with the crucial difference of not being accessible to anyone except its creator. This feature journal is provided since research indicates that people with ADHD can make good use of it as an organisational tool and as a coping mechanism.



The Profile

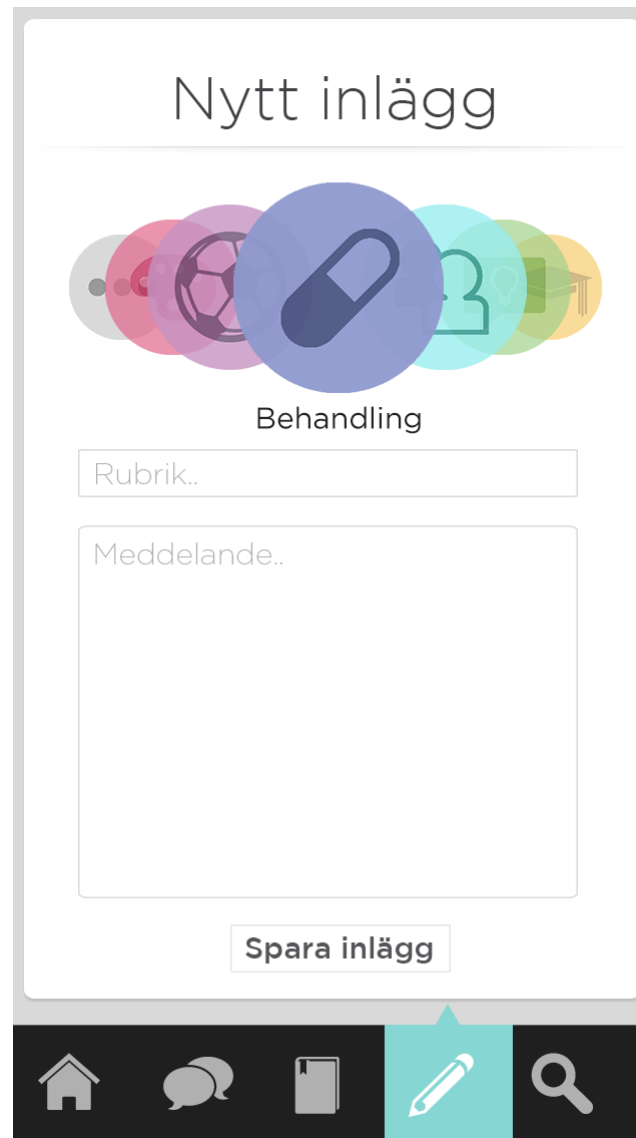
The profile is a page tied to a user where personal information is shown. It consists of an image, their screen name, their age and a customizable text all of which is customizable by the user in order to personalize their presence on the forum. This information is provided by the user upon first signing in and can be changed at any time by using the menu button. Other users will be shown this page when tapping their user name in the forum.

For the administrator this serves as a tool for banning individual users. Administrators also have privileges to edit the profile.



Thread creation

By tapping the pencil icon the user is presented with the create thread page. The category that the user desires her post to appear in is picked using same swipe motion as the forum viewing. Each thread needs a title and an original post thus making them mandatory fields. Once tapping *post* she will be taken directly to the newly created thread.



Nytt inlägg

Behandling

Rubrik..

Meddelande..

Spara inlägg

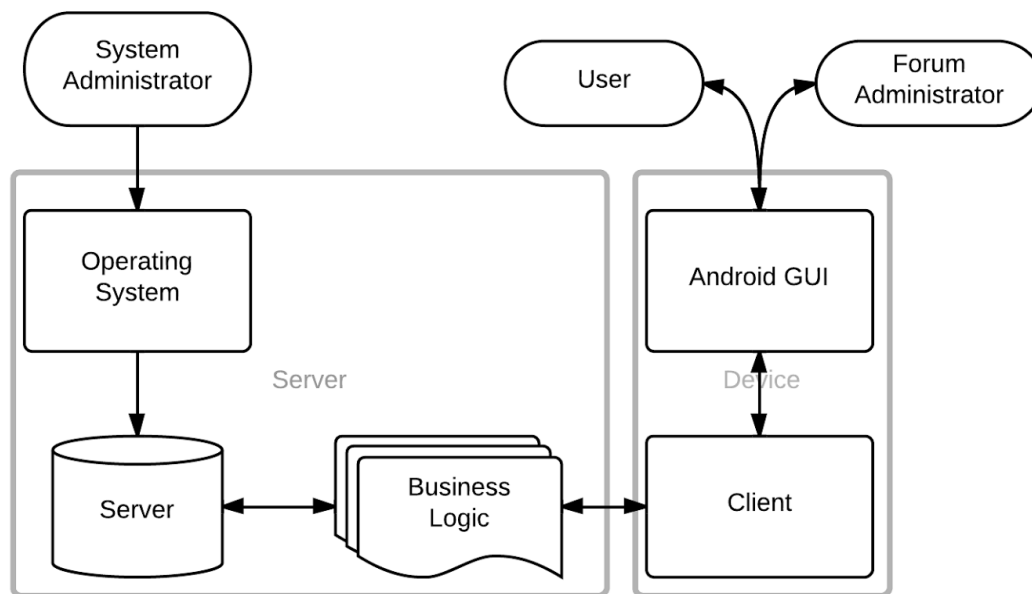
Search function

The search function allows user to search for threads in the public forum by their titles and the content of the original post. It is easily accessible by tapping the looking glass button. The results will be displayed in a list sorted by relevance.



Application architecture overview

All parts of the application are written in Java and it has three layers; interface, application logic and storage layer. The interface layer is made up of the GUI running in Android on the users device. The application logic and the storage layer are implemented and run on a separate server. The business logic tier acts as the communication medium between the client tier and the functional processing and also runs on the server.



The business logic and MySQL database will coexist on the same physical server machine and will communicate with the MySQL Connector/J library. The client side and business logic communicates through the JSON-RPC technology. This means that methods appears to run locally on the device despite being run on the server. This method is valuable in that it gives a good amount of version control since the code resides on the server and not on the individual devices. As long as the signatures of the methods do not change they will appear to have not changed at all from the client's point of view.

Project reflection

Planning and preparation

The workflow and structures suggested in the course curriculum have been upheld and generally worked out fine. We quickly agreed upon communication channels and tools to use which helped propagate information and to document the progress of the project. We opted to

use *Facebook* for general announcements, *Google Drive* for collaboration and storage and a text message group to push out urgent messages to our phones. The project code was uploaded to *Github* which was used for version control and collaboration.

Assigning work was initially confusing since we did not adhere to a consistent method. The first solution was to maintain a task list in *Google Docs* which were to be monitored and updated by everyone in the group as tasks were added and completed. This was not very successful since the tasks themselves were so small that they did not justify updating additional documents to reflect their completion. The collaboration tool *Trello* was later suggested as a task manager and issue handler but were abandoned for largely the same reason.

What we decided to use as our primary work method was simply gathering our members and working together in a focused manner. This way communication between the different roles was facilitated enabling a more flexible work method. Indeed, we had some overlapping between the different roles; programmers assisting in writing reports and report writers assisting with the programming. Though we often got started a bit too close to the deadlines, leading to a temporarily heavy workload, we were overall quite happy with our results.

Third parties

We were to take directions, guidance and assistance from our project proposers *Ergonomidesign*, later *Veryday*, in the course of project. The allotted time from their side was to be 20 hours per month. Early on, things worked out very well. We discussed the design requirements very closely with *Veryday*, leading to a good understanding of what was expected.

Veryday expressed reservations against the waterfall model that was to be employed since it, to their minds, offered too little flexibility to properly deal with real world conditions.

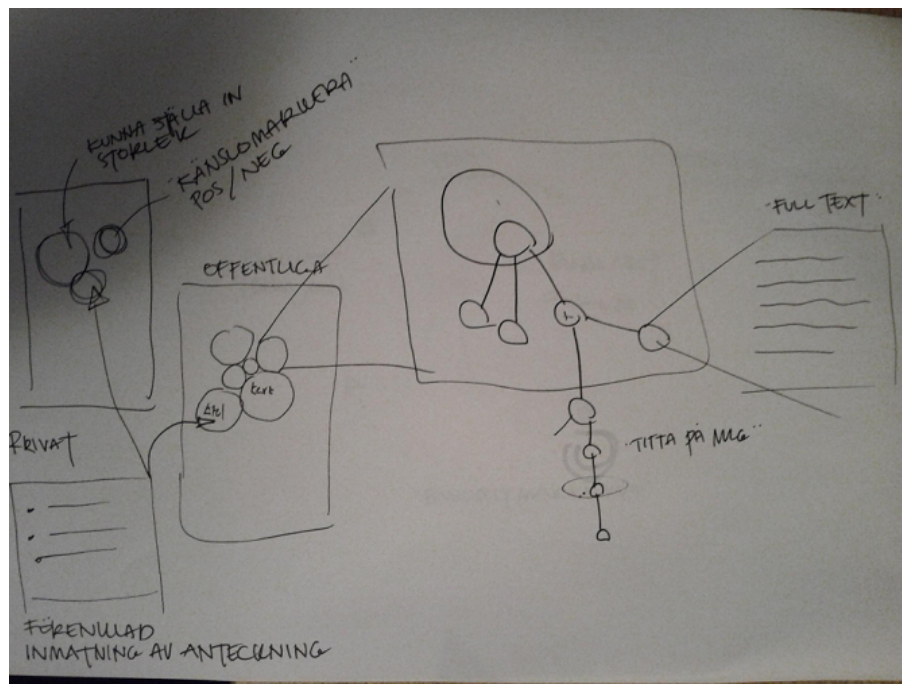
After the initial talks establishing the expectations and some brainstorming regarding the design we were largely left to our own devices. We had expected more active involvement from *Veryday* but they seemed content to leave us be after setting up an initial trajectory. We suspect that this is an artefact of a problem of communication between the course administrators and us. We did not and do not consider us well informed on what we could reasonably expect from *Veryday*. As we are able to prolong the demo of the product, we will try to contact *Veryday* regarding user testing. Hopefully they can assist us in this final stage by giving us test data from the target user group.

We were also to involve a group of students from *Berghs School of Communication*. There was some initial confusion as to what they were to assist us with, but overall the collaboration went rather well. The contributions from the *Berghs*-students included proofreading of the RURD as well as providing valuable ideas and feedback regarding the design. Additionally they met up with *Veryday* in order to in order to get a better understanding of the project and the design.

Design process

As previously mentioned, we took a lot of *Veryday*'s input into account when designing the application. The *Berghs* students were involved in the beginning of the project discussing design ideas with the design team at KTH and providing mockups. During the initial design talks with *Veryday* we wanted to emphasize what made the application unique. In order to avoid becoming another generic forum reader we wanted to make use of circles, dubbed "bubbles", in the navigation of the application.

The idea was to represent the forum as a large pane with differently sized bubbles representing topics and threads, larger bubbles containing more topics or replies. Tapping a category would zoom in on it and replace the pane with a new one populated with the thread bubbles contained in the relevant category.

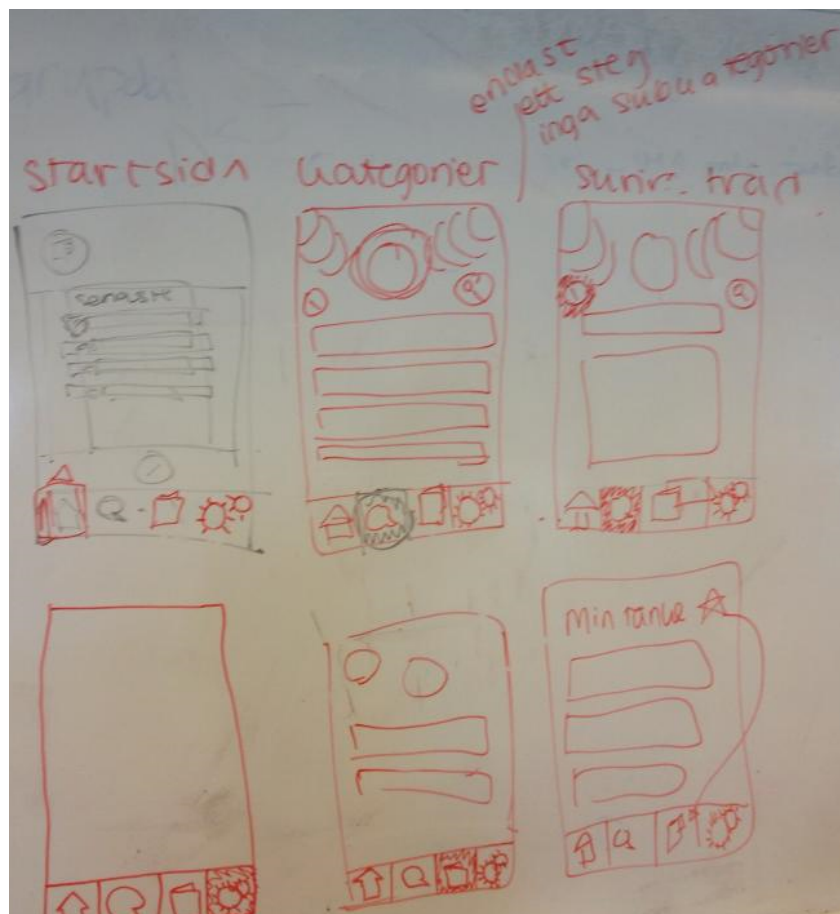


That design attempted to strike a balance between being visually engaging, easy to use and containing as few distractions as possible in order to keep users interested but not be distracted from its core functionality in the process. In an attempt to accommodate all the needs identified by *Veryday*'s study we planned, in addition to the public forum, for a form of journal, colour coding of various parts of the interface to indicate moods and tagging personal notes as negative or positive.

The forum were to have a public and a private part. As their names imply the former was to be an ordinary forum where any user can view and post threads and posts and the private one was to act as a cache of links to favorited public threads and personal notes. The initial idea was to use slide to navigate between the public and private part.

Over the course of the design process additional emphasis was placed on what was determined to be the core concepts. The personal journal was to be implemented as a private forum, the use of circles was toned down and all features touching on the moods aspect were cut. The journal was kept largely intact but the circles cluttering and distracting effects were deemed to overshadow their visually engaging positives so they were scaled back from being a central design principle to instead become a part of the category switcher menu. This switch to a more traditional approach of a forum allowed us to more closely adhere to the requirements outlined in our *User Requirements Document* which stated that a shallow structure was to be preferred. A button for navigating to the private part of the forum was decided instead of using the slide function. This was to prevent the scenario where the user accidentally touches the screen and navigates to the the other part of the forum.

The mood concept was largely a remnant from a previous idea about an energy calendar intended to coordinate work for users that experienced swings in energy levels or moods that made certain times better suited than others for working with others. The idea itself was good but misplaced within the now shifted focus of the application.



This is the basis for the design we decided on.

PPD, URD and ADD

The *Project Planning Document* had its intended effect of forcing us to solidifying our ideas of what we wanted to do and what had already been done by others in a cohesive manner. In a similar way the *User Requirements Document* further shaped our idea by clarifying what was truly core concepts of the design. The UML diagrams were especially useful once the programming got under way since it provided a cohesive vision of the program in an easily accessible place.

The *Architectural Design Document* by and large filled its purpose of forcing us to come up with concrete solutions for our previously established design.

Conclusion

By and large the methods proposed in the course curriculum are sound. The role assignment, PPD, URD, ADD and the latter two's revisions are good tools to coordinate the project and give individual members a shared vision of the end product. The UML diagrams proved especially useful while developing.

The waterfall model states that planning precedes execution and does not allow any real modification of the plan once it is put down. This is not always feasible to follow precisely due to unforeseen events and we therefore consider it as the biggest flaw with this model.

There were little information on what we could expect from the two third parties we were to collaborate with. After meeting with the *Berghs* students the impression was that they were similarly confused. The result was slightly wasted potential which could have been avoided by clearly establishing expectations for all parties involved.

There have been some tension within the group as can be expected with moderately large groups, but we have solved those problems as they arose. Overall we are satisfied with our results.