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

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Hyperactivity

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User Requirements Document (URD)

Version 1.3
2013-01-28

Abstract

This document summarizes work made in the User Requirements phase of group Hyperactivity's project in the course *DD1365 Software Engineering*. As stated in the *Project Handbook*, the user requirement phase concerns the capture and analysis of user requirements. The User Requirements phase is divided into two parts, the first one gives a general description of the software project, where the group describes the proposed product and how it intends to appeal the main target user group: young people with Attention Deficit Hyperactivity Disorder, ADHD. The application will have the form of a specialized forum-journal solution. A proposal to the graphical user interface is given, and in terms of programming and engineering a data model of an object oriented class structure is presented. The end product is intended to have the form of a native mobile Android application, mainly written in the Java programming language.

In terms of constraints and requirements, the second part presents and describes these in a more structured manner with a significantly higher level of detail than in the *Project Planning Document*. Discussion is made regarding constraints of hardware, pre-installed software and operating systems of mobile devices. The requirements for the product itself are divided into main requirements, functional, graphical and miscellaneous. All these requirements are separated in regard to what the group thinks is feasible, e.g. requirements for product models ranging from economy to deluxe.

Table of Contents

Document Change Record

Version 0.1*, 2012-12-03*: Created the document
Version 0.2*, 2012-12-03*: Added most of General Description (Kim, Leo)
Version 0.3*, 2012-12-03*: Added UML (Lucas, Mathias)
Version 0.4*, 2012-12-04*: Added Graphic Representation (Jennie, Yvonne)
Version 0.5*, 2012-12-04*: Added User Case Scenarios (Erik, Jesper)
Version 0.6*, 2012-12-04*: Added 3.1-3.2 (Jesper, Lucas, Marcus, Martin, Mathias)
Version 0.7*, 2012-12-04*: Added 3.3-3.6 (Jesper, Marcus, Martin)
Version 0.8*, 2012-12-04*: Added Appendices, 1.x and general layout (Jesper, Leo, Martin)
Version 1.0*, 2012-12-05*: Added Abstract and Finalized (Jesper, Martin)
Version 1.1*, 2013-01-13*: Edited layout (Jesper, Martin)
Version 1.2*, 2013-01-22*: Edited requirements in 3.1 and 3.2 (Martin)
Version 1.3*, 2013-01-28*: Minor edits and finalization (Jesper, Kim, Martin, Yvonne)

1. Introduction

1.1. Purpose

The purpose of the User Requirements Document (URD) is to give a general overview of the preparatory work made in the project so far, mostly focusing on the constraints and requirements decided by the group after communication with the client. The target audience for this document is mainly the project group itself and the client; it is of importance to have all specifications and requirements for the project stated in this way in order to provide consensus between both project group and client. All intentions described are so far based on informal agreement and no legal contract has been signed at this state. The binding parts of the document are the main, graphical and functional requirements given at the concluding parts of section 3.

1.2. Scope of the Software

The application to be developed is a specialized forum-journal solution for individuals diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) for the Android platform. The software design objective is to enable said individuals to connect with their peers and to aid them in their day to day struggle.

1.3. Definitions, Acronyms, Abbreviations

ADHD	Attention Deficit Hyperactivity Disorder
RGB	Red, Green, Blue
WiFi	Wireless High Speed Internet Connection
SDK	Software Development Kit
API	Application Programming Interface
3G	Third Generation of Mobile Communication Technology
UI	User Interface
GUI	Graphical User Interface
UML	Unified Modeling Language
UUID	Unique user ID
The client	Veryday (formerly Ergonomidesign)
Need	How essential the requirement is. (Budget, Standard, Deluxe)
Priority	Pecking order within the same Need level.
Stability	How certain we are of the requirements staticity.

1.4. References

Information on difference between platform versions of the Android operating system:
http://developer.android.com/about/dashboards/index.html

1.5. Overview of the Document

The first part of the document gives a general overview of what is included.

In the second part, the document gives a general description of what perspective the group has for the product at this stage of planning and preparation. The general capabilities and constraints are discussed, with focus on the main target user group: young people with ADHD. An overview and description of the planned graphical user interface is given, as well as the work on the data model. Two user cases describing people interacting with the product follows. The concluding parts of the general description gives details about assumptions, dependencies, and what operational environment we assume will be required.

The third part of the document will discuss specific requirements, divided into two parts where both requirements on the system is given, as well as individual requirements for the product. The individual requirements are divided into economy, standard and deluxe; these mainly depending on the feasibility of each requirement.

2. General Description

2.1. Product Perspective

Currently there are no competing applications addressing the problems that our application aims to solve. There are many specialized applications that focus on one forum on the market, but none on the subject of young adults with ADHD. There are also many calendar, journal and diary applications that can fill part of the role that our application will fill but they fail to deliver it in a manner that suits people with ADHD. They also aren't integrated with a forum reader/sharer component which means that we have a niche to work in where we have an edge due to specific research about our target demographic.

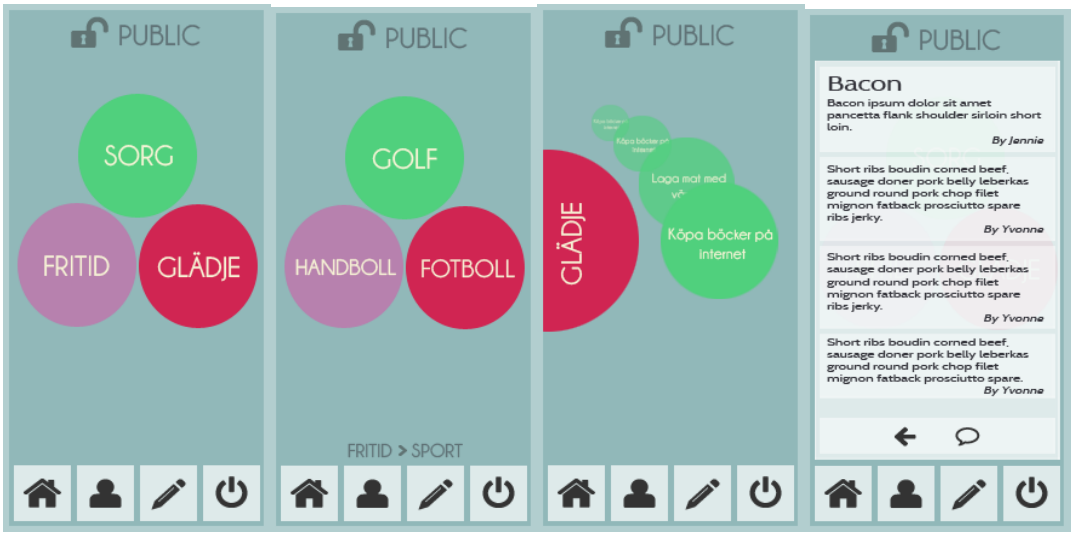
2.2. General Capabilities

The product to be delivered is essentially a forum application for the Android mobile platform. As with typical forums, users should be able to browse, search, create, and follow up on topics. Additionally, the application will have user-private journaling functionality -- users will be able to create and organize private posts in their 'journal' to record their thoughts and feelings. Users will then be able to 'Favorite' public posts and/or threads, which will appear in their private journal, and publish private journal entries as new threads or responses to existing ones. The aim is to provide persons with ADHD a platform to deal with ADHD. This will be accomplished by connecting individuals with others dealing with the same problems to help cope with day to day struggles and loneliness. The application will likely be a part of an ecosystem our client will build later on.

However unlike conventional forums, the user interface/navigation will be heavily visually/graphically oriented. Since those with ADHD suffer from either attention deficit or hyperactivity/impulsiveness. Both the navigation and the operation of the application therefore needs to be interactive, intuitive, minimalistic (clutter-free) and reasonably fun.

GUI Prototype

Our vision is that the navigation will be animated and if appropriate utilizing multi-touch gestures to navigate the conceptual levels of the forum. That can be done in several ways. One possible idea is to work with bubbles. From startup, the largest bubbles will naturally represent the available sub-forums, and they will be surrounded by smaller bubbles, which correspond to the threads and their related posts. Only relevant information will be displayed according to zoom level. For example at startup, only information about the sub-forums will be displayed; information about the threads in each sub-forum will not be displayed. Zooming in on a forum bubble removes from view the bubbles belonging to other sub-forums and displays information about the threads in the forum.



Visually, the current application mockup is styled with two different shades of blue as a background since blue has a calming effect. However, that can be changed to other colors with calming effect.

A menu should be accessible with appropriate buttons, e.g. home and profile.

Public: We want to visually differentiate the public and private part of the application. That can for example be done using different icons and layouts for the two views.

- The **main view** should consist of something separating the categories. If we are going with the idea with bubbles one bubble can represent one category.

- Clicking on one of the categories should the change state and subcategories should be visible.
- When you're done navigating you should somehow get to **the threads** where you can browse them.
- After clicking on a thread, the content should show up. Essentials of every post should be visible like the content of the post and maybe who posted.
- You should be possible to write a reply to a thread. A view with at least a field for writing your comment should be accessible.
- There will be a way to **post a new thread** yourself. To do it you will need to fill in essential fields like subject and comment.
- There will be a view for your "**profile**" with appropriate information about you.

Private: The private part of the application will be visually different from the public part. You should get a feeling that you are somewhere which is only "yours".

Important guidelines of the GUI are that it should be visually engaging and not cluttered.

2.3. General Constraints

The application architecture, as far as we know, does not need to be a robust platform. The target demographic is small, and the solution is to be specially tailored to their needs. While elements of the application, or even the entire architecture, might be adapted to other projects in the future, it is not the present concern.

The scope of the project is to develop a working prototype of the application. The main functionalities of the application are testable, but the actual effectiveness of the solution cannot be tested and verified because it is generally hard to test the effectiveness of a forum without a large test group. Furthermore, our target demographic is a very specific group of people, which compounds the difficulty of acquiring a test group.

One of the main difficulties lies in designing a visual representation of the forum that isn't cluttered, but still making it easy to navigate and not making any thread too hard to find. A search function is also needed, and will probably need some kind of animation as well.

Since the client requires a completely working prototype but has limited software engineering experience, time constraints may mean that certain extra, or "deluxe", features do not get implemented as the entire responsibility of software development lies with the project group.

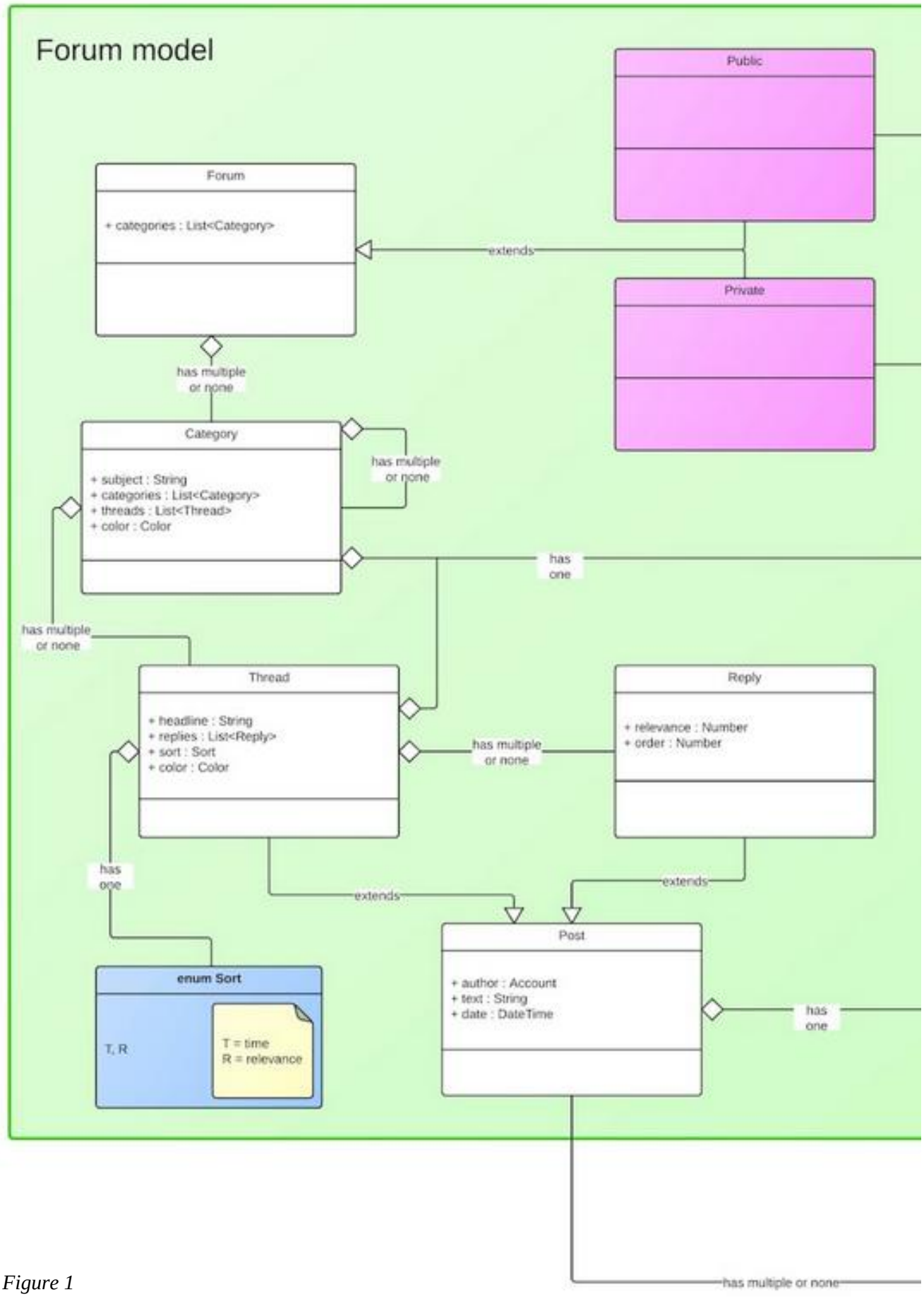

Forum model
Public
Forum
+ categories : List<Category>
extends
Private
has multiple
or none
Category
+ subject : String
+ categories : List<Category>
+ threads : List<Thread>
+ color : Color
has multiple
or none
has
one
has multiple
or none
Thread
+ headline : String
+ replies : List<Reply>
+ sort : Sort
+ color : Color
has multiple
or none
Reply
+ relevance : Number
+ order : Number
has
one
extends
extends
Post
+ author : Account
+ text : String
+ date : DateTime
has
one
enum Sort
T, R
T = time
R = relevance
has multiple or none

Figure 1

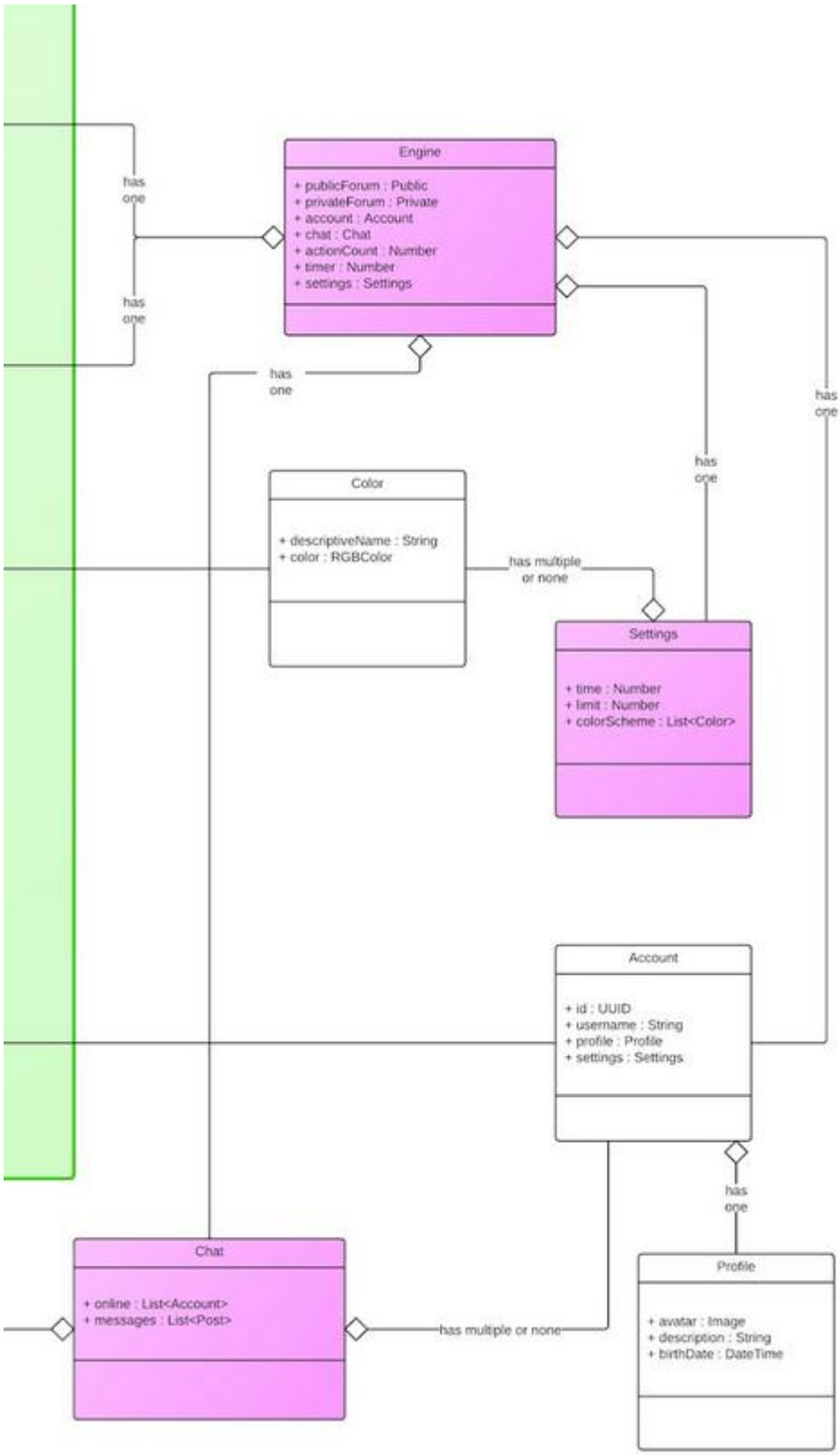


Figure 1, cont.

Data Model - UML

The boxes in *Figure 1* represent classes in the diagram. The big green box is a logical container, which contains classes that are highly related to each other. The fields with a "+"-prefix represent key attributes in the classes. Boxes in pink/purple are classes that should only be instantiated once (Singletons). Boxes in blue are static classes. Square arrows tell that the object with the arrow next to it contains objects from which the arrow originated. Regular arrows tell that the object with the arrow next to it is extended by the object from which the arrow originated.

There is a Singleton class called "Engine" which will be the main class of the app, being responsible for the whole functionality. The "Engine" class contains an instance of a private forum and an instance of a public forum. There will also be an "Account" object that tells which account is being logged in, an instance of the "Chat" class, an action count variable that counts the action the user has done, an internal timer and a "Settings" object which will be loaded when the account is logged in. The "Chat" Singleton will contain a list of "Account" objects of the accounts being online in the chat and a list of "Post" object which will be the messages present in the chat.

The forum structure will consist of a top class "Forum" which contains "Category" objects. A category object includes a subject, a "Color" object, other sub-categories (also "Category" objects) and "Thread" objects. A "Thread" object includes a headline, some "Reply" objects, a "Color" object and a sort variable. The sort variable can be one of the enum types specified by the enum call "Sort". Right now, those sort values can be "by time" and "by relevance", which will make the replies in the thread appear in different order depending on the active sort.

The "Post" object includes an author variable ("Account" object) which specifies which author created the object, a text and a DateTime variable which tells when the post was created. Both the "Reply" and "Thread" object extends the "Post" object since this data should be present in all three objects. The "Reply" object also has an order variable which holds the internal thread count of the replies. Reply number one has an order value of 1, reply number two has an order value of 2, and so on. The "Reply" object also has a relevance counter, which can be used when the thread is going to sort the replies by relevance. The relevance can for instance be incremented by a Like-function in the interface.

The objects of class "Color" has a RGB color and a descriptive name chosen by the user. The color field of the objects "Category" and "Thread" will most likely only be used in the private mode, so that the user can specify own colors to the categories and threads.

The "Account" object represents an user's personal account having the following information; a UUID, the users username, a "Profile" object and "Settings" object. The "Settings" class has a limit variable for how long the user is allowed to use the forum, a time representing how long time he has currently spent and a list of "Color" objects that the user has created. The "Profile" object has information about the user just like the "Account" object but contains information of a more personal nature such as an image (avatar) of the user, a description and a birth date.

2.4. User Characteristics

The application is mainly targeted at young adults with an ADHD diagnosis. The age of the user is not that important, but he/she should know how to use an android phone and of course be able to read and write in a forum. The focus on people with ADHD is what is having the biggest influence of the functionality and design aspects of the application.

The main characteristics of the target group are:

- Difficulty of handling a lot of information at the same time
- Problems with staying focused on a task, especially one that isn't enjoyed
- Poor self-regulation of behavior, that is ability to modify one's behavior to fit a specific situation

The idea with the forum is for people to share techniques to help in certain situations, to help dealing with the third point on the list. This is especially useful in very stressful situations where there is no one else to turn to. The forum is also meant to be interactive and stimulating, as this can help the user focus less on things around them, which our client has told us can be very helpful in dealing with stress.

User case

The following user case is based on the specific user type that our application is targeting. We aim to highlight and explain typical characteristics that are of relevance to the construction and specification of our application.

Lena is 23 years old and works as a bicycle courier in Stockholm. She got diagnosed with ADHD when she was 12 years old. Lena and her friends and family noticed early that she had a hard time controlling her impulses, which often led to conflicts with her teachers and class mates. To Lena the lessons in school seemed endless and she had difficulties absorbing what was mediated from the teachers.

Today Lena works as a bicycle courier which suits her well. She has the opportunity to be outside a lot and meet new people every day, which is both for the good and for the bad.
People that get in contact with Lena through her work doesn't always know about her disorder and sometimes misunderstandings occur, often in the traffic.

When Lena feels misunderstood and overlooked, she often gets very upset due to her disorder. In these situations she doesn't always know how to handle her anger and frustration, which often leads to conflict, with the result of Lena feeling bad. She also has problems with everyday chores. She forgets to pay his bills, the pile of laundry often gets out of control and he spends a lot of money on impulse purchases.

Lena is a happy and open person most of the days but sometimes this change. None of Lena's friends has the same diagnose and therefore they sometimes have a hard time understanding her and her behavior. Usually, Lena calls her parents when she feels that she has a troubling day but if she could choose she would rather connect with other youths in the same situation and share thoughts and experiences with them.

User case scenario

The following user case scenario is based on that we will represent the forum with bubbles which is not a definitive decision. What we want to express with the user case is mainly in what environments our application can be used in and in what way it can be used.

Lena has to travel by subway today, but this is something that she finds stressful. She needs

different strategies to endure this activity, which is why she is usually writing her reflections down as she travels. She finds our application very useful for that purpose.

She starts the application and reaches the start page. The page consists of three circles which seem to lead to a private page, the forum and something else. She has heard that you can write notes in the application, and this is what she wants to try first. She clicks the circle leading to the private page, which seems like a reasonable place to store notes. On the next page three new circles appear, and she clicks the one which says "New note" (or something similar). When she is done writing down her thoughts, which she is used to be doing, she wants to look at the forum. She clicks on a button and arrives on the start page again.

She now clicks the circle leading to the forum. New circles appear, all of which are containing broad categories to discuss. As she wants to hear other's thoughts on a pretty specific situation she looks for some kind of search function. One of the icons on the bottom of the screen seems to be what she is looking for and she clicks it. A text field appears. She writes "subway" in the field and clicks the search-button. A new view appears with some new circles which seem to be the search results. One bigger circle on the left contains her search-text and the other ones seem to orbit around it. She scrolls through some of the circles before she clicks one. There seems that the subway rides act as a source of stress for a lot of other people, as there are many answers in the thread. Many of the posts describe methods to cope with it that she has already tried on her own, but there are also some new ones that she decides to try out.

After clicking around and reading for a while the train arrives at her destination and she closes the application. The forum seems to have worked as a pretty good distraction and she feels that the trip went better than usual.

2.5. Assumptions and Dependencies

Given that we are creating a forum we assume that it will at some point be staffed by moderators and, more importantly, by active members. We assume that our users will be familiar with the basics of forum operation and how to operate their phone. Turning on their internet connections, be it by WiFi or otherwise, inputting text and so on are phone related skills. We assume that we will have access to a server that can handle storage as well as having reasonable response time for the message service. We also assume that our client have properly collected and presented their research data so that it accurately describes the target demographic.

For the application to be of any use it is also necessary that it is run on an Android device that has a sufficiently large touch screen. Too small and nothing will be presented in a useful fashion and without touch screen the entire application is rendered useless since touch input is a cornerstone of our design.

2.6. Operational Environment

The program that runs on Android is the main application. This will be backed up by a database and a messaging server. The messaging server will handle all requests to and from the forum, acting as a buffer between the user and the database. The database will contain what one can expect from a forum database; images, login credentials, favorites, threads and text posts.

3. Specific Requirements

3.1 Capability Requirements

3.1.1 Main Requirements

3.1.1.1 Connecting People with ADHD

Identifier	*Connecting people with ADHD*
Requirement Description	*The users should be able to connect to people in similar situations in order to relieve stress and to feel a social connection to others. The product should take into full account the specific preferences of people with ADHD.*
Justification	*This is the main goal of the product. To be a simple and engaging way for people with ADHD to connect.*
Need	*Economy*
Priority	*High priority*
Stability	*Stable requirement*
Source	*External requirement. Our client was employed by the government to provide a solution for this issue.*
Verifiability	*One way of verifying that the software truly connects people with ADHD is to simply hand out a questionnaire in the beta testing phase with appropriate questions.*

3.1.1.2 Public Forum

Identifier	*Public forum*
Requirement Description	*The way of choice for connecting people with ADHD is through a public forum.*
Justification	*Without a solution that enables the people with ADHD to connect, requirement 3.1.1.1 will be unfulfilled.*
Need	*Economy*
Priority	*High priority*
Stability	*Stable requirement*
Source	*External requirement. Based on research regarding how people with ADHD want to interact with each other, this is the solution of their choosing.*
Verifiability	*In the alpha test stage, one could login with two different users and the then try to post a public post from one user and see if it is visible for the other user. (requires 3.1.2.1 and 3.1.2.2)*

3.1.1.3 Private Forum

Identifier	*Private forum*
Requirement Description	*There should be a separate private forum where the user can write and edit posts locally.*
Justification	*In order for our target users to be able to note and access their own information, without mixing in the public side. This is important to people with ADHD.*
Need	*Economy*
Priority	*High priority*
Stability	*Stable requirement*
Source	*External requirement. Based on research regarding how people with ADHD want to note things, this is the solution of choice.*
Verifiability	*In the alpha test stage, one could login with two different users and then try to post a private post from one user and see that it is not visible for the other user. (requires 3.1.2.1 and 3.1.2.2)*

3.1.1.4 Mobile Phone Accessibility

Identifier	*Mobile phone accessibility*
Requirement Description	*The application should be made to be accessible with complete functionalities from a mobile phone.*
Justification	*Easy access to the forum is deemed mandatory in order to fulfill requirement 3.1.1.1 in a tangible way.*
Need	*Economy*
Priority	*High priority*
Stability	*Stable requirement*
Source	*External requirement. Based on research regarding how people with ADHD want to interact with each other.*
Verifiability	*In the alpha stage one could download and install the application on an android phone (this is of course necessary in order to verify any other functionality as well). The application should execute.*

3.1.2 Functional Requirements

3.1.2.1 Thread creation functionality

Identifier	*Thread creation*
Requirement Description	*The ability for a user to create a forum thread (category) in the public or private forum.*
Justification	*Without the ability to create threads the forum won't be usable, and so 3.1.1.2 and 3.1.1.3 won't apply.*
Need	*Economy*
Priority	*High priority*
Stability	*Stable requirement*
Source	*Internal requirement. Found through group discussion.*
Verifiability	*One could test this pretty much the same as for posts, that is, login with two users and create a thread, then see if it has appropriate accessibility from the other user.* *This will have to be done for both private and public forums.*

3.1.2.2 Commenting functionality

Identifier	*Commenting/posting*
Requirement Description	*The ability for a user to create a forum post or comment in the public or private forum.*
Justification	*Without the ability to create posts/comments the forum won't be usable, and so 3.1.1.2 and 3.1.1.3 won't apply.*
Need	*Economy*
Priority	*High priority*
Stability	*Stable requirement*
Source	*Internal requirement. Found through group discussion.*
Verifiability	*One could test this in the same way as for posts, that is, login with two users and create a post, then see if it has appropriate accessibility from the other user. This will have to be done for both private and public forums.*

3.1.2.3 Login functionality

Identifier	*Login*
Requirement Description	*The ability for a user to have a unique login, enabling him to be identified on the forum.*
Justification	*Without users being recognizable, communicating becomes less personal and engaging.*
Need	*Economy*
Priority	*Medium priority*
Stability	*Stable requirement*
Source	*External requirement. Our client deemed this a mandatory function.*
Verifiability	*In alpha testing we can check whether or not the login function works. Posts should have a flag saying who created them, this should match the logged in user.*

3.1.2.4 Admin functionality

Identifier	*Admin*
Requirement Description	*The administrator functionalities should include deleting posts, threads, editing, banning etc. Things that would be required in order to moderate a forum.*
Justification	*The administrator functionalities are necessary in order to ensure that the forum follows it's intended path, such as requirements 3.1.3.1 and 3.1.4.1*
Need	*Standard*
Priority	*Low priority*
Stability	*Stable requirement*
Source	*Internal requirement. Found through group discussion.*
Verifiability	*In alpha testing we can check whether or not the administrator functions work. For the administrator, posts and threads should be able to be deleted, edited, and users should be bannable etc.*

3.1.2.5 Search functionality

Identifier	*Search*
Requirement Description	*Ability for the user to navigate by searching the forum for threads and posts rather than by completely relying on the standard user interface.*
Justification	*In order to meet the requirement 3.1.3.1 it is necessary to have good navigation possibilities. Sometimes when for instance one remembers the name of a thread but not which category it lies in they should have the possibility to search for it.*
Need	*Standard*
Priority	*Medium priority*
Stability	*Stable requirement*
Source	*External requirement. Our client deemed this to be something of importance.*
Verifiability	*In alpha testing we can check whether or not the search function works. The results of a search should show and be accurate when used.*

3.1.2.6 Storage Requirements

Identifier	*Storage*
Requirement Description	*The application needs to be able to store all the forum posts, threads and the user data. The exact method of storing isn't specified but we'll probably call to our server side API (Application Programming Interface). The private forum will likely also be stored server side, although separated.*
Justification	*It's important for the target user group that the application is engaging. In order for this to be prominent it needs a certain degree of quickness.*
Need	*Economy*
Priority	*High priority*
Stability	*Unstable requirement*
Source	*Internal requirement. Found through group discussion.*
Verifiability	*The exact storage requirement isn't clearly specified, but it should become apparent in later user testing.*

3.1.3 Graphic Requirements

3.1.3.1 Easy to Navigate

Identifier	*Easy to navigate*
Requirement Description	*The overall design should promote a graphical user interface that is easy to overview and navigate through. It should be obvious which menu or bar to select in order for the user to execute a particular task.*
Justification	*The main user group of this application is young people with a diagnosis of ADHD; research made from the client tells us that easy navigation is of importance to this user group. Coincides with requirement 3.1.1.1.*
Need	*Standard*
Priority	*Low priority*
Stability	*Unstable requirement, not clearly defined.*
Source	*External requirement. Our client deemed this to be something of importance.*
Verifiability	*This requirement should mainly be verified by feedback given from beta testing, letting the target user group comment on the design. The client should also give some input whether or not the overall design corresponds to their general ideas.*

3.1.3.2 Clutter-free design

Identifier	*Clutter-free design*
Requirement Description	*Similar to easy navigation, the application must be simple to overview with an intuitive design and a general feeling that all navigation and information are kept as simple as possible, without too much text or images.*
Justification	*This is based on how the main user group most likely wants the application to look like, based on research made by the client. Coincides with requirement 3.1.1.1.*
Need	*Standard*
Priority	*Low priority*
Stability	*Unstable requirement, not clearly defined.*
Source	*External requirement. Our client deemed this to be something of importance.*
Verifiability	*This requirement should mainly be verified by feedback given from beta testing, letting the target user group comment on the design. The client should also give some input whether or not the overall design corresponds to their general ideas.*

3.1.4 Miscellaneous Requirements

3.1.4.1 Structured Forum

Identifier	*Structured forum*
Requirement Description	*An important aspect in order to appeal to the ADHD user is to have a clear structure in the layout. Categories should be simple and clear in their purpose.*
Justification	*People with ADHD need a simple and structured layout in order to be engaged. This coincides with requirement 3.1.1.1.*
Need	*Standard*
Priority	*Medium priority*
Stability	*Unstable requirement, not clearly defined.*
Source	*External requirement. Our client deemed this to be something of importance.*
Verifiability	*This requirement should mainly be verified by feedback given from beta testing, letting the target user group comment on the design. The client should also give some input whether or not the overall design corresponds to their general ideas.*

3.1.4.2 Interaction between Public and Private Forums

Identifier	*Interaction between public and private forums*
Requirement Description	*The users should be able to switch between the public and private forums in a simple way while on the go. This could for example be done by some implementation of a sliding function. Additional functionalities as saving posts from the public forum or pushing a post from private to public might be added as well.*
Justification	*This would make it easier to navigate and separate the two forums, coinciding with 3.1.1.1 and 3.1.3.1.*
Need	*Deluxe*
Priority	*Medium priority*
Stability	*Stable requirement*
Source	*External requirement. Our client deemed that preferably this should be implemented. We discussed different implementations in a group discussion.*
Verifiability	*In the alpha testing stage, one can test each of these functionalities one at a time in the same manner as in the other test cases.*

3.1.4.3 Visually Engaging

Identifier	*Visually engaging*
Requirement Description	*The user will navigate a forum with a compelling design and interactive layout. When pressing a link, redirecting should be a visually engaging process as well.*
Justification	*The target user group will appreciate the application more if it's visually engaging, and so the main requirement 3.1.1.1 will benefit.*
Need	*Deluxe*
Priority	*Low priority*
Stability	*Unstable requirement, not clearly defined.*
Source	*External requirement. Our client deemed that preferably this should be implemented.*
Verifiability	*This requirement should mainly be verified by feedback given from beta testing, letting the target user group comment on the design. The client should also give some input whether or not the overall design corresponds to their general ideas.*

3.1.4.4 Chat Function

Identifier	*Chat*
Requirement Description	*Ability to interact with other forum users through instant text messaging. This is often called a shout box.*
Justification	*In order to meet the main requirement 3.1.1.1 it is beneficial to have a instant message interaction feature.*
Need	*Deluxe*
Priority	*Low priority*
Stability	*Stable requirement*
Source	*External requirement. Our client deemed that preferably this should be implemented.*
Verifiability	*In the alpha stage, one can log in as two different users and try to use the chat communication tool between these two.*

3.2 Constraint Requirements

3.2.1 Performance Requirement

Identifier	*Performance*
Requirement Description	*Requirements on performance include more exact details on how fast the software is intended to be executed, how much internal memory will be needed for it to run smoothly, etc.*
Need	*Not specified*
Priority	*Not specified*
Stability	*Unstable requirement*
Source	*Internal requirement*
Verifiability	*At this state of preparation, the group has not yet decided on specifics regarding performance; this will become clearer during actual development and implementations of other requirements. Performance requirements will most likely be tested during development and through user testing.*

3.2.2 Environment Requirement

Identifier	*Environment*
Requirement Description	*Complete integration with Android is required. The terminal (e.g. phone or tablet) needs to be of a decent standard in order to be able to handle the page, although we have no specific hardware requirements at this state. An internet connection will be required in order to access the public part of the application. We do not think at this state that the connection will have to be at very high speed, although WiFi or 3G will be recommended for the application to be running smoothly. A web browser should not be required.*
Justification	*As our group is planning to develop the forum application natively, many requirements are deduced from this.*
Need	*Economy*
Priority	*High priority*
Stability	*Stable requirement*
Source	*A basic requirement from the client was to run the application for mobile devices. The group later agreed to design the application for Android as a native app.*
Verifiability	*Verifiability will come from the testing phase, ensuring that the app will run well enough on most Android devices.*

3.2.3 External Requirement

Identifier	*External*
Requirement Description	*We will naturally need to bundle our application with a couple of graphical libraries, network libraries etc., but there should be no application dependencies. According to Android, the Android version 2.3 holds over 50 percent of the android market. In order to target as many users as possible we will attempt to make our application compatible with every version greater than or equal to 2.3.*
Justification	*Because the simple needs of the client application it should be as standalone as possible. This eliminates lots of version problems that might occur otherwise.*
Need	*Economy*
Priority	*High priority*
Stability	*Stable requirement*
Source	*Internal requirement. Found through group discussion and background research.*
Verifiability	*Verifiability will come from the testing phase, ensuring that the app will run well enough on most Android devices.*

3.2.4 Reliability Requirement

Identifier	*Reliability*
Requirement Description	*The application will hopefully have a consistent uptime. This will rest upon the servers. As for the mean time to failure, we can't really specify as it's not set in stone how the system will be built. Average performance should be good. Worst case performance should be decent.*
Justification	*A reliable system is of utmost importance to our user group.*
Need	*Economy*
Priority	*High priority*
Stability	*Stable requirement*
Source	*External requirement. Our client has made clear how we should proceed.*
Verifiability	*Discussion with the client regarding correct interpretation of required safety.*

3.2.5 Usability Requirement

Identifier	*Usability*
Requirement Description	*The application should not take long time to learn, it should be fairly obvious to learn by just examining the user interface; The time to learn the system should be limited to a few minutes of use and mastery of the application should preferably be attained within one hour of use. Simple navigation through all functions in the application should suffice for the user to grasp the main concepts, although the expected time is difficult to specify at this state. The user support rests on our clients, how well they moderate the forum etc. Expected efficiency of the product is moderate to high.*
Justification	*Due to the target user group's limitation in focusing on single tasks for longer periods of time, this is essential.*
Need	*Economy*
Priority	*High priority*
Stability	*Stable requirement*
Source	*External requirement. Our client has made clear how we should proceed.*
Verifiability	*This requirement should mainly be verified by feedback given from beta testing. The client should also give some input whether the usability corresponds to their general ideas.*

3.2.6 Safety Requirement

Identifier	*Safety*
Requirement Description	*Each user should have a unique signature that can't be replicated by another user. In other words, you shouldn't be able to pose as another user, either when making posts, reading messages or creating topics. You also shouldn't be able to access someone else's private forum. This should be stored on the phone (or separately) and shouldn't be accessible from the public, not even to administrators. The administrators should be the only ones able to use special privileges on the forum; to the other users this shouldn't be available.*
Justification	*Each user should feel confident that his identity is secure.*
Need	*Economy*
Priority	*High priority*
Stability	*Stable requirement*
Source	*External requirement. Our client has made clear how we should proceed.*
Verifiability	*Discussion with the client regarding correct interpretation of required safety.*

3.2.7 Legal Requirement

Identifier	*Legal*
Requirement Description	*Our clients have informed us that it's likely that they want us to license the code as the product nears a finished stage. Also we've agreed that our clients own all rights to the product. Marketing, licensing details and further legal issues are unrelated to our project.*
Justification	*Correct legal appliance is central to the success of any project.*
Need	*Economy*
Priority	*High priority*
Stability	*Stable requirement*
Source	*External requirement. Our client has made clear how we should proceed.*
Verifiability	*Discussion with the client regarding correct legal interpretation.*

4. Appendices

4.1. Meeting Minutes 2012-11-12

Notes from meeting no 2, 2012-11-12, 17:15 - 18:00

Present:
Yvonne Le
Mathias Lindblom
Jesper Norberg
Lucas Wiener
Leo Yu

Absent:
Kim Malmros
Marcus Nordström,
Erik Odenman
Jennie Olsson
Martin Pettersson

Moderator: Jesper Norberg
Secretary: Yvonne Le

1. Reports (PPD and URD)
We managed to finish the PPD report before the deadline and the presentation went well. For the next report (URD), we set a goal to finish it a couple of days before deadline, December 1st.

2. Weekly meeting
To clarify, a meeting will take place every monday at 17:15 if nothing else is decided.

3. Activities
We went through all the steps written under the headline "4.4 Activities" for the User Requirements phase in the Project Handbook.

+ Requirements Capture techniques
We discussed briefly about the techniques and ended up deciding it should be discussed together with our client.

+ Client meetings
Not everyone should participate in the Client meetings. Preferably the project leader, secretary, customer account manager and chief programmer.

+Data model
Assigned to Mathias and Lucas.

+ Prototype GUI design
Assigned to Yvonne and Jennie.

+ User case scenario
Open slot.

4. Web or native android app
The question was posted on Facebook to get everyone's input but it will probably be decided by the programmers. It also depends on which project we are going to do.

5. Task list
A task list-document was created during the meeting and can be found on Google Drive. The purpose of it is to get a better overview of what needs to be done, who's doing it and everyone's contributions. If you are done with your assignment, tell the project leader who will look in the task list to decide if there's something else that needs to be done.

6. Misc
+ Jennie should contact the client as soon as possible to decide when they are available for a meeting. We need more information and need to discuss which project we are going to do to get going. We estimate the meeting to take 1 - 2 hours and would like to meet them this week or the beginning of the next week.

+ Jesper should ask Karl Meinke about the presentations (since we are 10 people and everyone has to represent the group at least once)

4.2. Meeting Minutes 2012-11-26

Notes from meeting nr 3, 2012-11-26, 17:15-20:30

Present:
Yvonne Le, Kim Malmros,
Jesper Norberg, Marcus Nordström,
Jennie Olsson, Martin Pettersson,
Lucas Wiener, Leo Yu
Erik Odenman,

Absent:
Mathias Lindblom.

Moderator: Jesper Norberg
Secretary: Kim Malmros

1. Client meeting
Attending members informally presented what was said at the client meeting to non-attendees.

2. Design clarification and discussion
High level goals were clarified, concrete design elements were discussed and decided upon. This took the bulk of the time.

3. Tasks
The report deadline is Monday 3 so the individual parts of the report was divided up among the members. Deadline for the individual parts was set to Friday.

4. Trello
We will be using Trello as our main activity monitor and information tool. This will also be a feedback channel to Designbyrån.

5. Tiering features
Features will be divided into three categories: budget, standard and deluxe.

4.3. Meeting Minutes 2012-12-03

Notes from meeting nr 5, 2012-12-03, 17:15-18:00

Present:
Mathias Lindblom, Jesper Norberg,
Marcus Nordström, Jennie Olsson,
Martin Pettersson, Lucas Wiener,
Leo Yu, Erik Odenman

Absent:
Yvonne Le, Kim Malmros

Moderator: Jesper Norberg
Secretary: Jesper Norberg

1. What has been done?
A run-through of how much work had been done for today's deadline, according to the tasks assigned in the previous meeting.

2. A demonstration of each individual part.
In order to get everyone up to date on what's been done and what's left.

3. Allocation of remaining work
We decided to finish most of the remaining issues in a group effort straight after the meeting. The absolute deadline is 15.00 tomorrow, 2012-12-04.

4.4. Meeting with Berghs, 2013-01-16, 12:00-12:30

Present:
Kim, Jennie, Yvonne, Jesper, Marcus, Mathias

Moderator: Jesper
Secretary: Kim

Berghs
They have contacted a person with ADHD that can hel pus with feedback regarding the design. They will make a clickable prototype in Ergodes. They want a time table.

Report
We need concrete feedback from Berghs and Veryday. We also need to receive the grade for the URD after the revision demanded by the teacher.

4.5. Meeting with Veryday, KTH. 2013-01-23, 13:00-15:00

Present:
Kim, Jesper, Jennie, Marcus

Moderator: Jesper
Secretary: Kim

The programmers
All programmers get a feeling for Android and create something before Thursday. This is simply to get warmed up.

Verydays comments regarding the URD
The URD is too specific in general. This is partially because we're rather regulated by the course template, but parts of the template can be interpreted in a less strict fashion.
"The URD should describe the need, not the solution."
Somewhere it should say that the application is a part of an ecosystem, it should be connected to a normal forum. A single row is enough.
User case scenarios should be simple and should only contain one application use each. Replace the administrator user case, he's not a typical user.

Workflow tips
* Terminology: GUI is just the graphic parts and nothing else. It should describe how things work at all, only colors, shapes and placements.
UI describes how things move, transitions and other behavior.
* Programmers: Put up a system for sharing everything quickly, preferably to everyone and not only the programmers. Very brief daily meetings may be a good idea in order to keep track of what everyone else is doing. Keep them extremely short, >5 min, so that they don't take up unnecessary amounts of time. Everyone says what they're doing, if they have any problems, and what they will do next. Other than that a suggestion was to use *Git's issues* to coordinate work.