



# KNOTS

## D2.2- Concept for graphical Design Implementation

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Deliverable 2.2	Executive Summary
This document describes the first designs for user interfaces for the different user groups. Each design was developed from the input of the first user evaluations	

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## 2 User Interface Designs

Each of the following designs was created after the outcome of the first user evaluation (see Deliverable 2.1). The initial interviews provided valuable insights into the needs of involved parties. These expressed needs allowed to extract requirements posed to the to-be-developed system. In such an early stage of development and user integration it is seldom possible to expect, on the user side, a clear vision of technical specifications or design features to be explicitly stated or described. However, based on existing knowledge in the area of Machine-Human interaction, ergonomics and usability studies we developed a prototypical interface design for each of the three user groups of interest: the clients, the volunteers and the coordinators.

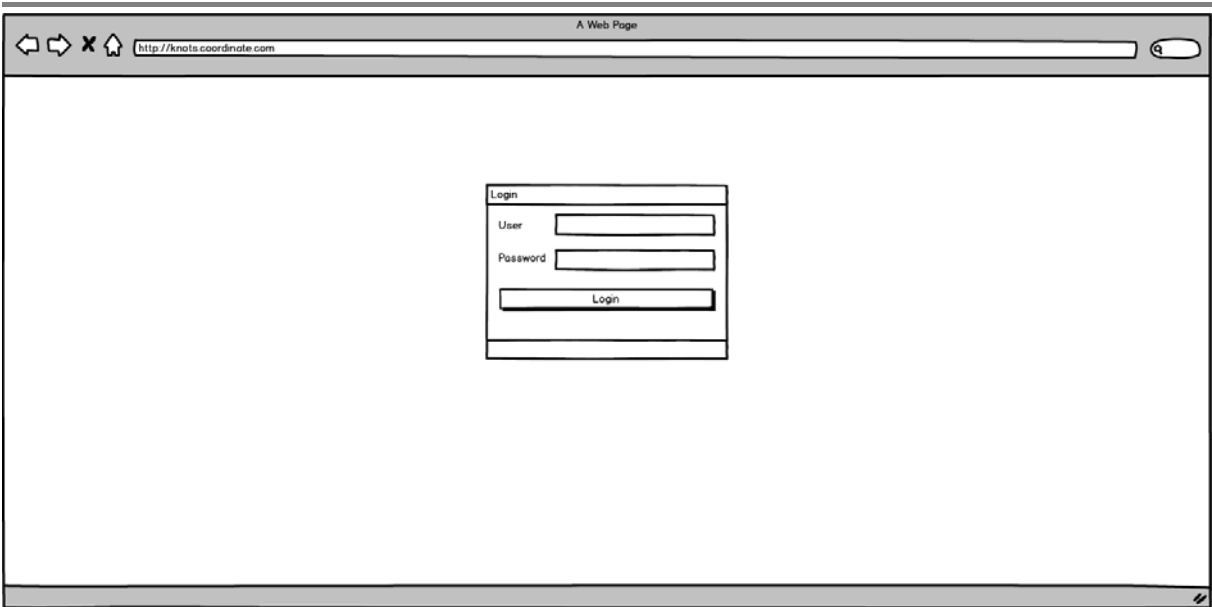
The term client in this document describes both male and female clients. This is also the also the case if the pronoun he is used.

### 2.1 Coordinator Application

The coordinator application enables data management and data administration as well as the option to schedule appointments and evaluate data. All these aspects were mentioned in the first user evaluation/ needs analysis (see Deliverable 2.1).

#### 2.1.1 *User interface for login*

The needs and requirements analysis indicated a secure access to the system. This is applicable to all three design interfaces for each of the user groups. In designing the interface design, characteristics relevant particularly to older users are considered. These include high contrast values between font and background and font size. Also, it is important that information presentation is not cluttered so that even users with less computer use experience can easily find the necessary information.



**Figure 1: Login interface**

Figure 1: Login interface shows the user interface for login of the user. Here the user has to insert his login credentials (Username and Password). After a successful login he has access to the KNOTS interface.

### 2.1.2 Scheduling of appointments for clients and volunteers

There are appointments for both end user groups – Clients and Volunteers. The next 3 designs show a user interface for scheduling the appointments for clients. But it is generally the same for volunteers. The clients indicated in the needs analysis the ability to schedule appointments and request services. They also want to be in charge with regards to requesting help/ support on their demand. Important was also the need for trust. They want to choose the caregiver they know best and trust. That way unwanted surprises due to visits by unknown caregivers are prevented. However, this is of course not always possible but clients always receive information about the visiting caregiver ahead of time before the actual appointment. The information provided includes a picture of the caregiver (see section 2.2 page 15).

There is a calendar view which shows the different appointments for each client (**Fehler! Verweisquelle konnte nicht gefunden werden.** Figure 2: Appointment for client, Figure 4: newly created appointment for a client). The client can be selected and then the appointments are shown. The visible timespan of the calendar can be changed by a click of one of the 4 buttons on the top (Today, Week, Month, Year).

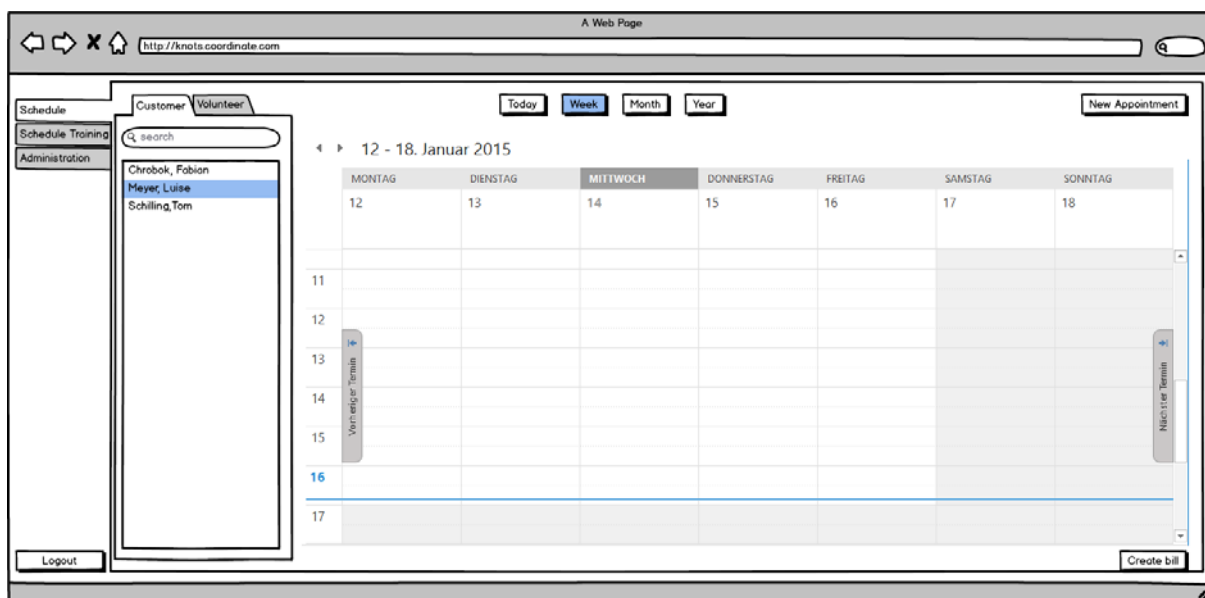


Figure 2: Appointment for client

Figure 2: Appointment for client can be created by a click on “new Appointment”. Here the client for the appointment can be selected. Then the start date/-time and end date/-time of the appointment must be selected. The last thing to do is to select the volunteer for the appointment. After everything is finished the appointment is show in the calendar view.

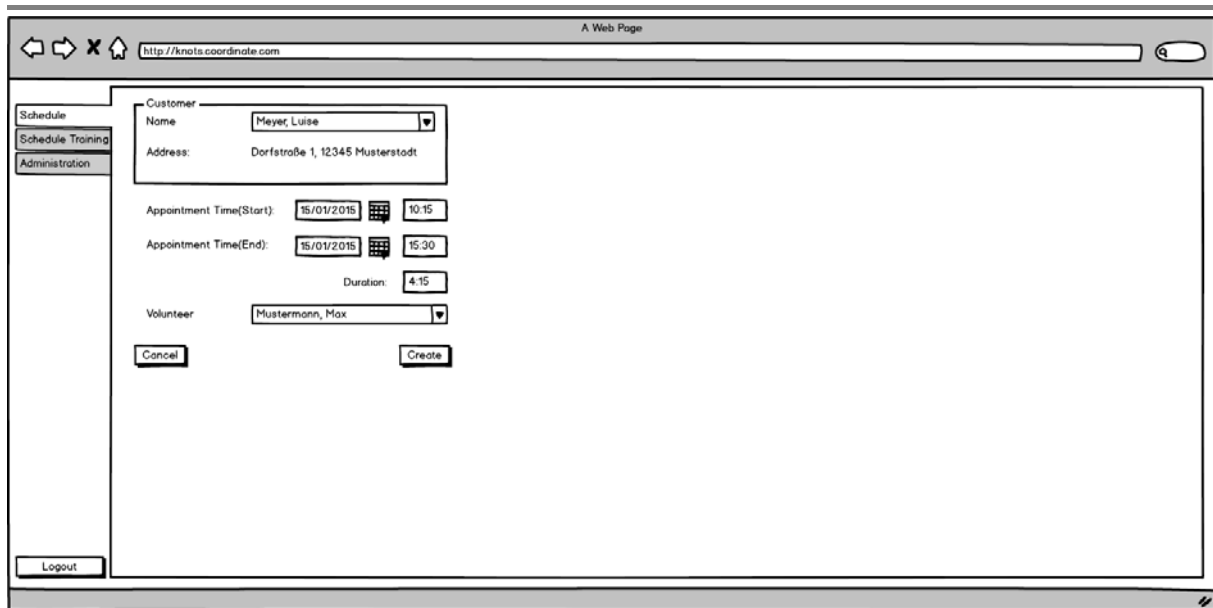


Figure 3: New Appointment for client

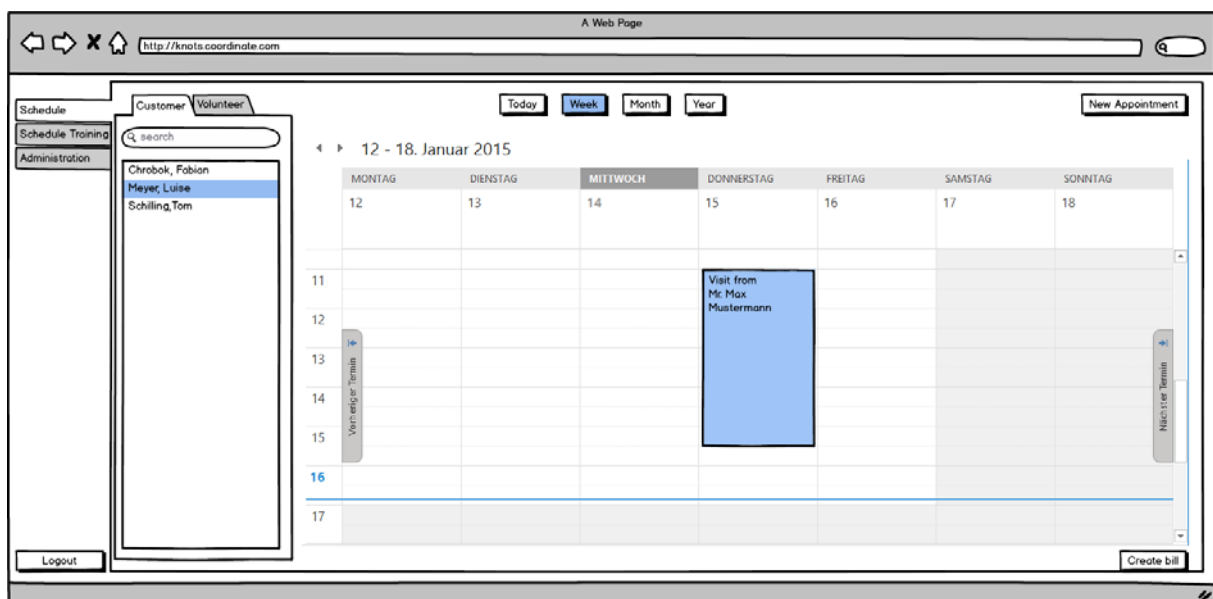


Figure 4: newly created appointment for a client

By a click on the button “Create bill” it might be possible to automatically create documents, e.g. bills. Figure 5: automatically created document **Fehler! Verweisquelle konnte nicht gefunden werden.** shows an example for an automatically generated report. Both volunteers and coordinators indicated that they wish for support and assistance with respect to accounting and billing functions and duties. Therefore the feature of automatic invoice creation is included in the application.

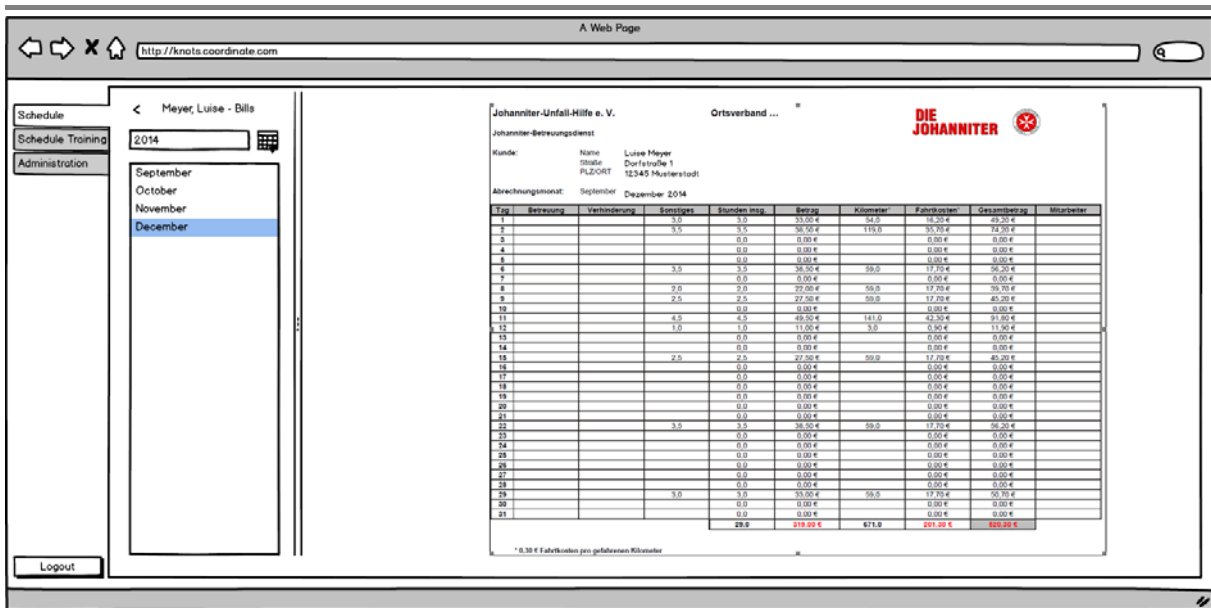


Figure 5: automatically created document

### 2.1.3 Appointments for trainings for volunteers

It should also be possible to schedule appointments of trainings for volunteers. The volunteers feel the need and the desire to continuously improve and extend their skills by attending appropriate trainings regarding various aspects of their functions and job description. A built-in function will enable the coordination of trainings for volunteers. At the same time the coordinator can assign volunteers to recommended trainings and have them appear in the volunteer’s calendar (see Section 2.2.2. page 13). The interface is generally the same as the interfaces to view and create normal appointments. As you can see in Figure 6: Calendar view for trainings and Figure 8: scheduled appointment for training the calendar views are basically the same as before. Also the creation of new appointments (Figure 7: creation of new training appointment) is the same. Instead of the volunteer to visit the training has to be chosen which the volunteer should visit.



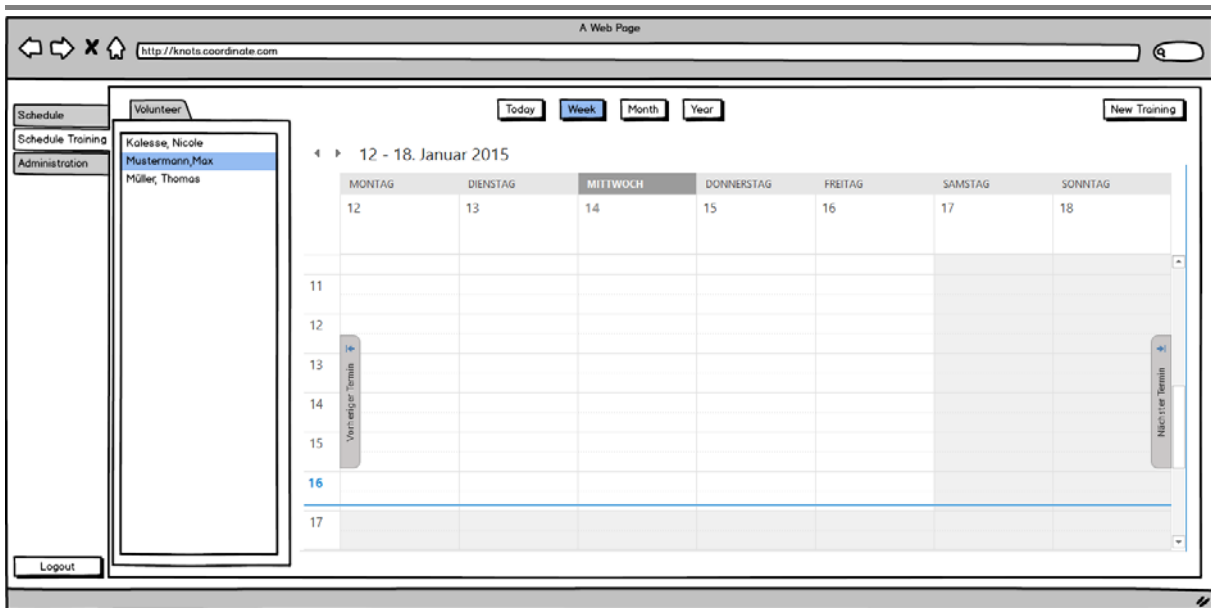


Figure 6: Calendar view for trainings

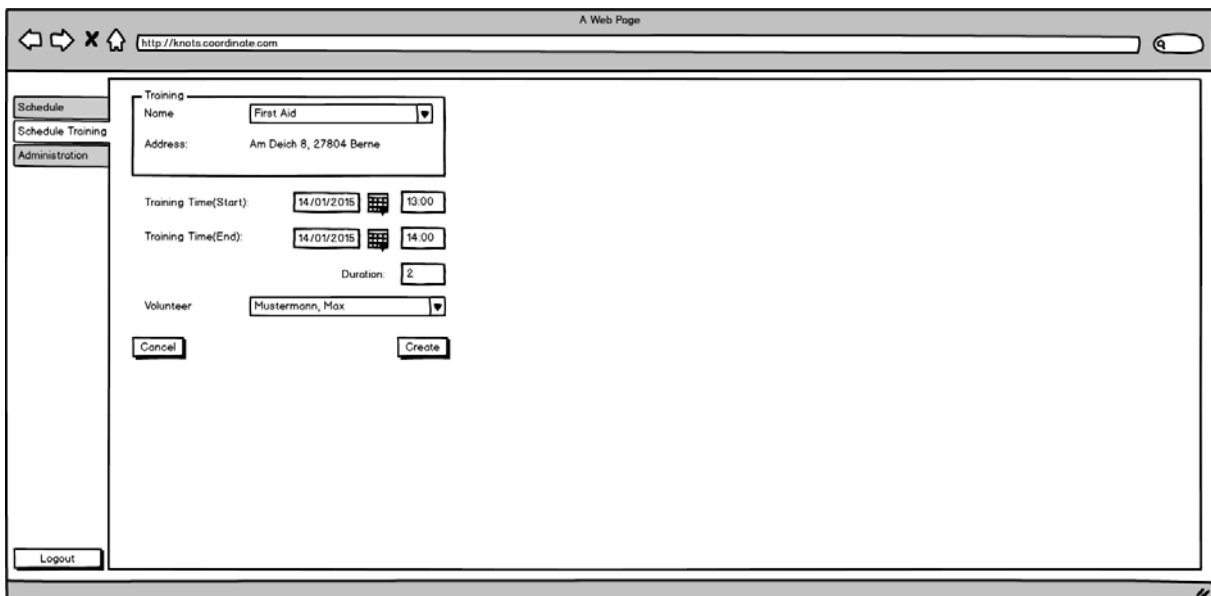


Figure 7: creation of new training appointment

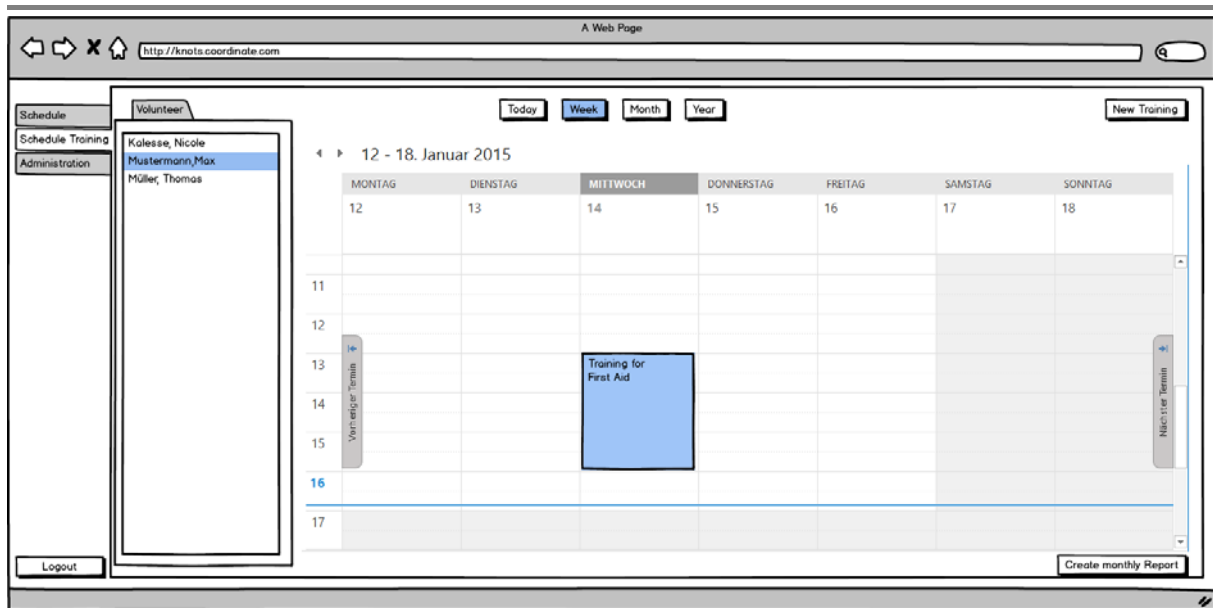
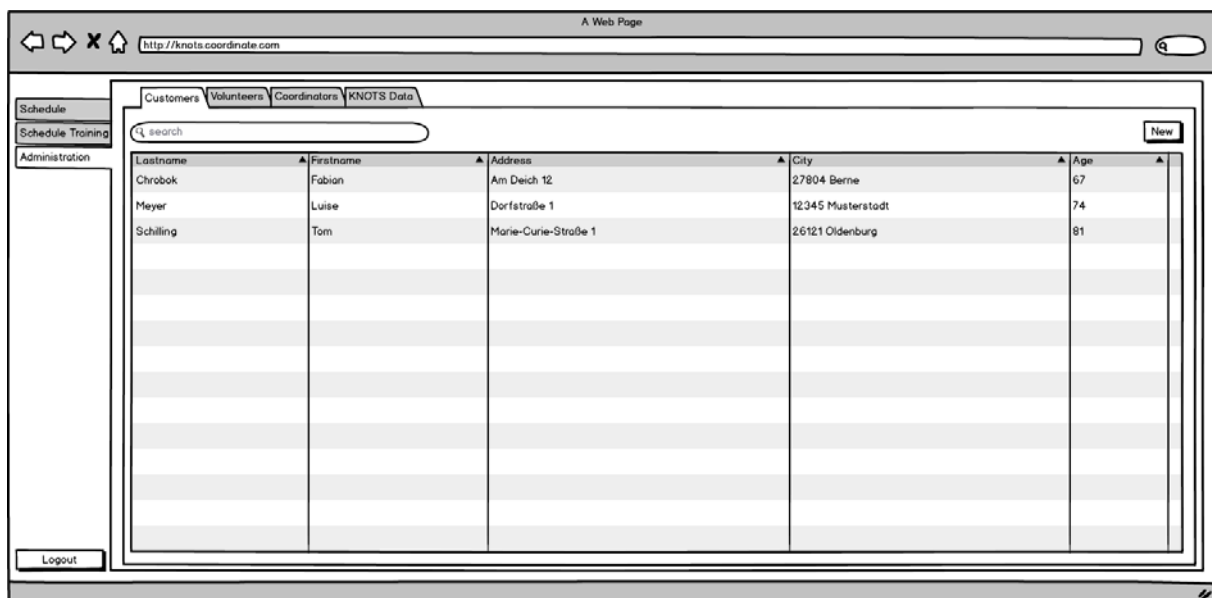


Figure 8: scheduled appointment for training

## 2.1.4 Administration of data

Upon interviewing the coordinators they indicated that they would like to be able to get statistical information regarding services and other relevant data. The KNOTS system includes data of different types. First of all there is the user data (Volunteers, Client, and Coordinators).



**Figure 9: Administration of user data**

Figure 9: Administration of user data shows an example design for administration of single user data. Here the import data of each user group and single user is shown. New user can be created and existing user can be edited.

Furthermore it should be possible to administrate the KNOTS data – videos, tutorials, manuals. An example design is shown in Figure 9: Administration of user data. This feature is based on results of the needs analysis. Volunteers suggested that it would be helpful to have access to information when they encounter novel situations in which the immediate solution is unknown. To enable on-the-spot solutions KNOTS will contain a database for known situations and offers to access information by video or text-based tutorials. This database is dynamic in order to enable adjustments and in particular extensions. These or a subset of these tutorials and manuals are also available to the clients. This increases their level of independence and empowers their individual and independent lifestyle. That is, when they encounter a problem, they can first attempt to solve it on their own before having to contact a caregiver.

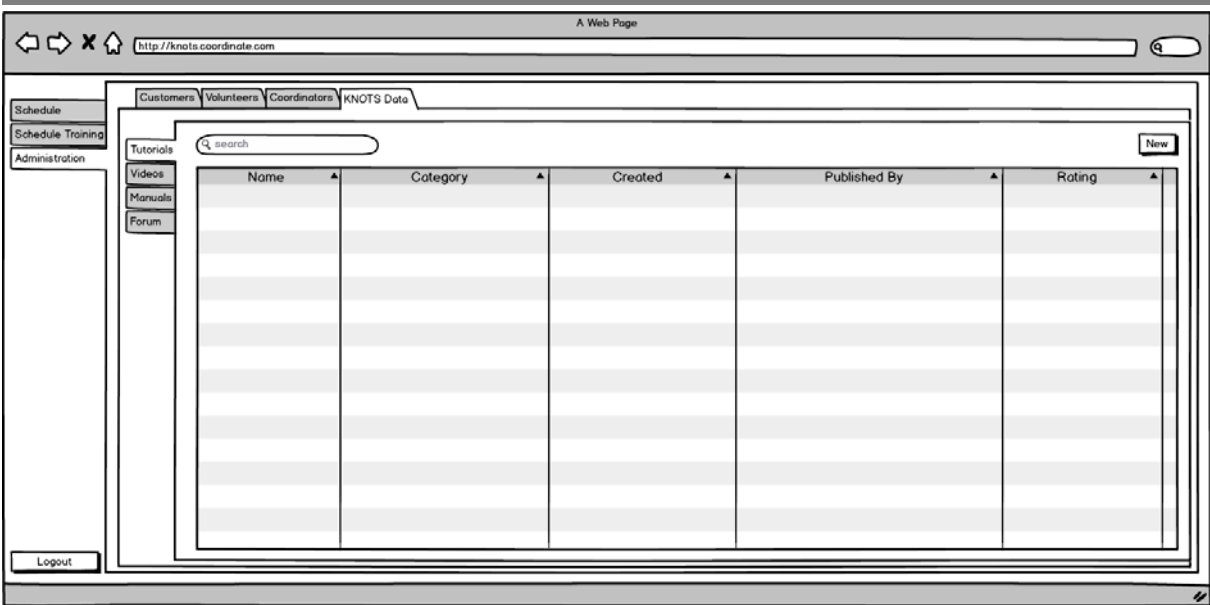


Figure 10: Administration of KNOTS data

## 2.2 Volunteer Application

The next designs show the smartphone interfaces for the volunteer application. The user evaluation had the outcome, that a smartphone application might be the best for volunteers.

### 2.2.1 Calendar view of appointments

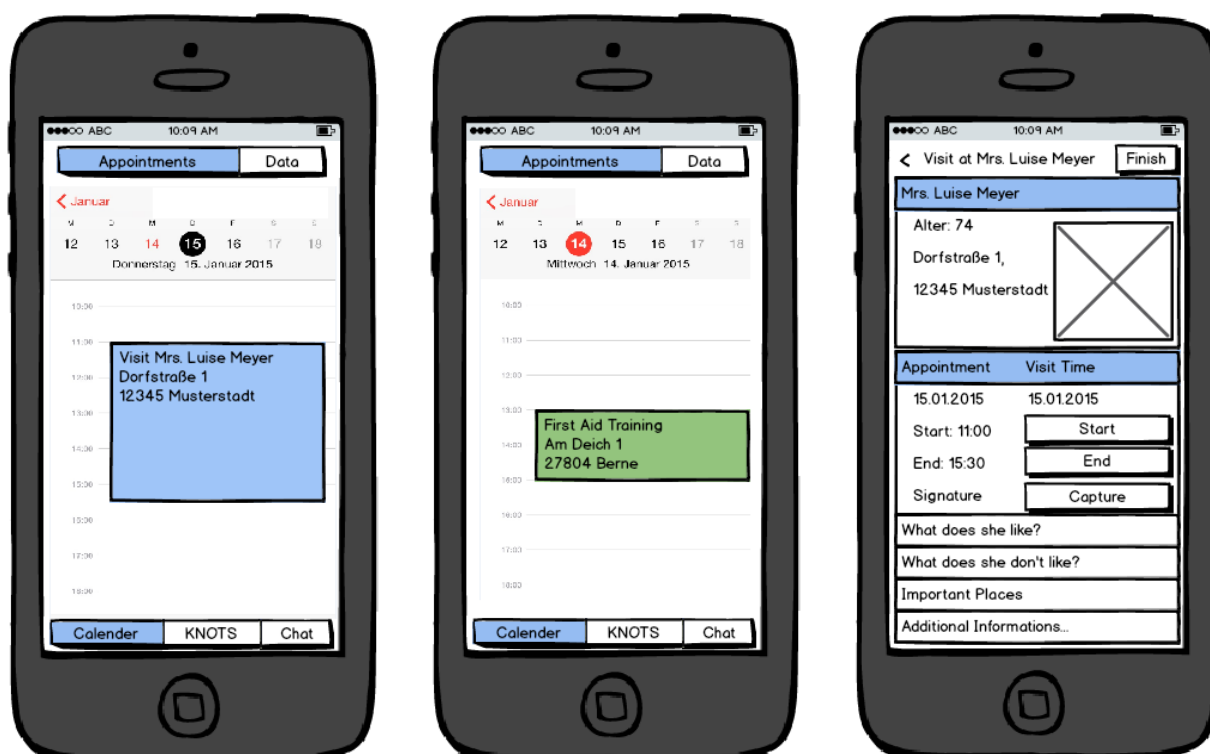


Figure 11: Calendar view of appointments for volunteer. On the right side: detail view of an appointment

Software-supported coordination and organization of activities with the client was one of the expressed needs of the volunteers. The volunteer will be able to see his appointments in a calendar view. Here he can see the appointments with clients (blue) and appointments for training (green). He has also the possibility to access details of the appointment. Here an example for details of an appointment at a client's home is shown. He gets personal details, a picture of the person he has to visit. He also sees the time he has to visit the client. There he might get the possibility to start and end time capture.

Then there is also place for additional information about the client (e.g. What does he likes?). Personal information about the client is provided in order to ensure a good client-volunteer relationship.

## 2.2.2 Data View



**Figure 12: personal data of a volunteer**

As expressed in the user evaluation/ needs analysis the volunteers would like access to a database to get an overview of various trainings they have completed to reflected one's own obtained skills and qualifications. The volunteer has the possibility to look into different kind of data. Perhaps the visits and trainings he has done or wishes to do, Documents he might have created and the possibility to add and administrate personal information.

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### 2.2.3 Access to the KNOTS data



**Figure 13: Interface to access KNOTS database**

An important feature volunteers requested was support in unexpected, unusual and previously not encountered situations. Tutorials, videos and manuals can help in these situations. The volunteer should have an option to access the KNOTS data. Here he has the possibility to search for different things in the database and to add new data. What options he has to input new data has to be discussed.

### 2.2.4 User interface for chat

The user evaluation indicated the desire of communication with other volunteers, clients and coordinators as one outcome. Figure 14: User interface for communication shows such a design. Here the different available chat partners are visible. The chat function will not be different from existing chat services (e.g. WhatsApp). A chat-option was included in order to enable fast and efficient communication between all involved parties. That includes clients, coordinators and volunteers. The need for communication and networking was a central outcome of the user evaluation.



Figure 14: User interface for communication



## 2.3 Client Application

The client application should run on smartphones and tablets. The following design where made with a tablet as the leading platform.

### 2.3.1 Calendar interface

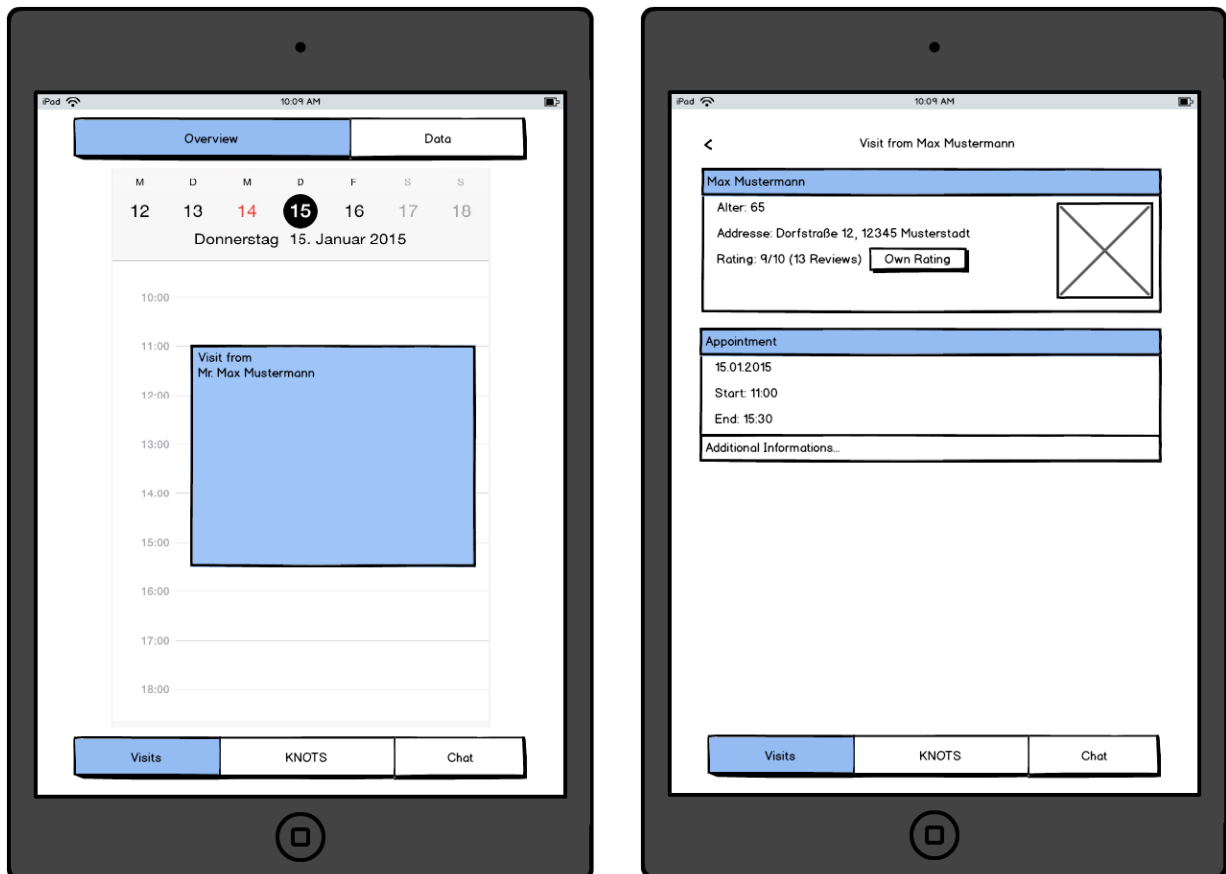
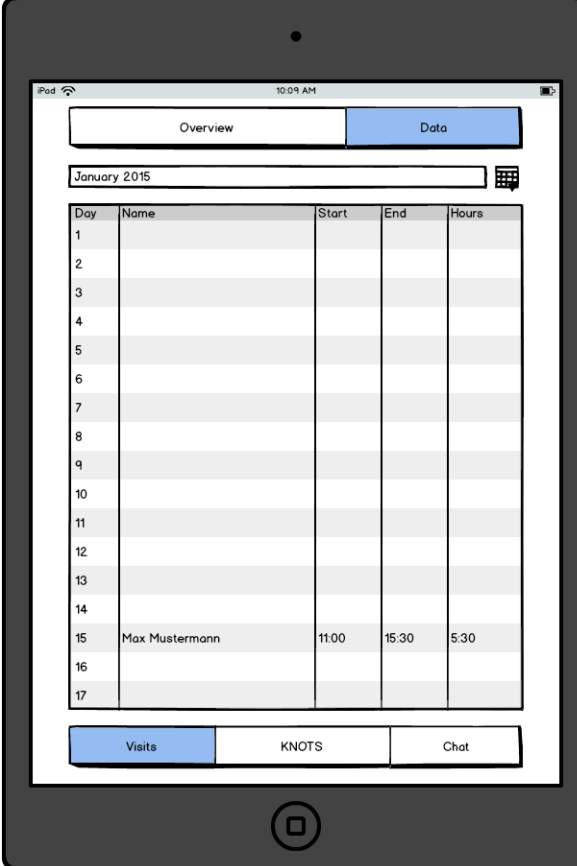


Figure 15: Calendar interface for appointment

Figure 15: Calendar interface for appointment gives the client an overview of the visit he or she will get from (different) volunteers. The client then has the possibility to view details of the person who will visit him/her. There will be a picture of the volunteer, so the client can identify the person who comes to visit. The needs analysis identified that trust in the caregiver is essential for the clients. Therefore personal information including a picture are provided before an appointment

### 2.3.2 Overview of visits for a period of time



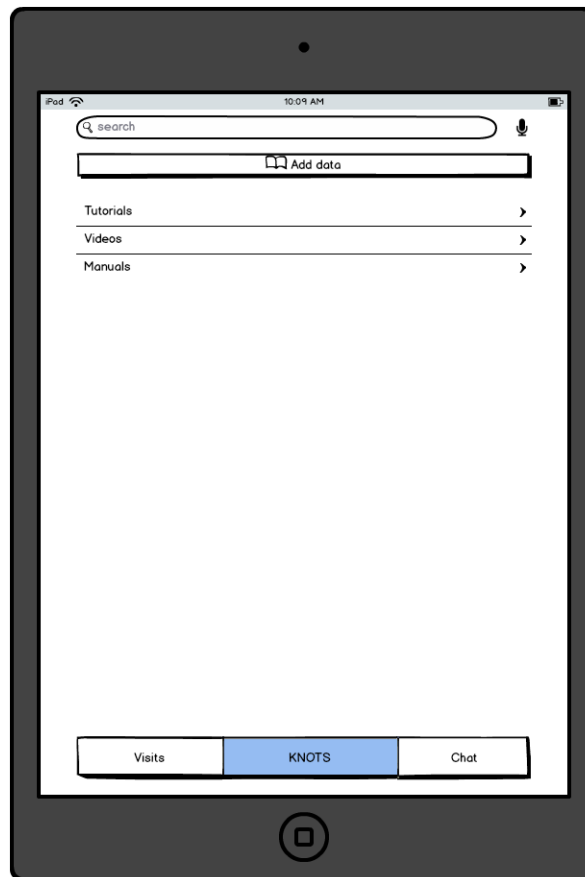
Day	Name	Start	End	Hours
1				
2				
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5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15	Max Mustermann	11:00	15:30	5:30
16				
17				

**Figure 16: Overview of visits for the last month**

The clients request a software-supported overview of received services by the caregivers. The client will have the option to take a look into all visits for a specific month. The month can be chosen by the client.

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### 2.3.3 Access to the KNOTS database



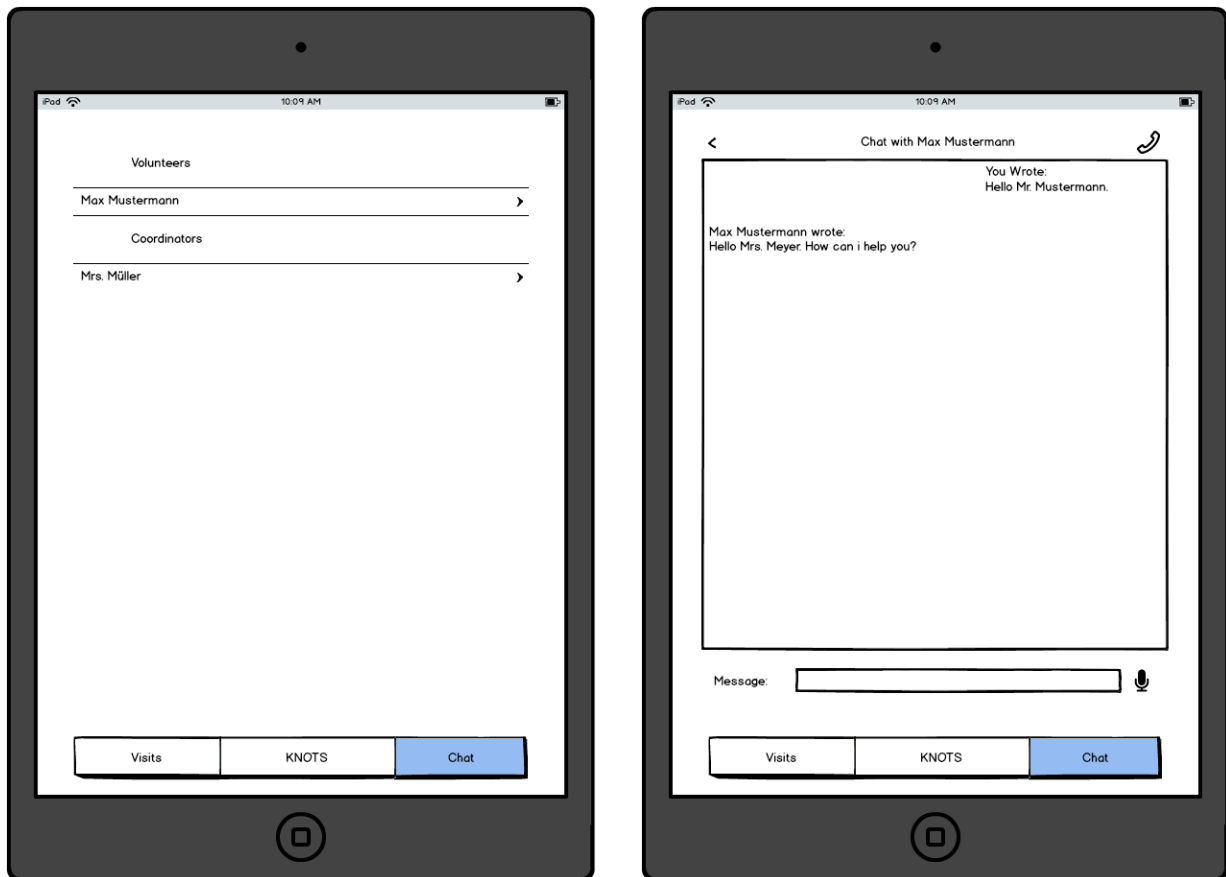
**Figure 17: Interface to access the KNOTS database**

The client has a possibility to access the KNOTS database with the help of the application. He can search inside the database for different data. Maybe he/she gets the possibility to add new data. How new data can be added into the system has to be decided. There also needs to be some sort of approval of the data.

Clients expressed the need for support in multimedia system usage and other instances. The KNOTS database including its manuals and videos and other tutorials offers a first step in solving encountered problems. This option for self-help is important in order to maintain independence and empower independent living. If the database does not contain the required solution there is always the option to request external help and of course to add information and data.

Also, the clients want to be able to provide Feedback regarding the services. This is necessary in order to continuously improve the KNOTS application.

### 2.3.4 Chat function



**Figure 18: Interface to chat with different participants**

Communication with all stakeholders was also mentioned as a key functionality that should be available. This includes communication with caregivers, the coordinating staff as well as other clients. Therefore, clients should also have the possibility to chat with different partners (Volunteers and Coordinators). The message interface will relay on existing services.