HÁSKÓLINN Í REYKJAVÍK
REYKJAVIK UNIVERSITY

SalesCloud Hero

T-404-LOKA

Jóhann Markús Chun
Jón Helgi Steingrímsson
Rúnar Leví Jóhannsson

Autumn 2021

Professor:
Hallgrímur Arnaldsson

Instructor:
Stefán Freyr Stefánsson

Examiner:
Guðný Ragna Jónsdóttir

Contents

0 Abstract

0.1 Core Project Objective

To create a centralized point of information for all workers within any given company using SalesCloud.

0.2 Specific Main Goals

Companies, especially in the service and hospitality industry, often struggle to maintain communication between lower and higher members of the company. Streamlining communication helps organize and save the company money by cutting down on unnecessary work hours spent on disorientation.

The **three main problems** in communication our project aims to solve are:

1. Lack of information about contract:
    a. Salary, vacations, rights etc.

2. Confusion due to the current delocalization of information
    a. Workers are often confused and/or irritated due to the number of platforms needed to maintain schedule, work hours, and estimate their paycheck using actual worked hours.

3. Excessive management hours:
    a. Managers and CEOs spend a significant amount of time maintaining their employees shifts, wages and morale due to lack of information.

1 Project Details

1.1 Affiliated Company: SalesCloud

SalesCloud is a small company which builds and innovates new sales solutions for small and medium sized businesses across all industries and releases them at affordable prices. They provide these solutions as best in class software in one subscription bundle.[1]

Their system is hosted in a cloud service but has offline functionality so that it will work even if the internet connection were to drop. Their equipment consists of a software application, tablet, cash register, kitchen printer and point of sale terminal. The setup of these devices is configured after the needs of each customer. Other systems that SalesCloud can connect to include Facebook, Mail-Chimp, WooCommerce, Wix and Weebly. The system is at its core designed to service restaurants, subscription sales and ticket sales.

SalesCloud offers a variety of sales solutions currently such as eTags[2] for self-service, ePos[3], mPos as an ePos and card reader in one, and webPos which allows you to see your point of sales information in your browser anywhere. They also offer analytic reports, customer profiles, and more in their mobile BackOffice.

Their customers include Flatey, Yess!, Perlan, Íslands Hótel, Bullseye, Barion, B5 and many other businesses. All the restaurants in “Borg29 Mathöll” and most of the restaurants in every other mathöll[4] currently use SalesCloud.

[1] https://www.salescloud.is/about-us

[2] Entity Tag (eTag) documentation https://developer.mozilla.org/en-US/docs/Web/HTTP/Headers/ETag

[3] Electronic point of sales including tablet, cash register and printing system.

[4] Mathöll translates to food court. There are currently four food courts in Reykjavik: Grandi Mathöll, Hlemmur Mathöll, Borg29 Mathöll and Mathöll Höfði.

1.2 Product Description

A customer brought a problem to the owner of SalesCloud Helgi Jónsson summer of 2021 while working as a manager at the restaurant Kröst. Kröst currently uses SalesCloud's services. He needed a way to reduce management hours spent gathering information for their employees that they should be able to get themselves. SalesCloud's clients are primarily from industries that rely on variable work shifts and variable employee roster.

The product is a mobile application that allows the employee to track their hours, shifts and rights. It implements a frontend interface to information previously only available to supervisors thereby reducing management hours. It also streamlines the clocking in and clocking out process by enabling employees to verify their hours.

1.2.1 Feature Synopsis

The app opens to a **home interface** where the user can choose to view their Work Profile Interface, union rights, shift schedule, and clock in/clock out.

- **Clock in/Clock out** feature works by scanning a QR code at the work location. It registers these timestamps to the SalesCloud database via its API. It records the information into your work profile so that it can build the work summaries later.
- **Work Profile Interface** shows a quick overview of hours worked since last payday, your next shift, and your gross salary earned since last payday. It allows the user to make, edit and select work profiles. The dashboard allows you to navigate through your work summary, contract and pay slip.
    - **Work Profile** is a record of your hourly daytime pay rate, the percentage of your pay you pay to your union, holiday pay, pension and your workplace pay period.
    - **Work Summary** shows actual worked hours based on your clock in and clock out per work profile. From here the user can suggest edits to their hours if there was an error in clock in and clock out. They may also add hours if they forgot to clock in. The product will que these suggestions and edits for management review.
    - **My Contract** feature allows the user to upload images of their contract from their mobile device allowing them to review at any time.
    - **My Pay slip** shows estimated pay based on their actual worked hours since their last pay period. The app fetches the breakout of hours worked during daytime, after 17:00, on weekends (or after 24:00), and overtime from SalesCloud. The product uses SalesCloud's APIs to connect to their database.
- **Work Shift Interface** shows planned work shifts and is sortable either by workplace or to include all workplaces. The user may also see who is working the current day at that location. The product allows the user to notify their supervisors of sickness for the current shift. The supervisors can see these notifications in their home interface.

- **Union Rights interface** gives the user a quick overview of their unions' FAQ's provided by the unions themselves. Filterable by union.

1.2.2 Features Which Have Been Removed from Scope

Originally the product intended to include a message board feature between users. This has been determined to be out of scope by the team due to time constraints. It may however be implemented by future developers as per the product owner's interest.

1.3 Relevant Persons

1.3.1 Members

Jóhann Markús Chun	johannc18@ru.is
Jón Helgi Steingrímsson	jons18@ru.is
Rúnar Leví Jóhannsson	runar18@ru.is

1.3.2 Contact person at SalesCloud

Helgi Jónsson	helgi@salescloud.is

1.3.3 Instructors

Stefán Freyr Stefánsson	stefan@ru.is
Hallgrímur Arnalds	hallgrimur@ru.is

1.3.4 Examiner

Guðný Ragna Jónsdóttir	gudnyragnaj@gmail.com

1.4 Ownership

A customer of SalesCloud brought this idea in the summer of 2021 and the owner of SalesCloud decided to act upon it. The customer worked in a restaurant using SalesCloud services. The product relies on SalesCloud's API, database, and facilities. Therefore, SalesCloud has full ownership of the product.

1.5 Work Agreement

1.5.1 Methodology

This project will be developed using **SCRUM**. The team will hold sprint planning meetings in person at the beginning of each sprint and sprint retrospectives at the end of each sprint. The team will communicate through communication and scheduling software.

Facebook Messenger for discussion about meetings, non-task related questions and potential vacancy.

ClickUp for task progress. All tasks must be listed in ClickUp. Their progress may be tracked by team members assigning themselves to the task and moving them to the “in progress” column. Picture for reference:

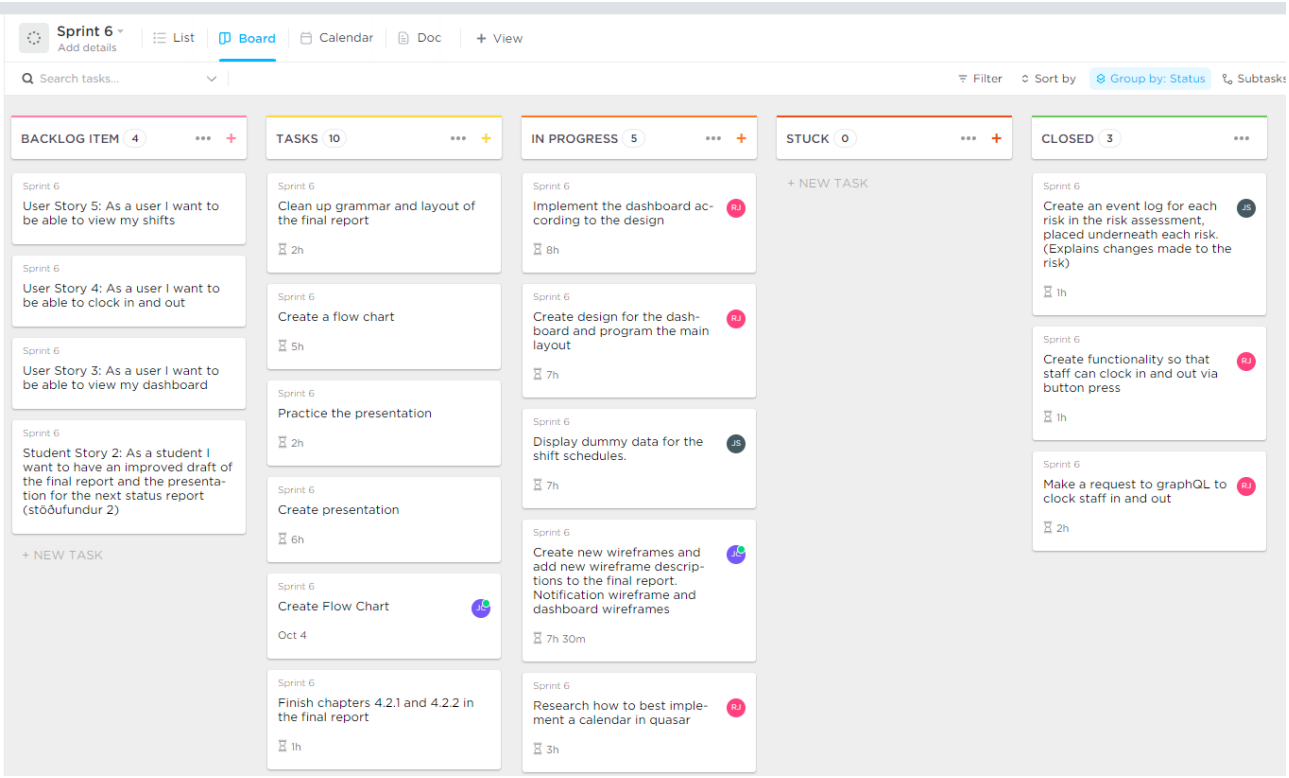


Figure 1 - Screenshot of sprint 6 tasks set up in ClickUp

E-mail shall be used to contact the instructors and the examiner.

1.5.1.1 SCRUM Roles

Product Owner: Helgi Jónsson
He must accept all requirements and design decisions made to the product.

Scrum Master
Originally held equally amongst the members. However, Jóhann Markús Chun was later appointed permanent Scrum Master as the team felt it necessary to further delegate tasks.

Backup Scrum Master
Jón Helgi Steingrímsson was appointed backup Scrum Master in case Jóhann was unavailable for Sprint Planning or Sprint Retrospective meetings.

1.5.2 Work Schedule

The team is scheduled to meet 10:00 – 17:00 every weekday. Rúnar is unable to work on the project on Wednesdays and Jóhann is unable to work on Fridays. They require these days to work on other university classes. All members are to be present on Monday, Tuesday, and Thursday.

Availability:

Blue: Everyone is available

Yellow: Rúnar unavailable

Red: Jóhann unavailable

<table>
<tr><th>Time</th><th>Monday</th><th>Tuesday</th><th>Wednesday</th><th>Thursday</th><th>Friday</th></tr>
<tr><td>9:00</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>10:00</td><td>Sprint Retrospective</td><td>Everyone meets at SalesCloud</td><td>Jóhann and Jón meet at SalesCloud</td><td>Everyone meets at SalesCloud</td><td>Jón and Rúnar meet at SalesCloud</td></tr>
<tr><td>11:00</td><td>Meeting with SalesCloud</td><td rowspan="4">Work on tasks</td><td rowspan="4">Work on tasks</td><td rowspan="3">Work on tasks</td><td rowspan="4">Work on tasks</td></tr>
<tr><td>12:00</td><td rowspan="4">Sprint Planning</td></tr>
<tr><td>13:00</td></tr>
<tr><td>14:00</td></tr>
<tr><td>15:00</td><td></td><td rowspan="2">Standup meeting</td><td></td></tr>
<tr><td>16:00</td><td></td><td>Standup meeting when necessary</td><td>Standup meeting when necessary</td><td></td><td>Standup meeting when necessary</td></tr>
<tr><td>17:00</td><td></td><td></td><td></td><td>Instructor meeting: Stefán</td><td></td></tr>
</table>

Figure 2 - Schedule depicting how the team plans to meet up each week.

1.6 Risk Assessment

The table below lists possible events that may occur, the risk they present, and how to handle and prevent them. They are ordered by two factors. Each of these factors are rated by the team on a scale from 1 to 5. The factors, Likelihood, and Impact are multiplied together to form the Risk Score product. The Risk Score is used to sort the list with the highest score listed at the top.

The responses have been considered by the team such that, if an event were to occur, there is a team member responsible. This team member is not in all cases solely responsible for solving the problem themselves. However, they are responsible for handling the reduction and prevention of the risk.

The list is a living file, meaning it has been edited continuously over the course of the project. The list is reordered by Risk Score when the Likelihood or Impact of an event is changed.

Risk ID	Risk Description	Likelihood (1-5)	Impact (1-5)	Risk Score (Likelihood * Impact)	How to prevent	How to handle	Responsibility	Comments
1	SalesCloud fails to provide a shift scheduling backend.	3	5	**15**	Have regular meetings with Helgi the owner of SalesCloud to keep on track of the progress their side.	We work together with a member of SalesCloud to implement the Calendar ourselves.	Rúnar	For the users to see their shift there needs to be a calendar object set up on the SalesCloud admin (backend) page.
	Event Log: **Sep. 30th:** Risk added. We realized we hadn't properly thought about what would happen if SalesCloud doesn't provide us with what we need.							
2	The project is too large.	4	3	**12**	Make a detailed scope of the project early on. Keep track of tasks, stories and hourly projections so that we know how much work there is to	Take some time to look over the requirements, project description, instructor notes/documents and comments to determine and reevaluate scope, tasks and progress.	Johann	Each member should keep a personal track of their progress, but the scrum master (johann) is responsible for the team, and scope.

Risk ID	Risk Description	Likelihood (1-5)	Impact (1-5)	Risk Score (Likelihood * Impact)	How to prevent	How to handle	Responsibility	Comments
					do, how much work we have done and how much we have left.			
	Event Log: **Sep 30th:** Risk added. We decided that our grand idea was too big to implement in one semester and decided to remove one of the features to reduce the workload							
3	SalesCloud API becomes inaccessible.	2	5	**10**	Speak to the owner of SalesCloud to add the Hero data from the graph into his backup drivers in case the first graph crashed.	Contact SalesCloud and use a locally run web API (graph) to debug.	Rúnar	
	Event Log: **Aug 30th:** Risk Added. Sep. 30th: Risk impact and likelihood re-evaluated.							
4	Quasar proves to be more difficult and time consuming than expected.	2	3	**6**	Spend time early on researching and testing programs in quasar in order to get a firm grasp of the framework.	Contact a member of SalesCloud which has experience with quasar for guidance.	Rúnar	Rúnar is the most familiar with the SalesCloud staff and can easily contact the company to get information.
	Event Log: **Aug 30th:** Risk added.							
5	We lose track of our progress, hours, and scheduling of tasks.	3	2	**6**	Jon reminds the other team members to clock in and out and schedule their hours accordingly at the end of every	Meet as a group to discuss the events that have taken place in the recent weeks and allocate the appropriate number of hours to each task and subject for each member.	Jón	

Risk ID	Risk Description	Likelihood (1-5)	Impact (1-5)	Risk Score (Likelihood * Impact)	How to prevent	How to handle	Responsibility	Comments
					day. We review these together at the end of every sprint.			
	Event Log: **Sep 30th:** Risk added.							
6	Team member becomes unavailable.	3	2	**6**	N/A	Take over their work and lessen the load over all by limiting requirements.	Jón	Some illnesses and events are not preventable but can be dealt with by tightening scope and lessening requirements.
	Event Log: **Aug 30th:** Risk added. **Nov 2nd:** Risk experienced. Jón had to take a 3-week course alongside the final project to graduate this semester. This led to him having less time to work on the project during the usual meet up hours for the remaining weeks, but he will keep working as much as possible on the project alongside the 3-week course.							
7	Team is unable to meet at the same time	2	2	**4**	Follow a team schedule to find the best available times for everyone to meet	Team members work from home or wherever they can to do their work	Jóhann	
	Event Log: **Aug 30th:** Risk added.							
8	Dependency errors after merging branches	2	2	**4**	Make sure all team members install the required dependencies after merging branches	Reinstall the repositories and the dependencies	Rúnar	
	Event Log: **Oct 11th:** Risk added after experiencing said problem.							

Risk ID	Risk Description	Likelihood (1-5)	Impact (1-5)	Risk Score (Likelihood * Impact)	How to prevent	How to handle	Responsibility	Comments
10	The Scrum master becomes unavailable	1	2	**2**	Assign a backup scrum master to take over for the main for the main scrum master	Backup Scrum Master Rúnar will fulfill the main Scrum Master's duties	Rúnar	
	Event Log: **Oct 29th:** Risk added.							
9	Team member loses all their progress and data on their computer.	1	1	**1**	Commit regularly and store important files on a cloud service. Keep computer up to date.	Setup team member on another computer and have them clone the data from the repositories while waiting to restore their computer.	Jóhann	Each individual person is responsible for keeping their computer in good condition and saving their documents to the team's allotted drive.
	Event Log: **Aug 30th:** Risk added.							

Figure 3 - Risk assessment breaking down each risk in detail

2 Requirement Analysis

2.1 SalesCloud's Requirements

SalesCloud is providing their scheduling and graph API.

For deployment the project relies on SalesCloud's implementation of a scheduling API and database.

The product is structured to operate without their backend by using dummy data within a database hosted on a member's computer. This decision was made in accordance with the Risk Assessment.

2.2 Initial Interviews

A few interviews were taken initially to gauge customers' interest in the product. The team intended to determine which solutions were currently being used for scheduling staff work shifts and reducing management hours spent gathering information for their employees.

For the purpose of the interview the restaurants needed to be customers of SalesCloud. A range of employees were interviewed to get as much variety of feedback as possible. The positions interviewed include cashier, waitress, shift manager, general manager, and owner.

2.2.1 Interview Questions

- How are you organizing your work schedules?
- What do you feel could be different or improved when making the work schedules?
- How do you keep track of your work schedules?
- How do you feel about being able to clock in and out using a QR-code at work?
- How do you contact your employees?
- How do you keep track of each employee's sick and vacation days?
- What do you find to be the most difficult about creating the work schedules or handling your employees?
- What are the most common questions you get from your employee's concerning their salary, work schedules and rights?
- What would you want to see implemented in our scheduling app?

2.2.2 Interview Results

Restaurants Interviewed

Pronto Pasta, Svala, YUZU, and Hipstur.

Results Summary

Every restaurant interviewed was currently using Sling and My Time Plan for shift scheduling. The most common problems with Sling and My Time Plan according to the interviewees were:

- My Time Plan information is “all over the place”: distributed information.
- Multiple locations to look at a shift plan: it’s not clear which shift is in which location
- System should notify the worker that they have not clocked out
- Color variations not clearly representing different companies and positions
- Not enough notifications: when an employee take a shift that goes over overtime hours, when an employee asks for a shift to be taken

A restaurant owner also emphasized how much time went into managing the shift schedule and hours of each staff member.

2.3 Product Backlog

The product backlog is a prioritized list of User Stories for the development team. The most important items are shown at the top of the product backlog, so the team knows what to deliver first.

2.3.1 Product Backlog Column Definitions

2.3.1.1 Number

User stories are ordered solely by this column. The number 1 user story is thereby the most important story and is placed at the top of the list.

2.3.1.2 Category

	Description
Student	Stories relating directly to the school: project documentation, meetings, and presentations.
User	Stories relating directly to the product development: Hero Application.

2.3.1.3 Story

An informal, general explanation of a software feature written from the perspective of the student or end user as listed in the Category table above.

A description of an end goal not a feature.

2.3.1.4 Definition of Done

An agreed-upon set of conditions and/or tasks which must be completed before a story can be considered complete. If a member communicates to the team that a story is done, then each team member may know that the Definition of Done has been fulfilled.

2.3.1.5 Grade

	Description
A	Stories which must be completed by December 10th.
B	Stories which should be completed by December 10th.
C	Stories which would be nice to complete by December 10th.

2.3.1.6 Story Points

Story points are an abstract unit. They indicate the general complexity, difficulty, and time requirement of each story.

2.3.1.7 Completed

Completed column is only marked off once the solution a member creates satisfies the Definition of Done column.

2.3.2 Product Backlog Table

Number	Category	Story	Definition of Done	Grade	Story Points	Completed
1	Student	As a student I want to have a draft of the final report ready for the instructor at the end of sprint 5	The report fulfills the requirements listed in the document "handhægar upplýsingar fyrir nemendur (2)".pdf provided by the instructors at the start of the semester.	**A**	**4**	TRUE
2	Student	As a student I want to have an improved draft of the final report and the presentation ready for the next status report (stöðufundur 2)	We have made and updated each document and rehearsed the presentation	**A**	**4**	TRUE
3	User	As a user I want to be able to create an account	When I open the app, I can click the create account button and then fill in all the information required and have my account created	**A**	**3**	TRUE
4	User	As a user I want to be able to view my shifts	When I press the shifts button, I am brought to the shifts schedule screen where I can see all of my upcoming shifts, who is working with me and all shifts I have from all places I work in	**A**	**3**	TRUE
5	User	As a user I want to be able to clock in and out	When I press the clock in or out button, then the time I clocked in or out is added into the database	**A**	**1**	TRUE
6	User	As a user I want to be able to log in with an email and phone number	When I enter my login credentials and press the login button, I load into the dashboard with my account	**A**	**2**	TRUE
7	User	As a user I want to be able to log out of my account	When I press the logout button in the menu list or the profile screen, I am logged out and brought to the login screen	**A**	**1**	TRUE
8	User	As a user I want to be able to view and edit my profile	When I press the profile button, I am brought to the profile page, and I can view and edit my profile information	**A**	**1**	TRUE

Number	Category	Story	Definition of Done	Grade	Story Points	Completed
9	Student	As a student I want to reformat the report according to comments from the instructor and examiner.	The report has been reorganized and spell checked as according to the comments mentioned from the instructors and examiners at the third status meeting.	**A**	**1**	TRUE
10	User	As a user I want to have authentication and verification while using the application so that other people may not have access to my account.	The user can connect to their account pertaining to each organization via the login page by entering the valid organization name, email and phone number. The application will register an authentication for my account so that I may use the app for that organization.	**A**	**2**	TRUE
11	User	As a user I want to be able to edit and create a work profile	When I press the wages button from the dashboard, I am able to make a new work profile, edit my specifics and view my contract, my pay slip (work hours) and contract	**A**	**3**	TRUE
12	User	As a user I want the product to have been tested to know that my requirements for the application are met	Interviews are structured then conducted with formal questions and tasks inquiring about the user's ability and overall experience. Project members then meet and discuss feedback and determine which features to edit, add or remove.	**A**	**2**	TRUE
13	User	As a user I want to be able to run, use and update the application without risk of it failing.	Unit tests have been created to intercept bugs and errors which may hinder the usability of the product.	**A**	**3**	TRUE
14	User	As a user I want to get all the latest features and updates as soon as possible.	CI/CD has been set up such that when a change is committed to the master branch, the repository rebuilds the application and runs unit tests.	**A**	**3**	
15	User	As a user I want the application to be visually pleasing	All pages have been styled and colored	**A**	**2**	TRUE

Number	Category	Story	Definition of Done	Grade	Story Points	Completed
16	User	As a user I want to be able to switch to another organization that I am working at	When I change the workplace selected in the home screen or the shift schedule screen, then all the information displayed is updated to display that organizations information	**A**	**3**	TRUE
17	User	As a user I want to be able to view my union rights	When I press the Rights button, I can view my rights	**B**	**1**	TRUE
18	User	As a user I want to be able to see my notifications	When I click the notifications tab it shows me all the notifications that I have received.	**B**	**3**	
19	User	As a user I want to be able to notify my next shift that I am sick	When I view my shifts, I can press a shift to see more information and mark myself as sick for that shift.	**B**	**2**	
20	User	As a user I want to be able to change my password	When I press the forgot password button on the login screen or the change password button on the profile screen, I am sent an email to reset my password	**B**	**3**	
21	User	As a user I want to be able to view and edit my contract	When I click on the wages button and then the my contract button I can view my current contract with the selected company	**B**	**2**	
22	User	As a user I want to be able to see who's working with me	When I view my shift schedule, I can press the My Team button to see what other co-workers will be working with me on the shift for each individual day	**B**	**1**	
23	User	As a user I want to be able to see other people's profiles in the company	When I click on the image of my colleague's profile, I can view their profile	**C**	**2**	
24	User	As a user I want to be able to message my co-workers	When I press the messages button, I am brought to the message board where I can see my coworkers and message them individually	**C**	**3**	Out of Scope
25	User	As a user I want to be able to edit my	When I press the wages button and then the work summary button, I can request confirmation on	**C**	**2**	

Number	Category	Story	Definition of Done	Grade	Story Points	Completed
		hours worked for a certain shift.	edits to the hours spent for a certain shift			
26	User	As a user I want to be able to see which positions I hold in the company. (Chef, waiter, manager, etc.)	When I am viewing my profile, I can click the “my workplaces” button and see which positions I hold in the company	**C**	**1**	

2.4 Use Cases

Use Cases were used as a way for the team to further describe user stories from the product backlog table. The value of having preconditions, base flows and alternative flows were deemed useful as a tool to connect user stories and related code functionality.

The use case tables below will be updated along with the product backlog. This method ensures that all team members have a deeper agreed understanding of each user story increasing the amount of time each member may work independently on the product.

Name	As a user I want to be able to login with an email and password
Number	1
Priority	A
Precondition	N/A
Description (Base Flow)	User inputs email and password and presses the login button on the login screen
Alternative flow	User is not registered and cannot log in. User must create/register and account (see use case 6)
Post condition	User is logged in and can be identified by his account id
Source (Requirements)	N/A
Actors	All
Author(s)	Jón

Name	As a user I want to be able to log out of my account
Number	2
Priority	A
Precondition	User is logged in
Description (Base Flow)	User presses the log out button or closes the app entirely
Alternative flow	
Post condition	The user is logged out
Source (Requirements)	1
Actors	All
Author(s)	Jón

Name	As a user I want to be able to clock in and out
Number	3
Priority	A
Precondition	User is logged in
Description (Base Flow)	User presses the clock in button when they arrive at work and then the clock out button when they finish his/her shift. (Same button for both actions)
Alternative flow	N/A
Post condition	Users clock in and/or out times are submitted to the database.
Source (Requirements)	1
Actors	Employee / Owner
Author(s)	Jón

Name	As a user I want to be able to view and edit my profile
Number	4
Priority	A
Precondition	User is logged in
Description (Base Flow)	User selects the profile page
Alternative flow	User selects any profile information section to edit (such as phone number, email, etc.)
Post condition	User views his/her profile information and can see that his/her edits have been updated
Source (Requirements)	1
Actors	All
Author(s)	Jón

Name	As a user I want to be able to view my shifts
Number	5
Priority	A
Precondition	User is logged in User has been assigned shifts
Description (Base Flow)	User selects the shifts/calendar page
Alternative flow	N/A
Post condition	User can view his/her shifts for each day
Source (Requirements)	1, 7
Actors	Employee
Author(s)	Jón

Name	As a user I want to be able to create an account
Number	6
Priority	A
Precondition	N/A
Description (Base Flow)	User installs the app and opens it. They are then brought to the login screen where they can press the create account/register button which brings her to the register page. User then fills in the required information and presses the register button to create the account
Alternative flow	Users account information is invalid or possibly already in use. User must edit the information and try again.
Post condition	User creates an account and is brought to the login page.
Source (Requirements)	N/A
Actors	All
Author(s)	Jón

Name	As an admin I want to be able to see, edit, accept, and reject work hours requests from employees.
Number	7
Priority	A
Precondition	Admin/Owner is logged in to the admin page
Description (Base Flow)	Admin views the overview requests from his/her employees and accepts, rejects or edits them.
Alternative flow	
Post condition	Employees are notified of the admins/owner's response to their requests
Source (Requirements)	1
Actors	Owner/Admin
Author(s)	Jón

Name	As a user I want to be able to easily interpret the product interface, such that navigation is kept simple
Number	8
Priority	A
Precondition	User is logged in
Description (Base Flow)	User sees all the tabs with descriptive names and pictures and selects whichever tab/page that they want to view
Alternative flow	
Post condition	User is brought to whichever tab/page that they selected
Source (Requirements)	1
Actors	All
Author(s)	Jón

Name	As a user I want to be able to see my notifications
Number	9
Priority	B
Precondition	User is logged in
Description (Base Flow)	User selects the notification tab/page
Alternative flow	
Post condition	All the users' notifications are listed on the page
Source (Requirements)	1
Actors	All
Author(s)	Jón

Name	As a user I want to be able to notify my next shift that I am sick
Number	10
Priority	B
Precondition	User is logged in User has been assigned shifts
Description (Base Flow)	User selects his shift schedule page and selects the shift that he is going to call in sick for. User then presses the call-in sick button to notify other workers and owners
Alternative flow	
Post condition	Owner and other employees on the same shift are notified that the user is sick for this shift
Source (Requirements)	1
Actors	Employee
Author(s)	Jón

Name	As a user I want to be able to view how many hours I have worked for the month
Number	11
Priority	B
Precondition	User is logged in User has been assigned shifts User has clocked in and out for the shifts
Description (Base Flow)	User selects the work hours page on the dashboard
Alternative flow	
Post condition	User can view how many hours they have worked throughout this month. (Hours are split into categories)
Source (Requirements)	1, 3
Actors	Employee/Owner
Author(s)	Jón

Name	As a user I want to be able to view my union rights
Number	12
Priority	B
Precondition	User is logged in
Description (Base Flow)	User selects the "my rights" tab/page which brings him/her to the "my rights" page and selects the union the user wants to see the rights for.
Alternative flow	User clicks on the link under the FAQ rights
Post condition	User can view the most FAQs for the selected union. If user clicks on the link for the rights, they are brought to a web browser where they can view more in-depth descriptions of all of the rights for the union
Source (Requirements)	1
Actors	Employee
Author(s)	Jón

Name	As a user I want to be able to change my password
Number	13
Priority	B
Precondition	User has an account
Description (Base Flow)	User selects the profile page or is viewing the login page and clicks on the reset password link. User is brought to the reset password page. User fills in his new password and clicks submit. User is sent an email confirming the password reset and clicks confirm
Alternative flow	
Post condition	User has updated his/her password and can login with the updated password
Source (Requirements)	
Actors	All
Author(s)	Jón

Name	As a user I want to be able to upload and view my contract
Number	14
Priority	B
Precondition	User has an account User is logged in
Description (Base Flow)	User selects the work profile tab/page and selects the MyContract button.
Alternative flow	Same as base case except if the user has not uploaded his contract, he can do so by pressing the upload file/picture button to upload his contract to the app
Post condition	User views his contract before and/or after uploading his/her contract
Source (Requirements)	1
Actors	Employee
Author(s)	Jón

Name	As a user I want to be able to see who’s working with me
Number	15
Priority	B
Precondition	User is logged in User has been assigned a shift
Description (Base Flow)	User selects his/her shift interface tab/page and is brought to the shift interface page. User then selects which shift they want to view.
Alternative flow	
Post condition	User can see all other employees that will be working during his/her shift
Source (Requirements)	1
Actors	All
Author(s)	Jón

Name	As a user I want to be able to view my colleagues’ profiles in the company through the work shift interface
Number	16
Priority	C
Precondition	User is logged in User has been assigned a shift
Description (Base Flow)	User selects the work shift tab/page and then clicks on the shift they want to view which displays information for that shift including other employee's that are working that shift. User then selects the employee's name who’s profile they wants to view
Alternative flow	
Post condition	User is brought to the co-worker’s profile page where they can view that co-workers profile information
Source (Requirements)	1
Actors	All
Author(s)	Jón

Name	As a user I want to be able to switch to another organization that I am working at
Number	17
Priority	C
Precondition	User is logged in User has multiple work profiles assigned to the different organizations
Description (Base Flow)	User clicks on the "Work Profile Interface" tab/page and then clicks on the work profile drop down menu where they can change which work profile, they want to view
Alternative flow	
Post condition	Users Work Profile Interface gets updated to display the information associated to the new work profile that was selected
Source (Requirements)	1
Actors	Employee
Author(s)	Jón

Name	As a user I want to be able to edit my hours worked for a certain shift.
Number	19
Priority	C
Precondition	User is logged in User was assigned a shift
Description (Base Flow)	User clicks on the "Work Profile Interface" tab/page and then selects the work summary button. User then selects the shift that they want to edit the hours to. User fills in the correct clock in and out times and then clicks submit.
Alternative flow	
Post condition	A notification is sent to the owner/admin to review the edit made to that shift. If the admin accepts the changes, then the hours are updated in the database otherwise there is no change made and the user is notified if the change was accepted or changed.
Source (Requirements)	1
Actors	Employee
Author(s)	Jón

Name	As a user I want to be able to view my pay slip
Number	20
Priority	C
Precondition	User is logged in
Description (Base Flow)	User selects the "pay slip" tab/page.
Alternative flow	
Post condition	User can view his pay slip information
Source (Requirements)	1
Actors	Employee
Author(s)	Jón

Name	As a user I want to be able to see which positions I hold in the company. (Chef, waiter, manager, etc.)
Number	21
Priority	C
Precondition	User is logged in User has a work profile assigned to an organization
Description (Base Flow)	User selects the "Work Profile Interface" tab/page
Alternative flow	
Post condition	User can view what position they hold in the company
Source (Requirements)	1
Actors	All
Author(s)	Jón

3 Design

3.1 Decision Protocol

All important decisions which affect the design of the product, structure or company must be documented in the Decision Protocol below. This list is an unordered list.

ID	Decision	Reason
1	Outside applications will not be considered for the shift planning feature of the app.	Product owner requirement.
2	Student Stories are to be created as a form of user stories to add scheduling to our sprint backlogs.	Created to make a clear difference between which stories relate to the product and which relate only to the academic portion of the project.
3	We will use Vue 2.x and Quasar 2.x	Product owner requirement.
4	The messenger part of the application is defined out of scope.	Time constraints, messenger functionality requires too much time in comparison to its importance.
5	Flowcharts and detailed wireframes suffice for describing minimum viable detail of the product.	Reduce time spent on unnecessary documentation.
6	Data retrieved from SalesCloud’s API will be mocked in case SalesCloud does not provide the functionality required for the product.	Primary risk in risk assessment. The product must be able to function regardless of SalesCloud's disposition.

3.2 Architecture

3.2.1 Overview

The product will be developed using Quasar, Node JS, GraphQL and mongoDB. The product is required to use the languages and frameworks by SalesCloud. The product, Hero, is written using GraphQL API to fetch data from the mongoDB database. Quasar, a framework on top of view, will be used to display the data as a mobile application. Any method not provided by the SalesCloud API is written in Node JS as per GraphQL logic.

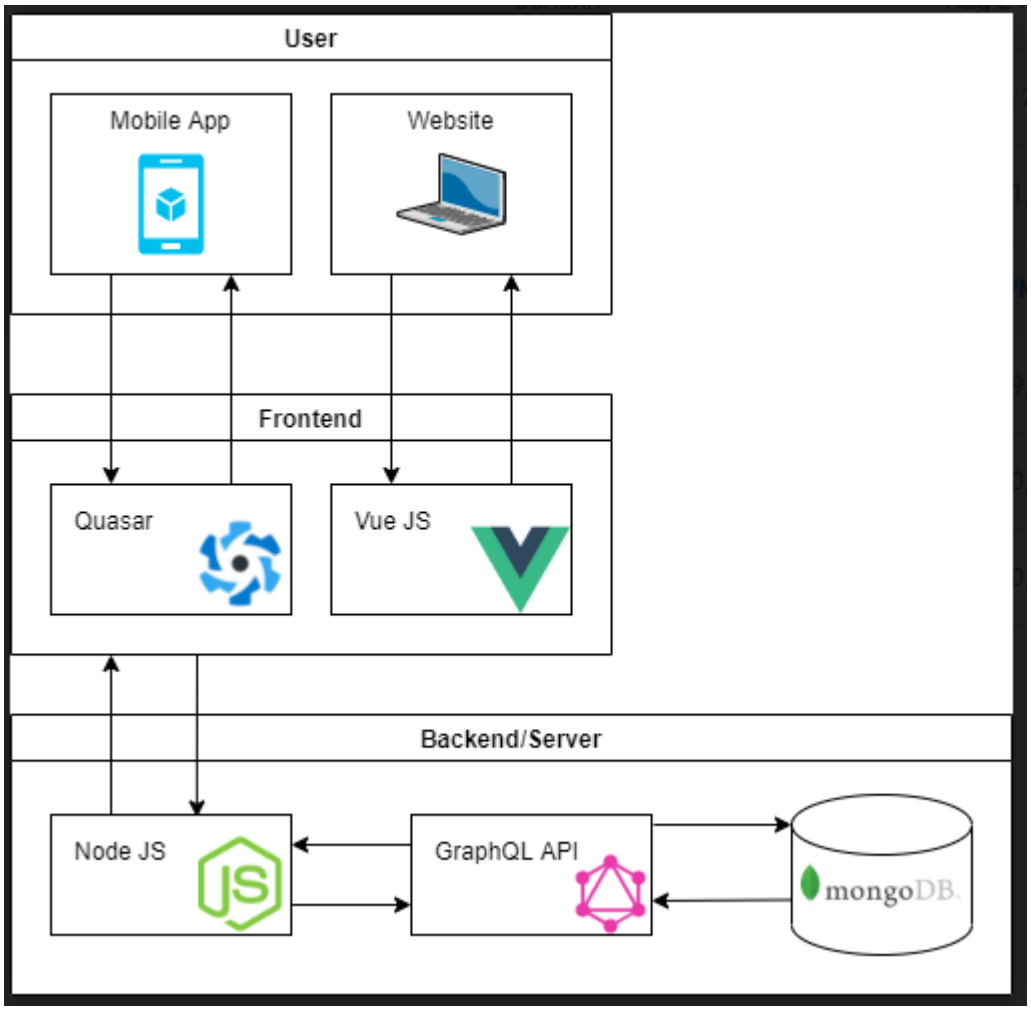
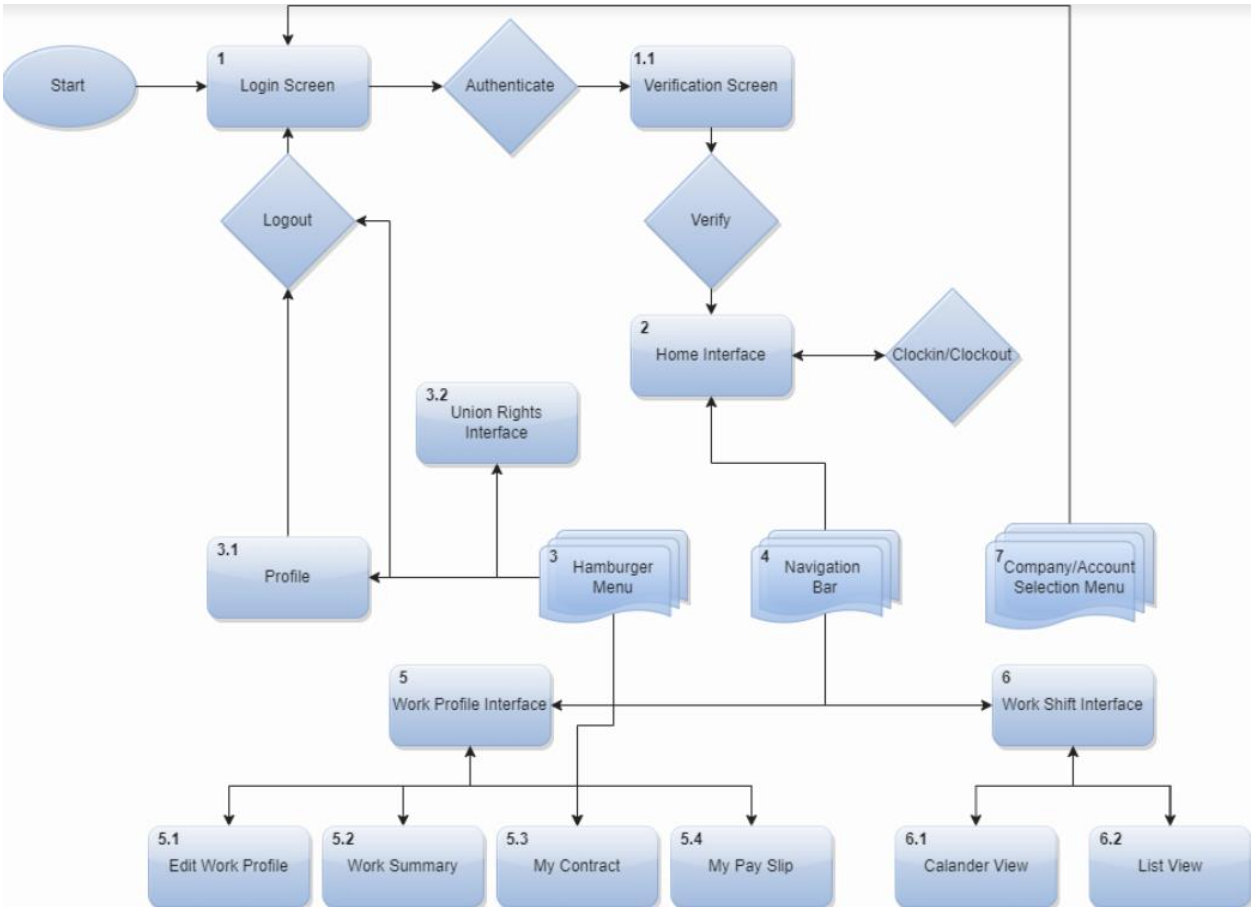


Figure 4 - Visual representation of the tech stack used for this project

3.3 Flowchart

3.3.1 Description

The flowchart represents how a user may navigate through the application. Each rectangle represents an entity (screen or interface). Diamonds represent actions the user may take from their respective entities. The flow of the application is determined by which piece of information the user would like to see at any given time. The flowchart may be used to help visualize the connection between different features.



3.3.2 Menus

The below menus are accessible from all other entities in the flowchart save entities 1 *Login Screen* and 1.1 *Verification Screen.* This subchapter aims to clarify the flowchart as different flowchart versions proved to be over complicated when connecting menus.

3.4 Wireframes

Wireframes present the functionality of the product in a visual manner for each member to refer to later. They help remind us of functionality and design when programming product functionality. The wireframes below are high fidelity wireframes but are not to be taken as a 100% accurate depiction of the final product.

After discussion in sprint 5 the team deemed that the message board functionality of the product was out of scope. The relevant wireframes were kept in the report to accurately depict the teams initial progress and decision.

The wireframes have been sorted into subchapters as per the functionality described in the project description.

3.4.1 Home Interface

Home Interface flowchart

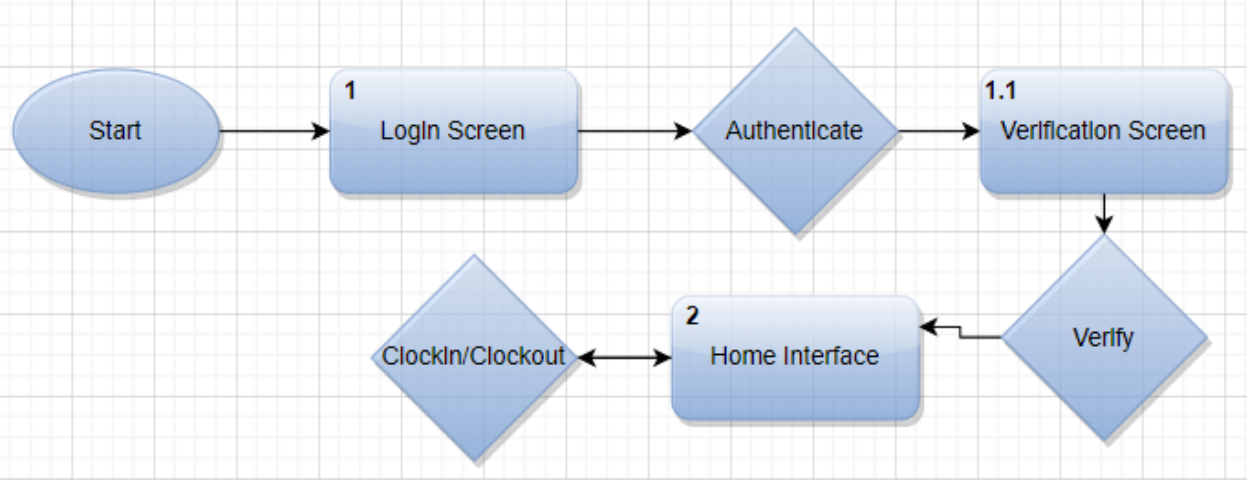


Figure 5 - Relevant portion of the flowchart in chapter 3.3 repeated for convenience

The application opens to a login screen. From here the product follows a familiar form allowing the user to login via email, ask to reset password via the forgot your password section or create an account. At this point the product is intended to be used via email registry. A user will download the application via their email. A company may then send a request to the user via their email to join their company. When a user joins a company, it will allow them to see shifts assigned to them via the company. The company may create shifts for their user via the SalesCloud admin page.

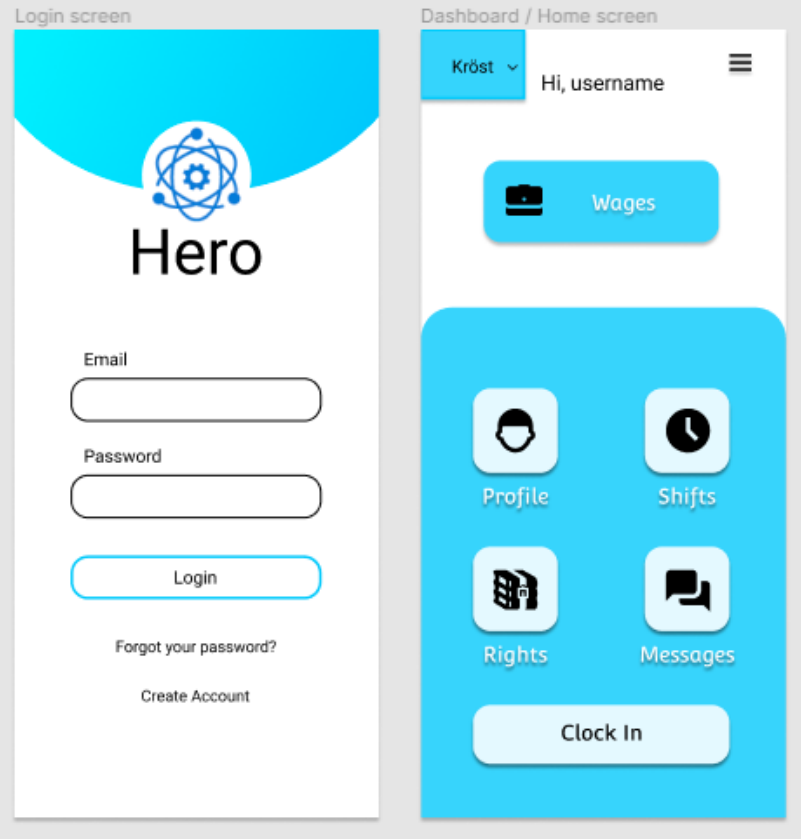


Figure 6 - Wireframes for login screen and home dashboard interface

Once the user is logged in, they are greeted with a dashboard. The dashboard wireframe shows the main functions the product will offer. Those categories are wages, profile, shifts, rights, and clock in functionality. Note that “messages” functionality was determined out of scope in [sprint 5](#).

Wireframes 1 - Company (account) selection and menu options

The dashboard has two drop-down menus which demonstrate important initial design decisions.

The right hamburger menu allows the user to quickly move between the product's main functionalities and log out of their account. The intention being to emphasize simple and consistent design as per the product backlog.

The left menu allows the user to switch between workplaces. This decision required significant thought from the whole team as it later determined the design of both the "wages" and "shifts" functionalities. The exact importance will be discussed with the help of the following wireframes.

Final Product:

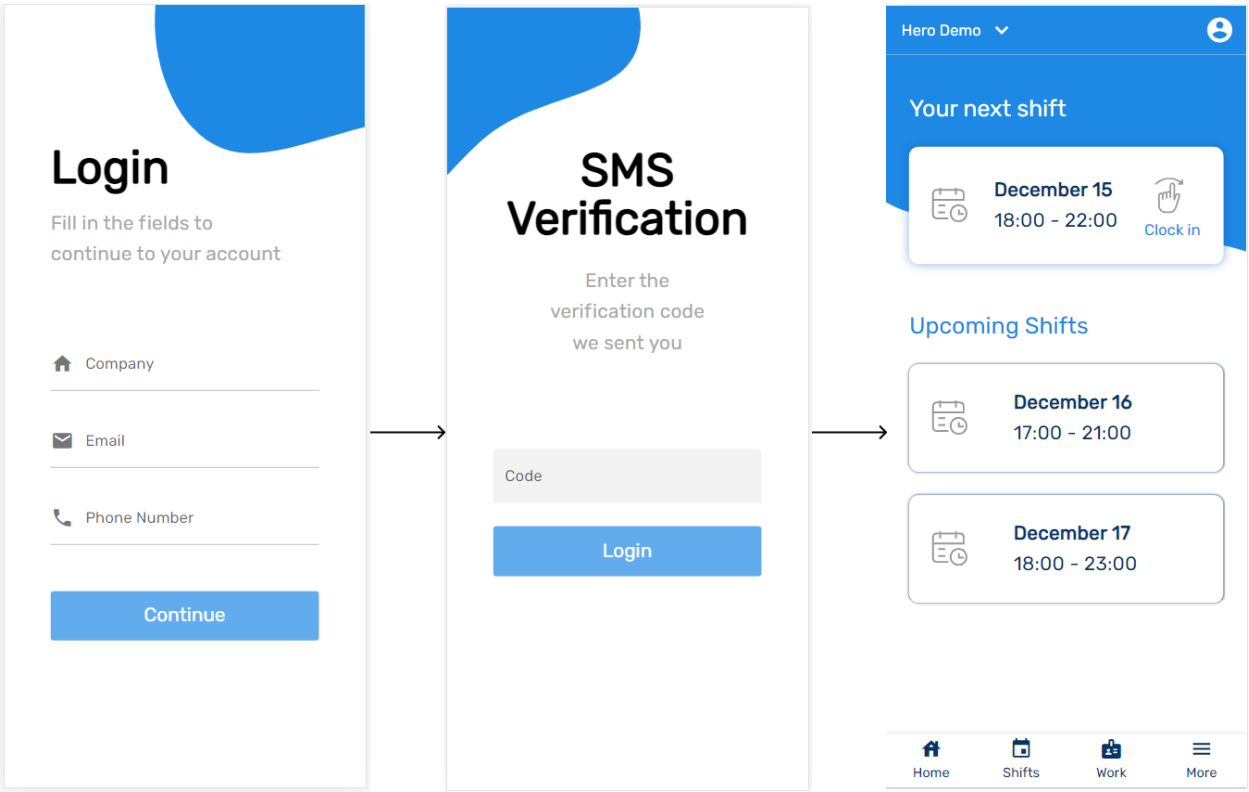


Figure 7 - Screenshots of the current application showing login, verification, and home interface

3.4.2 Work Profile Interface

3.4.2.1 Work Profile Interface

Work Profile flowchart

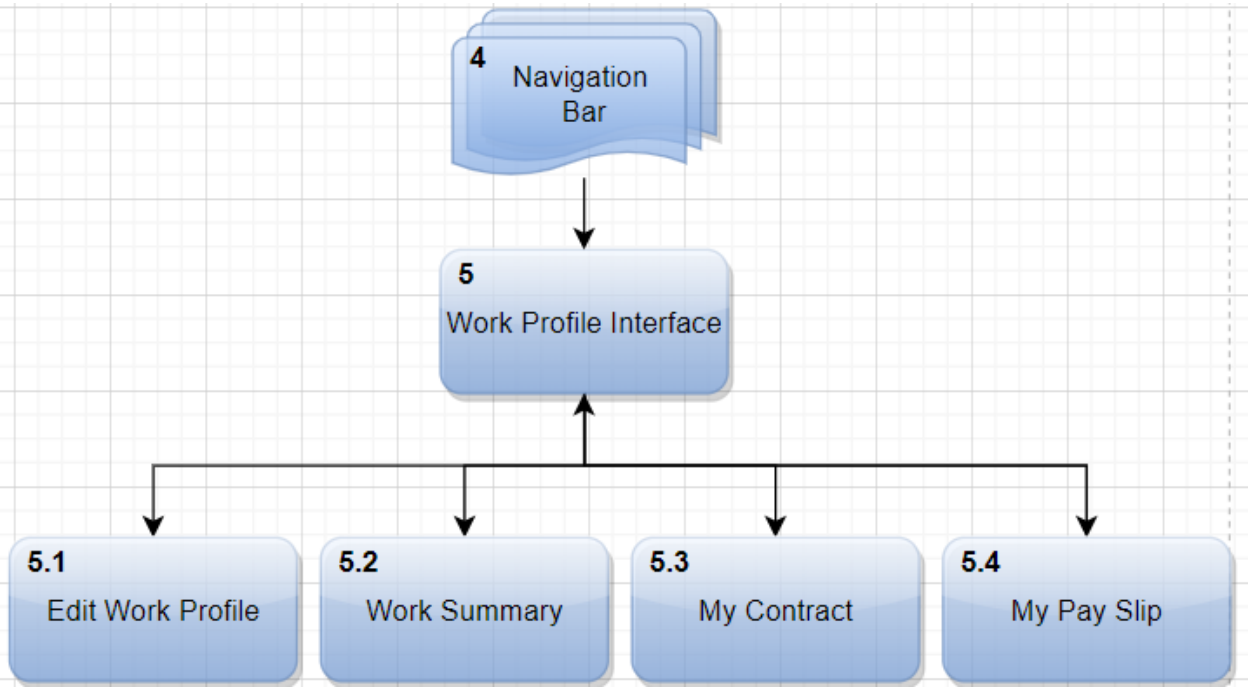
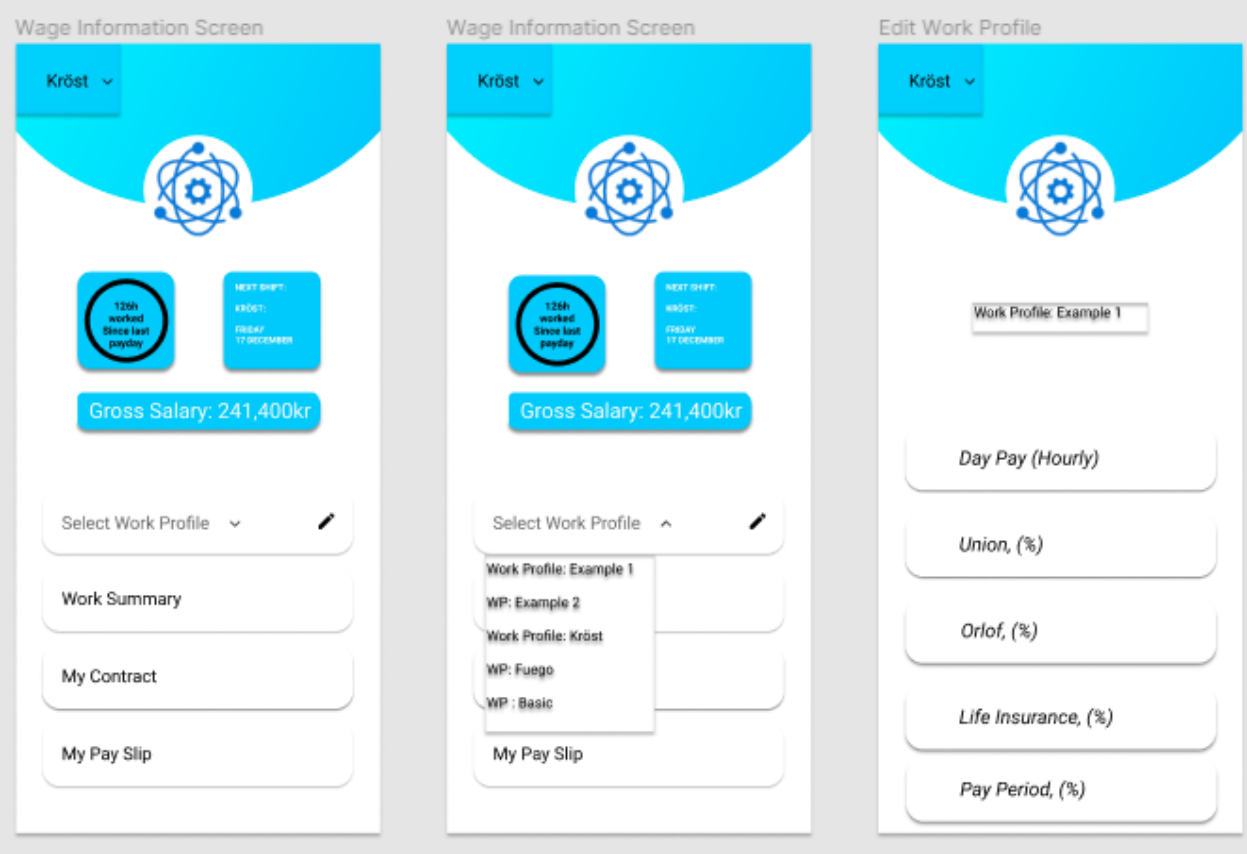


Figure 8 - Relevant portion of the flowchart in chapter 3.3 repeated for convenience

The Work Profile Interface shows a quick overview of hours worked since last payday, your next shift, and your gross salary earned since last payday. It allows the user to make, edit and select work profiles. The dashboard allows you to navigate through your work summary, contract and pay slip. The below wireframes demonstrate in order:

1. Left wireframe: which functionality shall be accessible from the Work Profile Interface.
2. Middle wireframe: how a user may select between work profiles connected to the company selected in the top left drop down menu discussed above. This initial design was intended to decouple work profiles and restaurants so that a worker may hold multiple positions within or outside of the company.
3. Right wireframe: which properties a work profile may have and that a user may edit. These fields will be used for calculations in the “My Pay Slip” feature.



Wireframes 2 - Work interface, profile selection and profile details

Final product:

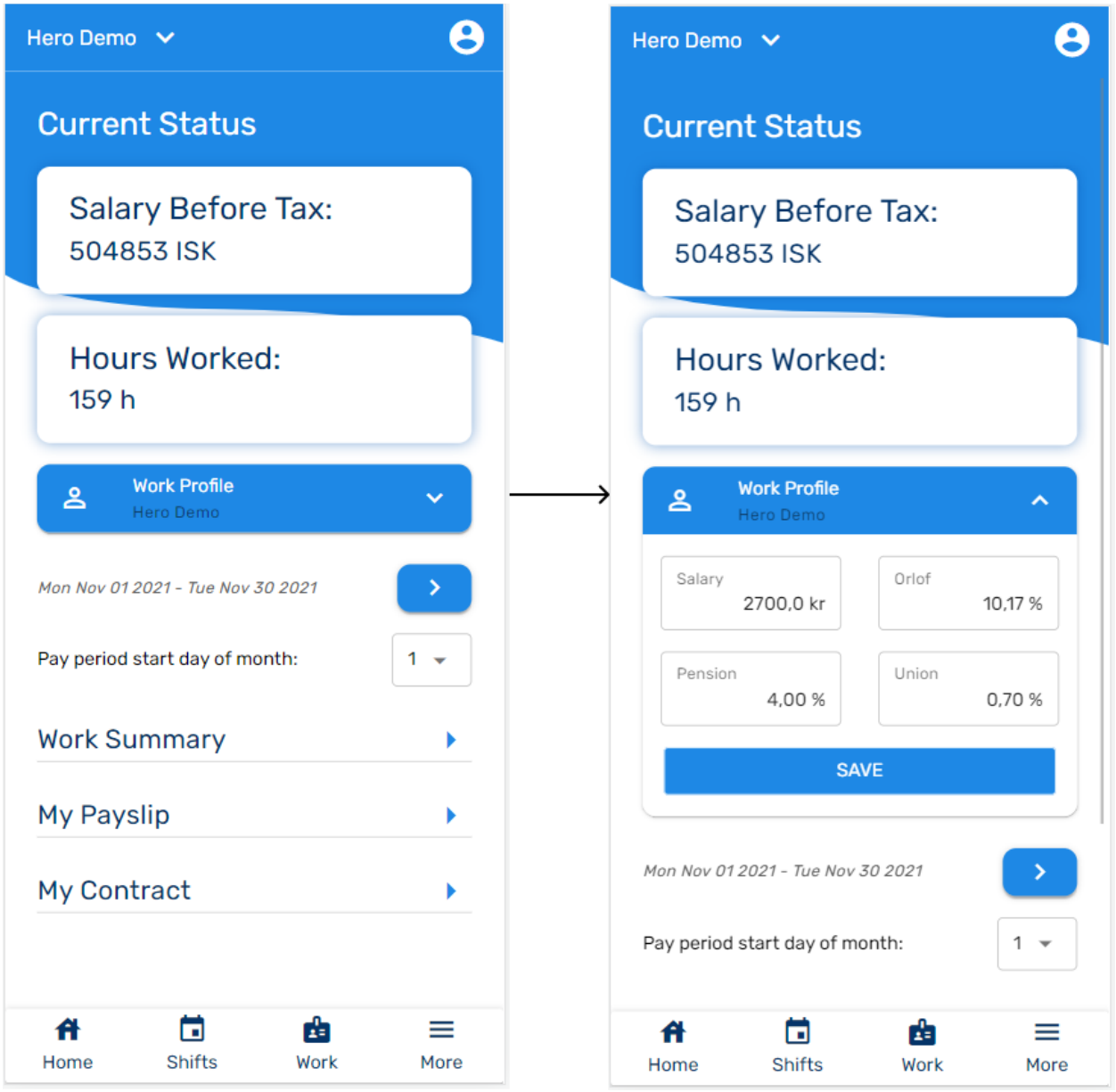


Figure 9 - Screenshots of the current application showing work interface and profile details

3.4.2.2 Work Summary

Work Summary flowchart

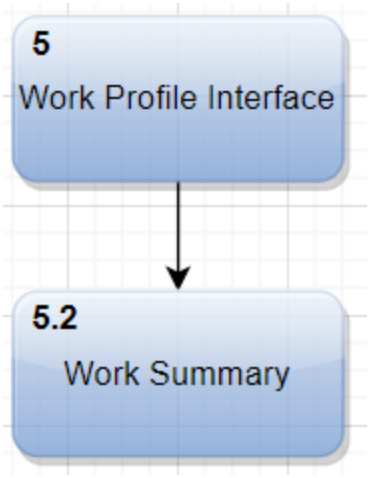
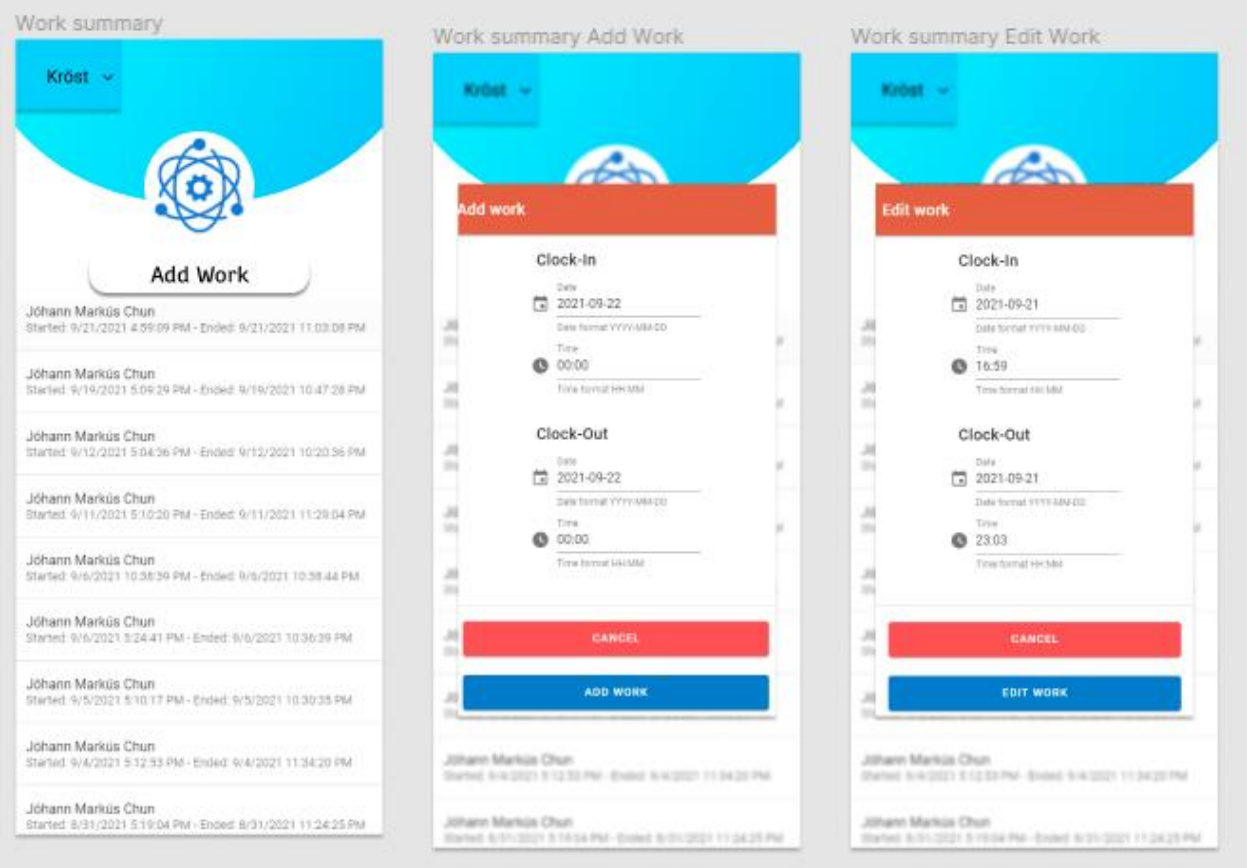


Figure 10 - Relevant portion of the flowchart in chapter 3.3 repeated for convenience

The first functionality available from the Work Profile Interface is the work summary. The work summary lists the work shifts within the selected work profile. Here the user may see the work shift hours logged by the clock in and clock out feature. Initial design includes the ability to add work and edit work. Adding work intends to reduce management hours by giving each user the ability to track and suggest their hours. If a user forgot to clock in, they may add work. If a user clocked in or out at an incorrect time, the user may edit work. Adding and editing work are suggestions, meaning, that an admin (manager) of the currently selected company may see a notification which they may accept or decline.



Wireframes 3 - Work interface features: work summary, adding and editing work

Final product:

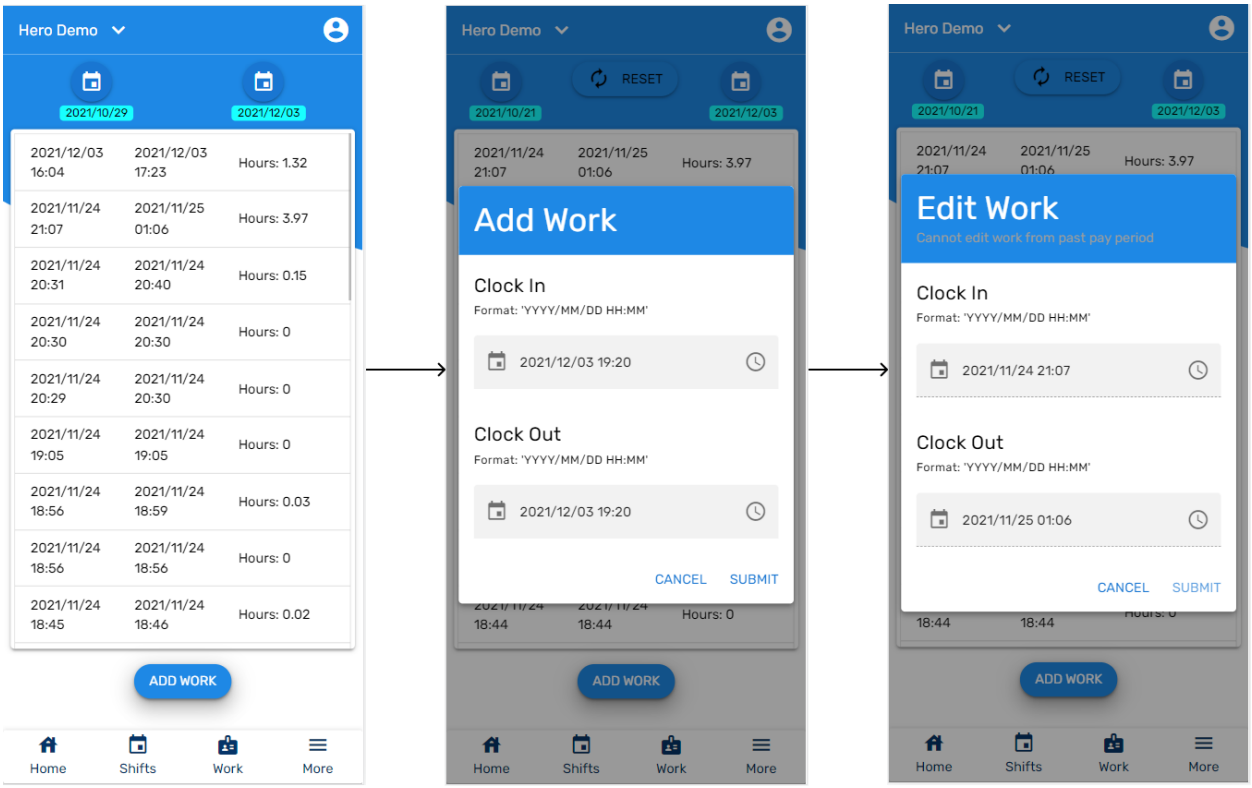


Figure 11 -Screenshots of the current application showing Work interface features: work summary, adding and editing work

3.4.2.3 My Contract

My Contract flowchart

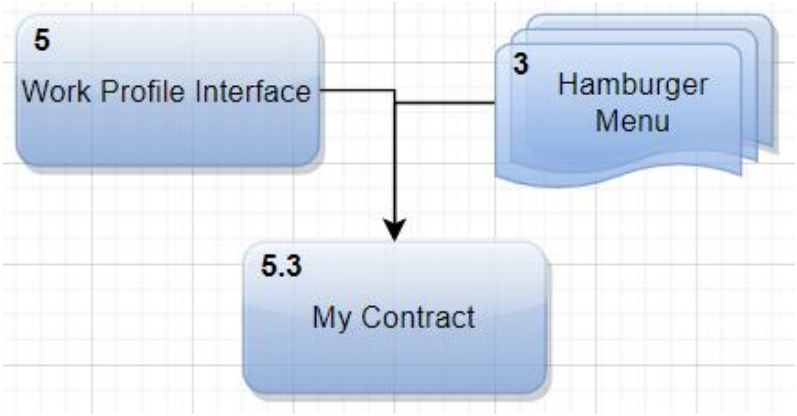
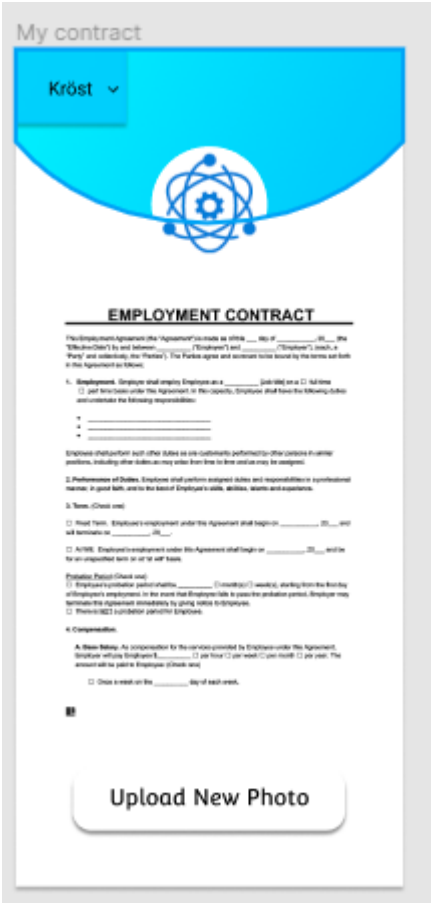


Figure 12 - Relevant portion of the flowchart in chapter 3.3 repeated for convenience

The second feature in the Work Profile Interface is the "My Contract" feature. This allows the user to upload images from their device to the application. This gives the user the ability to review their contract at any time in a location convenient to them. They may for example review their contract and update their work profile accordingly.



Wireframes 4 - My Contract design

3.4.2.4 Pay Slip

Pay Slip flowchart

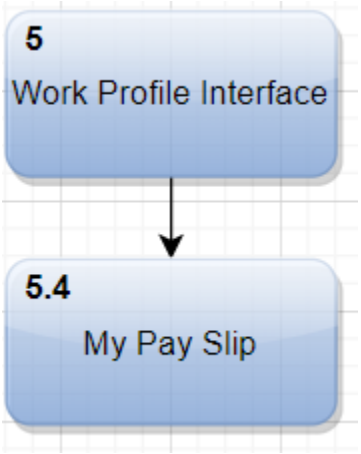


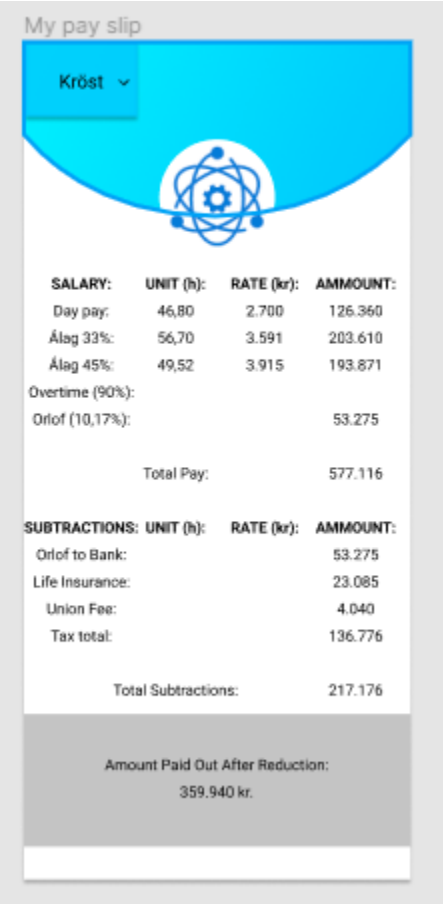
Figure 13 - Relevant portion of the flowchart in chapter 3.3 repeated for convenience

The third feature in the Work Profile Interface is the “Pay Slip” feature. The “Pay Slip” acts as a calculator using the information registered by the user in each work profile. It shows estimated pay based on their actual worked hours since their last pay period. The app fetches the breakout of hours worked during daytime, after 17:00, on weekends (or after 24:00), and overtime and calculates the Total Pay (gross pay). It then calculates the total amount of subtractions from orlof (holiday pay), pension, union, and taxes.

The result, total pay minus total subtractions, is then displayed by the product in a clear format for the user to see.

It is important to note that this feature is intended to be used as a calculator and an overview. The user may have a unique contract with their employer which the product does not address. The “Pay Slip” is not intended to be used as a direct substitute of the electronic pay slips provided by the employer.

Wireframe:



Wireframes 5 - Depiction of My Payslip feature

Final product:

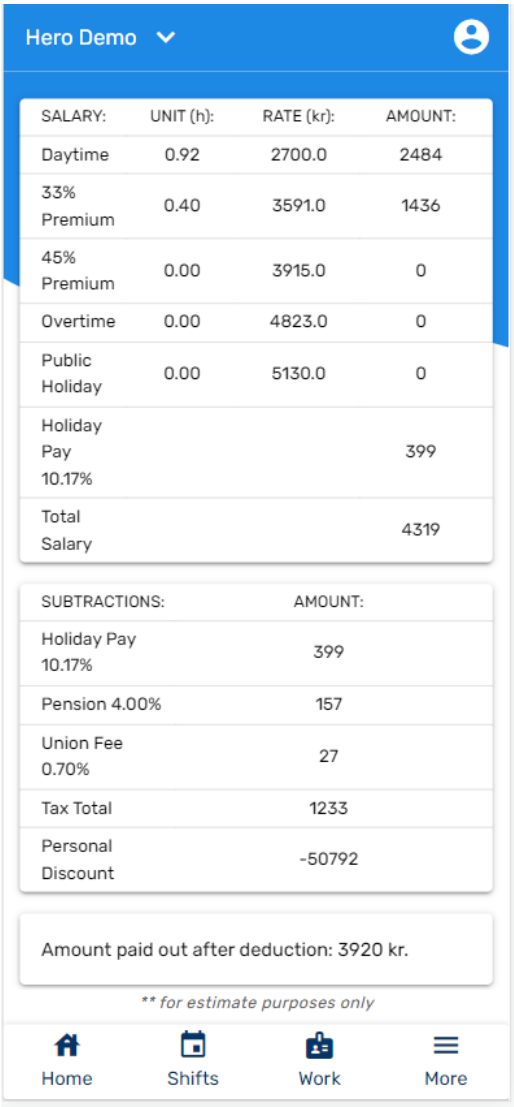


Figure 14 - Depiction of My Payslip feature

3.4.4 Work Shift Interface

Work Shift flowchart

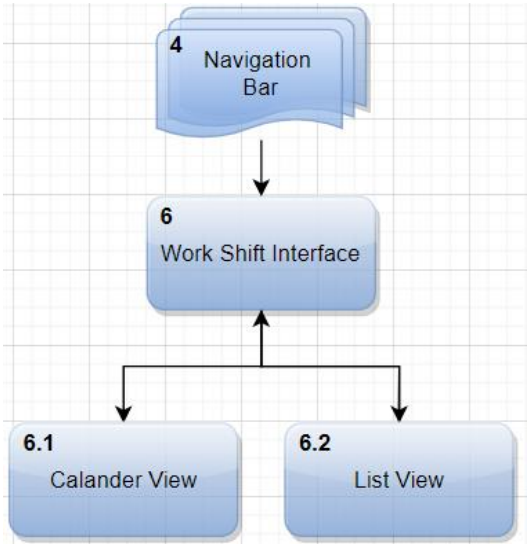


Figure 15 - Relevant portion of the flowchart in chapter 3.3 repeated for convenience

The shift schedule available from the home interface (dashboard) may be seen in the wireframes below. The shift scheduling relates to the company selected in the top left corner of the application. The user may see their upcoming shifts, “My Shifts” tab, within said company as displayed in the left wireframe. They may also see which other users are scheduled for the current day via the “My Team” tab selected in the right wire frame. The user may also select a user in this section to see further details as described in the profile screen wireframes.

The middle wireframe allows the user to see their upcoming shifts regardless of the workplace selected in the top left corner of the application. That way the user may review and schedule themselves without having to frequently swap between workplaces.

Wireframes 6 - Work shift interface features, listing work by workplace and team (coworkers)

Final product:

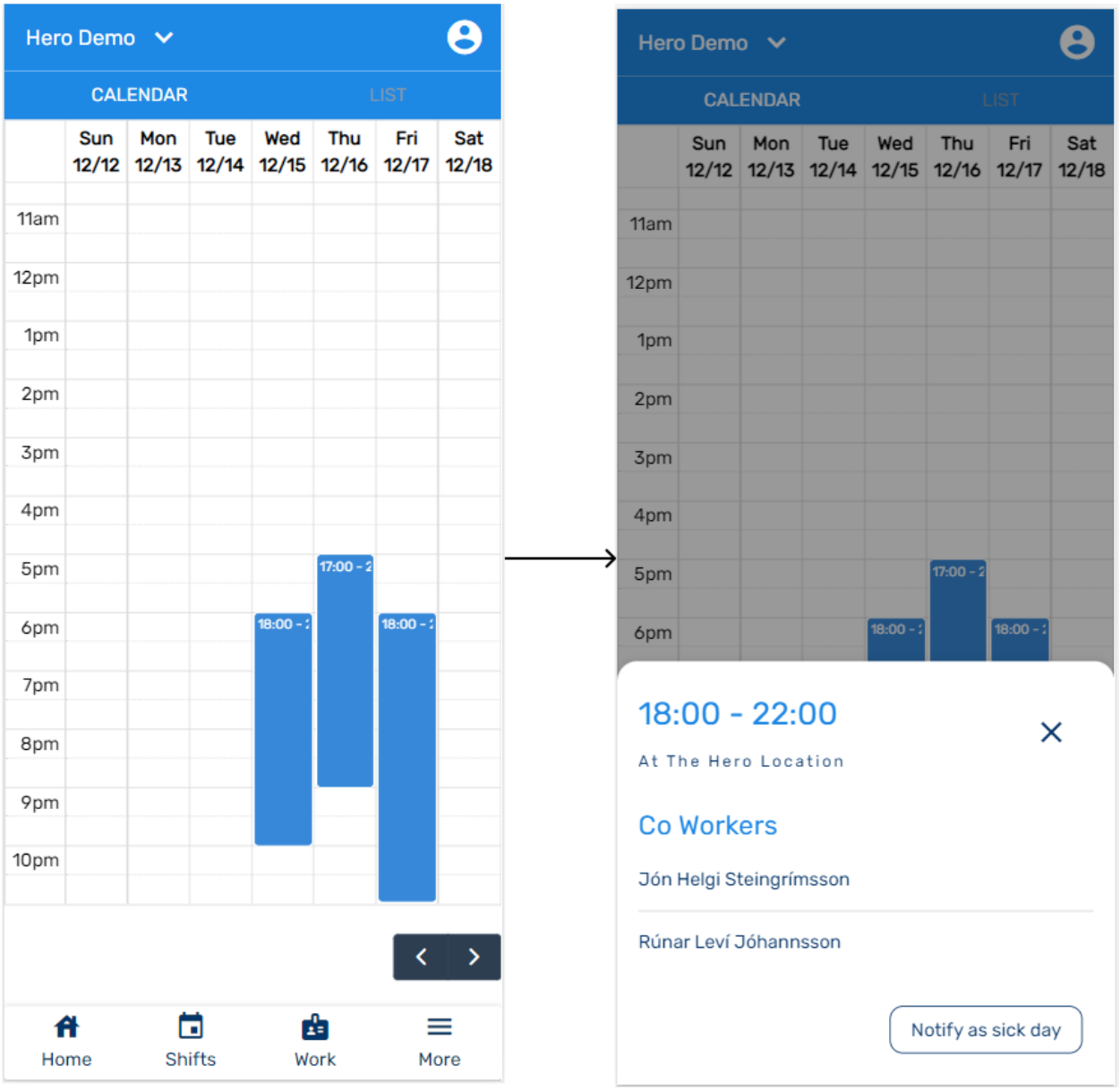


Figure 16 - Screenshots of the current application showing work shift interface in calendar format with work details

3.4.5 Union rights interface

Union Rights flowchart

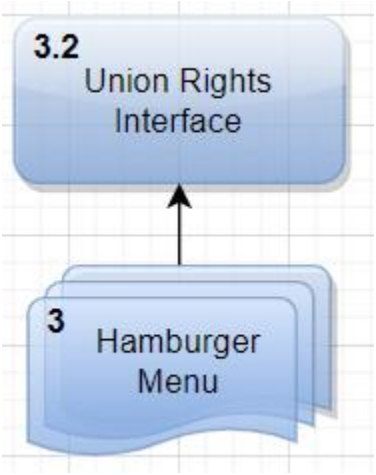


Figure 17 - Relevant portion of the flowchart in chapter 3.3 repeated for convenience

The “Rights” feature from the home interface (dashboard) allows the user to review their base rights as described by their union. The initial design strictly includes descriptions of union rights provided by the union Efling. This is because Efling is the dominant (base) union for most workers within the restaurant industry in Iceland and SalesCloud’s current primary customers are restaurants. This way the product currently addresses most users. A link to Efling’s website for union rights in hotels and restaurants may be seen at the bottom of the following wireframe.

Later implementations may include the ability to swap between unions. For now, due to time constraints, the team has placed the “Rights” function lower in priority as per the product backlog.

Wireframe:

Wireframes 7 - Union rights interface

Final product:

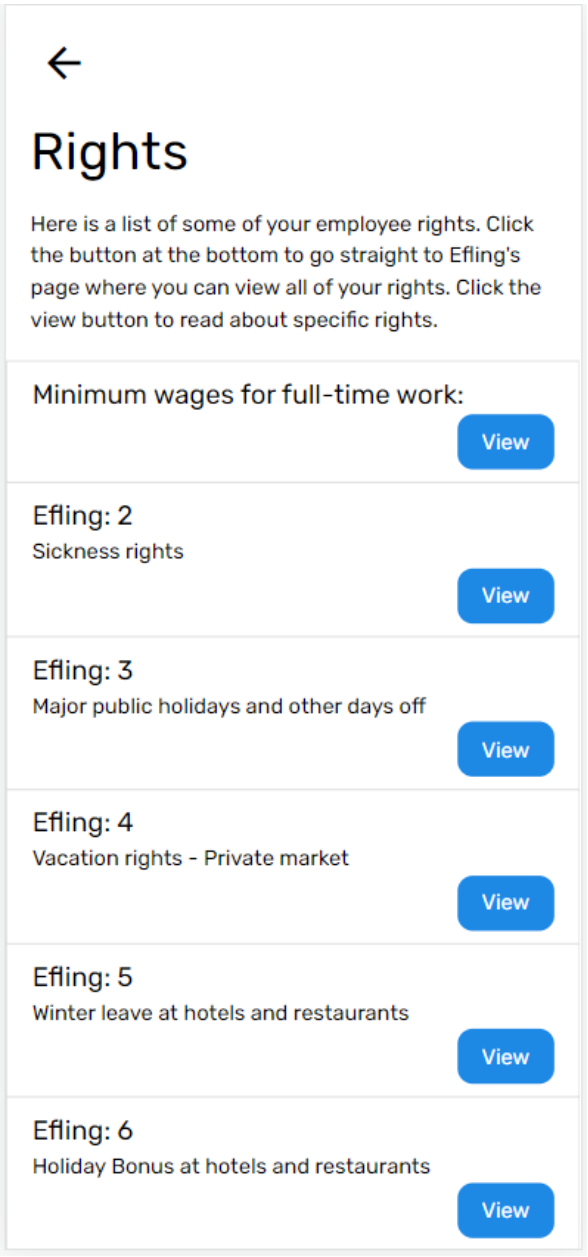


Figure 18 - Screenshots of the current application showing the union rights interface

3.4.6 Profile screen

Profile flowchart

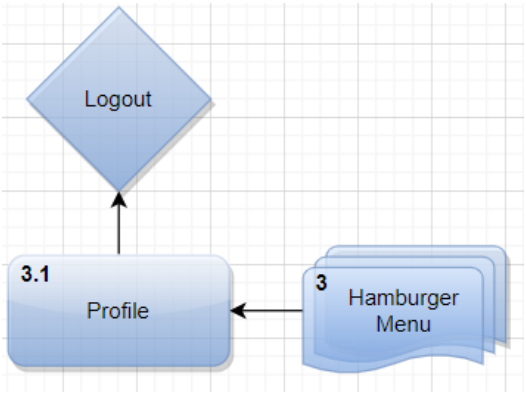


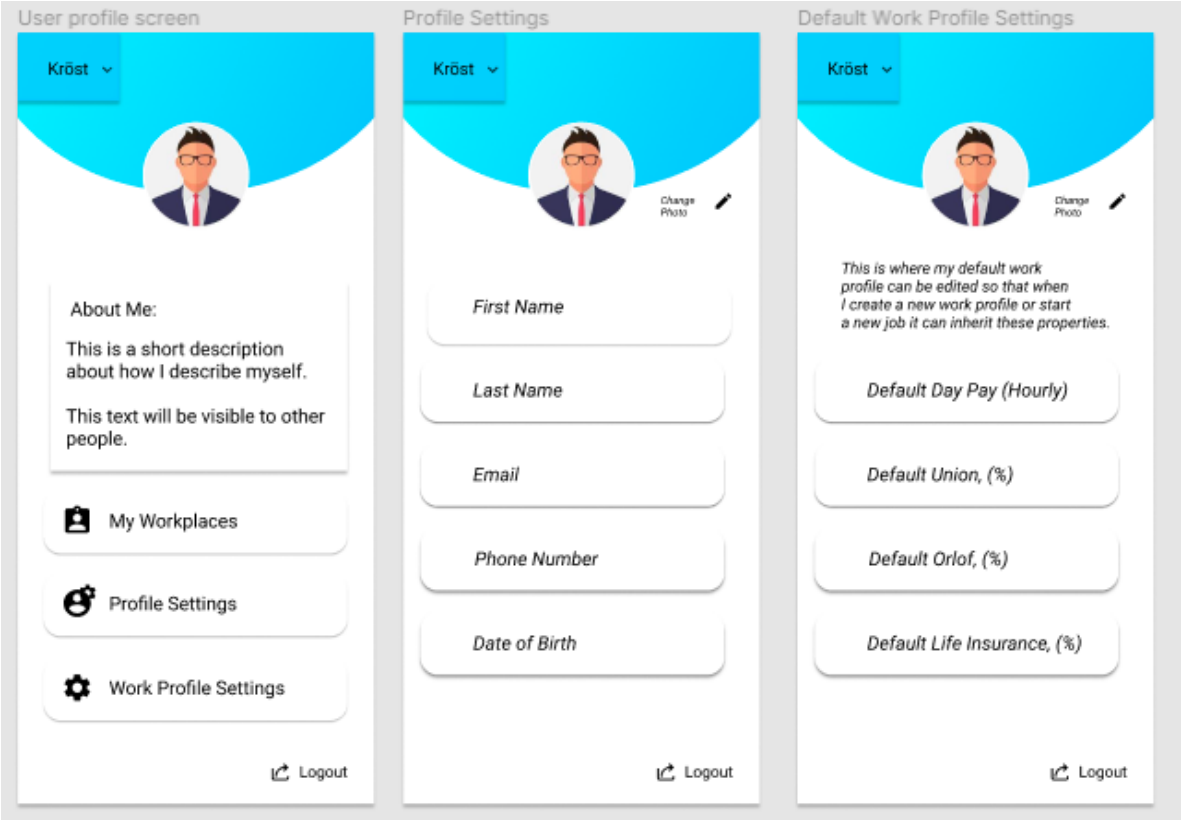
Figure 19 - Relevant portion of the flowchart in chapter 3.3 repeated for convenience

The “Profile” feature from the home interface (dashboard) demonstrates which information the user may display and edit about themselves.

The user may choose to edit their basic description, profile settings or work profile settings. They may also see a list of their current workplaces, more about that later.

Profile settings allow the user to adjust contact information about themselves which does not pertain to any workplace. These fields may be seen in the middle wireframe directly below.

Work profile settings allow the user to create a default work profile template. This template is intended to reduce redundancy when creating work profiles.

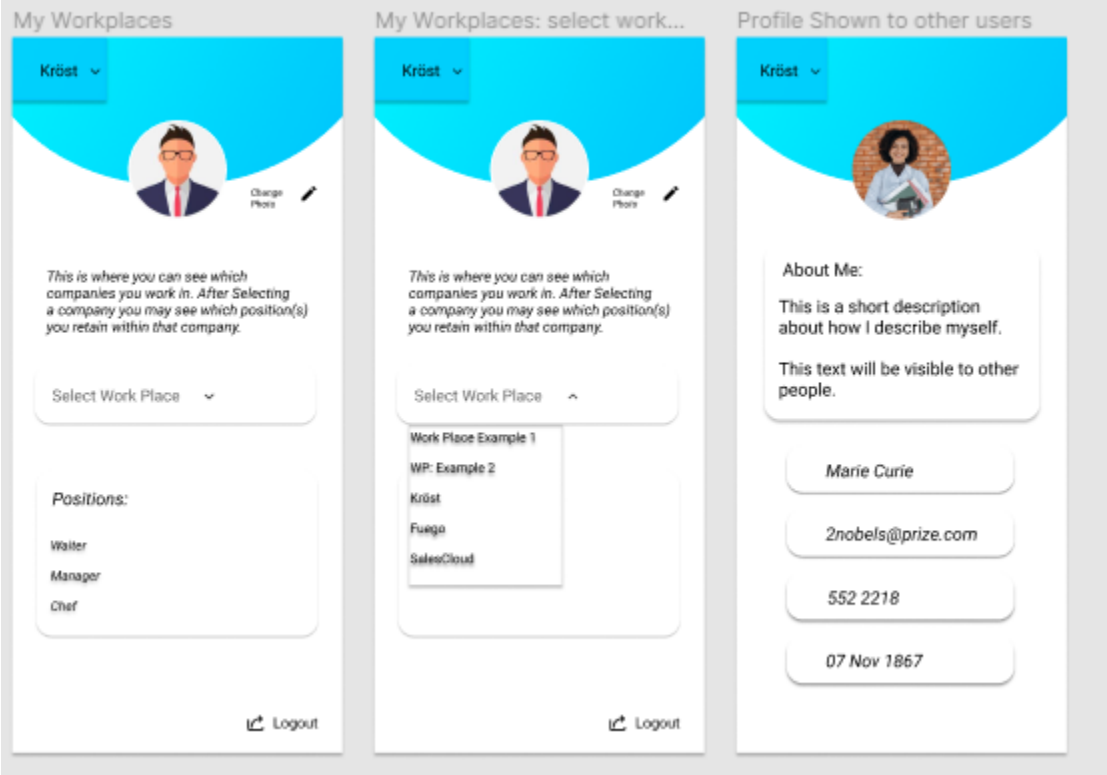


Wireframes 8 - User profile showing profile information and the ability to set default information for the work profile

The following wireframes show further detail of the aforementioned: current workplaces; “My Workplaces” feature.

The user may select between different workplaces to view which positions they hold within each workplace.

The right wireframe depicts which information about the user may be viewed by other users. This portion of the product was originally intended to be used along the depreciated “Messages” functionality but still finds some use in the work shift interface: “My Team” section.



Wireframes 9 - More detailed information available in the profile

Final product:

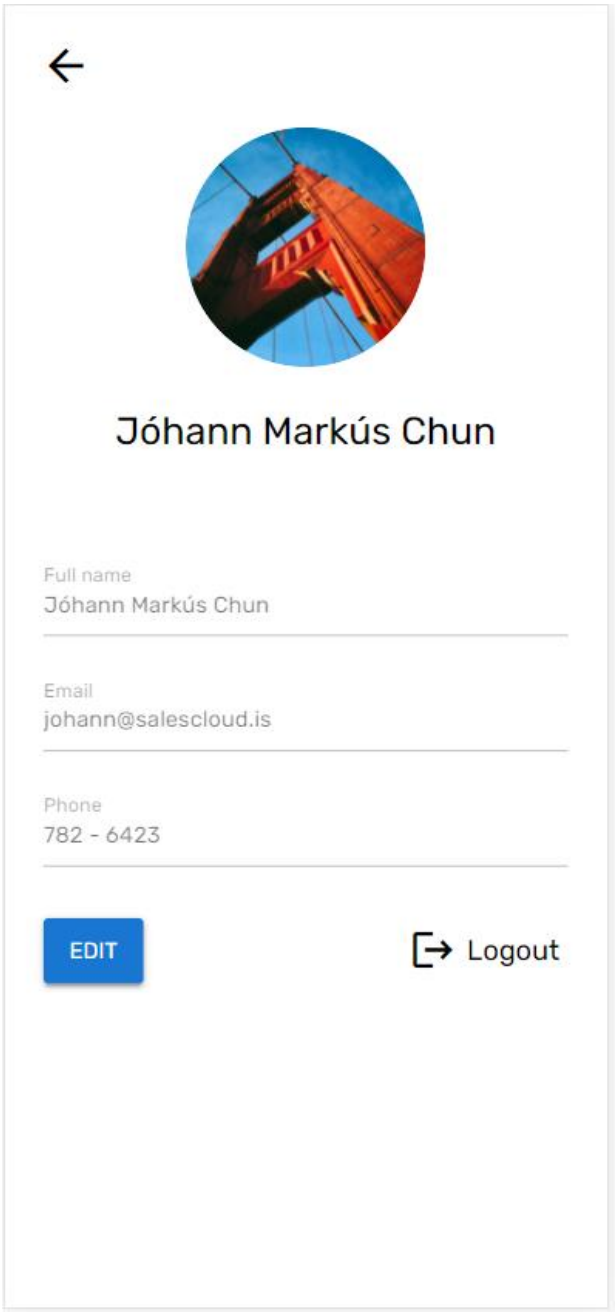
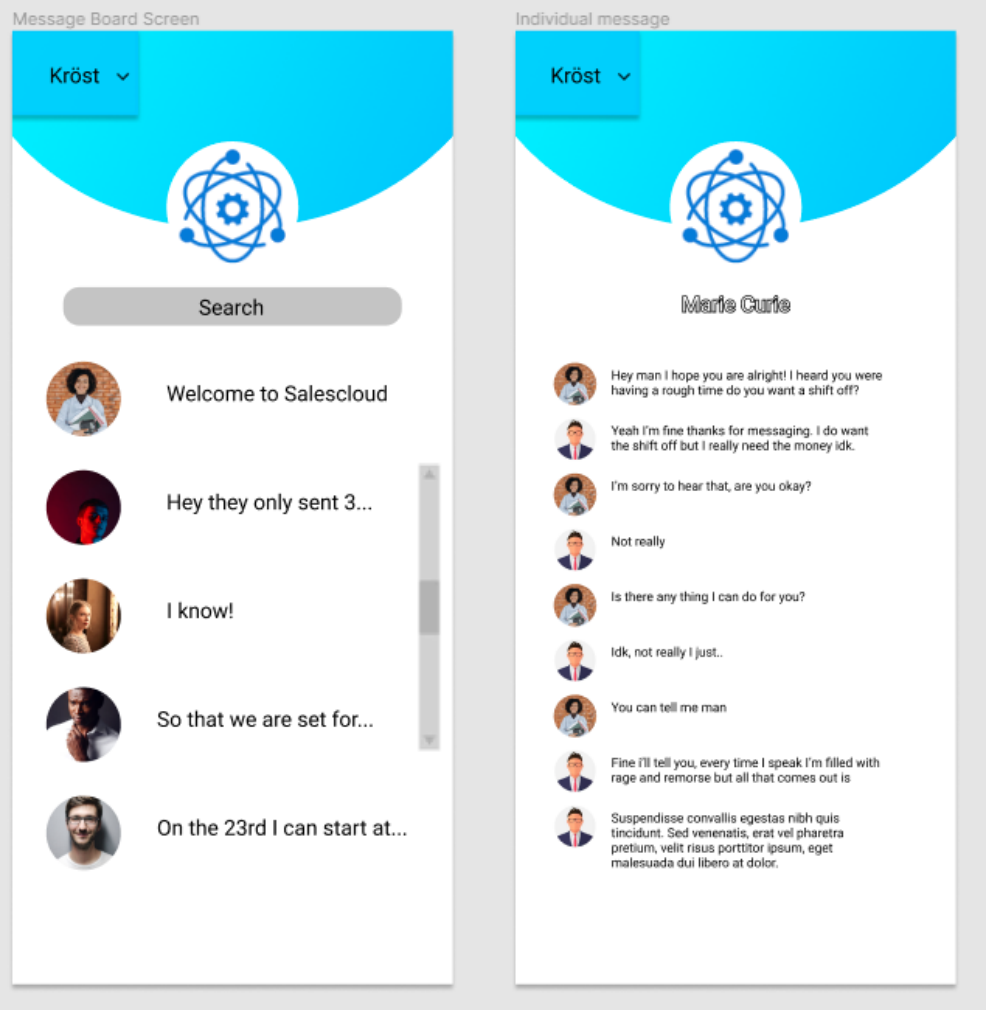


Figure 20 - Screenshots of the current application showing profile information available

3.4.7 Message Board Screen (Out of Scope)

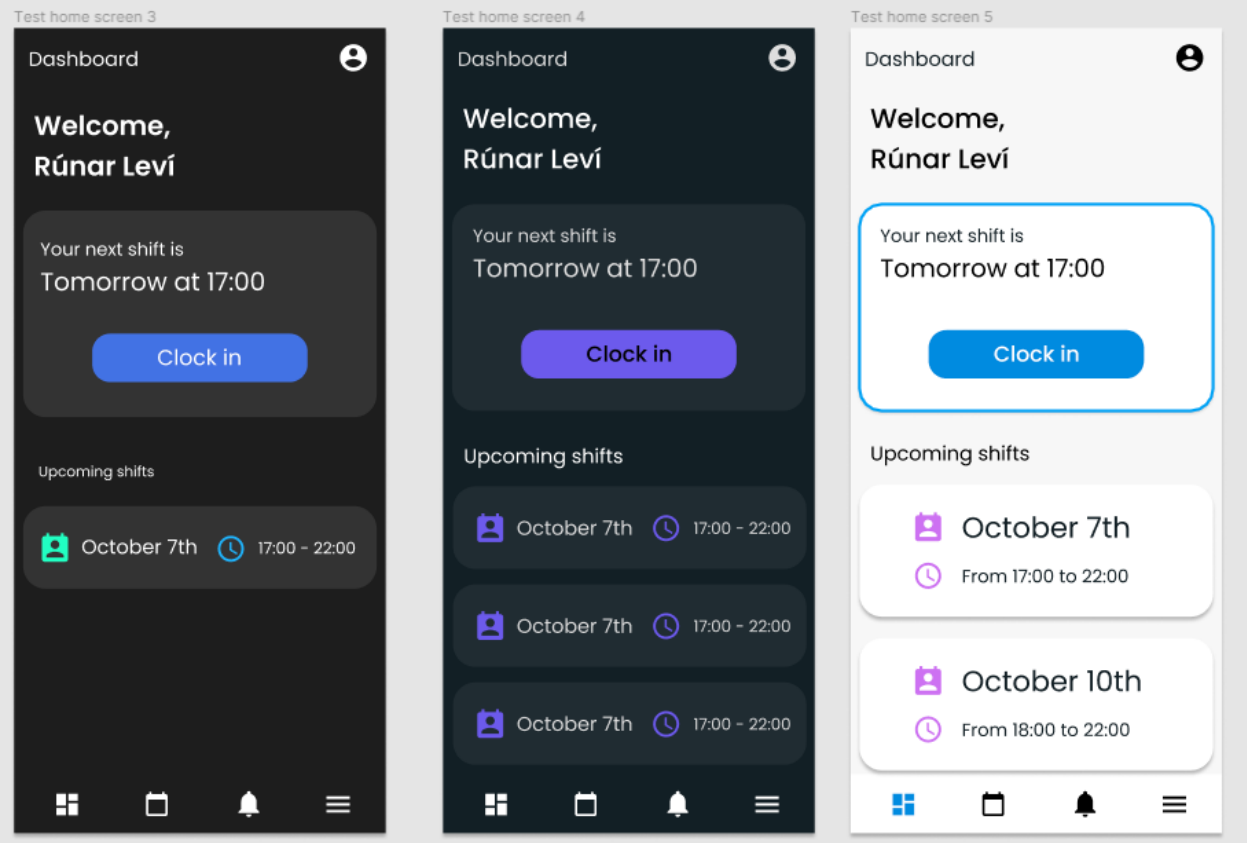
Initial design of the product included a message board function as seen in the wireframes below. The idea was to have a way to retain all communication regarding work within the application. This idea was deprecated due to time constraints. However, SalesCloud owner Helgi retains interest in this feature. Future versions of the product may include a reintroduction of the “Messages” functionality.



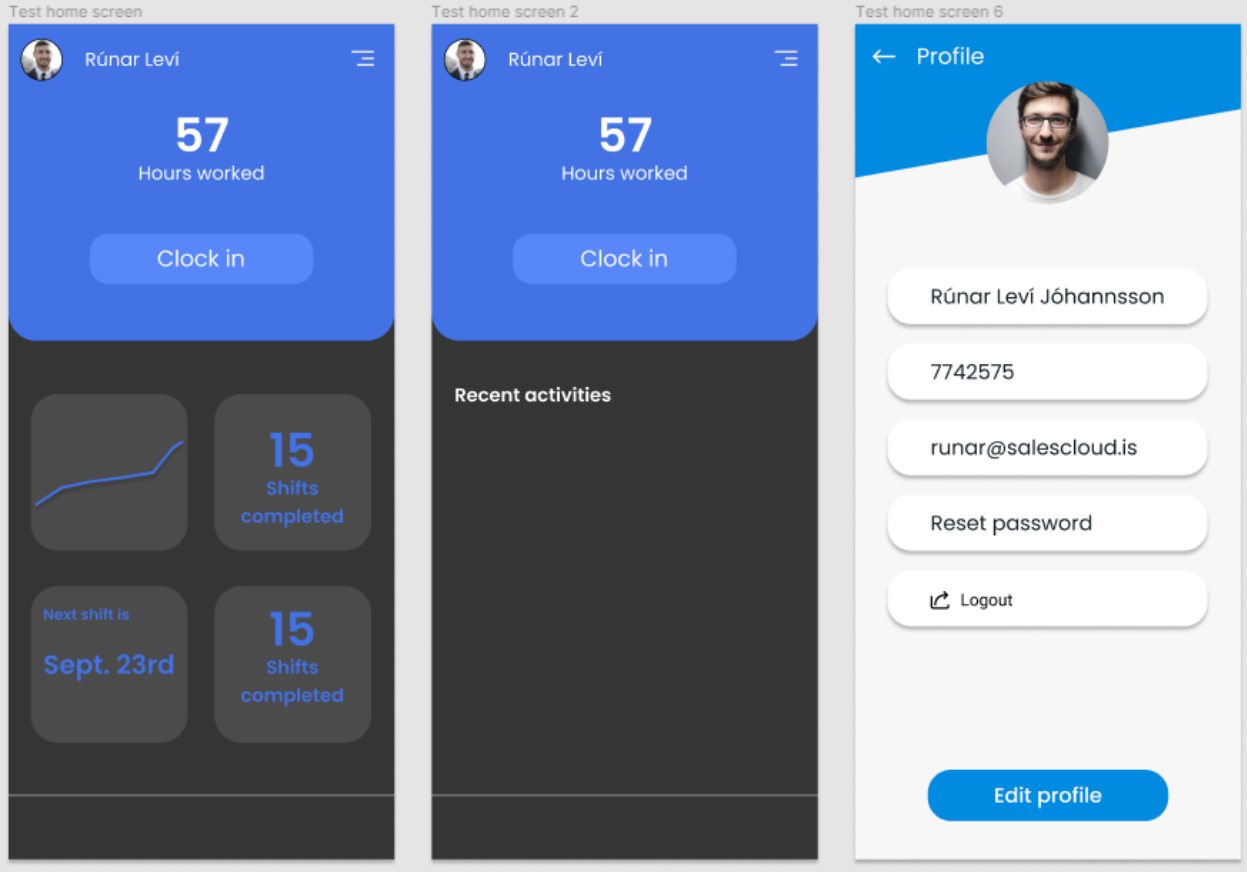
Wireframes 10 - Message board functionality which has since been moved out of scope

3.4.8 Wireframe Re-design

These wireframes were created after the initial wireframes to rethink the design and layout of the application. Although the wireframes before this subchapter depict all the main functionality of the product, the team felt it important to include the following wireframes to illustrate the design process.



Wireframes 11 - Redesign of the home interface for illustration of design process



Wireframes 12- Redesign of the home interface and profile for illustration of design process

3.5 Usability Testing

Date Performed	23rd November 2021
Researcher/s	Jón Helgi Steingrímsson and Jóhann Markús Chun
Meeting	The meetings were held at SalesCloud's offices and in Hlemmur Mathöll at the convenience of the interviewee.

3.5.1 Goals

The goal of this usability testing is to put our prototype to the test. We want to determine the complexity of using the application and the quality of its design. From this user testing, we will have gathered insights from users and validated our current design.

3.5.2 Introduction Script

Welcome to the interview. We have been developing an application called Hero. Hero is an application that can track your hours, shifts, rights, and salary. The application is specifically designed for the workers of restaurants using SalesCloud's sales services. Today we will have you complete a set of tasks to give you a feel for the application and what it can do. Then we will ask you a few questions to get a better understanding of your experience using Hero.

3.5.3 Questions and Tasks

We created a list of tasks for the users to complete as well as some follow-up questions to ask the user after having attempted to complete said tasks.

3.5.4 User Tasks

1. How might you login to the application?
2. How might you view your shifts?
3. How might you change the shifts' view from calendar to list?
4. How might you view your work summary?
5. How might you view your pay slip?
6. How might you view your contract?
7. How might you view your profile?
8. How might you update your profile information?

9. How might you view your rights?
10. How might you log out?

3.5.5 Follow-up Questions

1. How was your experience navigating through the application?
2. Was there any task that you had difficulty doing?
3. Is there any additional information that you believe would be good to have on the home dashboard?
4. Are there any features that you would like to see implemented?
5. Do you have any further questions or notes about the application?

3.5.6 Method

Each participant will be introduced via the introduction script. We will then make sure that the user has a social security number (kennitala), email and pin number on their SalesCloud account. If they are missing any of these fields, then we will add them with the participants approval. Without these fields the participant would not be able to login with his/her own details.

We will be running a localhost version of the application and hand the computer over to the participant to work through the tasks.

Once the participant has finished all the tasks, we will ask the follow-up questions.

Once the follow-up questions have been answered, we will thank the participant for their time

3.5.7.1 Participants

All the participants for this user research were selected from restaurants using SalesCloud's sales platform. Each participant must have a SalesCloud account in their respective company. We will also be selecting participants primarily from the company Hold Veitingar ehf. as they have given the scrum master permission to edit and add any necessary user information.

3.5.7.2 List of Participants

Table 1 - List of all participants, when the interview was held and how they described themselves

Time	Name	Participant Details
9:00 – 9:30	Alex James Turner	• Server at Kröst restaurant • Former Bar Manager • Former Key Account Manager at Rohlig • Musician • Corporate Drop out • Brexit Refugee • Self-proclaimed nerd tabletop gamer
11:30 - 12:00	Arthur Lawrence Sassi	• Soon to be father • Running 2 startup companies • Restaurant manager at Kröst • Familiar with tech • Wine enthusiast • Spiritual and materialist combined • Lover of animals and nature
15:30 – 16:00	Ívar Þór Ástuson	• Icelandic but raised in the USA • Big sports enthusiasts • Worked in the service industry for 7 years • Waiter/bartender at Kröst

Time	Name	Participant Details
		• Participant attribute 5
14:30 - 15:00	Yassine Hajji	• Love football • Admire arts • Good chef • Speak 5 languages
15:30 - 16:00	Nóra Siroki	• movie and music geek • was experimenting with making cosmetics • used to run a web shop and manage ads on Facebook • taqueria worker for three+ years
17:30 – 18:00	Elmar Tryggvi Hansen	• Bartender • Self-proclaimed kind and handsome • Tech oriented

3.5.8 Observations

The following is what we observed from users during our testing.

Table 2 - Observations from the interview and frequency with which they were observed

	Alex	Arthur	Ívar	Yassine	Nóra	Elmar	%
Layout should stay simple.	✓	✓	✓	✓	✓	✓	**100%**
Expected to find contract in side-menu.			✓		✓	✓	**50%**
Would like contract to be accessible from profile.		✓				✓	**33%**
All tasks were intuitive.	✓	✓	✓	✓	✓	✓	**100%**
Would like the ability to edit and add shifts in app.	✓	✓				✓	**50%**
Would like to see notification on home screen.		✓	✓	✓		✓	**67%**

3.5.9 Findings

Features that the users would like to see implemented:

1. Ability to reschedule, swap, edit and add shifts in the app.
2. Ability to create documents such as cleaning lists, prep lists, and ordering lists.
3. Ability to add notes on specific days in the shift calendar.
4. Ability to chat with coworkers through the application.

Bugs found:

1. Application doesn’t refresh and load into the home page after the user inserts code from SMS authentication on the ~/verify page.
2. Workplace displays twice (duplicate) in the top left tab after the user has logged in to more than one account.
3. Work isn't fetched properly or displayed when logging in to the test users account.
4. Default rate is set per device instead of per account -> create local variables by userID.
5. Clock in text does not change to clock out when the button is pressed on the home screen.
6. Log out button in the side menu leads to a 404 page.

4 Progress

4.1 Sprints

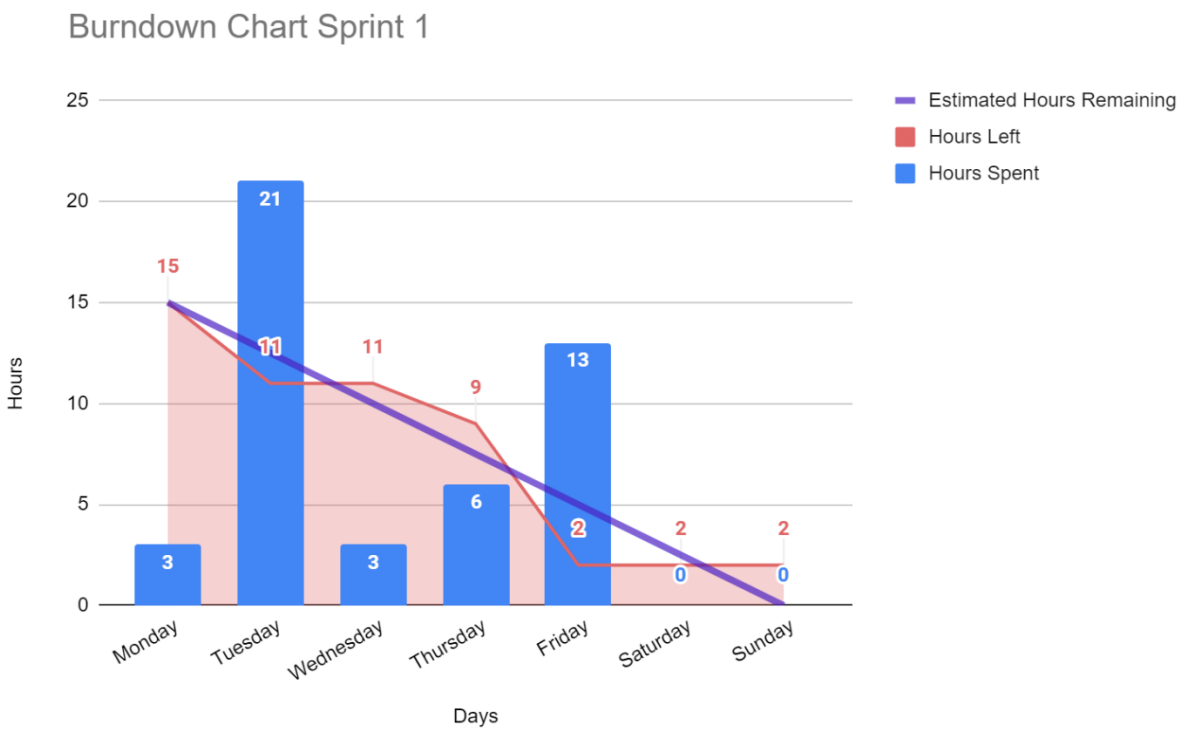
4.1.1 Sprint 1

August 23rd – 29th

The team started off the week by having a meeting to plan out the sprint. We decided that this sprint's theme was getting organized and setting up all the files that we need to keep track of our progress throughout the project. We created a layout for the final report and for our work diary. We created a list of restaurants to request interviews with to gather information and recommendations for features. We also spent some time cleaning up and setting up our workspace inside the SalesCloud office. Since we were only focusing on setting up files and getting organized, we did not take on any user stories from the product backlog.

The following figures are screenshots from our work diary. Figure 1.1 displays our clock in/out times for each day. The figures 1.2-1.4 display how many man hours each individual team member spent on each subject.

Burndown Chart



What went well?

- The team got along well and organized the drive storage together.
- We had a good connection while talking to restaurant employees to schedule meetings with them.
- We cleaned up our workstation and got to know each other better.

What could be improved?

- We could have spent more time getting to know Vue and quasar.

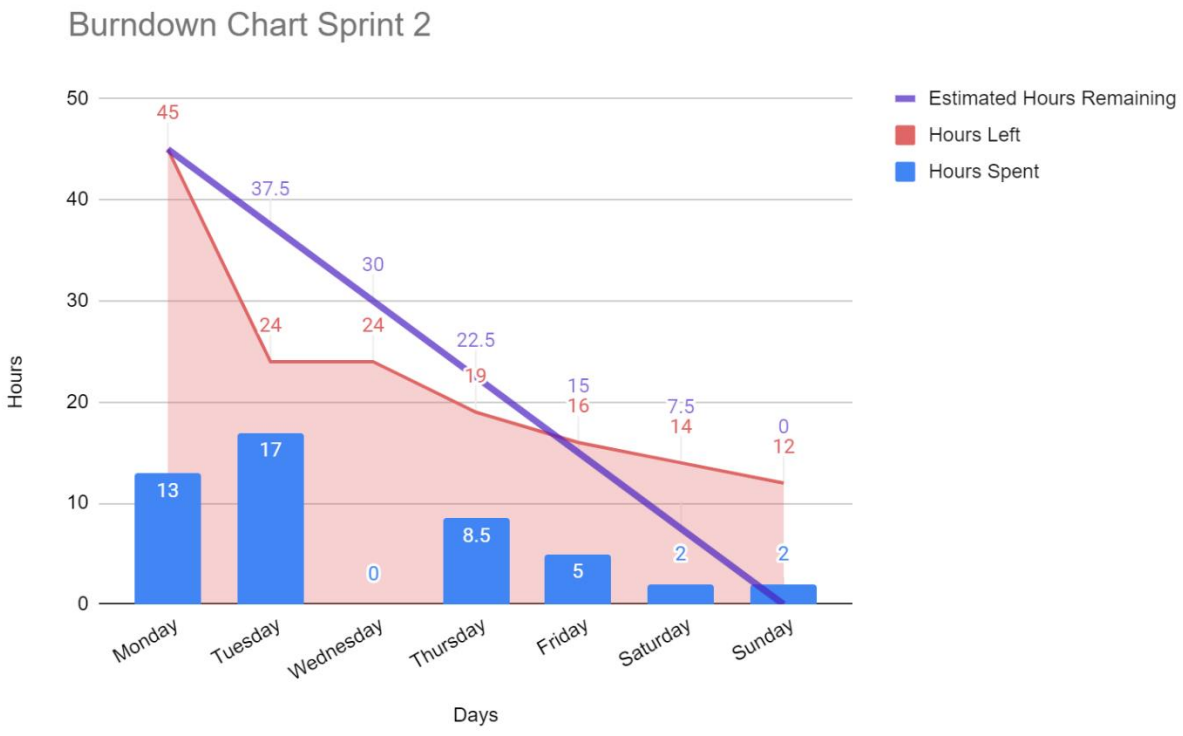
4.1.2 Sprint 2

August 30th - September 5th

We started this sprint off by meeting with our instructor Stefan where we asked some questions about the report. This sprint's theme was like sprint 1 in that we continued to work on documentation required for the final report as well as figuring out how to structure and organize our work. We started working on the files and documents to be included in the final report, such as the burndown charts, work diary, the risk analysis, and the product backlog. We also met up with restaurant employees to gather information from which we could create user stories. Like sprint 1, we did not take on any user stories from the backlog for this sprint.

The following figures are screenshots from our work diary. Figure 2.1 displays our clock in/out times for each day. The figures 2.2-2.4 display how many man hours each individual team member spent on each subject.

Burndown Chart



What went well?

- We got a better understanding of the documentation required thanks to the meeting with Stefan.
- We managed to distribute tasks efficiently between team members. Everyone knew what they had to do.

What could be improved?

- We could have prepared a bit better for the meeting with the instructor by having a list of questions that we wanted to ask.
- We should have had more daily standup meetings. We skipped them some days.

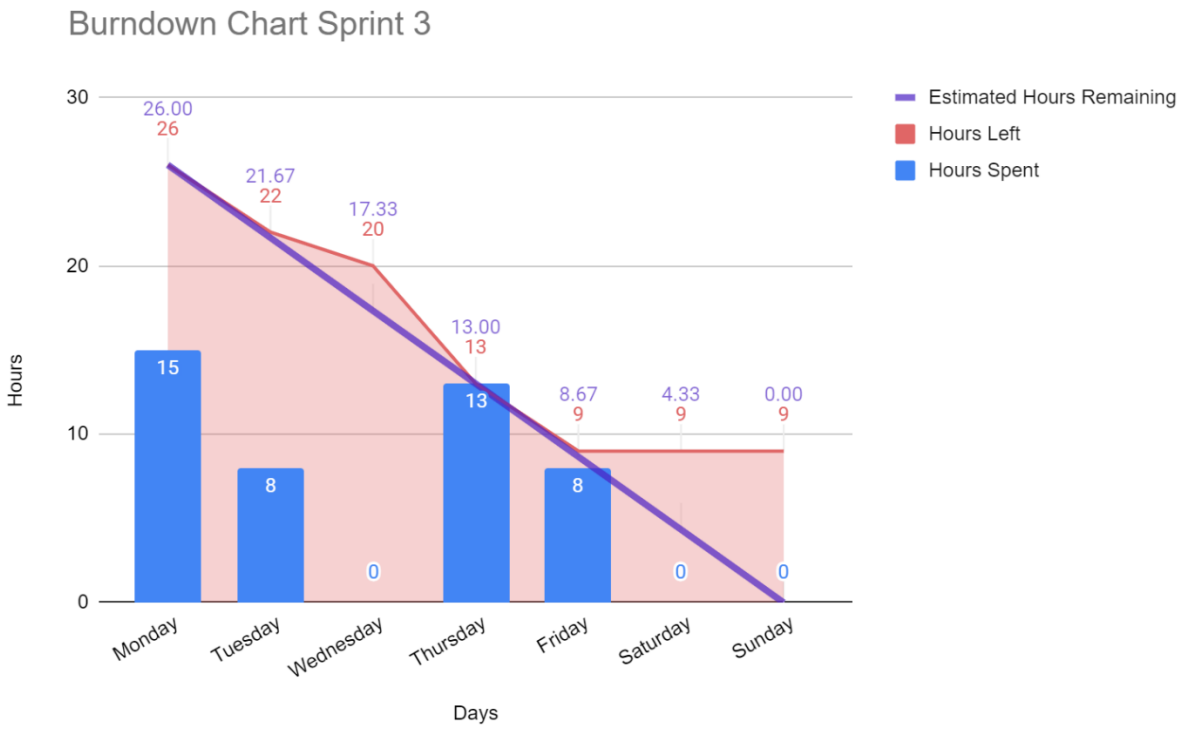
4.1.3 Sprint 3

September 6th – 12th

The theme of this sprint was to get to know the frameworks and continue to improve the final report. We created a short slideshow for the introduction presentation and started creating wireframes for the app. We also made a base layout for the app so we can traverse through the application and start implementing functionality.

The following figures are screenshots from our work diary. Figure 3.1 displays our clock in/out times for each day. The figures 3.2-3.4 display how many man hours each individual team member spent on each subject.

Burndown Chart



Backlog

Number	Story	Definition of done	Rank
1	As a user I want to be able to log in with email and password	When I enter my login credentials and press the login button, I load into the dashboard with my account	A
6	As a user I want to be able to create an account	When I open the app, I can click the create account button and then fill in all the information required and have my account created	A

What went well?

- We felt the presentation went well.
- We got a good rough idea of how we want the app to look like and function.

What could be improved?

- We noticed that we were not spending as much time as we had planned on the project.
- We were slacking on the standup meetings, and we need to prioritize them better.

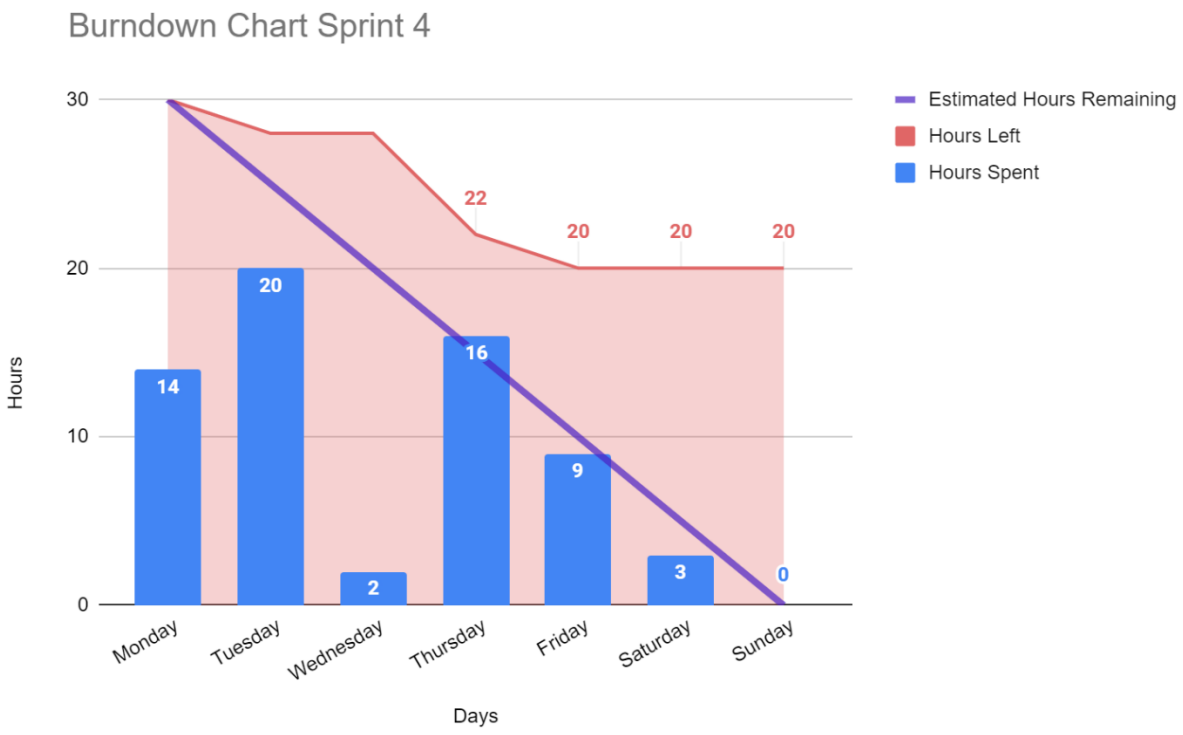
4.1.4 Sprint 4

September 13th – 19th

The theme for this sprint was to continue coding the functionalities for the requirements from the last sprint and working on the frameworks. We did however spend a significant amount of time on the final report as well.

The following figures are screenshots from our work diary. Figure 4.1 displays our clock in/out times for each day. The figures 4.2-4.4 display how many man hours each individual team member spent on each subject.

Burndown Chart



Backlog

Number	Story	Definition of done	Rank
1	As a user I want to be able to log in with email and password	When I enter my login credentials and press the login button, I load into the dashboard with my account	A
6	As a user I want to be able to create an account	When I open the app, I can click the create account button and then fill in all the information required and have my account created	A

What went well?

- We were starting to get more comfortable using Vue and quasar

What could be improved?

- We were not breaking our user stories / backlog requirements down properly into manageable tasks.
- We were not organizing and prioritizing our work efficiently.

4.1.5 Sprint 5

September 20th – September 26th

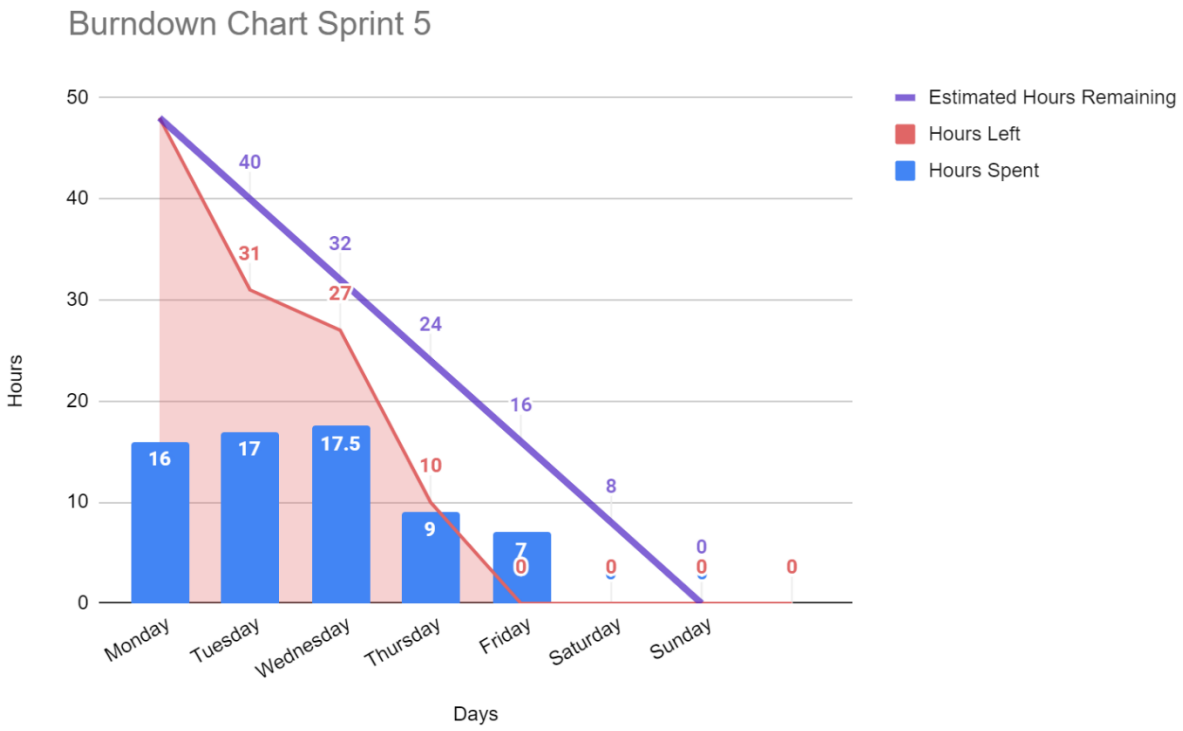
The theme of this sprint was initially to complete the backlog requirements from the previous sprint as we had been stuck on them for a few weeks. However, after the first Status meeting with the instructors on Tuesday, we realized that our work was not up to par and that we were falling behind schedule. This was a wakeup call for the team, as we were initially under the impression that we were on the right track. Our backlog was not correctly done, we hadn't defined our scope for the project properly, our wireframes were incomplete and undescriptive, the risk assessment was not properly assigned, and we weren’t using a slideshow to present our progress. All in all, we needed to seriously pick up the slack from the previous weeks. Due to this change of plan, we focused our time for the first week of this sprint on fixing the issues addressed by the instructors.

September 27th - October 3rd

After spending most of the previous week having meetings to get our act together, we came to the decision of extending the sprints from here on out to two weeks. Member Jóhann Markús Chun was selected by vote to be the permanent scrum master. This decision was made with the intention to reduce time. Rotating scrum masters between team members proved time inefficient as each rotation required the new scrum master to catch up on things the previous one had already focused on.

The goal of this sprint was to fix the project based on the feedback from the last status meeting. The backlog section for this sprint underlines which items the team determined most important.

Burndown Chart



Backlog

Since this week focused mainly on improving the project documentation and structure, we decided to work on tasks instead of user stories from the product backlog. Later we had a meeting with the instructor Stefan which advised us to create user stories for these tasks as well. This will be talked about in the upcoming “What could be improved?” section. The tasks we focused on were:

Tasks

Slideshow bones - prepare for the next status meeting.
Create Use Cases
Final Report - Sprint backlogs, Risk Analysis and architecture
Program the App's Dashboard
Connect the front end to the GraphQL API and Query initial data
Query shifts (dummy data) with GraphQL
Make a diagram of entities

What went well?

- The team held a lot of meetings on improving the project. This led to increased organization and put all members on the same page.
- Each member put significantly more time into the project as can be seen in the product backlog.
- The project became structured in accordance with the feedback:
    - Correctly formatted sprint backlog
    - Reassessed risk assessment
    - Significantly more wireframes, from 4 to 20+
- Scope was properly defined.
    - Project description written to define scope
    - Team decided to remove the messages functionality due to time restraints

What could be improved?

- Hold sprint planning and retrospective meetings
    - More detailed task descriptions
    - Assigning task lengths together as a team to determine workload
    - Discussing whether the product backlog is in accordance with the scope
- Schedule meetings with the instructor on a regular basis
- Prepare for status meeting meetings

4.1.6 Sprint 6

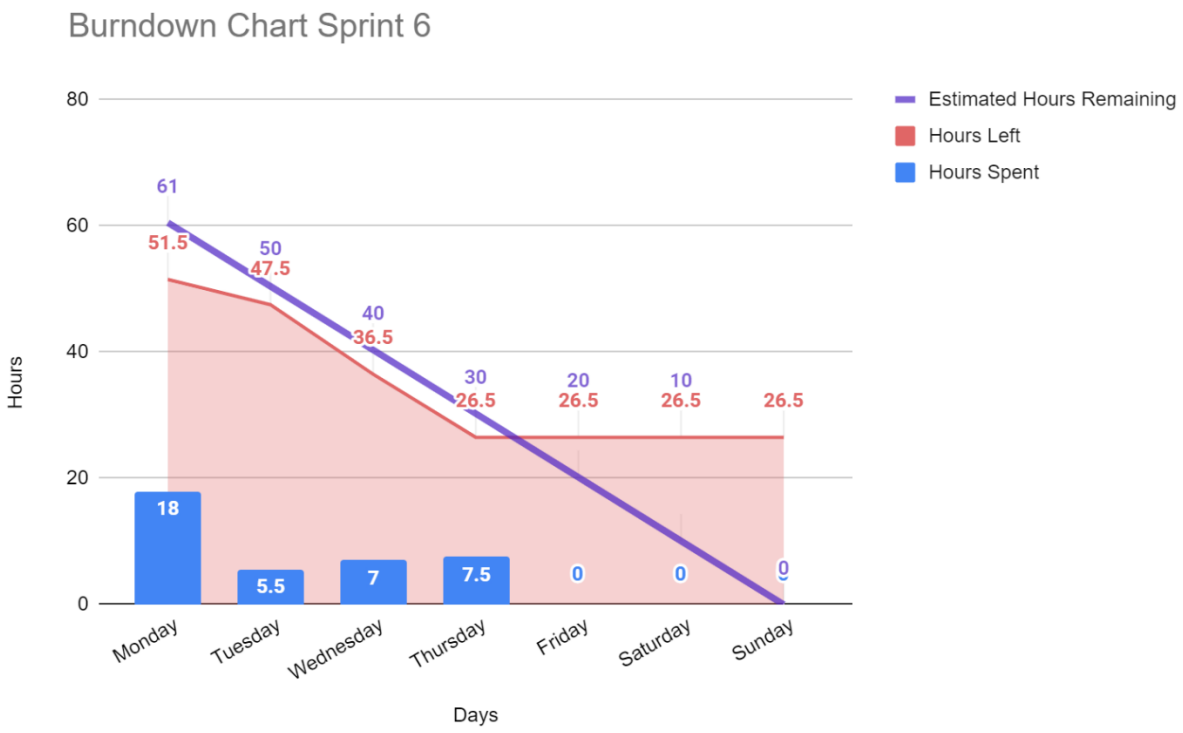
October 4th – 10th

The team held its first proper sprint planning meeting. Each member discussed which product backlog user stories were the most important and the product backlog was updated in accordance. Then user stories were split up into tasks. Each member determined the length of each task independently. The length of the task was determined by the average of these lengths. If a member considered the task to be significantly shorter or longer than the other members, then the task was reevaluated.

Once the tasks and their lengths were determined, the team reviewed the sprint backlog and determined that to complete the A grade user stories the sprints needed to revert to one-week intervals.

Member Jóhann Markús Chun had a large assignment in his course at Reykjavik University and was unable to attend much of the week. This is discussed later in the "what could be improved chapter".

Burndown Chart



Backlog

2	Student	As a student I want to have an improved draft of the final report and the presentation ready for the next status report (stöpufundur 2)	We have made and updated each document and rehearsed the presentation	A	4	
3	User	As a user I want to be able to view my dashboard	When I press the clock in or out button, then the time I clocked in or out is added into the work summary	A	1	
4	User	As a user I want to be able to clock in and out	When I press the clock in or out button, then the time I clocked in or out is added into the work summary	A	1	
5	User	As a user I want to be able to view my shifts	When I press the shifts button I am brought to the shifts schedule screen where I can see all of my upcoming shifts	A	3	

What went well?

- More time was spent on the sprint planning
    - Tasks discussed and length determined as a team
- Better communication with the instructor
- Product backlog updated in accordance with the team's priorities as a whole

What could be improved?

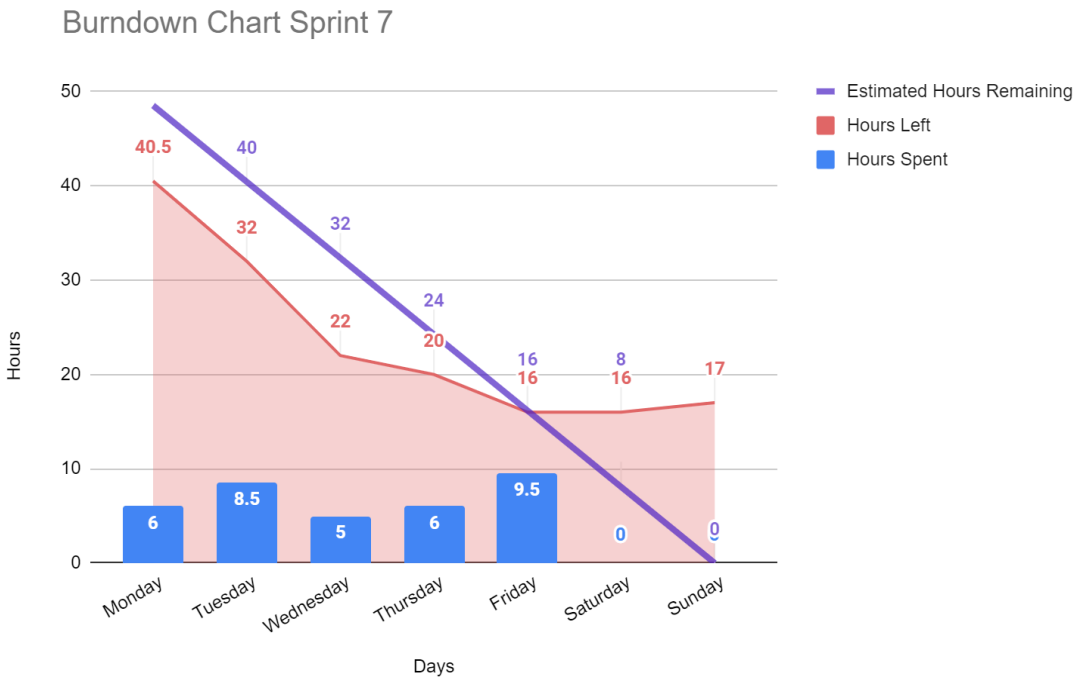
- Member Jóhann was unable to spend enough time on the project to complete his tasks
    - Better time management between projects and work
    - Reducing work hours for other projects
- The team did not designate enough time to the project
    - More meetings in person shall be held
    - Consciousness of team moral should be improved
- Better organization of tasks in ClickUp
- Hours spent on project should be organized better, each member should record their own hours each day and not towards the end of the sprint

4.1.7 Sprint 7

October 11th - 17

For this sprint the team focused on researching and coding graphQL based on SalesCloud's previous projects. Another primary focus was the preparation of the final report and the slides for the next status meeting.

Burndown Chart



Backlog and Tasks

Number	Category	Story	Definition of Done	Grade	Story Points	Completed
2	Student	As a student I want to have an improved draft of the final report and the presentation ready for the next status report (stöðufundur 2)	We have made and updated each document and rehearsed the presentation	A	4	TRUE

Tasks	Description	E.T. (H)	Story
Task 1	Create presentation	6	2
Task 2	Practice the presentation	2	2
Task 3	Update sprint 5 and 6 in the final report	2	2
Task 4	Insert initial interview question results into the final report	1	2
Task 5	Create new wireframes and add new wireframe descriptions to the final report. Notification wireframe and dashboard wireframes	7.5	2
Task 6	Create an event log for each risk in the risk assessment, placed underneath each risk. (Explains changes made to the risk)	1	2
Task 7	Create flow chart	5	2
Task 8	Finish chapters 4.2.1 and 4.2.2 in the final report	1	2
Task 9	Clean up grammar and layout of the final report	2	2

Number	Category	Story	Definition of Done	Grade	Story Points	Completed
3	User	As a user I want to be able to clock in and out	When I press the clock in or out button, then the time I clocked in or out is added into the database	A	1	TRUE

Tasks	Description	E.T. (H)	Story
Task 10	Create profile page design	1	3
Task 11	Implement profile page according to design	3	3

Number	Category	Story	Definition of Done	Grade	Story Points	Completed
4	User	As a user I want to be able to view my shifts	When I press the shifts button I am brought to the shifts schedule screen where I can see all of my upcoming shifts, who is working with me and all shifts I have from all places I work in	A	3	

Tasks	Description	E.T. (H)	Story
Task 12	Create Hero User schema	2	4
Task 13	Create Work Profile Schema	2	4

Number	Category	Story	Definition of Done	Grade	Story Points	Completed
5	User	As a user I want to be able to create an account	When I open the app, I can click the create account button and then fill in all the information required and have my account created	A	3	

Tasks	Description	E.T. (H)	Story
Task 14	Program login functionality	6	5
Task 15	Create design for the dashboard and program the main layout	7	5

What went well?

- The team met up far more often.
- The ER diagram was reconsidered so that each member was on the same page about which entities needed to be created and how they connect.
- From this, members gathered a much better understanding of how the graphQL schema was set up for SalesCloud's product.

What could be improved?

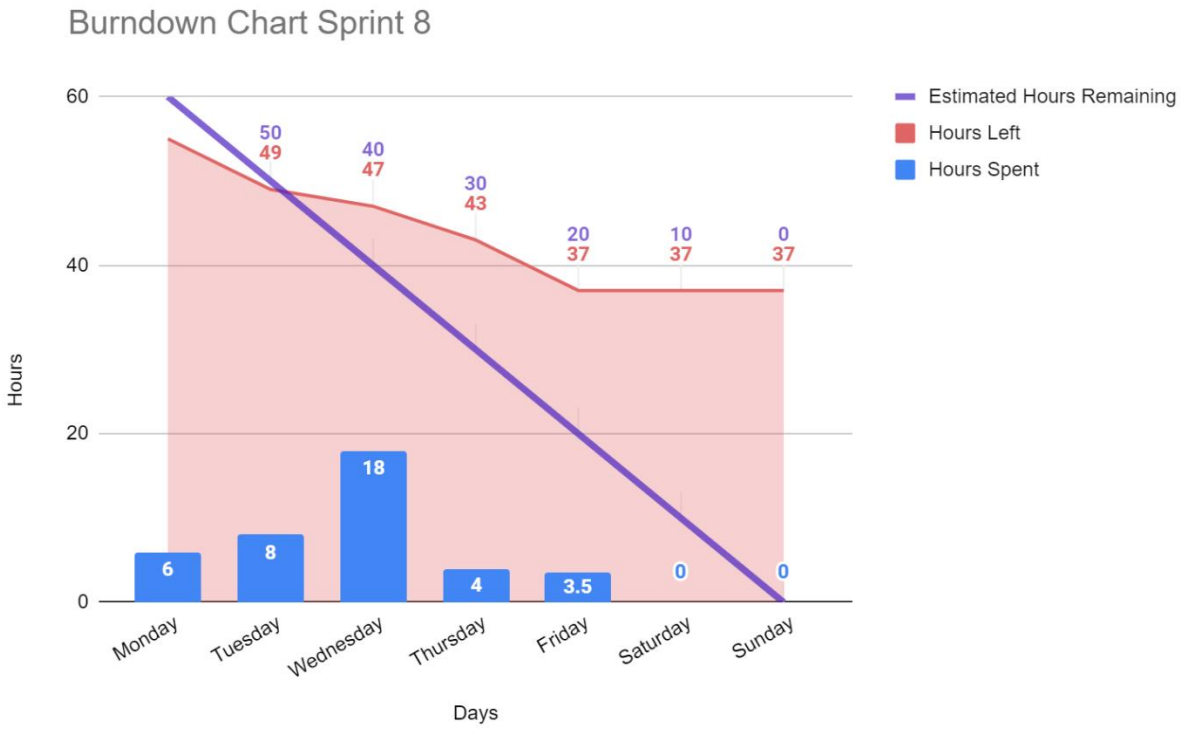
- More time was spent on the sprint planning
- Not enough time was spent on the project.
- Too many user stories were selected.
- Time per task was underestimated.
- Meeting relating to the ER diagram needed to happen sooner; prioritize group consensus.

4.1.8 Sprint 8

October 18th – 24th

After meeting with the instructor, the team decided to add a tasks subchapter to each sprint to show which tasks each user story was broken down to. The product backlog was reorganized with the intention of prioritizing user stories not only by how important the feature was, but also which feature needed to be done first to implement other features. For example, a user needs to be able to create an account for the team to implement the shift schedule.

Burndown Chart



Backlog and Tasks

Number	Category	Story	Definition of Done	Grade	Story Points	Completed
3	User	As a user I want to be able to create an account	When I open the app, I can click the create account button and then fill in all the information required and have my account created	A	3	TRUE

Tasks	Description	E.T. (H)	Story
Task 6	create more dummy data: users	2	3
Task 7	Jon shows johann how the project is setup	2	3
Task 8	research how collections should be set up in database	3	3
Task 9	create function that stores user in database from create account screen	5	3
Task 10	Have a meeting about how authentication is handled with a member of salescloud	3	3

Number	Category	Story	Definition of Done	Grade	Story Points	Completed
4	User	As a user I want to be able to view my shifts	When I press the shifts button I am brought to the shifts schedule screen where I can see all of my upcoming shifts, who is working with me and all shifts I have from all places I work in	A	3	TRUE

Tasks	Description	E.T. (H)	Story
Task 1	Create popup dialog when clicking on a shift	4	4
Task 2	Create different tabs to swap between my shifts, all shifts, and my team	3	4
Task 3	populate tabs with list format	4	4
Task 4	populate tabs with calander view	3	4
Task 5	Add company selection to header	1	4

Number	Category	Story	Definition of Done	Grade	Story Points	Completed
5	User	As a user I want to be able to clock in and out	When I press the clock in or out button, then the time I clocked in or out is added into the database	A	1	TRUE

Tasks	Description	E.T. (H)	Story
Task 11	add log out button to hamburger menu which sends you to login screen	2	5
Task 12	add clockin clockout functionality	2	5
Task 3	populate tabs with list format	4	4
Task 4	populate tabs with calander view	3	4
Task 5	Add company selection to header	1	4

What went well?

- Report finalized on time.
- Good results on the presentation.
- More information and proper setup.
- Improved understanding of code structure

What could be improved?

- Spent more time on the project.
    - Should have continued Friday.

4.1.9 Sprint 9

October 25th – 31st

The team had planned to meet up on Monday for the sprint planning, however the scrum master was sick, so the team did not hold this meeting. This risk was then added to the risk assessment with the correct response being to appoint a backup scrum master who will lead the meetings if the primary scrum master is unavailable.

After a meeting with SalesCloud the team determined that the create account user story needed to be redone.

Backlog

Number	Category	Story	Definition of Done	Grade	Story Points	Completed
3	User	As a user I want to be able to create an account	When I open the app, I can click the create account button and then fill in all the information required and have my account created	A	3	TRUE

What went well?

Programming went smoothly on Tuesday.

What could be improved?

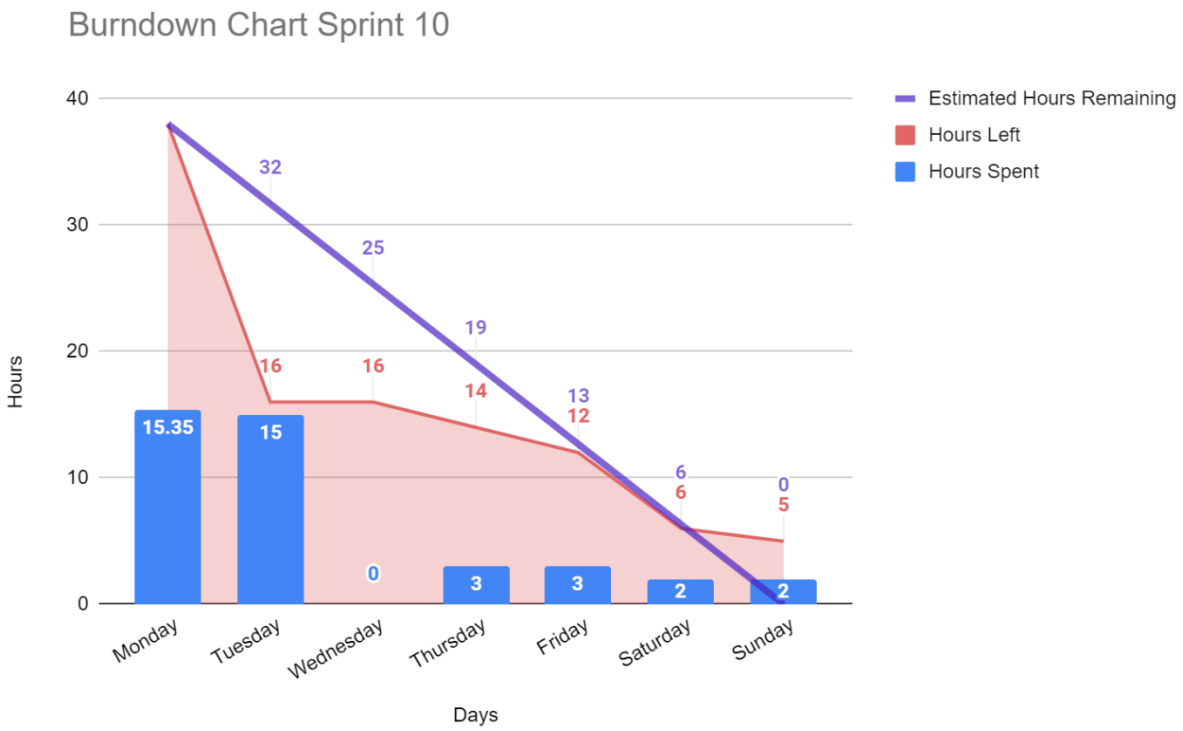
- Scrum master was sick.
- No backup.
- No sprint planning.
- Tasks not set up.
- Unorganized work.
- Not enough team communication.

4.1.10 Sprint 10

November 1st – 7th

This week members Jóhann and Rúnar needed to return their final projects in other classes and were therefore unable to work on this project on Wednesday. The primary focus in this sprint was to determine how authentication should be handled within the application. After a productive meeting with SalesCloud the decision was made to use JSON web tokens and text message verification. Rúnar focused on implementing these features while Jón helped Jóhann catch up after sick absence last week.

Burndown Chart



Backlog and Tasks

Number	Category	Story	Definition of Done	Grade	Story Points	Completed
6	User	As a user I want to be able to log in with an email and phone number	When I enter my login credentials and press the login button, I load into the dashboard with my account	A	2	TRUE

Tasks	Description	E.T. (H)	Story
Task 1	Talk to Pétur about how authentication is handled in SalesCloud	1	6
Task 2	Research authentication methods.	7	6
Task 3	Implement authentication.	8	6
Task 4	Implement sms verification.	8	6
Task 10	create new login page	1	6

Number	Category	Story	Definition of Done	Grade	Story Points	Completed
7	User	As a user I want to be able to log out of my account	When I press the logout button in the menu list or the profile screen, I am logged out and brought to the login screen	A	1	TRUE

Tasks	Description	E.T. (H)	Story
Task 5	Create logout method/functionality.	3.5	7

Number	Category	Story	Definition of Done	Grade	Story Points	Completed
8	User	As a user I want to be able to view and edit my profile	When I press the profile button I am brought to the profile page and I can view and edit my profile information	A	1	TRUE

Tasks	Description	E.T. (H)	Story
Task 6	Fix update user mutation.	3	8
Task 7	Jon catches johann up to date with the coding methodology.	10	8
Task 8	update routing for footer pages	3	8
Task 9	sprint retrospective and planning	4	SCRUM

What went well?

- Code structure determined on meeting with SalesCloud employee
- Good communication between team members
- More meetings (standup meetings at end of day)
- Longer meetings
- Productive meeting with instructor: important feedback on report structure

What could have gone better?

- More time spent on project
- Final projects in other courses
- Underestimated the time required for each user story
- Authentication proved a lot more challenging than expected

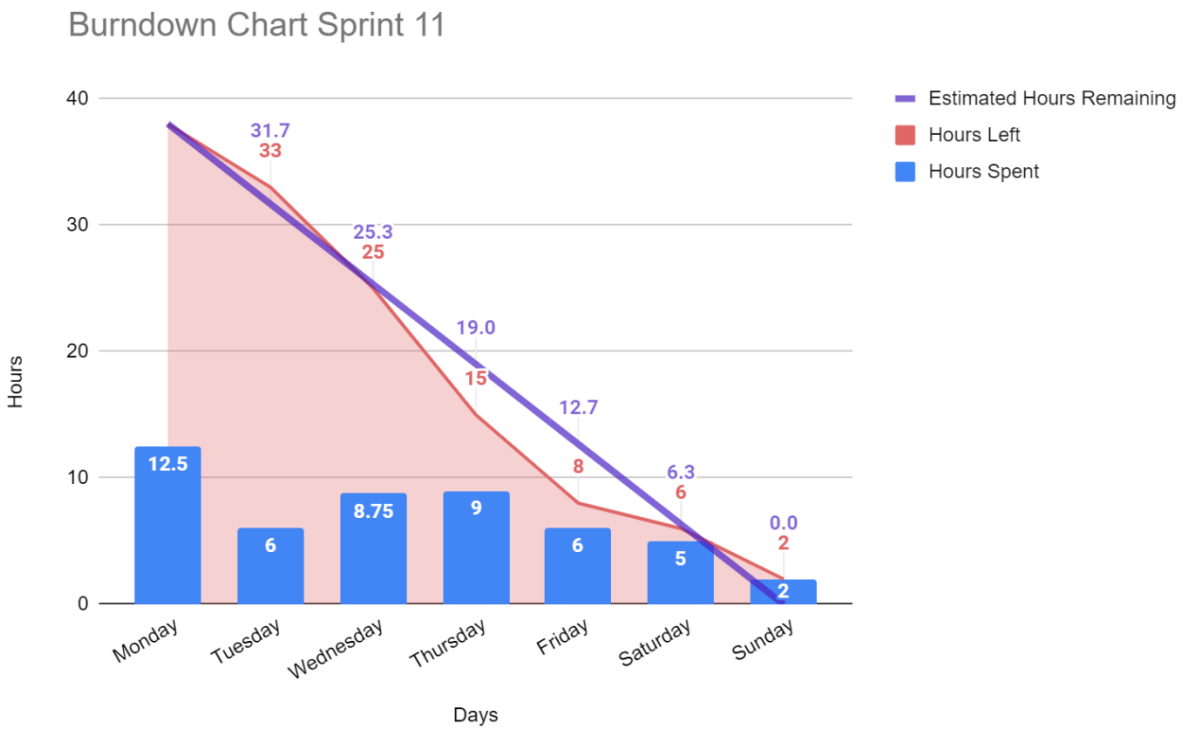
4.1.11 Sprint 11

November 8th – 14th

This sprint focused on user authentication, documentation, and primary app features. The report was reformatted after the meeting with Stefán. Most of the content of the report was good but the structure was confusing and repetitive. The team also wanted to complete the authentication and add the functionality for users to swap between restaurants.

Creating and editing the work profile along with all its subpages and functionality turned out to be a more time-consuming task than originally thought. Therefore, the user story will need to be continued in the next sprint.

Burndown Chart



Backlog and Tasks

Number	Category	Story	Definition of Done	Grade	Story Points	Completed
9	Student	As a student I want to reformat the report according to comments from the instructor and examiner.	The report has been reorganized and spell checked as according to the comments mentioned from the instructors and examiners at the third status meeting.	A	1	TRUE

Tasks	Description	E.T. (H)	Story Number
Task 1	Edit the final report according to the comments from instructor and examiner. (from notes taken during the meeting)	8	9
Task 2	Edit the product backlog and add new version to the final report	1	9
Task 3	proofreading for spelling and grammar	2	9

Number	Category	Story	Definition of Done	Grade	Story Points	Completed
10	User	As a user I want to have authentication and verification while using the application so that other people may not have access to my account.	The user is able to connect to their account pertaining to each organization via the login page by entering the valid organization name, email and phone number. The application will register an authentication for my account so that I may use the app for that organization.	A	2	TRUE

Tasks	Description	E.T. (H)	Story Number
Task 4	Implement switch account functionality	7	10
Task 5	Finish authentication for a single user	6	10
Task 6	Add styling to login page	2	10
Task 7	Add styling to verify page	2	10
Task 8	Add a loading screen when opening the app	2	10
Task 9	Fix the Login Organizations filter	1	10

Number	Category	Story	Definition of Done	Grade	Story Points	Completed
11	User	As a user I want to be able to edit and create a work profile	When I press the wages button from the dashboard, I am able to make a new work profile, edit my specifics and view my contract, my payslip (work hours) and contract	A	3	

Tasks	Description	E.T. (H)	Story Number
Task 10	Create work profile schema	1	11
Task 11	create work profile dashboard in quasar	1	11
Task 12	create base pages for work profile editing, creating and selecting	1	11
Task 13	Update the profile page to contain the current users info	2	11
Task 14	create functionality for work profile editing, creating and selecting	5	11
Task 15	create my payslip sub page	8	11
Task 16	create my contract sub page	8	11
Task 17	create work summary sub page	8	11
Task 18	Create the pages that relate to work profile	1	11
Task 19	Add routes for the work profile related pages	1	11
Task 20	Implement an image uploader and display the uploaded image on the MyContract page	5	11

What went well?

- The report is now clear in terms of format and structure.
- Authentication has gone a long way towards being completed.
- Work profile dashboard and subpage templates were set up quickly.

What could be improved?

- Time required for each work profile subpage was far greater than expected.

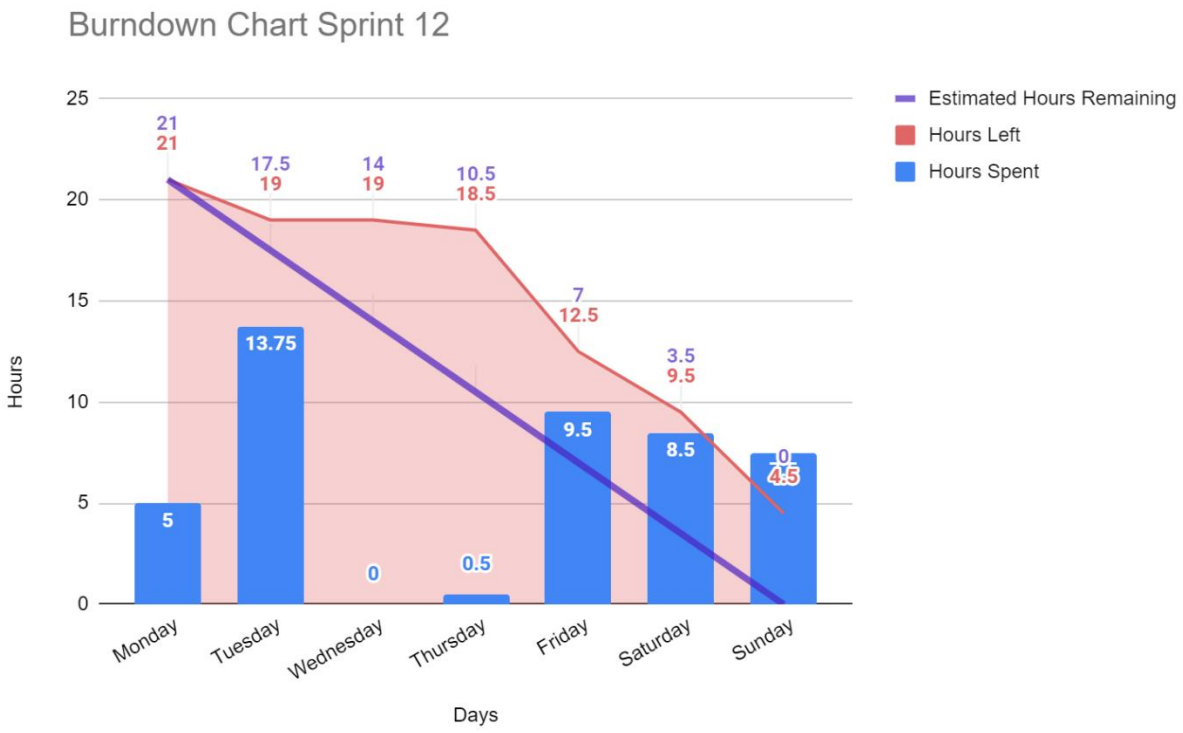
4.1.12 Sprint 12

November 15th – 21st

Team member Rúnar had his final exam this week and was therefore unable to work on the project. For this reason, less user stories were selected. The rest of the team focused on preparing interview questions for user testing and completing the rest of the work profile user story from last sprint.

Wednesday and Thursday were unproductive due to illness and vaccine shots.

Burndown Chart



Backlog and Tasks

Number	Category	Story	Definition of Done	Grade	Story Points	Completed
11	User	As a user I want to be able to edit and create a work profile	When I press the wages button from the dashboard, I am able to make a new work profile, edit my specifics and view my contract, my payslip (work hours) and contract	A	3	

Tasks	Description	E.T. (H)	Story Number
Task 1	Implement an image uploader and display the uploaded image on the MyContract page	3	11
Task 2	Create My Pay slip sub page	8	11
Task 3	Create Work Profile Schema	8	11
Task 4	create functionality for work profile editing, creating and selecting	4	11
Task 5	Create work summary sub page	3	11

Number	Category	Story	Definition of Done	Grade	Story Points	Completed
12	User	As a user I want to be able to test the product to determine the confidence of the design	**The following are completed:** Write interview questions. Determine user groups. Conduct interviews. Use feedback to determine which features and designs to change	A	1	

Tasks	Description	E.T. (H)	Story Number
Task 6	Write interview questions	2	12
Task 7	Determine user groups	1	12
Task 8	Conduct interviews	4	12
Task 9	Use the feedback from interviews to determine which features and designs to change	3	12

What went well?

- All main functionality for the work profile was completed.

What could be improved?

- Complications came up regarding graphQL resolvers that were required from SalesCloud's API
    - Their current API did not allow for querying work objects based on time.
    - New resolvers will be written by our team now that permission has been granted from SalesCloud.
- More time should be spent on completing the functionality needed to start user testing

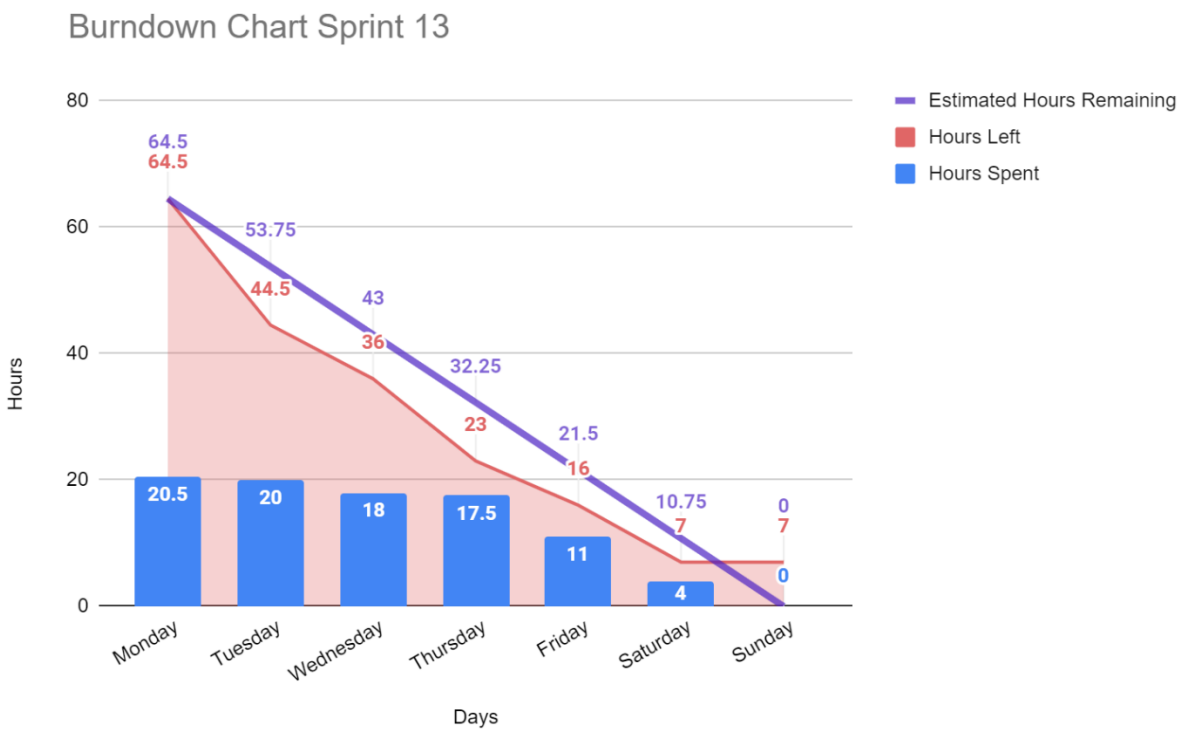
4.1.13 Sprint 13

November 22nd – 28th

The due date of the project approaching rapidly led to the teams, decision to take on more user stories and dedicate more time to the project than other sprints. After reviewing what needed to be done before the third status meeting the team split up to cover more ground. The team found that the project was lacking on integral components such as user testing, deployment, unit tests, etc.

Member Jón started his three-week academic course on Monday. This was acknowledged as a risk as documented in the risk assessment. The team took this into consideration and scheduled group meetings after Jón had completed his course requirement each day. Other project members continued to work on the project as per the work agreement.

Burndown Chart



Backlog and Tasks

Number	Category	Story	Definition of Done	Grade	Story Points	Completed
11	User	As a user I want to be able to edit and create a work profile	When I press the wages button from the dashboard, I can make a new work profile, edit my specifics, and view my contract, My Pay slip (work hours) and contract	A	3	TRUE

Tasks	Description	E.T. (H)	Story #
Task 1	Create resolver in PAAS SalesCloud repo to query data based on time	2	11
Task 2	Edit staff type in PAAS: add holiday pay, pension, union rate and pay period	0.5	11
Task 3	create mutation in staff schema to edit rate, holiday pay, pension, union rate and pay period	2	11
Task 4	Implement frontend for user to edit rate, holiday pay, pension, union rate and pay period	2	11
Task 5	Implement frontend for user to be able to filter work hours in work profile by date	2	11

Number	Category	Story	Definition of Done	Grade	Story Points	Completed
12	User	As a user I want the product to have been tested to know that my requirements for the application are met	Interviews are structured then conducted with formal questions and tasks inquiring about the user's ability and overall experience. Project members then meet and discuss feedback and determine which features to edit, add or remove.	A	2	TRUE

Tasks	Description	E.T. (H)	Story #
Task 6	Conduct interviews and record results from interview questions	5	12
Task 7	Summarize interview results and hold a meeting to decide which features to implement or change	2	12

Number	Category	Story	Definition of Done	Grade	Story Points	Completed
13	User	As a user I want to be able to run, use and update the application without risk of it failing.	Unit tests have been created to intercept bugs and errors which may hinder the usability of the product.	A	3	

Tasks	Description	E.T. (H)	Story #
Task 8	Determine which parts of the application should be tested	2	13
Task 9	Create unit tests	8	13
Task 10	Run unit tests and review coverage to determine which tests or functions need to be changed	4	13
Task 4	Implement frontend for user to edit rate, holiday pay, pension, union rate and pay period	2	11
Task 5	Implement frontend for user to be able to filter work hours in work profile by date	2	11

Number	Category	Story	Definition of Done	Grade	Story Points	Completed
14	User	As a user I want to get all the latest features and updates as soon as possible.	CI/CD has been set up such that when a change is committed to the master branch, the repository rebuilds the application and runs unit tests.	A	3	

Tasks	Description	E.T. (H)	Story #
Task 11	Research CI and CD for quasar applications	4	14
Task 12	Create pipelines for CI and CD	8	14
Task 13	Test pipelines with updates to master branch	2	14

Number	Category	Story	Definition of Done	Grade	Story Points	Completed
15	User	As a user I want the application to be visually pleasing	All pages have been styled and colored	A	2	

Tasks	Description	E.T. (H)	Story #
Task 14	Visually update the application by editing the CSS and html of each Vue page	10	15

Number	Category	Story	Definition of Done	Grade	Story Points	Completed
16	User	As a user I want to be able to switch to another organization that I am working at	When I change the workplace selected in the home screen or the shift schedule screen, then all the information displayed is updated to display that organizations information	A	3	TRUE

Tasks	Description	E.T. (H)	Story #
Task 15	Add list which allows the user to swap between authentication tokens (companies/accounts).	4	16

Number	Category	Story	Definition of Done	Grade	Story Points	Completed
17	User	As a user I want to be able to view my union rights	When I press the Rights button, I can view my rights	B	1	TRUE

Tasks	Description	E.T. (H)	Story #
Task 16	Create buttons that link to Efling's main rights	2	17

What went well?

- Majority of tasks were completed despite the workload.
- A lot of time was dedicated to the project by all members.
- Time well managed between academic coursework and project work.

What could have gone better?

- More user stories from the product backlog should have been completed before nearing the third status meeting.
- Integral components such as user testing, deployment, unit tests, etc. should have been acknowledged and completed before this point in the project.
- Not all user stories were finished.

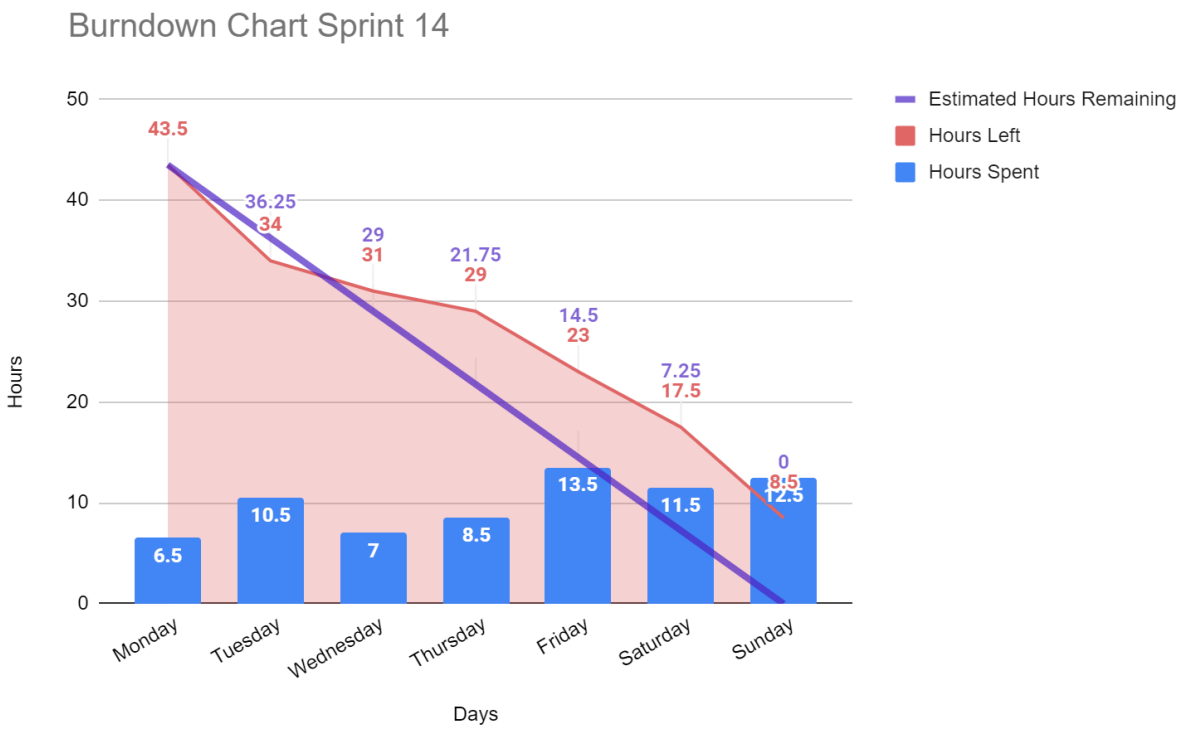
4.1.14 Sprint 14

November 29th – December 5th

The focus of this week was to complete all necessary documentation for the third status meeting and continuing the user stories which were left unfinished from the previous sprint.

Continuous delivery and continuous integration proved to be much more challenging than expected due to complexity and play store's change on august 22nd to remove .apk support.

Burndown Chart



Backlog and Tasks

Number	Category	Story	Definition of Done	Grade	Story Points	Completed
13	Student	As a student I want to have finished the final report and markdown file for the third status meeting.	We have made and updated each document and returned to the instructors and examiner by Sunday 05th decemeber 17:00	A	1	TRUE

Tasks	Description	E.T. (H)	Story #
Task 1	Sprint planning and retrospective	2	SCRUM
Task 2	Create a descriptive ReadMe file	3	13
Task 3	check product backlog for duplicates and story structure (spelling/grammar)	0.5	13
Task 4	fix total burndown to include all sprints	0.5	13
Task 5	create flowchart and flowchart segments to wireframes in final report	3	13
Task 6	add what's next chapter / what we learned (conclusion)	1	13
Task 7	fix risk assessment	0.5	13

Number	Category	Story	Definition of Done	Grade	Story Points	Completed
14	User	As a user I want to be able to run, use and update the application without risk of it failing.	Unit tests have been created to intercept bugs and errors which may hinder the usability of the product.	A	3	

Tasks	Description	E.T. (H)	Story #
Task 8	Research how unit tests should be implemented	8	14
Task 9	Create unit tests	5	14

Number	Category	Story	Definition of Done	Grade	Story Points	Completed
15	User	As a user I want to get all of the latest features and updates as soon as possible.	CI/CD has been set up such that when a change is commited to the master branch, the repository rebuilds the application and runs unit tests.	A	3	

Tasks	Description	E.T. (H)	Story #
Task 10	finish initial deployment, get icons, privacy policy, and other play store requirements	4	15
Task 11	get mobile app in intimal deployment to connect to graph	2	15
Task 12	set up CI/CD pipelines	3	15

Number	Category	Story	Definition of Done	Grade	Story Points	Completed
16	User	As a user I want the application to be visually pleasing	All pages have been styled and colored	A	2	TRUE
		possible.	the application and runs unit tests.			

Tasks	Description	E.T. (H)	Story #
Task 13	Calculate hours worked since user clocked in	2	16
Task 14	Finish redesign completely	4	16

What went well?

- Solid meeting with Helgi owner of SalesCloud talking about future prospects
- A lot of meetings between team members

What could have gone better?

- Initial deployment far more complicated than expected
- Application not connecting on mobile
- Not all stories correct

4.2 Tracking Time Spent

A document was set up to keep track of the hours each member spends on the project. The hours were tracked by sprint and by category. Progress was tracked by estimating the number of hours necessary for each sprint and comparing it to the number of hours worked. A graphical representation may be found via the burndown charts of each sprint in section 2.3. The number of hours spent on each category shows which type of tasks were most time consuming. This proved important as not all documentation hours related to user stories.

4.2.1 Hours Spent by Category

Grand Totals	Programming	Research	Documentation	Meetings	Design	Other	Total
Johann	88.93	13.7	75.9	55.75	10.5	10	**276.35**
Jon	109.5	17.25	81.25	40	4	22.5	**307**
Runar	91	10.75	48.5	38.75	10	36.75	**263.5**

4.2.2 Hours Spent by Sprint

	Sprint 1	Sprint 2	Sprint 3	Sprint 4	Sprint 5	Sprint 6	Sprint 7
Johann	13.5	9.5	12.5	21	39.25	8	20.2
Jon	15.5	18.5	15	27	45.5	12.5	27.5
Runar	17	20	16	16	40.5	17.5	13
Totals	**46**	**48**	**43.5**	**64**	**125.25**	**38**	**60.7**

	Sprint 8	Sprint 9	Sprint 10	Sprint 11	Sprint 12	Sprint 13	Sprint 14	Totals
Johann	15	0	16.85	22.65	31	45.33	21.57	276.35
Jon	19.5	12	21	16.5	13.75	30.25	32.5	307
Runar	20.75	0	19.75	19.75	3	32.5	27.75	263.5
Totals	**55.25**	**12**	**57.6**	**58.9**	**47.75**	**108.08**	**81.82**	**846.85**

4.2.3 Total Burndown Chart

The burndown chart is a graphical representation of work left to do versus time. The outstanding work in hours (backlog) is on the vertical axis, with time worked in hours along the horizontal. It is a run chart of outstanding work and is used here for predicting when all the work will be completed.