

Requirements and Analysis Document for Yellow

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1. Introduction

1.1 Purpose of application

The aim of this project is to create an inventory application where different groups of people can lend out and keep track of the items in their common inventory. The application will allow the user to know to who, when and during what period the item(s) were lent.

1.2 General characteristics of application

The application will be a desktop application runnable on Mac/Windows/Linux platforms.

The application's purpose is to give members of different societies the possibility to keep track of their inventories and lend out items in these inventories. The users should be able to rent out anything they want by creating their own items. The user has the possibility to give the item a name, a description, a certain amount and add an image. When a customer wants to rent an item the user will be able to search for the item in their inventory and rent it out. When an item is available for renting an order is created to give the user an overview of the renting, and input the customers personal info. When the order is created all users who shares the inventory can see the order and the items will be marked as rented in the groups calendar.

1.3 Scope of application

The application will not support rentals made by private individuals. The rental procedure can only be done by people associated with the group that owns the specific inventory. The renter therefore does not need to create an account and the entire lease is handled by the members of the group. However, this could be a development area for the application. By allowing users to complete their booking themselves, they reduce the workload for the group. But at the present time, the group gets a good opportunity to keep track of their inventory without incorrect and unwanted rentals made by renters.

1.4 Objectives and success criteria of the project

1. It should be possible to add items to an inventory.
2. The added items should be able to be categorized into multiple categories.
3. It should be possible to search for different items in the inventory.
4. Users should be able to join different groups by entering a code that is generated when a user creates a group.
5. If items are lent out, the current amount of that specific item should be displayed. This to be able to see what is in stock and what is not.
6. There should be a calendar where all the lent items should be marked as "booked" or "rented".
7. It should be possible to edit specified information in the application.
8. It should be possible to create orders where all the items that the renter wants to borrow are gathered and updated as "booked" or "rented".
9. It should be possible to view all the items in the inventory.

10. It should be possible to add items to a order.
11. It should be possible to see who has the rented items and when.

1.5 Definitions, acronyms, and abbreviations

- **Committee** - A group of people.
- **Yellow** - The name of this application
- **Student division** - Referring to a group of students with a common inventory.
- **App** - Referring to an application usable on android phones.
- **Item** - Specific object/objects
- **Inventory** - A collection of items.
- **Renter** - The person who lend items from the group who owns the inventory to which the object belongs.
- **Group** - A group in the app users can be a part of and where they can share inventories.
- **User** - The person using the application
- **User Story** - Describes a feature that a user or customer of the system desires.

2. Requirements

2.1 User stories

Listed below are the different user stories for Yellow. All user stories are identifiable by a unique story id and with an explanatory story name.

1. **Story Identifier:** U101

Story Name: See an inventory

Description: As a section member I want to see an inventory with my items because I want to know what items I have.

Confirmation

- It should be possible to get a list of items from a specific inventory.
- It should be possible to get a list of all items in a group with two or more inventories.

Functional

- Can the person see the items in their inventories?
- Can the person see the items for a specific inventory?

Non-functional

- The inventory should only be available for the users sharing the group in which the inventory is created.

2. **Story Identifier:** U102

Story Name: Adding items

Description: As a section member I want to be able to expand my inventory because I might want to add items in the future.

Confirmation

- It should be possible to add an item into a selected inventory.
- When creating an item it should be able to choose which inventory.

Functional

- Can I add an item when not in a group?
- Can I add an item with no selected inventory?
- Can I add an item with no parameters filled?

Non-functional

- It should not be possible to add an item if not in a group.
- It should not be possible to add an item if no inventory is selected.
- Items must have a name and amount.

3. **Story Identifier:** U103

Story Name: Removing items

Description: As a section member I want to remove items from an inventory because I might regret adding something.

Confirmation:

- It should be possible to remove an item from a selected inventory.

Functional:

- Can I remove an item when not in a group?

Non-functional:

- It should not be possible to remove an item when not in a group.

4. **Story Identifier:** U104

Story Name: Sharing inventories

Description: As a section member I want to be able to share my inventory with others because we might be several people sharing an inventory.

Confirmation

- The user is able to invite other users to a group.
- The user can be invited to a group.
- The shared inventory should be viewed by the different users.

Functional

- Can I join a group?
- Can I see the inventories that are in the selected group?
- Can I see the items that are in the selected inventory?

Non-functional

- Can I join a group at any time?
- Can I view the inventory the items in the group at any time?

5. Story identifier: U105

Story Name: Keeping groups and inventories private

Description: As a section member I don't want other people to see my inventory because I want to keep it private.

Confirmation:

- Achieved when an user only has access to their own group and inventory.

Functional

- Is it possible to see other users inventories without being in their group?
- Is it possible to login without creating an account?
- Can users use the app even if they are not logged in?

Non-Functional

- The user should only see their own groups, inventories and items

6. Story Identifier: U106

Story Name: Search functionality

Description: As a section member I want to be able to search for my items because I want to find items easier if I have a large inventory.

Confirmation

- Achieved when the input in a search bar returns a list of items which matches the search.

Functional

- Can I find the item even if I forget to write the last letter?
- Can I search for categories so that all items in that specific category (in active group) is displayed?
- Can I search for items in a specific inventory?

Non-functional

- Can I find items which isn't part of my inventory?

7. Story Identifier: U107

Story Name: Several Inventories

Description: As a section member I want to create different inventories because I might have items in different places.

Confirmation

- Achieved when the user can press an add inventory button when in a selected group.
- The user can write a name for the inventory.
- The user can choose which inventory to look at.

Functional

- Is it possible to create an inventory without a group?
- Is it possible to switch between inventories?
- Can I name my inventory?

Non-functional

- The inventory must have a name.

8. **Story Identifier:** U108

Story Name: Item renting status

Description: As a section member I want to see what items are rented because I want to know if they are available for renting.

Confirmation

- When the user can see the item's availability in a calendar.

Functional

- Can I see the selected item in a calendar?

Non-functional

9. **Story Identifier:** U109

Story Name: Renting items

Description: As a section member I want to rent out a specific item because I want to meet the customers needs.

Confirmation:

- An order should be created for the item/items rented
- The order should include information about the renter
- The item/items rented should be displayed as rented in the calendar.

Functional:

- Can I create an order without any items?
- Can I create an order without any information about the renter?
- Can I see that the item is rented in the calendar?

Non-functional:

- The item can only be rented when it is available.

10. **Story Identifier:** U110

Story Name: User Settings

Description: As a section member I want to change my user information because I might want a new username or password.

Confirmation:

- Achieved when the user can change their username, name, email and password.

Functional:

- Can I save the settings for the next time I login?

Non-functional:

- Can the user change username to an other users username?
- Can the user input empty fields and save?

11. **Story Identifier:** U111

Story Name: Different categories

Description: As a section member I want to categorize my items so they will be easier to find for specific purposes.

Confirmation:

- When the user searches for a category, all the items in that category should appear.
- The category should be seen on the item.

Functional:

- Can I choose category when I create an item?

Non-functional:

2.2 User interface

In general, Yellow has two main purposes. It should be possible to view and edit an inventory, and it should be possible to lend out items and know who has them and when. This notification has provided the basis for how Yellow's user interface is designed.

2.2.1 Design structure

The application is mainly structured into two different sections with similar layouts, but with discernible differences. The different sections' purposes is to indicate to the user which functions are available. In the first section the user will be able to view and edit groups, inventories and items while the other section handles the rental part of the application. This breakdown is made because a user is not believed to be interested in adding and changing items at the same time as placing an order for a renter.

2.2.2 Design and graphic details

The overall color scheme for Yellow is a darker background where important functionality is enhanced with a yellow color. Yellow also uses two different background images depending on whether the user is logged in or not. This is to clarify whether the user is in the application and can start using it or not. The background image also has a bit brighter color when the user is signed in. This to indicate even more that the user has finished the first step and now can start using the application.

Most labels are written in a white or light grey color to pop out from the background. Therefore labels and texts placed on a brighter background is displayed in a black or dark grey color.

Yellow also uses colour pickers to make it easier for users to distinguish their groups in the list. In addition to this, the application keeps a fairly neutral and easy-to-understand color use where, for example error messages and lent items are highlighted red, and available items green.

Icons are used by Yellow to clarify some features of the application and also to reduce the usage of texts which in large quantities can make the interface look messy.

2.2.3 Layout and flow

When starting up Yellow the user will get two options, either sign in or sign up (*Figure 1: Welcome screen*). These two options are displayed on the same screen to make it easy for the users to know what is expected of them. If the user chose to sign up, a new, but similar page (*Figure 1: Sign up screen*) will be displayed where the user can create an account by typing in relevant information.

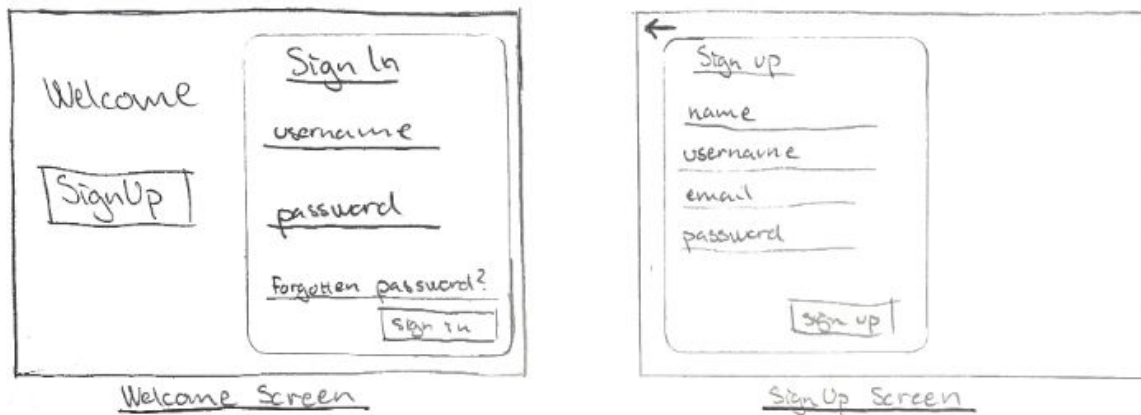


Figure 1

After the user finished any of these two steps, a new screen with four new options will be displayed (*Figure 2: Yellow screen*). These options are believed to be relevant while first going into the application. By restricting the choices here, Yellow makes it easier for the user to find what they are looking for in the application.

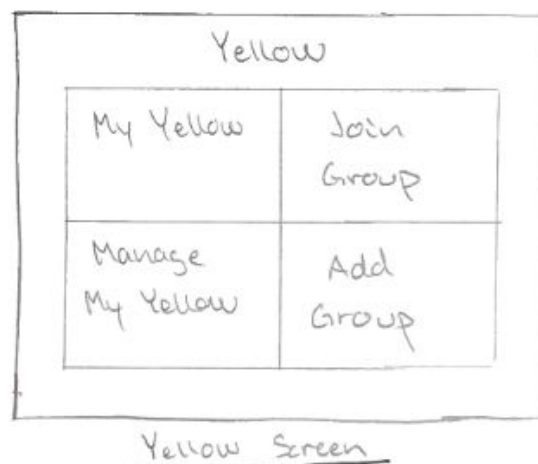


Figure 2

In most cases the user have been using Yellow before and are already a part of a group. But if that is not the case, the options to either create a group or join a group is available here. After doing any of these two, the user will be taken to the “Manage my Yellow” page (*Figure 3: Manage my Yellow*). This is where you edit existing groups, inventories and items, create new ones or go directly to “My Yellow” (*Figure 4: My Yellow*), which is the part/section of the application where it is possible to lend out items.

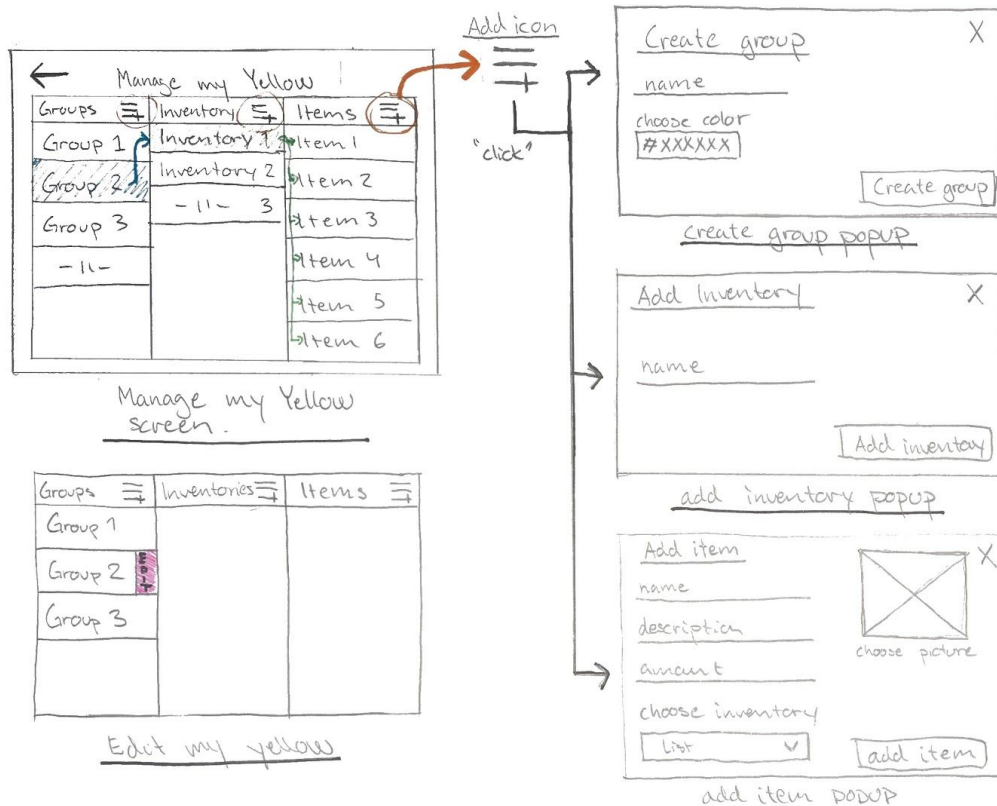


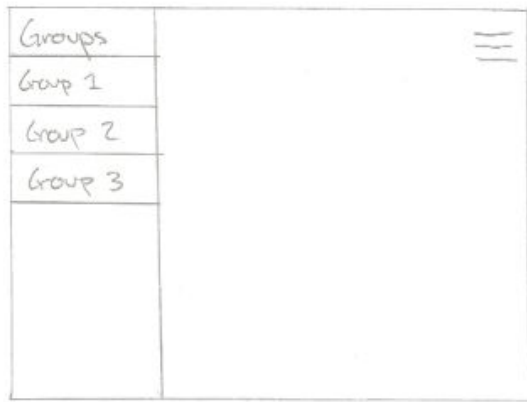
Figure 3

If you are a previous user of Yellow and are familiar with the structure of the application, you probably already know if you want to edit your inventory or lend out items when signing in. Therefore it is possible for the user to go directly from "Yellow screen" into "My Yellow" or "Manage my Yellow" after signing in (Figure 2: Yellow screen).

"Manage my Yellow" (Figure 3: Manage my Yellow) is divided into three different flowpanes/lists where groups, inventories and items are listed. The lists is structured in a way that the different inventories is shown based on which group is chosen and items based on chosen inventory. By doing this the user can easily see which inventories and items that belong to which group.

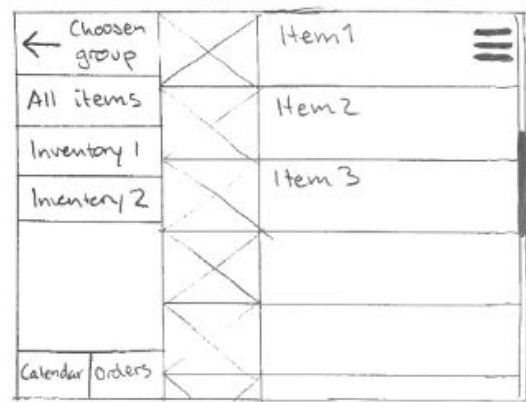
In the "Manage my Yellow" window the user can also add new groups, inventories and items. This is easily done by clicking on the adding symbol placed next to the associated label. By this action a new dialog is displayed where the user can insert relevant information. All the dialog screens in Yellow has the same layout which hopefully results in the user recognize himself making it easier to navigate around the application.

By choosing a group in "Manage my Yellow" an "edit" panel is revealed (Figure 3: Edit my Yellow) that takes the user to a almost identical dialog screen as the one that is shown while adding a new group. However, the differences in this view is that the user has the option to change already given information or deleting the object. This structure applies to both groups, inventories and items.



My Yellow

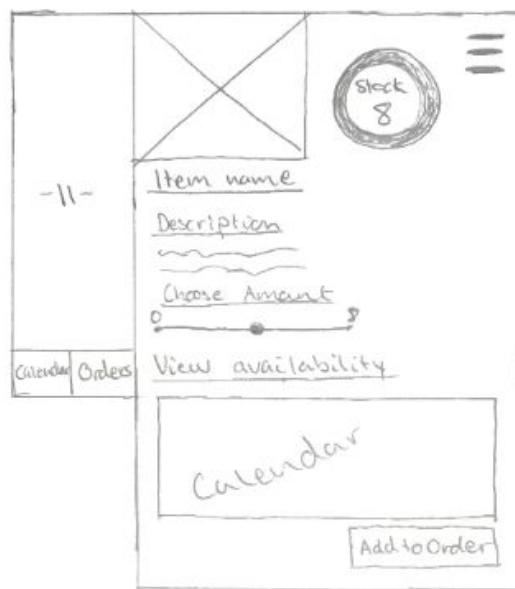
Figure 4



Item list screen

Figure 5

“My Yellow” (Figure 4) is the view where it is possible to create orders and view which items that are available. It is structured into two main sections. One list view and one bigger view where things such as items and orders are displayed. The list view has the same structure as “Manage my Yellow” and by clicking on an available group, that groups inventories will be displayed while its items are shown in the main window.



Item screen

Figure 6

By clicking on a item in the list the user accesses the detailed information about that specific item which is shown in the main panel. It is also in this view that it is possible to add a item to the active order and view when, and how many items that is available (Figure 6).

When in the “My Yellow” window and a group is chosen from the list, two new buttons: Calendar and Orders will reveal in the left bottom corner (Figure 5). The calendar takes the user to a calendar where all the orders in the active group will be displayed.

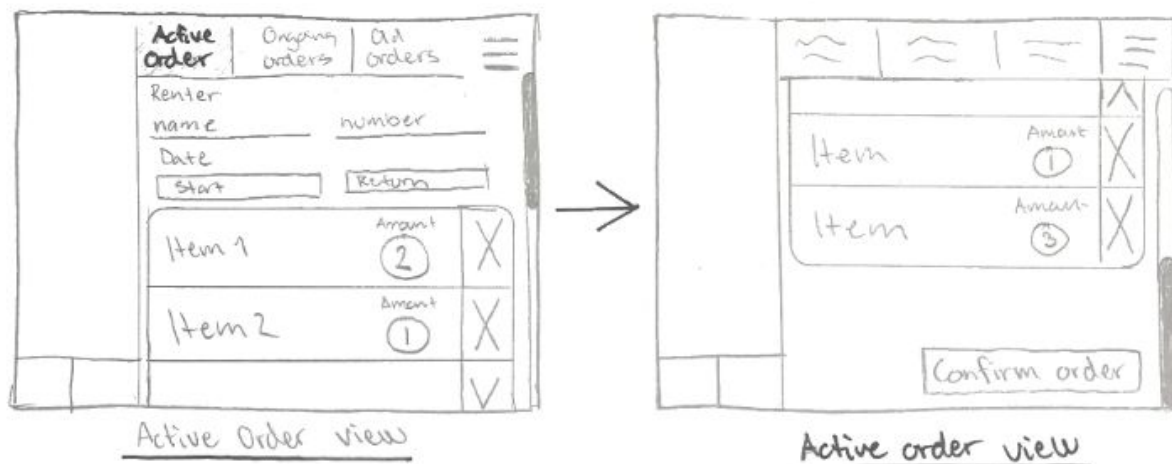


Figure 7

The order view is divided into three different views: Active order, Ongoing orders and Old orders (Figure 7: Active order view). The active order shows all the items that is added to the order and is shown there until the order is confirmed. For an order to be confirmed, a renter must be entered and all the items must be available during the chosen rental period. If the items are not available during the picked date, they will be marked in red and it will not be possible to place the order. It is also not possible to add items from two different groups in the same order due to the fact that orders are linked to a specific group.

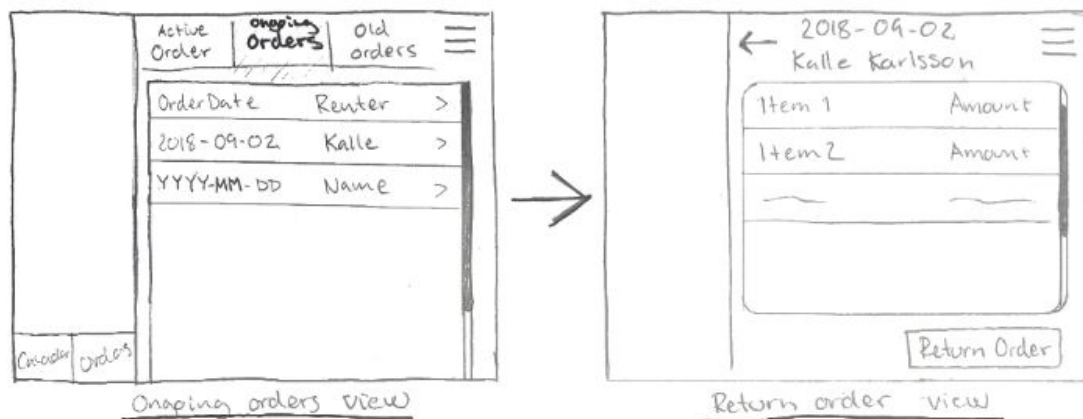


Figure 8

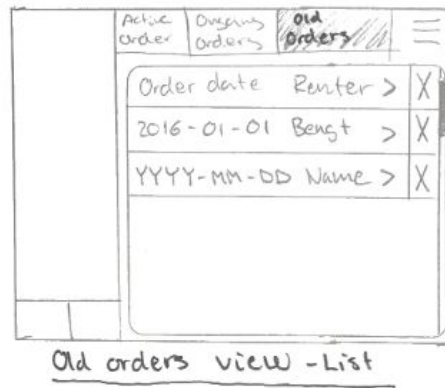


Figure 9

After an order is confirmed it is added to ongoing orders where it stays until it is returned (*Figure 8: Ongoing orders & Return order view*). After being returned, the order is moved to “Old orders” which has the same layout as “Ongoing orders” except that the order can be deleted and then removed from the list (*Figure 9*) .

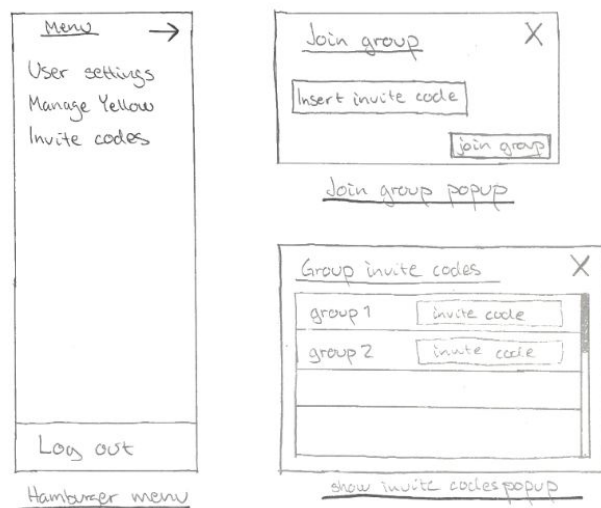
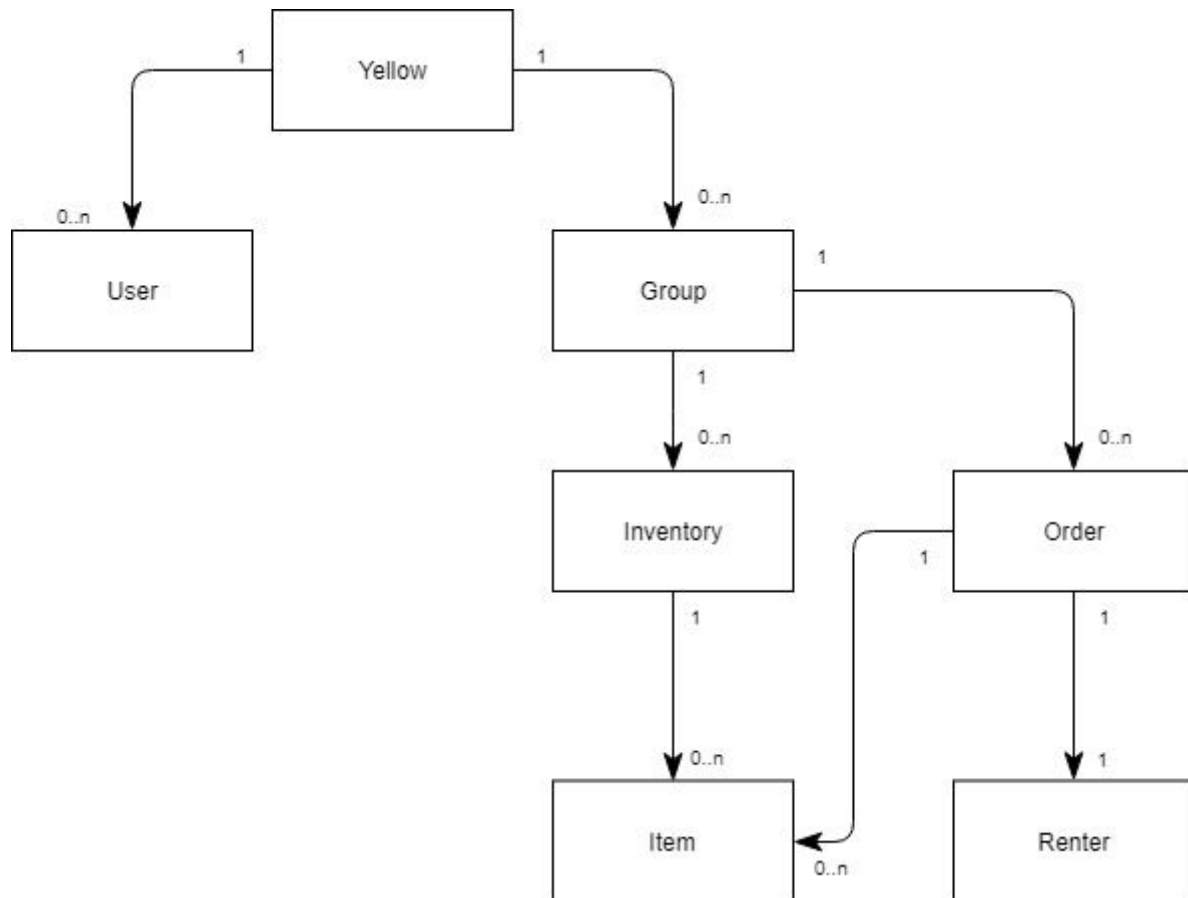


Figure 10

Another essential view of “My Yellow” is the pop out menu that always is available in the upper right corner in “My Yellow” (*Figure 10: Hamburger menu*). By clicking on the icon a menu with multiple functions appear. These functions are considered to be relevant to the user no matter where in “My Yellow” the user is located. This menu contains things such as user settings, a shortcut to “manage my yellow”, join group function (*Figure 10: Join group popup*), logout function and a button to show a dialog screen with the invite codes to the users groups (*Figure 10: Show invite codes*).

3. Domain model



3.1 Class responsibilities

User: Represents the users of the app. It contains information about the user, such as name, username, password and what groups they belong to in the form of an id.

Yellow: Handles the logic and management of all the data. It's the bridge between User and Group as well as the manager of the model, delegating tasks to the other classes.

Group: Represents the groups users take part of and also contains what inventories and orders are in the group.

Inventory: Represents an inventory which users can put items in. Inventories are connected to a specific group.

Item: Represents the item that can be added into an inventory.

Order: Is created to get an overview when an item/items are rented and to get information about the renting.

Renter: Represents the person who rents the item/items.

4. References