

Employment contract for Bachelor Group 6

Members: Aleksander Vegsund, Balendra Sounthararajan, Joakim Røren Melum, Odin Velle Ulvestad

Roles and task distribution

The responsibility within the team is divided equally between each team member, and the majority ruling will decide if there is a discussion. Every decision that affects the whole team and not just the given team member should be voted on in plenary.

Work should be divided between all members, and every member should contribute to the project equally. Sprints and tasks will be available in jira, where the tasks must be picked sequentially in the order they are listed.

Team contact person: Aleksander Vegsund

Responsibilities: Summon meetings with product owner and supervisor. Functions as the main contact point for issues, questions and similar matters in regards to the bachelor project.

Procedures

A. *Meeting notice*

Until week 12 (Monday, March 20.) meetings regarding the bachelor thesis will happen on every Thursday and Friday from 0900 – 1600, unless we have to deviate for unforeseen reasons. From Tuesday, March 21., we will meet up every day to work on the bachelor thesis until we are done.

B. *Notification of absence or other events*

If a group member is sick, he/she is responsible for notifying the other parties (team, supervisor) in reasonable time. This should primarily be done by using the teams messenger group and email, but discord could be used as a secondary option. The person that is sick is responsible for ensuring that the remaining parties has received the message. The person being absent must ensure that the remaining parties gets the notification, to avoid misunderstandings.

C. *Document management*

We will use different tools depending on the information and tasks, but preferably the whole team should use the same tool for simplicity reasons. In that way we will be able to help each other more easily.

- GitLab will be used as the remote repository for version control of the source code.
- JIRA will be used as a workflow tool to keep track of tasks related to the project
- Confluence will be used as a tool for describing tasks and progress
- Teams will be used for the remaining documents such as PDFs, word-files
- GitKraken and git-bash can be used for committing, pulling, pushing etc.

D. *Submissions of group work*

- Every team member is responsible for finishing tasks assigned by themselves or assigned by the team. If help is needed to complete the task the given team member must notify the other team members in reasonable time, so the issue at hand can be solved.

- Every team member should review the work done by the whole team in the sprint, to ensure that the quality is at the expected level. Before making any major corrections or changes, inform the team so that it can be discussed before changing.
- Team members are responsible for keeping track of the deadlines and important dates for themselves. It is encouraged to remind other team members when upcoming deadlines are closing.

Interaction

A. *Attendance and preparation*

- Meetings for the team will primarily be held on Thursdays and Fridays until week 12, from 0900 – 1600. From week 12 we will make a new schedule to meet, where it probably will be a hybrid solution with some physical and some digital meetings.
- Every team member should meet at the given time or notify the remaining parties as soon as possible if they are running late.
- Preparing for the meetings and lectures is essential to get the most out of the time, so each team member should beforehand read the given subject that is to be discussed/worked on the given day(s).

B. *Presence and engagement*

While meetings or preparations for the work is being done, all members should contribute to a good working environment and dedicate their attention to the tasks. This means that computer games, listening to music or doing other irrelevant activities according to the task is prohibited.

C. *How to support each other*

Everyone must contribute to make the work environment as pleasant as possible. To function as a good team, it is important to show support and understanding in both work and social situations. E.g., always say hello to everyone when you arrive and answer other team members politely. Be inclusive and share useful information, and if a discussion occurs be calm and objective.

D. *Disagreement, breach of contract*

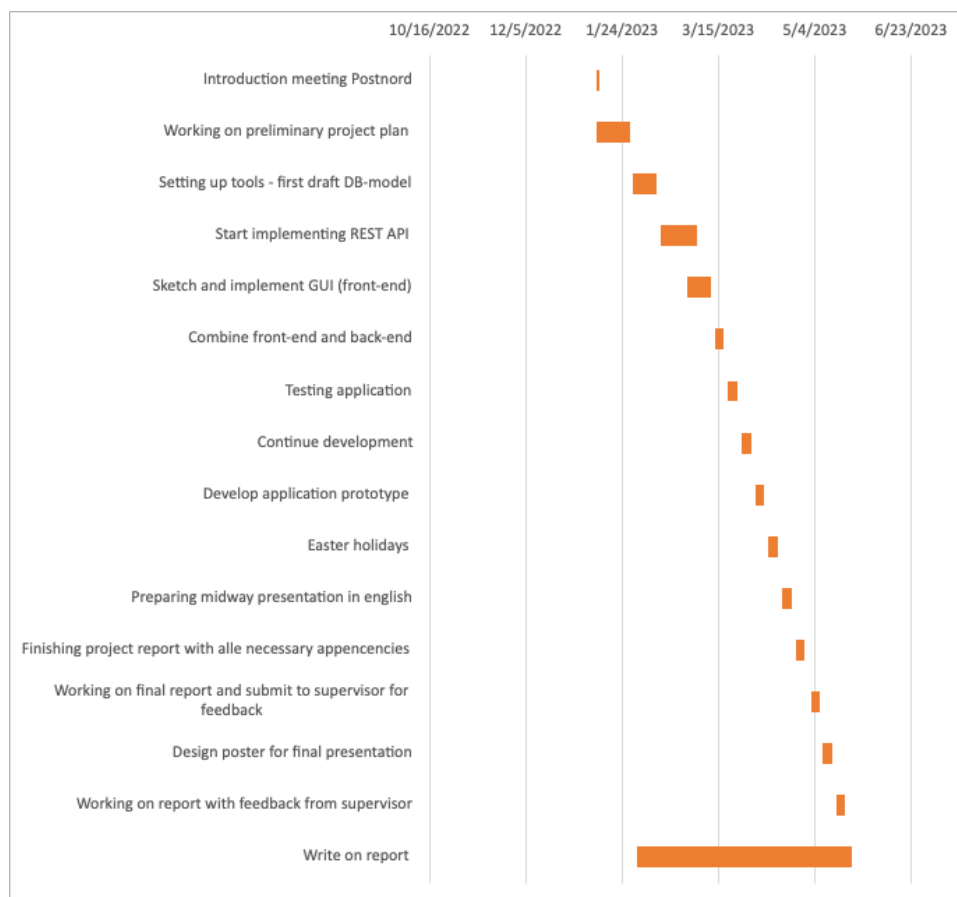
- Coming too late to team meetings without notifying other team members is tolerable, if it's between 0 and 15 minutes. But preferably the team should be notified regardless of the amount of time.
- Coming too late to meetings with product owner or supervisor should be notified no matter how soon it is to arrival.
- Regularly showing up too late will result in an oral warning by the team will be given.
- Every team member is responsible for gathering the necessary knowledge to contribute to the project in an equal manner to the other team members. If struggling the given team member is responsible for seeking help. If this is not done, team members can delegate other tasks or give warning if the reason for this is due to slacking.
- If breaking several rules on a regular basis, the team will notify department manager of NTNU.

6.1 Schedule

Week	Date	Task
2	11.01 - 13.01	Meeting with PostNord and introducing ourselves. Reading project document. Discussing project in group to get a better understanding.
3	19.01 - 20.01	Working with group agreement, schedule and project plan
4	26.01 - 27.01	Finishing preliminary project plan.
5	02.02 - 03.02	Exploring with Jira / Confluence Sketching first draft of data model
6	09.02 - 10.02	Finishing data model and starting with implementing database.
7	16.02 - 17.02	Start implementing REST API (spring boot)
8	23.02 - 24.02	Continue/finish Implementing REST API (spring boot)
9	02.03 - 03.03	Finishing Spring boot - REST API Sketching first draft of GUI – Query Engine Viewer
10	09.03 - 10.03	Implementing GUI
11	13.03 - 17.03	Combining frontend and backend components.
12	20.03 - 24.03	Testing application.
13	27.03 - 31.03	Continue developing application
14	03.04 - 07.04	Develop application prototype
15	10.04 - 14.04	<i>Easter holiday</i>
16	17.04 - 21.04	Preparing for Project presentation in English
17	24.04 - 28.04	Finishing project report with all necessary appendices.
18	02.05 - 05.05	Working with final report and submitting it to the supervisor, to get feedback.
19	08.05 - 12.05	Designing posters to display after final presentation. <i>Poster design should be delivered minimum two days before presentation.</i>
20	15.05 - 19.05	Making changes in report according to the feedback from supervisor.

		Preparing for the final project presentation in Norwegian.
--	--	--

Gnatt chat schedule



1. 2023-01-11 First Meeting with PostNord	2
2. 2023-01-12 First meeting with Supervisor	3
3. 2023-01-19 Meeting notes: Supervisor	4
4. 2023-01-27 Meeting notes: Post-Nord	7
5. 2023-02-03 Meeting notes: Post-Nord	9
6. 2023-02-03 Meeting notes: Supervisor	10
7. 2023-02-10 Meeting with: PostNord	11
8. 2023-02-17 Meeting notes: PostNord	12
9. 2023-02-17 Meeting notes: Supervisor	13
10. 2023-02-24 Meeting notes: Supervisor	14
11. 2023-03-03 Meeting Girts	15
12. 2023-03-03 Meeting notes with: PostNord	16
13. 2023-03-03 Meeting notes with: Supervisor	17
14. 2023-03-09 Girts DB-meeting	18
15. 2023-03-10 No meetings for this or next week	19
16. 2023-03-24 Meeting notes with Postnord	20
17. 2023-03-29 Meeting notes: Supervisor	21
18. 2023-03-31 Meeting notes with Postnord	22
19. 2023-04-12 Meeting notes: Supervisor	23
20. 2023-04-17 Meeting notes with Postnord	24
21. 2023-04-26 Meeting notes with Supervisor	25
22. 2023-04-28 Meeting notes: Postnord	26
23. 2023-05-11 Meeting notes: PostNord	27

2023-01-11 First Meeting with PostNord

Date

11 Jan 2023

Participants

- [Odin Velle Ulvestad](#)
- [Balendra Sounthararajan](#)
- [Joakim Røren Melum](#)
- [Aleksander Vegsund](#)

Goal

- Establish and discuss a plan regarding the assignment

Discussion points

Tidspunkt	Element	Hvem	Notater
2 h	<ul style="list-style-type: none">▪ Is there a need for NDA?▪ Restrictions towards programming languages▪ Set up future meetings	Torgeir, head of IT	<ul style="list-style-type: none">• Gave us a tour around the building• Gave a short presentation with history and insight on services they provide in PostNord

Summery

Arrived at PostNords office building for the meeting at around 12:00 on Wednesday morning. Once we met up with the Head of IT Torgeir, we got a tour around the building and gained an insight into what services they provide as well as some history revolving around the company.

After the tour we discussed the bachelor theses assignment. We were given a first draft of the problem the company would like us to solve for them as well as we were informed no NDA agreements were needed for this assignment.

The assignment to our understanding was to create a Query engine which the user will be presented with some sort of GUI that erases the need for the users to know the SQL language. Our task is to research the best, most effective and simplest way to present this Query engine to our users. The targeted users are developers withing the PostNord business.

We've agreed to be working in sprints and working in a scrum team. Every 14th day well. Be having a status meeting with the Head of IT the first few times around where we'll show off our progression. Every 7th day we'll work in sprints to reach a goal we set at the start of the week.

Programming languages well as other technologies were mentioned in the meeting and is in the PDF's from PostNords PowerPoint presentation. However, Java and Vue for front and backend as well as some SQL and other API's were mentioned as preferred languages and frameworks.

2023-01-12 First meeting with Supervisor

Date

12 Jan 2023

Participants

- [Odin Velle Ulvestad](#)
- [Joakim Røren Melum](#)
- [Aleksander Vegsund](#)

Goal

- Meet the supervisor for our project assignment

Discussion points

Tidspunkt	Element	Hvem	Notater
20 min	Introductions	Rituka Jaiswal	<ul style="list-style-type: none">▪ Weekly meetings every friday

Summery

Met up with the supervisor in person at her office, group members present for this meeting was everyone except Balendra. He was not able to meet up due to sick children. Otherwise we introduced ourselves and spoke a bit about the bachelor project in general and got a few tips on how we should start off with the project; like drawing up some use-cases for all the steps we need to take into consideration in order to solve the problem at hand.

We didn't have too much to relay to her on this meeting, however we've agreed to meet with her once a week to ensure we have some weekly progression. Will need to discuss a bit within the group which day works best for the weekly meeting but will most likely be a day between Wednesday – Friday as the supervisor is busy with classes on Mondays and Tuesdays.

For the next meeting we will have sent our supervisor PDF's we were granted for our assignment, translated from Norwegian to English.

2023-01-19 Meeting notes: Supervisor

Date

19 Jan 2023

Participants

- [Odin Velle Ulvestad](#)
- [Balendra Sounthararajan](#)
- [Aleksander Vegsund](#)

Goal

- Discuss the initial draft assignment handed to us by PostNord
- Present our current understanding
- Gain insight on what to ask PostNord in order to gain a better understanding on the task at hand

Discussion points

Tidspunkt	Element	Hvem	Notater
30 min	<ul style="list-style-type: none">▪ Present our understanding on the assignment▪ Discuss the initial draft	Rituka Jaiswal	<ul style="list-style-type: none">• Both the group and the Supervisor figured the draft to be vague and unclear

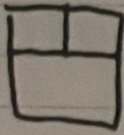
Summary

Various group members showed up to the meeting with our supervisor, Joakim was sick, so he had to stay home for this meeting. We started the meeting up by presenting to our supervisor how we understood the problem that PostNord wanted us to solve. How we understood the assignment is this.

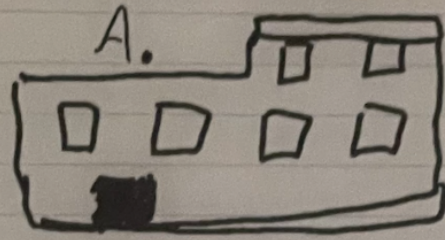
"We are tasked with creating a Query search engine where the developers at PostNord wouldn't have to know SQL to be able to use, here the information will be presented as a web interface in way which is simple to use and efficient to read. As we were not granted access to PostNords database, we'll additionally have to create a simplified database ER-model which we'll base the Query engine on."

Additionally, we also presented a sketched version of how we understood the process of which a package goes through to be transported from start to finish. The main ideas being that the package always must go through a checkpoint which it gets registered once upon arrival and another time at departure. The whole process how we sketched below, this is just to try and figure out which fields in the database model that we should take into consideration for our system, however this is overly simplified and does not represent the full task at hand.

⊙ Pakke start.



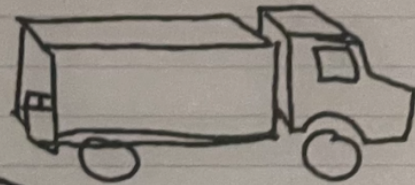
Post senter Checkpoint



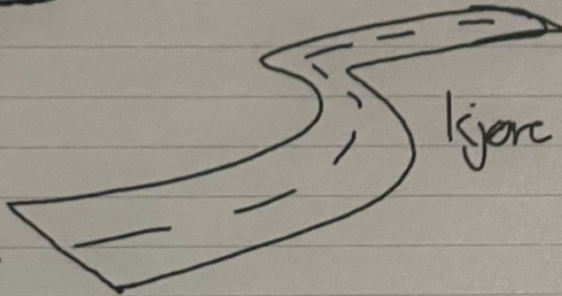
Registrer pakke



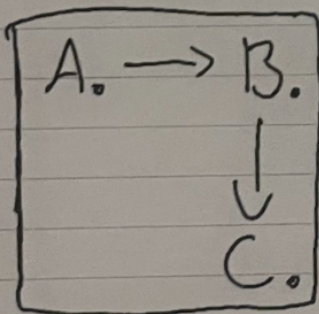
laster pakke i bil



kjør rute

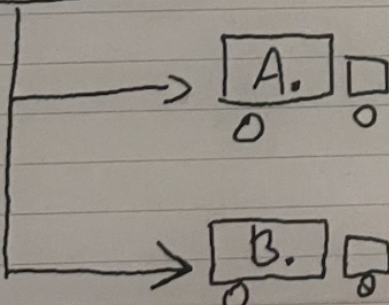


Kontrol senter
Checkpoint



Frakt av pakke.

- Bestillings ordre?
- Info på pakke?



- Registrer pakke i Checkpoint.
- Registrer pakke i Bil.

After some further discussion with our supervisor, we looked at the first draft we were handed from PostNord had a vague vision and description on the assignment we were granted from the company. It was suggested that we for our next meeting ask PostNord for clarification at various areas such as

- Find out which fields in the database that changes, as well as which fields are relevant from the database model to represent to the end users of the web interface.
- Find out what functions the GUI should have.
- Find out which parameters the end user would want to be able to use to search in the query engine we're tasked to develop.
- Find out which Queries PostNord expects us to implement for the Query engine.
- Find out what functionality PostNord expects from a Query engine.
- If we don't get a more specified draft from PostNord during the next meeting.

At the end of the meeting, we've arranged the meetings with our supervisor to meet with us now Fridays between 13:00 to 14:00, as we found it was challenging to get any much work done to present and ask for guidance on Thursdays.

2023-01-27 Meeting notes: Post-Nord

Date

27 Jan 2023

Participants

- [Odin Velle Ulvestad](#)
- [Balendra Sounthararajan](#)
- [Joakim Røren Melum](#)
- [Aleksander Vegsund](#)

Goal

- Gain a better understanding of the assignment we're meant to solve

Discussion points

Tidspunkt	Element	Hvem	Notater
45 min	<ul style="list-style-type: none">▪ Discuss planned questiones	Torgeir, Head of IT	<ul style="list-style-type: none">• We did not bring our supervisor with us for this meeting

Summery

All members present at the meeting, did not bring the supervisor. Several questions were asked under the meeting in order to gain clarification over the assignment at hand, during the meeting these questions were asked and answered:

Q: For the Query engine should the search engine only implement functions regarding pure READ operations from the database, or are we supposed to implement a complete CRUD application?

A: *"The primary goal is fetching information out of the database and presenting the information requested to the end user as best and efficient as possible for the non-expert, this task is tightly coupled with the GUI."*

Q: Will this Query engine demand user authentication?

A: *"No, that's considered outside of the scope for this assignment as that would take time away from developing the Query engine. Don't waste time on implementing authentication"*

Q: What functionality do you expect us to implement for the Query engine if any, are we free to implement functionality how we see fit?

A: *"We choose not to set any requirements for functionality besides being able to make searches of course! The group is detached from production within the company due to issues revolving complexity and is hence fourth free to tackle the assignment as they see fit"*

Q: What requirements do you have in regards towards the database / database model?

A: *"There should be a decent amount of data in the database on order to properly test the Querys. We'd also like the group to do research around the performance between GraphQL and Java REST API for the final rapport you'll be writing"*

Q: What information would you like to be left with after having made a search using the Query engine?

A: *"There is no concrete plans regarding what the end user is left with after making a search, though the group should pretend the end user they are developing for is a person working with finances. In other words, keep in mind that the application should be used by a non-expert in SQL and a GUI should be implemented with that in mind"*

Q: What expectations do you have in regards for functionality towards the GUI?

A: *"The GUI should be implemented in a way that a non-expert on SQL should be able to make good use out of the Query engine, otherwise we don't have other expectations. Do research on what is the best method for a non-expert be able to use the program efficiently and with minimal confusion"*

Q: Should the GUI be scalable towards a Personal Digital Assistant (PDA)?

A: *"No, we think that it could just be scaled towards a computer screen, no need to scale it down to something smaller than that."*

Otherwise during the meeting, we mentioned a "3-part agreement" document handling a few copy rights and getting that signed by them and us throughout the day. They mentioned that they did not get access to GitLab but they did however gain access to JIRA, though unsure about Confluence for the time being.

PostNord also handed us over a second draft on the assignment at hand with a hopefully more precise description via email which we for the moment have yet to read. Though it was mentioned during the meeting that it should be clearer than the previous draft.

14 days from now (aka 10th of February) we will have come up with some database models that we'll present for our next meeting.

TL;DR

- Query engine will only have READ operations for functionality
- Authentication is outside the scope of the Query engine
- There should be a considerable amount of data in the database to properly test the SQL queries
- We are free to implement functionality on both the back and front end of the application, reason being not to make the assignment too complex and big
- A comparison in the final rapport should be done between REST API and GraphQL
- Presentation of data to the user should be done in a way a non-expert is able to make use of it and understand, the end user being for example a person working with finance
- Application should be scalable towards a PC, other things are outside the scope.
- We received an updated project description from PostNord
- We'll be using Confluence to document stuff and JIRA for scrum
- 3-part assignment was mentioned and signed by the end of the day

2023-02-03 Meeting notes: Post-Nord

Date

03 Feb 2023

Participants

- [Odin Velle Ulvestad](#)
- [Balendra Sounthararajan](#)
- [Joakim Røren Melum](#)
- [Aleksander Vegsund](#)

Goal

- Show off our datamodel
- Summery of meeting with PostNord

Summery of meeting

- Started off with difficults regarding screensharing
- Showed off the Sketches of our database model and the flow chart of the work flow
- Showed off the First database model sketch with logic

After having showed off the database model to Torgeir (Head of IT) and Berit (Head of database management) we found a few improvemens we can make towards our database sketch modell. For the next week we've agreed to show them a new draft after we have revised the previous sketch of the database modell. However we are on the right track and they told us we've gained a good understanding of the assignment as well as they think we've already come far! If we can make the proper changes for the next sketch iteration we'll end up with a solid model!

- We should consider that it is not possible to only use the barcode on the Package as a ID, reason being the barcode can be recycled and bar codes differers depending on the different delivery servives
- To solve this we could make the barcode a attribute and use another ID for the package. (They were happy we added a own ID to the package in the orignal sketch draft)
- We should use some more proper terminologi for the database model, Example: Package => Parcel
- We should not take into consideration what where in the country the cost per scan in a terminal is.
- We'll use a static cost per terminal as well as the location of where the terminal is, (Use this to track the package)
- We are not required to differ terminals from terminals in cars VS terminals at other checkpoints.
- We will mostly be using static data in our database and should prioritise "Costs" and "Searchability" for this assignment
- We will calculate income using costs of freighth, x amount of scans per terminal and additional servives bought
- Instead of using Sender, Recevier and Customer, we should be simplifying it to a single Customer and instead add a "type" attribute on the costumer to determine wether they are a sender or recevier.
- There are a few many to few and few to many arrows in our database we should be flipping around as some connections doesn't make sense atm, Example: Order has many statuses, instead of statuses has many orders
- Should add a few forgotten tables, such as postal codes which we forgot in our first draft here
- Should add a table with a list of terminals (Check post nords website for public terminals)
- Could combine municipality to get a common list of terminals
- Should populate the database using a automation process.

Discussion points

Time	Elements	Who	Notes
45 min	database model	Torgeir, Head of IT Berit, Architecture & Technology	

Checklist of what we've discussed

- ☒ Show off sketch of database model
- ☒ Recevie feedback

2023-02-03 Meeting notes: Supervisor

Date

03 Feb 2023

Participants

- [Odin Velle Ulvestad](#)
- [Balendra Sounthararajan](#)
- [Joakim Røren Melum](#)
- [Aleksander Vegsund](#)

Goal

- inform our supervisor regarding progress updates on our assignment for PostNord

Summary of meeting with supervisor

Met up with our supervisor at around 14:00. Here we showed our progress to her showing off our first draft of flow charts and database model sketched, as well as overall expressing that we've got a clear understanding of the assignment. There has been a change of meeting schedules since last meeting. Now we'll be working with 1 week sprints, this meaning we'll be having meetings with both PostNord and our supervisor every week at Friday.

Discussion points

Tidspunkt	Element	Hvem	Notater
20 min	<ul style="list-style-type: none">▪ Show how far we've come on our project	Ritukja, Supervisor	<ul style="list-style-type: none">• Asked us if we have partitioned the work into smaller segments and divided tasks among ourselves• It was brought up different reports we'll need in our final report by the end of the year:<ul style="list-style-type: none">◦ Sprint reviews, sprint retrospectives◦ Status reports (Weekly)◦ Time list◦ Meetings and meeting summaries◦ Reflection notes (individual)

Checklist

- ☒ All group members present for meeting
- ☒ Forwarded progression to supervisor

2023-02-10 Meeting with: PostNord

Date

10 Feb 2023

Attendees

- [Odin Velle Ulvestad](#)
- [Balendra Sounthararajan](#)
- [Joakim Røren Melum](#)
- [Aleksander Vegsund](#)

Goals

- Update PostNord with the current progress

Summery

- Brought up the new database model
- Informix block? Some group members are able to connect Spring boot towards IBM Informix
- Net beans IDE works well towards IBM-Informix
- Group going to check out Net beans
- Feedback,
- With the issues, need to define what must be done in order to complete a task
- We should have a goal to complete all issues in a sprint iteration
- We should define a theme for our sprints, aka sprint goal
- Database model tips from PostNord.
- one to many on parcel to shipping order? one shipping order can have many packages...
- many to many should be applied there due to reuse of parcel_ID in multiple orders, and one order can have multiple parcels
- "Parcel ID send" is a junction table used to un-tangle the many to many connection between the "Parcel" and the "Shipping order" table
- Should refine the database model with feedback, then forward a new db model asap.

Discussion items

Time	Item	Who	Notes
20 min	Updates on progression	Torgeir, Head of IT Berit, Database Dev	

2023-02-17 Meeting notes: PostNord

Date

17 Feb 2023

Attendees

- [Odin Velle Ulvestad](#)
- [Joakim Røren Melum](#)
- [Balendra Sounthararajan](#)
- [Aleksander Vegsund](#)

Goals

- Update PostNord about the progression in the project
- Forward challenges using IBM-Informix together with Java Springboot?

Summery

- Informed we've made edits towards the feedback from last weeks meeting!
 - Informed we tried to connect Db via Informix, able to fetch data from DB and tested with Postman
 - Informed that we received a mail from the other group, Should send them the set up of Spring-boot (requested from postNord)
 - We think that we should be start working with the code base, reason being we can't spend too much time only planning the db forever
-
- For next week we will implement entity classes for the tables in the DB, then begin sketching on GUI for the front end

Discussion items

Time	Item	Who	Notes
10 min	Update on current progression	Torgeir, Head of IT	

2023-02-17 Meeting notes: Supervisor

Date

17 Feb 2023

Attendees

- [Odin Velle Ulvestad](#)
- [Joakim Røren Melum](#)
- [Balendra Sounthararajan](#)
- [Aleksander Vegsund](#)

Goals

- Update on current progression

Summery

- Went ahead and met up with our supervisor
- Supervisor is now able to view the Confluence and Jira for our project
- Got tipped that we should start thinking about code implementation for the more vital parts of the DB sketch model
- We asked and gained new insight on how we should be writing our retrospective rapports
 - Writing what we did well and what could be improved
 - Writing up the steps and decisions we made for the week and the reasoning behind them
 - Writing up what we did get done and why we couldn't finish certain tasks

Discussion items

Time	Item	Who	Notes
15min	Status update	Ritukja, supervisor	

2023-02-24 Meeting notes: Supervisor

Date

24 Feb 2023

Attendees

- [Odin Velle Ulvestad](#)
- [Balendra Sounthararajan](#)
- [Aleksander Vegsund](#)

Goals

- Update on the current progression on the assignment!

Summery

- Met with the supervisor at scheduled time 14:30, digital meeting
- Informed supervisor on our current progression
 - Beginning code implementation of Entity, Service, Repository and Controller Classes in Springboot with support for GraphQL
 - Set up the GitLab branching structure, (link to structure page coming soon...)
 - Set up a proper issue board with subtasks on Jira where work is evenly distributed
- Informed we did not have a meeting with PostNord this week due to winter break and them having a busy office.

Discussion items

Time	Item	Who	Notes
30min	<ul style="list-style-type: none">▪ Update on current status▪ Gain insight in how to assign issues in Jira	Rituka Jaiswal , Supervisor	<ul style="list-style-type: none">• Structuring issues and subtasks comes down to personal preference

2023-03-03 Meeting Girts

Date

03 Mar 2023

Attendees

- [Odin Velle Ulvestad](#)
- [Balendra Sounthararajan](#)
- [Joakim Røren Melum](#)

Goals

- Ask about how to populate database with dummy data
- Connecting localhost to Ubuntu Informix DB

Summary

We got access to Informix db in Ubuntu server. Girtz opened port 9088 which is default port in Informix.

We discussed some dummy data populating mechanisms. But Girtz did not have any experience with them.

Discussion items

Time	Item	Who	Notes
30min	Database and server connections	Girts Strazdins	

2023-03-03 Meeting notes with: PostNord

Date

03 Mar 2023

Attendees

- [Odin Velle Ulvestad](#)
- [Aleksander Vegsund](#)
- [Balendra Sounthararajan](#)
- [Joakim Røren Melum](#)

Goals

- Update post nord on current progress!
 - Show off our code base (GitLab)
 - Show off OpenStack Ubuntu server with IBM-Informix DB installed
 - Inform we've begun discussing frontend GUI

Summery

- Meeting started 10:00 am
- Began showing off our GitLab
- Showed off the graphiql website
 - Performed a query fetching the TerminalById, TerminalByName, and StatusById
 - Only parts of the DB is currently implemented, going to implement the rest of the code base
- Asked if we could have one week to studie and prepare for an upcoming exam 20 Mar 2023!
- Will implement a new page where we will put our most recent zipped git code for PostNord to read!
- 13:00 - 13:30 are the new meeting date with PostNord from now on
- They want the front end to be a bit generic and able to make many queries
- Also would need to eventually check the scale of the application
- Was asked about how the scrum is going
 - Showed our Meeting notes
 - Showed our Retrospectives

Discussion items

Time	Item	Who	Notes
20min	Update post nord on current progress	Torgeir Lien Berit a Flatbø, DB dev	

2023-03-03 Meeting notes with: Supervisor

Date

03 Mar 2023

Attendees

- [Odin Velle Ulvestad](#)
- [Balendra Sounthararajan](#)
- [Joakim Røren Melum](#)

Goals

- Update supervisor on current progression

Summery

- Updated supervisor on our progression and informed her we feel confident in what the next steps for the project is now that we've got the ball rolling
- Informed her that we created a page on confluence where we'll put versions of our bachelors thesis for her to supervise

Discussion items

Time	Item	Who	Notes
15min		Rituka Jaiswal	

2023-03-09 Girts DB-meeting

Date

09 Mar 2023

Attendees

- [Aleksander Vegsund](#)

Goals

- Clarify the structure in the database model, check that relationships between tables are logically correct.

Discussion items

Time	Item	Who	Notes
15min	input database model	Aleksander	<ul style="list-style-type: none">• naming conventions: use all small letters in entity names and columns• use underscore instead of camel case• use only small letters• don't use keyword names as column names• create different use cases to check that the model is correct.

2023-03-10 No meetings for this or next week

Date

10 Mar 2023

Attendees

- [Odin Velle Ulvestad](#)
- [Aleksander Vegsund](#)
- [Balendra Sounthararajan](#)
- [Joakim Røren Melum](#)

Summery this week and the following

- Due to exams and projects in other classes we will not be having any meeting notes with either Postnord or our supervisor.
- These weeks will be spent preparing for these exams
- After the next week we will then have 5 days a week we can spend on working on our Batchelor project!

2023-03-24 Meeting notes with Postnord

Date

24 Mar 2023

Attendees

- [Odin Velle Ulvestad](#)
- [Balendra Sounthararajan](#)
- [Aleksander Vegsund](#)
- [Joakim Røren Melum](#)

Goals

- **Started meeting by updating the stake holder with current progression on project, this includes:**
 - Taking courses in Vue, which is a javascript framework we'll be using for front end development.
 - Using Figma to draft up possible GUI designs.
 - Taking in external tools in order to fill up our Informix database with dummy data.
 - Programming database relations in our backend (one to many, many to many, etc).
 - Creating a short list of use cases and user stories.
- **When we showed our use cases we got the following feedback:**
 - Add features for exporting more then just a PDF of the given data, examples include:
 - *The ability be to export files as CSV or Excel which can be used for creating graphs and predictions for ML (Machine Learning)*
 - *The ability to export data such it can be used in programming languages such as python*
 - We should exand the user stories and cases to get a better picture of how the application will be used.
 - We should identify the types of users for our application, examples could be:
 - *A data analytics specialist, which would need raw data to run analysis*
 - *A person working with customer support, would like to know what's going on with peoples packages.*
 - *A person working with business analysis, managing income and expenses*
- **When we showed our GUI drafts we got the following feedback:**
 - The base sketch they were happy with so we're going to continue developing with this as our base for now
 - We should focus on building our applications with the initial scope, then expand if we have extra time
 - If there is other sorts of data, how could a non specialist create queries for fetching this information?
- **Question revolving presentation of the project:**
 - Explained that we'll have our final presentation on 22 May 2023 and they are welcome to come watch if they'd like
- **Next weeks goals:**
 - Complete the GUI sketch by drawing up all features in the application
 - Connect the Front end of the project with the Back end, making them communication
 - Create more use cases and user stories.

Discussion items

Time	Item	Who	Notes
30min	Update on current progress!	Torgeir Lien	

2023-03-29 Meeting notes: Supervisor

Date

29 Mar 2023

Attendees

- [Odin Velle Ulvestad](#)
- [Aleksander Vegsund](#)
- [Balendra Sounthararajan](#)
- [Joakim Røren Melum](#)

Goals

- Update supervisor on current progress on project
- Ask regarding wether or not we should send the report over in chunks of iterations or if we should draft up a rapport and then send when everything is written
- Ask regarding booking group rooms

Summary

- We've updated our supervisor on our current stand point in the project. Mostly finished the backend with connections and a few queries, currently tweaking a few bugs and common issues but once those are fixed we'll work on front end of the application
- We should send the report in iterations of small chunks when we have something to write, however it was recommended we keep focus on the programming aspects before we begin focusing on writing much, at least for 2-3 weeks time.
- Supervisor will check up with [Girts Strazdins](#) regarding booking group rooms for us on Wednesdays and Fridays.

Discussion items

Time	Item	Who	Notes
15min	<ul style="list-style-type: none">▪ Updata on process▪ Check up on how to forward the bachelors thesis to supervisor▪ Check if supervisor is able to book group rooms for us	Rituka Jaiswal	

2023-03-31 Meeting notes with Postnord

Date

31 Mar 2023

Attendees

- [Aleksander Vegsund](#)
- [Balendra Sounthararajan](#)
- [Joakim Røren Melum](#)

Goals

- Inform Postnord what has been done since the last meeting. Tried to complete spring boot and working with GUI with vue.js
- Ask about sectioning the front-end page (parcels, shipping orders, economy etc.)
- Ask what is a good design, get some input from Postnord.

Summary

- Started the meeting with updating Torgeir (Postnord) on what has been done the last week. We have worked on completing the spring boot for back-end, and started on the front-end part of the application. At this moment we just have a very simple site without functionality.
- Torgeir suggested that we could (if there is time) create a regular spring boot application to compare spring boot and spring boot with GraphQL (pros and cons with both).
- Sectioning of the front-end. E.g., create economy section to get out reports regarding cashflow, separating that part from parcel tracing etc.
- Use real terminals in the database

Discussion items

Time	Item	Who	Notes
25min	Update about project progression	Torgeir Lien	

Action items



2023-04-12 Meeting notes: Supervisor

Date

14 Apr 2023

Attendees

- [Aleksander Vegsund](#)
- [Balendra Sounthararajan](#)
- [Odin Velle Ulvestad](#)
- [Joakim Røren Melum](#)

Goals

- Sum up what has been done since last meeting and inform supervisor on what is going to be done until the next meeting.

Summary

- Supervisor told us to just start writing something on the report go get started, and that it could be revised at a later time if the content was not perfect.
- Start with the simplest things, and topics where we have all the needed information and we can send that to her after we are done writing.
- Continue to work on the system to make it ready for final delivery at the end.

Discussion items

Time	Item	Who	Notes
5min	Report	Group	Start writing to get feedback. Limited time since 5 weeks left
5min	System	Group	System we are developing, checking if on schedule.

Action items



2023-04-17 Meeting notes with Postnord

Date

14 Apr 2023

Attendees

- [Odin Velle Ulvestad](#)
- [Aleksander Vegsund](#)
- [Balendra Sounthararajan](#)
- [Joakim Røren Melum](#)

Goals

- Update post nord on current progress

Summery

- Gave post nord a short demo of our application thus far, only new features from last iteration being the implementation of a single query search for the customers in the DB
- Received feedback on our sprints saying we set a bit too optimistic goal for what we were able to complete
- For next meeting we have set plans to further improve our front end application and hopefully get a bit further
- Development going forward at a bit of a slower pace then we'd like it too currently as we are behind schedule.

Discussion items

Time	Item	Who	Notes
10 min		Torgeir Lien	

2023-04-26 Meeting notes with Supervisor

Date

26 Apr 2023

Attendees

- [Odin Velle Ulvestad](#)
- [Balendra Sounthararajan](#)
- [Aleksander Vegsund](#)

Goals

- Report revision notes

Summery:

- Report structure
 - should have one architecture diagram !!!NPNPNP!!!
 - What tools has been used for the project
- should not use sources that not public, locked behind a paywall
- referencing physical books you go to site it from google scholar instead of

- Change the header "Theory" for "Abstract"
- after abstract should come the introduction
- after introduction should come the architecture , tools
- then the methodology
- then Experimental results (all the results / diagrams developed with screenshots explaining them)
- discussion (what did we learn, retrospective)
- then comes the conclusions / draft
- lastly references

- Should also describe the tables and their entities (DB)

Discussion items

Time	Item	Who	Notes
40min		Rituka Jaiswal	

Action items

- ☒ work on the Results next

2023-04-28 Meeting notes: Postnord

Date

28 Apr 2023

Attendees

- [Aleksander Vegsund](#)
- [Balendra Sounthararajan](#)
- [Odin Velle Ulvestad](#)
- [Joakim Sander Løken](#)

Goals

- Present the latest update from the website for the product owners
- Discuss potential improvements for the website - functionality that can be done

Summary

- Discussed different things for different sections
 - In general, need to look at indexing for the database because of performance issues (needs to be resolved before final hand-in)
 - Parcel could have queries for:
 - Invoices belonging to parcels
 - parcels by their status messages
 - Track checkpoints a parcel goes through
 - Invoices could update for:
 - Rework the calculations in the header with a formula
 - Take total earnings from 3 countries and divide among them
 - also take the total earnings and divide by the number of terminals in Norway
 - Locations could update with:
 - A map showing off locations visually
 - bigger dots the bigger the customer bases etc
 - Customers could improve with:
 - allowing to sort customer bases (example, coop customer base) etc
- Will send first draft of final report to PostNord and Supervisor 06 May 2023

Discussion items

Time	Item	Who	Notes
25min	update on current progression	Torgeir Lien	

Action items



2023-05-11 Meeting notes: PostNord

Date

11 May 2023

Attendees

- [Odin Velle Ulvestad](#)
- [Aleksander Vegsund](#)
- [Joakim Røren Melum](#)
- [Balendra Sounthararajan](#)

Goals

- Update on current progress

Summery

- The front page was shown to Postnord
- Received feedback on the parcel page, Implement logic to sort the DB table via Dropdown menu
- PostNord reviewed the bachelor thesis report and came with feedback
- PostNord additionally invited us to present the project for them the day after the Batchelor is submitted 23 May 2023

Discussion items

Time	Item	Who	Notes
25min	Update on current progress	Torgeir Lien	

1. Retrospect on week 5	2
2. Retrospect on week 6	3
3. Retrospect on week 7	4
4. Retrospect on week 8	5
5. Retrospect on week 9	6
6. Retrospect on week 10	7
7. Retrospect on week 11	8
8. Retrospect on week 12	9
9. Retrospect on week 13	10
10. Retrospect on week 16	11
11. Retrospect on week 17	12
12. Retrospect on week 18-19	13

Retrospect on week 5

Date	04 Feb 2023
Participants	Odin Velle Ulvestad Aleksander Vegsund Joakim Røren Melum Balendra Sounthararajan

Retrospect

First week testing out the features and functions on Jira and Confluence. Progression has been made regarding the database model and we have a solid starting point, however it will be improved upon in later iterations. The collaboration in the group has gone well and everyone have participated designing the sketches presented for PostNord on 03 Feb 2023

What did we do well?

- Everyone was actively working during the planned time
- Communicated ideas during sketching of the database model
- Discussions were constructive

What should've been done better?

- Could've prepared better on setting up database models

Retrospect on week 6

Date	10 Feb 2023
Participants	Odin Velle Ulvestad Joakim Røren Melum Balendra Sounthararajan Aleksander Vegsund

Retrospective

This week we learned how to set up a docker container together with an Informix DB. We also found tools for a database management systems as well as creating a second iteration of our database model. We have yet to complete the database model as we were not able to finish it this sprint as we underestimated how much time the issues we set up would take.

What did we do well?

- learned how to set up docker with Informix and implemented
- We found DBMS-tool, RazorSQL
- We made a second iteration of the DB model

What should we have done better?

- Should've completed the DB model
- We're a little behind schedule
- Under-estimated how much time the issues would take

Retrospect on week 7

Date	17 Feb 2023
Participants	Odin Velle Ulvestad Aleksander Vegsund Balendra Sounthararajan Joakim Røren Melum

Retrospective

This week we managed to connect IBM-Informix to a Springboot application and we've now learned how to do crud operations towards the DB. Tested the endpoints of the java application with postman and were successful. Communication within the group and collaboration has gone well!

What did we do well?

- Managed to Connect IBM-Informix to Springboot
- Able to do CRUD operations against the DB
- End points responding to Postman tests
- Good communication

What should we have done better?

- Update after meeting with supervisor

Retrospect on week 8

Date	24 Feb 2023
Participants	Odin Velle Ulvestad Balendra Sounthararajan Joakim Røren Melum Aleksander Vegsund

Retrospective

- Started using subtasks in issues
- Set up a structure for how to use git branching
- Begin programming Entity, Service, Repository and Controller classes

We started implementing classes for Entity, Service, Repository and Controllers in Java as well as we spent some time making rules for how use branching for GitLab. We agreed upon using [Git flow rules](#) for the workflow. [Balendra Sounthararajan](#) and [Joakim Røren Melum](#) started to experiment with setting up a IBM-Informix in a virtual computer in OpenStack. We did not have a meeting with PostNord this week however we did have a [meeting with our supervisor](#) on Friday, and by the end of the day we planned our next sprint with new issues.

What did we do well?

- Tested that Entity classes worked with Informix
- Set up a proper issue board
- Began experimenting with OpenStack

What should we have done better?

- Haven't managed to push all classes to the repo

Retrospect on week 9

Date	02 Mar 2023
Participants	Odin Velle Ulvestad Aleksander Vegsund Balendra Sounthararajan Joakim Røren Melum

Retrospective

- [Balendra Sounthararajan](#) and [Joakim Røren Melum](#) attempted to connect to OpenStack server via SpringBoot
- Group discussed front end GUI
- Sketched a couple ideas for GUI
- Worked on refining codebase and finishing class implementation from last weeks sprint
- Meeting with Girts
 - ([Recap meeting](#))

What did we do well?

- Implemented all classes and pushed to GitLab
- Managed to get SpringBoot and DB on server
- Begun sketching on GUI frontend

What should we have done better?

- Did not implement test classes for implemented code
- Could make multiple sketches for ideas on GUI

Retrospect on week 10

Date	16 Mar 2023
Participants	Odin Velle Ulvestad Joakim Røren Melum Balendra Sounthararajan Aleksander Vegsund

Retrospective

- [Aleksander Vegsund](#) Been experimenting with Vue and trying to learn the language as well as setting up the
- [Joakim Røren Melum](#) Been working with Guardian conditions and making the backend code base more robust, as well as fixing some name changes
- [Balendra Sounthararajan](#) Been working with attempting to populate the DB with dummy data
- [Odin Velle Ulvestad](#) Been working on creating iterations of front end designs for the application

What did we do well?

- Progressed well into the project
- Populated DB
- Designed iterations of wireframes for the front-end
- Coded guardian conditions

What should we have done better?

- poor communication
- underestimated the amount of work on issues

Retrospect on week 11

Date	23 Mar 2023
Participants	Odin Velle Ulvestad Balendra Sounthararajan Aleksander Vegsund Joakim Røren Melum

Retrospective

- Due to spending the week practicing for an exam our sprints are a bit out of order

What did we do well?

What should we have done better?

Actions

- ✓ [Odin Velle Ulvestad](#) Fix the sprint structure and issues

Retrospect on week 12

Date	24 Mar 2023
Participants	Aleksander Vegsund Odin Velle Ulvestad Balendra Sounthararajan Joakim Røren Melum

Retrospective

This week has been used to read vue.js documentation combined with udemy courses for vue.js as a prerequisite to start implementing frontend the coming weeks. Started populating the database tables with dummy data for testing and continued working with java/spring boot classes (setting up annotations for entity relations between tables). The last draft of GUI was sketched this week before presenting it to product owner on Friday 24.03.23

What did we do well?

- Found efficient way to populate tables with data
- sketched the last draft of GUI (will be used when starting to implement)
- Getting better at vue.js framework

What should we have done better?

- get better at daily standups (use SCRUM methodology better)
- behind schedule with spring boot (no work week 11 because of exam 20.03.23)

Actions

- ✓ Balendra Sounthararajan populate all tables with data
- ✓ Aleksander Vegsund finish connecting tables with JPA in spring boot
- ✓ Odin Velle Ulvestad expand GUI with all features (pop ups etc)

Retrospect on week 13

Dato	31 Mar 2023
Deltakere	Joakim Røren Melum Odin Velle Ulvestad Aleksander Vegsund Balendra Sounthararajan

Retrospective

This week we have managed to populate the informix db with dummy data for the entities, we have started on creating the frontend and we have gotten the frontend up and running on the server. We have also completed the relationships between the entities.

What did we do well?

- Starting to implement the frontend
- Got the frontend up and running on the server
- Populated the Informix DB with dummy data
- Completed the relations between the entities

What should we have done better?

- The startup meeting took too long time due to not being as effective as we should.

Retrospect on week 16

Date	24 Apr 2023
Participants	Odin Velle Ulvestad Balendra Sounthararajan Aleksander Vegsund Joakim Røren Melum

Retrospective

This week we started out with preparing for a mid way presentation on Monday and Tuesday, then for the rest of the week we worked on implementing a front page for Invoices as well as setting up a simple query to list all invoices on the front end. Otherwise a pipeline was set up for CI/CD on both the backend and front end as well as beginning to work on the main thesis report

What did we do well?

- Got a pipeline set up for CI/CD
- Getting up the layout for a Invoice page and a simple query for invoices
- Managed to more or less complete Chapter 2 (theory) in our thesis report

What should we have done better?

- Over estimated the amount of issues we could complete in a single sprint

Actions



Retrospect on week 17

Date	02 May 2023
Participants	Odin Velle Ulvestad Balendra Sounthararajan Aleksander Vegsund Joakim Røren Melum

Retrospective

worked further on customer page - worked with chart [Balendra Sounthararajan](#)

Finished layout on Invoices page - implemented apollo and char on invoice page - worked on report [Aleksander Vegsund](#)

Worked on getting a map displaying post nords offices in the Locations page [Joakim Røren Melum](#)

Created layout on parcel page - report work [Odin Velle Ulvestad](#)

What did we do well?

- Progressed further on the application!
- Gotten further on the report!

What should we have done better?

- Overestimated how much we could get done in a sprint
- A little behind schedule

Actions



Retrospect on week 18-19

Date	From 08 May 2023 To 21 May 2023
Participants	Odin Velle Ulvestad Balendra Sounthararajan Joakim Røren Melum Aleksander Vegsund

Retrospective

The last 2 weeks has been somewhat hectic and rushed to get everything done, but we do have a mostly complete and finished product, even if it is a bit too simple for our liking. The collaboration has gone well within the group and the core function on the site works as intended! For further development however we would look at ways to optimize the queries to reduce loading times and possibly make more dynamic searches.

What did we do well?

- Project completed
- Most of the functions works as intended
- Collaboration has gone well within the group

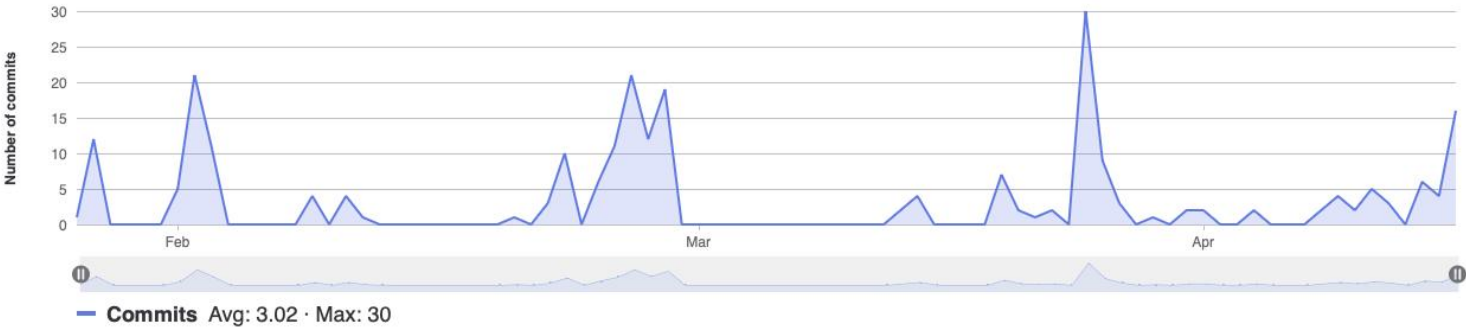
What should we have done better?

- Did not manage to implement all functions we wanted to have in the project
- Did not use Issues and sprints correctly the last few weeks
- Front end suffers from long loading times, needs optimization

develop ▾ History

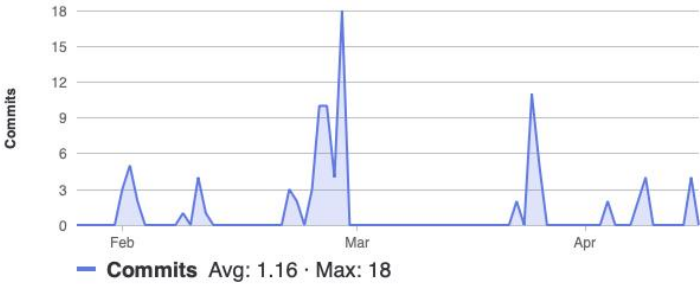
Commits to develop

Excluding merge commits. Limited to 6,000 commits.



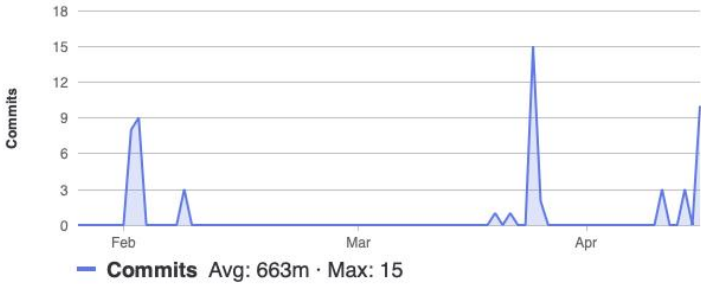
aleksveg

96 commits (a.vegsund@gmail.com)



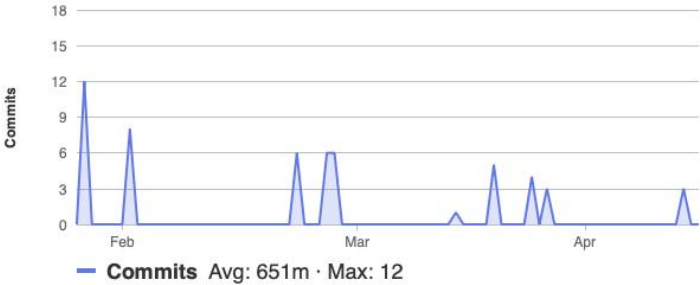
Yokiza

55 commits (joakimroren@gmail.com)



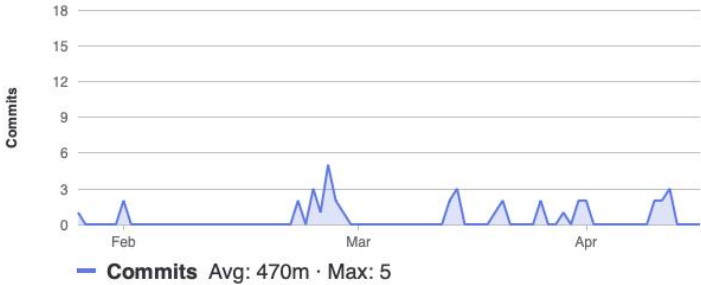
odinvu

54 commits (odinvu@stud.ntnu.no)



Balendra Sounthararajan

39 commits (balendrs@stud.ntnu.no)



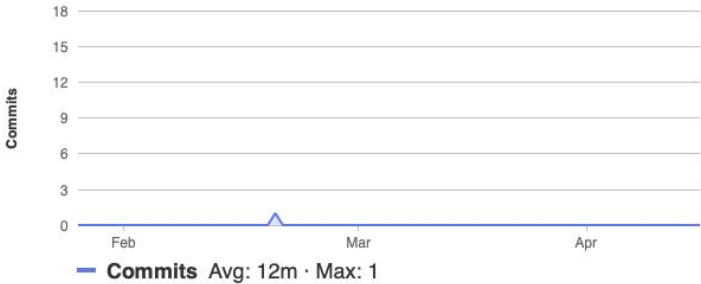
Joakim Røren Melum

6 commits (joakimrm@stud.ntnu.no)



Aleksander Vegsund

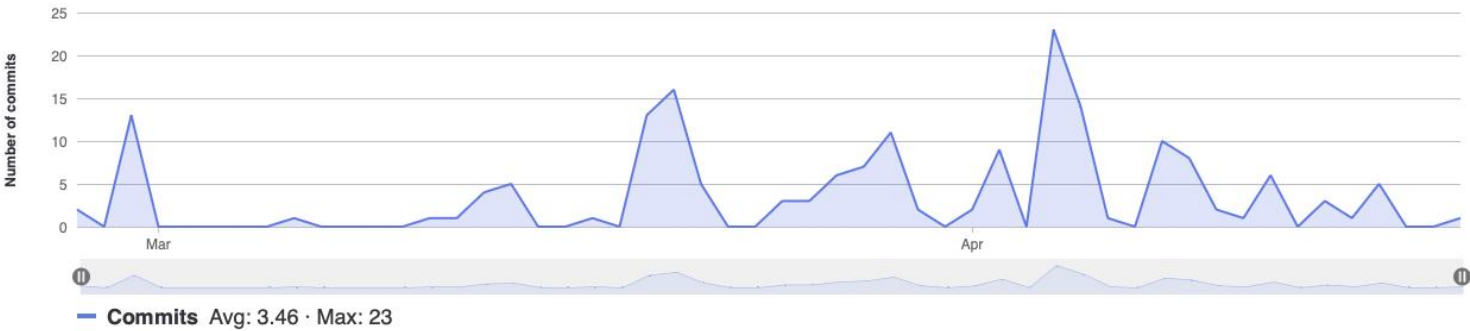
1 commit (aleksveg@stud.ntnu.no)



develo┐ History

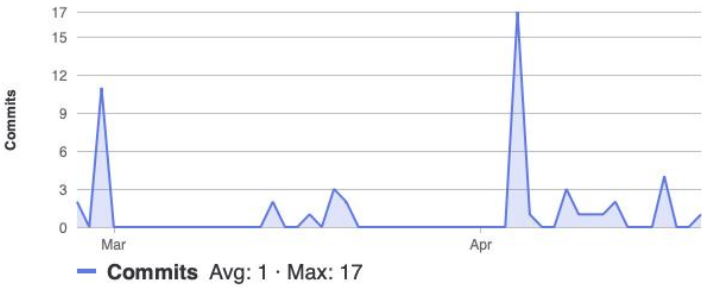
Commits to develop

Excluding merge commits. Limited to 6,000 commits.



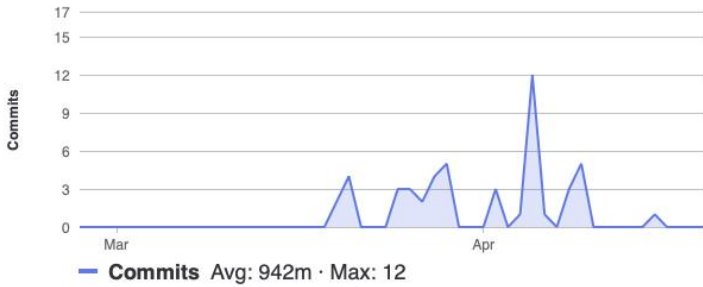
Yokiza

52 commits (joakimroren@gmail.com)



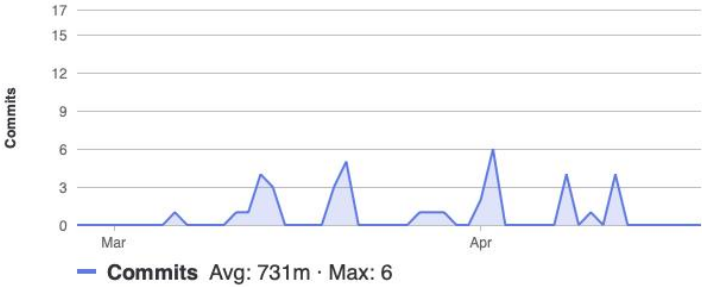
aleksveg

49 commits (a.vegsund@gmail.com)



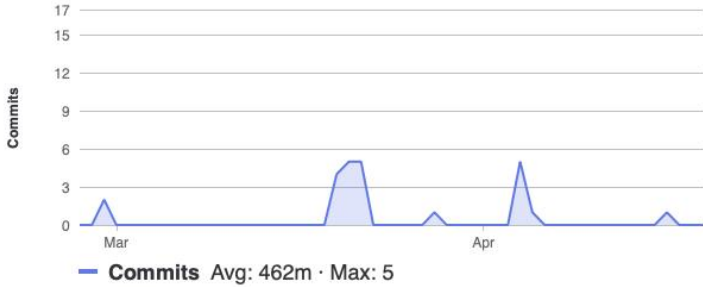
Balendra Sounthararajan

38 commits (balendr┐stud.ntnu.no)



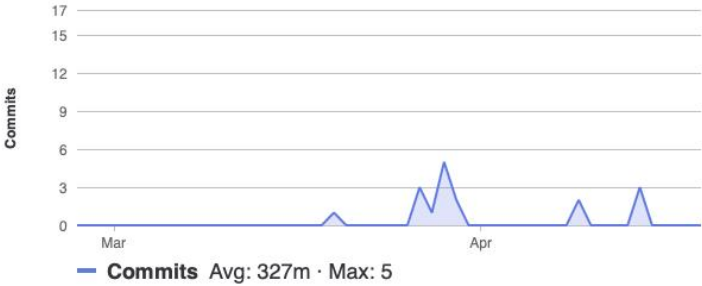
Joakim Røren Melum

24 commits (joakimrm┐stud.ntnu.no)



odinvu


17 commits (odinvu┐stud.ntnu.no)



Report created 20/May/23

 Tempo Logged Time Report created by Odin Velle Ulvestad at May 20, 2023, 22:47 +02 UTC

01/Feb/23 - 31/May/23

Project / User	Key	Logged	Feb 01 - 04 2023	Feb 05 - 11 2023	Feb 12 - 18 2023	Feb 19 - 25 2023	Feb 26 - Mar 04 2023	Mar 05 - 11 2023	Mar 12 - 18 2023	Mar 19 - 25 2023	Mar 26 - Apr 01 2023	Apr 02 - 08 2023	Apr 09 - 15 2023	Apr 16 - 22 2023	Apr 23 - 29 2023	Apr 30 - May 06 2023	May 07 - 13 2023	May 14 - 20 2023	May 21 - 27 2023	May 28 - 31 2023
 Common Query Engine And Viewer	QUERYENG	1472.15	53	70	65	47.23	57.25	53	23	101.17	142	53	110	127	170	104	152.5	144		
 Aleksander Vegsund		279.5	13	11.5	11	14	9	16		21	30			35	41	24	30	24		
 Balendra Sounthararajan		360	15	26	18	16	18	7		19	37		28	42	39	21	32	42		
 Joakim Røren Melum		516	13	19.5	23	4	19	17	23	38	40	36	60	34	40	33	58.5	58		
 Odin Velle Ulvestad		316.65	12	13	13	13.23	11.25	13		23.17	35	17	22	16	50	26	32	20		
Total		1472.15	53	70	65	47.23	57.25	53	23	101.17	142	53	110	127	170	104	152.5	144		