

# PROJECT REPORT

Class and group: P-CB-S03

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## Introduction

This report will show the full documentation for our Housing Application project. It will be written by Alessandro, Luca and Maarten. We will take you step by step through the process of development. In this process we will describe; the existing problem, our initial thoughts and ideas for a solution to this problem, the actual steps we took to realize our solution and a conclusion, looking back at this process and the solution we offered for the problem. Our personal reflection will conclude the report.

## Background

The initial problem was laid upon us by “Student Housing BV.” They needed some kind of tool to better arrange day-to-day solutions (e.g. cleaning schedule) and to reduce the number of issues their tenants(or students, in this report both are being used) have. This could be issues between tenants or just general issues with their shared house. Some examples of issues they face are:

- Appointed persons not cleaning the shared facilities.
- Groceries are not done or paid for shared items such as toilet paper, dish soap, etc.
- Garbage disposal is not done on time
- Unannounced parties, gatherings, etc.

This tool needed to be both available to their tenants and their so called housing admins. These admins monitor if everything goes well inside of their appointed house. For their tenants it has to be possible to record and see agreements made between them, see house rules and file complaints anonymously.

Admins should be able to see all these agreements and complaints and should have the option to let their tenants know whether they picked up any of the issues the tenants have. Besides looking into the problems their tenants have, these admins should be able to review and adjust/make house rules and make small news articles informing their tenants about chances in and around the house.

## Problem statement

The communication between the tenants and the admins of “Student Housing BV” is bad/not present. They need a tool to communicate between house mates and admins without any issues or delay to increase the satisfactions of their tenants.

## Process & Results

After going through the problem as a team, we created our solution proposal, restraints and agreements. Like the name hints at, the solution proposal is how we, at the start of the project, wanted to solve the problem. In here we decided what both sides of the coming application (admins and tenants) should be able to do. This resulted in the following:

The first screen will be a login screen. From here you either continue to the admin or the tenant side of the application.

The tenants will have multiple forms/tabs, first a main page, one for complaints, one for announcements, one for the garbage disposal and cleaning schedule and one with general house rules.

On the **Main page** the tenant can see some sort of newsletter provided by the admin and will have the navigation for the rest of the application.

On the **complaint page** it is possible to file complaints anonymously. These complaints won't be visible for other tenants but will end up on the admin side. Further explanation will follow in the admin part.

On the **announcement page** you can see and write announcements visible to everybody. These announcements (example: loud music due to a party taking place) can be accepted or declined by both the tenants and the admins. The hierarchy will be decided later on in the house rules.

On the **garbage disposal and cleaning schedule page** it will show who has to clean what part of the house each week. Besides this it will show the days the garbage is collected. A tenant will have the option to 'skip' a task when he/she is not able to do it.

On the **house rule page** there will be a list of all house rules. There will be different rules depending on the location of the house.

The admin side of the application has a main page, a complaint page, an announcement page, an add tenant page and a house rule page.

On the **main page** they will have the same newsletter feature the tenants have with the extra option to add items to this news page.

On the **complaint page** they receive the complaints made by the tenants. They have the option to check of a complaint once it has been dealt with.

On the **announcement page** they will see the same as the tenants but will not have the option to put in announcements. There will be the option to accept or decline these announcements just like the tenants have this option.

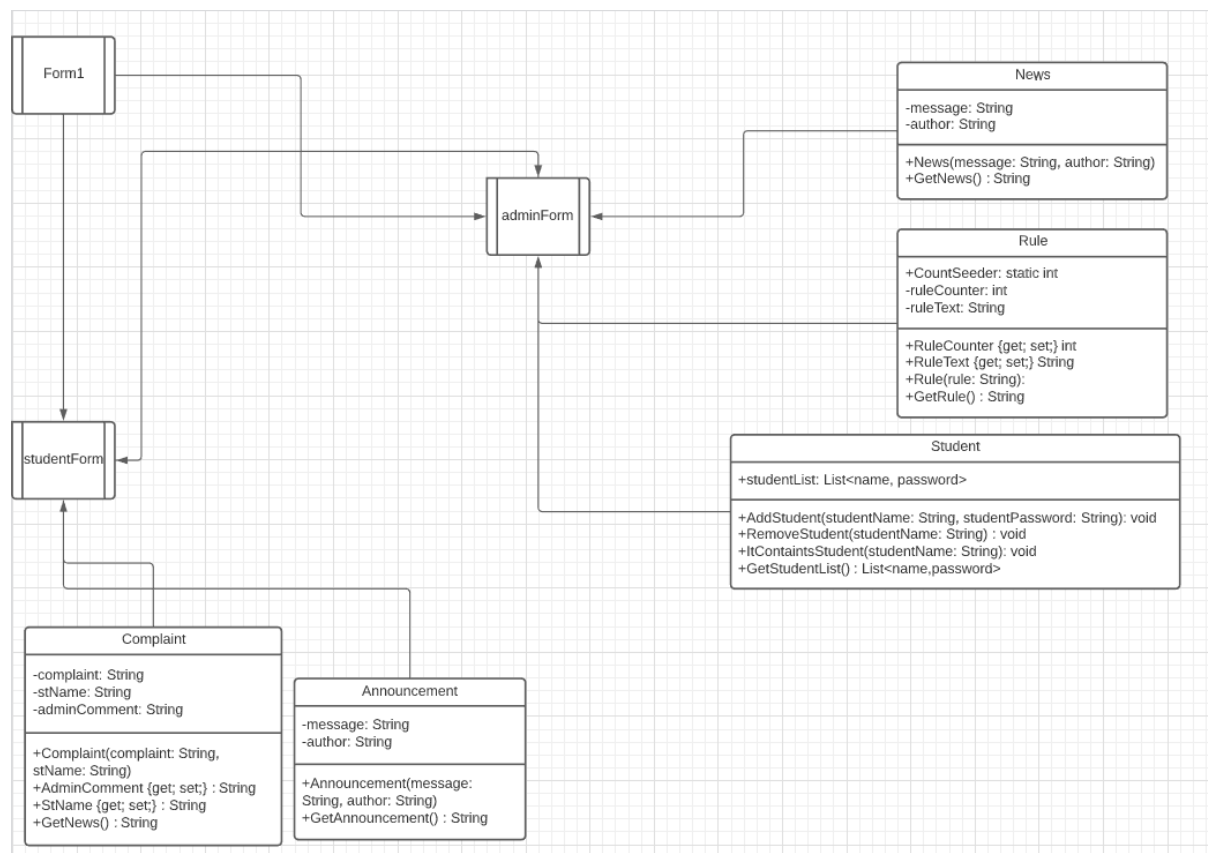
On the **add tenant page** it is possible to make new tenant accounts, giving them a username and password. Besides adding tenants, they can edit existing tenants and change their username or password.

On the **house rule page** they can view and add house rules.

After starting on the project, we realized that not everything would be implemented the same we as expected in our solution proposal. For example: the announcements are just that. There is no option to accept or decline them. Besides not implementing something we expected, we also made things that were not in the proposal. For example: An admin can add comments to complaints written by tenants.

Following the proposal, we created the agreements and the requirements. These can be found in the project analysis file that sums up the beginning of this project.

From here on there was one thing keeping us from programming: The UML diagrams. In here it explains how each class and form of our application would interact with each other.



We decided to split up the work that needed to be done over the 3 of us as equal as we could, given that we did not yet know how much time each part would cost us.

### **Maarten:**

I was responsible for creating both the main and the complaint page for the tenant and the admin. For this I had to wait for Alessandro to finish the login screen. Since he finished his part during the scheduled time, there were no issues for me starting with this project. Both main pages, student and admin, functioned as a newsletter. For this I created the News class that both sides of the application use. While making this, I did not encounter any issues of any kind. The next part would be the complaint pages. There were a lot of similarities with the news page, making it easier for me to implement this part of the application. The only thing different being that admins make newsletters and students make announcements. This did not create any issues.

The only issues I truly faced was the line break in a listbox. I could not find a way to let a string continue on the next line when it reached the end of the listbox. I did not see this as a great issue since it was something visual, not code related. I'm sure that someone who would make/create app designs would have a way to resolve this issue.

Since these 4 small parts were the only thing I was tasked with, I was done quite early in the project. This of course did not mean I could just sit back and do nothing. Whenever any help was needed I would see if I can be of any assistance.

***Luca:***

I was tasked with implementing the rules class, the schedule page, as well as the general UI and QOL adjustments to the project.

The implementation of the rules was a bit of a challenge at first but I managed to get it done rather easily once I was in the coding 'mindset'. I had thought that the schedule page would be a lot more complex but to my surprise, it was just a static page with information. It seemed very bare so I added extra information alongside each weekly occurrence (that is visible in the schedule) that you can access by clicking on the respective icon.

I also of course added quality-of-life and UI adjustments which includes a gradient background, a sophisticated login screen and even a custom title bar which required the usage of a bunch of mouse tracking logic.

To be fair, I think I was assigned a smaller part of the total work compared to the rest of the team - however, I did try to pull my weight as much as I could by polishing some areas of the project of which I thought I could be of assistance for and of course just be available and to lend a hand whenever someone had an issue.

***Alessandro:***

In this project I was responsible for creating the login page: the first step of our application. After that, I created both the student and the tenant forms.

I waited Maarten to finish his complaints page and then I resumed with completing the announcements one. To do this, I created an Announcement class, used by both the tenants and the admins. It was very easy for me to implement this part because I looked at the work made by Maarten, because the form and the classes are very similar to each other's. In this way I could finish very fast.

The last step I made was the student page. This is the place where the admins can create new users with the related passwords. These information are then used for the login.

In this project I didn't face any issues. I did everything in time and without problems. Besides this, I helped the other members of my group whenever they needed help (also for GIT).

**Result:**

When you open the application you will be seeing a Login-screen. Depending on whether someone is a student or an admin, the application will show you the screen that belongs to you. As an admin the first screen you see is the Newsletter. In here you can see what your colleagues already added, and add something for yourself. The next tab would be the add tenant part. In here you can create a

tenant account, giving it a username and a password. There is also the option to remove a tenant. Next up would be the complaints. In here you can see all the complaints filed by tenants, giving you the option to react to a complaint or check it off as done. Tenants can see both these actions if it concerns a complaint they filed. Following the complaints we have the announcements. In here you can see all the announcement tenants made. The last part on the admin side is edit rule. In here you can see all the rules present, change the rules or delete them. This concludes the admin side of the application.

Students go through the same login as the admins. They will then end up on the other side of the application. The first screen you will see is the Newsletter. On this screen you can see all the articles made by the admins. The complaint page is the second one for the tenants. Here they can make new, anonymous complaints and see whether an admin has picked it up yet. Following the complaints we have the rules. There is not much here for the tenants. They can see the list of rules created by admins. That is for them. Next up are the announcements. This screen looks a lot like the news screen for the admins. They can add an announcement to be seen by all tenants and admins and can see all the announcements made by others. As final screen we have the schedule. In here they can see when the trash will be collected and who has which task in the house.

## **Conclusion & recommendations**

As a group, we managed to complete our project as planned and we respected all the deadline presented at the start of the project. Our final work respects all the requirements prefixed.

The group has worked in a collaborative way, without any type of conflict. We managed to help each other whenever a member had doubts or difficulties in coding.

A first possible extension of the application could be to create a tab in the student form in order to permit them to pay the rent, and for the admins a page that works as a register to keep track of the students' payments.

The second one might be the possibility to give a reaction to an announcement or to send direct messages from the tenants to the landlords and in the other way around.

## **Evaluation & reflection**

### ***Maarten:***

I see the project as a big success. We did everything we wanted to do. Our communication and teamwork was very good and we helped each other where ever needed. The project only lasted for a few weeks, so the work load was not too bad. I feel like we could have done much more with the application if there was more time to do this.

The team I worked with is definitely a team I would love to work with again. Like I mentioned before is the teamwork on a really good level and I enjoy working together with these guys.

At the start of the project we worked quite hard compared to the rest of the project. Since we finished quite some in the first week(s) we did take it quite easy during the last weeks. Next time I would try to either completely finish the project in the first few weeks or try to do the same amount of work each week. I believe this would keep more motivated more and it would be less hard to work on the project again in one of the later weeks of the project.

During the project Luca did a lot of work for the design of the application. The code for this design is kind of messy in my opinion and is something I would do differently next project. I did not mention it during this one since it took only a few weeks and it looked like we needed our time for the rest of the project.

I'm proud that we as a group were able to set up an application that seems to be working as desired. If I would have to point out 1 part it would be the complaint part of the application. I really like that I was able to implement this during the first weeks of the project when we did not have all the theory yet. It works good, both forms use the same list and you are able to change and delete items. In my opinion it shows that I am capable of implementing code we learned during this year.

**Luca:**

This project was an interesting one for sure. I've done plenty window form projects in the past; however, this is the first time that I've done it alongside a team and hence, the first time that I've incorporated a version control system like Git into the development process.

I really do enjoy working with the UI and general aesthetics of any software application and so this passion pushed me to implement my creativity whilst also starting the momentum I needed to complete the rest of the project of which I was assigned. After I was done, I decided to add some quality-of-life adjustments to the project which included parts of work that weren't even assigned to me. Little changes like the selecting of a rule in the admin form and having it appear in the textbox (which provides a faster way to edit the text) is just a small example of some of the things that I add to make the general use of the app a lot more enjoyable and adds clarity to the whole experience. I really hope it doesn't go unnoticed.

Another thing to add is that in my very first semester, working with Git was no easy task and I struggled a lot. Luckily, I'm happy to report that my experience this time around has been a lot better and I am starting to get the hang of it. My coding knowledge has also been expanded throughout the course of this project and I can confidently say that I now know way more than we first started this work a couple weeks ago.

The pacing of this project maybe could've been a bit better. As Maarten has already said, we covered quite a lot of the work in the first week and then stopped the momentum. Maybe if we had spent our time better, some elements of the project would be more refined and perhaps the code could be more concise.

Other than that, working with Alessandro and Maarten has been nothing but a breeze. They work very efficiently, and I hope to do another project with them in the future.

**Alessandro:**

The project was good to test our skills about what we have done in these weeks in the course. It has been something different from the other typical assignments. Plus, we have had the chance to collaborate as a group and everything worked perfectly. Working with my teammates has been a real pleasure because everything seemed easy (in assigning the tasks or just help each other's in case of problems). I would like to work with them again in the future.

I am proud about the result of our application because it is as we planned at the beginning, so it means that we have worked well in respect of the deadlines set. The only thing that it may be improved is to distribute better the workload during the weeks. In the last two weeks we did not work a lot because we have almost finished everything after the first two weeks.

The part I enjoyed doing more is the part on which the admin can create student users with the passwords. I made possible to store the information in a list and use it to login in the initial page. Plus, if a student signs up, the name being shown in the header of the page.

In conclusion, I am incredibly happy with the result because I feel my code skills are particularly good since I managed to use all the things taught in class without any problems. Plus, I have learnt how important is the collaboration in a group. I do not know If I would have enjoyed the project as I did with another members.