Appendix

Project manual

Collaboration agreement

IDATT1002, Team 1

Members: Lotte Walla Aune, Vemund Ellingsson Røe, Birthe Emilie Christiansen, Håkon Rene Billingstad and John Ivar Eriksen

1. Goals

Impact goals

1. ***Get to know each other, build trust, and increase motivation***
   For the team to get to know each other better, and thus achieve a more comfortable and confident interaction, we will prioritize work with the project as a team. This will be done through both formal and informal meetings. In the early phase of the project, we will focus on an informal sense and getting to know each other, i.e., keep a low bar for small talk during work. As the team grows more familiar with each other, this will naturally work itself into confident productivity. By getting to know each other, the team will have a stronger basis for utilizing and accounting for the strengths and weaknesses of each member. Establishing an environment where everyone feels at ease, with a low bar for discussions, will be a boon to the team's results.

1. ***Effective collaboration***
   To ensure effective collaboration, we will strive to find a balance between completing the assigned tasks in time, while also including all team members in the process. This will ensure that all members can contribute according to their strengths, while also enabling us to learn from each other. By using collective competence to increase that of the individual, we will increase the quality of both the work process and final delivery. Thus, it is particularly important to strike a good balance between learning benefits and on-time delivery of work.

2. ***Flexibility and solution-oriented behavior***
   The team members shall act in a flexible and solution-oriented manner towards the team and our work. To ensure this, we will encourage all points of view to be presented and discussed. We will do our best to help each other and act with understanding if any unforeseen incidents occur. To achieve the collective goals of the team, every team member shall make themselves available for the team and its members, if there is need and opportunity.

Result goals

1. **Deliver all tasks on time**
   To achieve this, we will have weekly meetings to evaluate our progress with deadlines. Based on these evaluations, we will plan, or revise plans, for both the short and long term. This will provide us an overview of what needs priority to reach our collective goals.
   Each team member is responsible for giving prior notice if they, for some reason, are unable to partake in the planned meetings, unable to finish or deliver their assigned work on time or will be arriving late. This will enable the rest of the team to adjust plans to accommodate this.

2. **Grade goal**
   All team members shall bring their best efforts, such that the final product is something that every single member can be satisfied with. Considering this, the team have concluded that our “best efforts” should amount to at least grade B. To ensure this goal, we will work in a steady and consistent manner, and every member is responsible for mobilizing their best efforts.

2. Roles, organizing and division of tasks

A. Team Leader: Håkon

The team have chosen a flat hierarchy, where every single member is responsible for taking the lead when called on or in situations where it would be natural for them. That said, we have chosen to have a Team Leader, to whom falls the responsibility of representing the team in relation to customers, and as a mediator and tiebreaker in voting situations.

In situations requiring voting, a majority vote will, in most cases, decide the outcome. Votes can be cast via digital channels, i.e., one does not have to be physically present to partake in voting.

In situations where a majority is not being reached, and this leads to great disagreement within the team, the Team Leader will have a special responsibility to act in an objective manner to resolve the conflict. If no agreement can be found, the Team Leader can invoke the Right of Veto to decide the disagreement or voting.

The requirements for invoking the Veto are as follows:

a. The Team is unable to reach an agreement through discussion and voting.
b. The Team Leader must listen to and consider the arguments given by the team members.
c. The Team Leader shall strive for objectivity and decide based on what will be most beneficial to the team and the project.

B. Meeting organizer: Birthe

The Meeting Organizer has responsibility for preparing and issuing invitations to our formal meetings. The invitations are to be sent via e-mail, where time and place is specified, and a meeting agenda is attached.

Every single member has a responsibility to come prepared for the meetings and arrive on time. This will ensure that we do not waste our time, nor that of our clients, on unnecessary waiting.

During the meetings, the Meeting Leader will have the responsibility for leading the word, following the agenda in both time and topic, and including input from the rest of the team.

C. Referent: Lotte

The Meeting Reporter is responsible for writing the meeting report during formal meetings. During informal meetings, and after scheduled work sessions, a summary of the sessions is to be written. This summary report will contain, at least, notes on time spent, who was present, what was worked on, and if any decisions were made. Any other relevant information is also to be recorded. Any member not attending the meeting should be able to read these reports and get a good sense of what was done, talked about, and decided upon. The reports are to be stored in the Team's cloud storage.

Both the formal and informal meeting report will ensure that the team can document the work process; how much work was put in, and any major or minor events along

the way. In addition, it will give us a concrete sense of how we are progressing, with regards to both minor and major project goals.

D. Responsible for Documents and Version Control: John and Vemund

The team have created a project directory in the cloud (currently: OneDrive provided by NTNU). All relevant project documents are to be stored here. This will ensure that each member has access to the documents and any given time.
For version control, the team have decided on using Git via NTNU's GitLab instance. Here we will create a project Group and repo for all our source code. The responsibility for the document storage and source code will be shared between two people. They will ensure that all team members have access to, and knowledge of, the project's documentation and source code. Even though these two members are given the primary responsibility here, the other members also have a responsibility to familiarize themselves with version control with Git and Gitlab so that everyone can use these tools.

a. ***Combined Area of Responsibility:*** *Responsibility for QA and Delivery of Work as a natural overlap with responsibility for documentation and version control. Thus, the team has decided that these two areas should be combined and shared between two members. This will ensure that there are always two pair of eyes on our most critical assets, i.e., source code and documentation.*
b. *See also section* ***2.E.***

E. Responsible for Quality Assurance and Delivery of Work: John and Vemund

All Team members are responsible for verifying the final product before delivery. Considering this, a "check-out" of work to be delivered is a collective responsibility, where every member of the team has a personal responsibility to review and attest to the quality of any work that is to be delivered. No member should file complaints against the correctly submitted work after the fact of delivery, unless they have spoken out, and argued their dissatisfaction, prior to delivery. Any such complaints should ideally be logged as a text document on the team's cloud drive, either by the Referent or by the member(s) themselves, prior to delivery.
However, the responsibility of final delivery, i.e., submitting the work within deadlines, will fall on those assigned to the roles responsible for QA and Delivery.

a. *See also section* ***2.D.a. Combined Area of Responsibility.***

3. Standard Operating Procedures

A. Meetings and meeting invitations

The team will center meetings around the scheduled subject hours at school, I.e., Mondays and Wednesdays. If needed, we will schedule extra meetings. We will prioritize Tuesdays as the go-to day for this. The team differentiates formal and informal meetings. Informal meetings will be scheduled through the Discord channel dedicated to the team project, where everyone have a responsibility for taking the initiative to meet, extra if needed. The formals meetings, e.g., Guidance meetings or client meetings, will be scheduled via e-mail. Here, the Meeting organizer will be responsible for sending out invitations to all who should attend. All team members are required to RSVP on the meeting invitation. Any team member that cannot attend a formal meeting must give notice to the rest of the team as soon as possible.

B. Notice of absence or other incidents

Absence, or special situations which prevent a team member from attending team meetings and/or planned work sessions, both formal and informal, are to be announced to the rest of the team as soon as possible. The Discord chat is available, but if the team is notified, the specific channel used is unimportant.

C. Handling of documents and source code

All documents and documentation concerning the team and their work is to be stored and worked on through the team's cloud storage (currently: OneDrive via NTNU). Repositories for source code and version control is to be done via the NTNU instance of GitLab, where the team has created a GitLab Team.
Files worked on in offline applications are to be uploaded to the cloud storage between works sessions, or when their state permits, such that everyone has access to them.

D. Delivery of Work

The team believes in shared responsibility for our work. This means each member has a personal responsibility for our work. All are responsible for proofreading the work and to be comfortable with the content and quality. If any members find the work wanting, they are obligated to voice their dissatisfaction prior to final delivery. The final responsibility for submitting the work within deadlines falls to the Responsible for Quality Assurance and Delivery of Work.

4. Interactions

A. Attendance and preparations

All team members have a duty to attend meetings in a prepared manner. Preparations will naturally vary from time to time, but all members are expected to have completed any tasks assigned to them within given deadlines.

B. Being present and engaged

During meetings and gatherings, attention should be paid to the task at hand. During sessions, the members can request breaks, which the team can decide on. Having breaks is a crucial part of increasing efficiency and preventing loss of focus during long work sessions.

C. Support each other

To achieve the team's collective goals, it is expected that members help and support each other, both as colleagues and fellow humans. This includes helping with finishing tasks such that the workload can be spread evenly, giving constructive feedback, and showing understanding. In the words of Bill & Ted, “Be Excellent to Each Other.”

5. Disagreements and Breach of Contract

A. **General**

Through generous communication, civil conversation and objective discussion, the team will try their best to come to agreements that will benefit the team as a whole. In situations where the team does not reach an agreement, we can call for a consultation and mediation with one or more of our subject teachers or invoke the Team Leader's Right of Veto.

In the case of Breach of Contract, or other breaches of trust, the team's reaction and sanctions shall be measured. As a ground rule, they should consider the benefit of the team and the project. Reactions and sanctions will be situational, and the team is to use discretion to arrive at a reaction fitting the crime.

a. In case of disagreements, the majority vote will decide.
b. In case of serious disagreements, the Team Leader can invoke their Right of Veto.
c. If the disagreement involves the Team Leader, and they are not an objective actor, or if the Team Leader has triggered the Expulsion Clause, the Team Leader can be removed from office, situationally either temporarily or permanently by a unanimous vote to negate their Right of Veto. In such events, the entire team must be present to cast their vote. See also section **5. C. Expulsion.**

B. **Delays and late arrivals**

The team has decided that arriving late as a one-time-offence is to be seen as both human and OK. In such cases, the offending team member must give notice as soon as possible. The social punishment of being late and having a bad conscience for this is considered punishment enough for preventing repeat offences. With frequent late arrival, the offending member will be put on notice, and given a stern talking-to. If the late arrivals are considered unacceptable, the team can move to consider Expulsion. This same reaction will count for not meeting at agreed upon time and place, without giving notice or with no valid reason.

C. **Expulsion**

Expulsion from the Team can be invoked for the following reasons:

a. No response via Discord within 4 workdays.
    i. Primarily Discord, but in extraordinary circumstances any channel of communication is OK, if communication has been attempted and/or established.
b. Under normal circumstances, non-attendance for more than 5 days can lead to expulsions.
c. Not completing assigned work within the deadline, without having given notice and/or a valid reason.
    i. First-time offenders will be put on notice. Repeat offenders will be eligible for Expulsion

D. Expulsion Mediation

The person in danger of Expulsion has a right to demand consultation and mediation with one, or more, of the subject teachers for IDATT1002 (referred to as Mediators). They will attend as objective actors in the disagreement. The team will take the recommendations of the Mediators, as well the explanations of the offending member, to heart and consider them thoroughly.

a. The Expulsion requires a unanimous vote by all the other members.
b. The team member being the subject of the Expulsion vote, will have their right to vote suspended during the entire process.

Signed
Trondheim 25/01, 2023

Lotte Aune Vemund E. Røe

Håkon R. Billingstad Birthe Emilie Christiansen

John D. Eriksen Trondheim 25/01-2023

Gantt chart

Table 2 Gantt Chart

Project startup: 23/01/2023
Current date: 27/04/2023
Current week: 17

					Part 1						Part 2		Part 3						Presentation
Task	**Category**	**Start**	**Finish**	**Deadline**	**Week 4**	**Week 5**	**Week 6**	**Week 7**	**Week 8**	**Week 9**	**Week 10**	**Week 11**	**Week 12**	**Week 13**	**Week 14**	**Week 15**	**Week 16**	**Week 17**	**Week 18**
Milestone 1 - Project Startup																			
Collaboration Agreement	Administration	16.01.2023																	
Wireframe, UI mockup	UI/UX																		
Vision Document	Documentation																		
Delivery, part 1	Check-in	16.01.2023	27.02.2023	03.03.2023															
Guidance meeting 1				13.03.2023															
Milestone 2 - MVP																			
Start project report	Documentation																		
Class Diagram	Code, docs																		
Use Case	UML																		
Start programming	Code																		
Unit Testing, initial	Code																		
GUI v0.1	GUI			17.03.2023															
User testing																			
Minimum Viable Product	Check-in	27/02/2023	13/03/2023	17.03.2023															
Guidance meeting 2				27.03.2023															
Milestone 3 - Production Ready																			
User testing																			
Evaluate & Implement UT results																			
Unit Testing, final																			
Final sprint of programming	Code																		
Finalize project report	Documentation																		
Finalize project delivery	Deployment			28/04/2023															
Milestone 4 - Project Presentation																			
Project presentation	Presentation																		

Legend	
Deadline	Hard
Internal/projected deadline	Soft
Planned work time	Focused
Planned work time	Continious
Planned excess time spent	Buffer
Meeting	Guidance

Timesheets with status reports

Summary of timesheets for project:

Week no	John Ivar	Håkon	Lotte	Birthe	Vemund	Sum hours week
Week 4	4	4	4	4	4	**20**
Week 5	2	2	2	3	2	**11**
Week 6	2.5	2.5	1.5	1.5	2.5	**10.5**
Week 7	6	6	6	6	6	**30**
Week 8	13.5	12.5	18.5	12.5	12.5	**69.5**
Week 9	12	6	6	13	6	**43**
Week 10	4	4	4	5	4	**21**
Week 11	19	19	22	19	19	**98**
Week 12	22	14	13	14.5	14	**77.5**
Week 13	14.5	8	10	11	5	**48.5**
Week 14	7.5	2	4.5	2	0	**16**
Week 15	25.5	10	14	11	13	**73.5**
Week 16	31.5	28	20.5	16.5	26.5	**123**
Week 17	26.5	30.5	27	28	28	**140**
Total sum hours pr person	190.5	148.5	153	147	142.5	781.5
Total sum hours pr person excluded illness and leave	**190.5**	**138.5**	**142.5**	**147**	**138.5**	**757**

Summary of hours by activity

Activity	John Ivar	Håkon	Lotte	Birthe	Vemund	Total sum hours pr activity
Self-education	6	5	3	0.5	0	**14.5**
Information search	2	3.5	5.5	0	0	**11**
User testing	4.5	2	2	1	1	**10.5**
Prototyping	0	12	0	0	71	**83**
Coding	80	63	66.5	64	54	**327.5**
Testing of code	0	10.5	0	0	0	**10.5**
Error correction	0	2	0	0	0	**2**
Project reporting	46.5	33.5	60	70	6	**216**
Presentation including preparation	0	0	0	0	0	**0**
Team meetings	9.5	5	4.5	10.5	5	**34.5**
Team meetings with supervisor	2	1	1	1	0.5	**5.5**
Illness or leave	0	10	10.5	0	4	**24.5**
Meeting client	1	1	0	0	1	**3**
Wiki	39	0	0	0	0	**39**
Total sum hours	**190.5**	**148.5**	**153**	**147**	**142.5**	**781.5**

Summary of hours by category

Category	John Ivar	Håkon	Lotte	Birthe	Vemund	Total sum hours pr category
Documentation	66.5	24	58.5	61.5	9	**219.5**
Adminstration	6.5	6	5.5	6	5.5	**29.5**
Quality assurance	0	15.5	0	0	27.5	**43**
Wireframe	0	12	0	0	12	**24**
MVP	49	42	43	43	40	**217**
Final delivery	14.5	26.5	6	13		**60**
Leave	0	6	10.5	0	4	**20.5**
Beta Client (MMP)	42	16.5	29.5	18.5	39.5	**146**
Releasae Candidate		0	0	5	5	**10**
Total sum hours	**178.5**	**148.5**	**153**	**147**	**137.5**	**769.5**

Timesheet with weekly status report			Time	Date	Weekly status report
					With each weekly time list, a status report (log) must be included that shows what activities each team member has completed during this week. These include a description of the following:
Timesheet		**John Ivar**			*A short description of the nature of the work and which results are achieved.*
Activity	**Category**	**Duration (hours)**			*If problems have occured, describe the problems and what steps are/ need to be taken to correct the situation*
Project reporting	Documentation	4.0			Started with the collaborationg agreement
Week 4		**4.0**			
Timesheet		**Håkon**			
Activity	**Category**	**Duration (hours)**			
Project reporting	Documentation	4.0			Started with the collaborationg agreement
Week 4		**4.0**			
Timesheet		**Lotte**			
Activity	**Category**	**Duration (hours)**			
Project reporting	Documentation	4.0			Started with the collaborationg agreement
Week 4		**4.0**			
Timesheet		**Birthe**			
Activity	**Category**	**Duration (hours)**			
Project reporting	Documentation	4.0			Started with the collaborationg agreement
Week 4		**4.0**			
Timesheet		**Vemund**			
Activity	**Category**	**Duration (hours)**			
Illness		4.0			
Week 4		**4.0**			
Timesheet		**0**			
Activity	**Category**	**Duration (hours)**			
Week 4		**0.0**			

Timesheet with weekly status report

			Time	Date	Weekly status report
Timesheet		**John Ivar**			
Activity	**Category**	**Duration (hours)**			
Team meetings	Adminstration	2.0			Administration for the upcomming project
Week 5		**2.0**			
Timesheet		**Håkon**			
Activity	**Category**	**Duration (hours)**			
Team meetings	Adminstration	2.0			Administration for the upcomming project
Week 5		**2.0**			
Timesheet		**Lotte**			
Activity	**Category**	**Duration (hours)**			
Team meetings	Adminstration	2.0			Administration for the upcomming project
Week 5		**2.0**			
Timesheet		**Birthe**			
Activity	**Category**	**Duration (hours)**			
Team meetings	Adminstration	2.0			Administration for the upcomming project
Project reporting	Documentation	1.0			Coolaboration agreement
Week 5		**3.0**			
Timesheet		**Vemund**			
Aktivitet	**Kategori**	**Antall timer**			
Team meetings	Adminstration	2.0			Administration for the upcomming project
Week 5		**2.0**			

Timesheet with weekly status report

Timesheet		John Ivar	Time	Date	Weekly status report
Activity	**Category**	**Duration (hours)**			
Team meetings	Adminstration	1.5			Started Scrum. Divided roles and set up issueboard. Discussed the application
Meeting client	Documentation	1.0			First meeting with client
Week 6		**2.5**			

Timesheet		Håkon			
Activity	**Category**	**Duration (hours)**			
Team meetings	Adminstration	1.5			Started Scrum. Divided roles and set up issueboard. Discussed the application
Meeting client	Documentation	1.0			First meeting with client
Week 6		**2.5**			

Timesheet		Lotte			
Activity	**Category**	**Duration (hours)**			
Team meetings	Adminstration	1.5			Started Scrum. Divided roles and set up issueboard. Discussed the application
Week 6		**1.5**			

Timesheet		Birthe			
Activity	**Category**	**Duration (hours)**			
Team meetings	Adminstration	1.5			Started Scrum. Divided roles and set up issueboard. Discussed the application
Week 6		**1.5**			

Timesheet		Vemund			
Activity	**Category**	**Duration (hours)**			
Team meetings	Adminstration	1.5			Started Scrum. Divided roles and set up issueboard. Discussed the application
Meeting client	Documentation	1.0			First meeting with client
Week 6		**2.5**			

Timesheet with weekly status report

Time	Date	Weekly status report

Timesheet		John Ivar			
Activity	**Category**	**Duration (hours)**			
Project reporting	Documentation	6.0			Vision Document
Week 7		**6.0**			

Timesheet		Håkon			
Activity	**Category**	**Duration (hours)**			
Project reporting	Documentation	6.0			Wireframes
Week 7		**6.0**			

Timesheet		Lotte			
Activity	**Category**	**Duration (hours)**			
Project reporting	Documentation	6.0			Vision Document
Week 7		**6.0**			

Timesheet		Birthe			
Activity	**Category**	**Duration (hours)**			
Project reporting	Documentation	6.0			Vision Document
Week 7		**6.0**			

Timesheet		Vemund			
Activity	**Category**	**Duration (hours)**			
Project reporting	Documentation	6.0			Wireframes
Week 7		**6.0**			

Timesheet with weekly status report

Timesheet		John Ivar	Time	Date	Weekly status report
Activity	**Category**	**Duration (hours)**			
Team meetings with supervisor	Adminstration	0.5		20/02/2023	Meeting with TA.
Project reporting	Documentation	6.0		20/02/2023	Vision document. Administration. Client meeting.
Project reporting	Documentation	6.0		22/02/2023	Vision document. Administration.
Project reporting	Adminstration	1.0		26/02/2023	Gantt diagram.
Week 8		**13.5**			

Timesheet		Håkon			
Activity	**Category**	**Duration (hours)**			
Team meetings	Adminstration	0.5		20/02/2023	Meeting with TA.
Prototyping	Wireframe	6.0		20/02/2023	Wireframe. Client meeting.
Prototyping	Wireframe	6.0		22/02/2023	Wireframe. Domain model. Class diagram.
Week 8		**12.5**			

Timesheet		Lotte			
Aktivitet	**Kategori**	**Antall timer**			
Illness or leave	Leave	6.5		20/02/2023	Approved leave of absence.
Project reporting	Documentation	6.0		22/02/2023	Vision document.
Project reporting	Documentation	6.0		26/02/2023	Vision document.
Week 8		**18.5**			

Timesheet		Birthe			
Activity	**Category**	**Duration (hours)**			
Team meetings	Adminstration	0.5		20/02/2023	Meeting with TA.
Project reporting	Documentation	6.0		20/02/2023	Vision document. Client meeting.
Project reporting	Documentation	6.0		22/02/2023	Vision document.
Week 8		**12.5**			

Timesheet		Vemund			
Activity	**Category**	**Duration (hours)**			
Team meetings	Adminstration	0.5		20/02/2023	Meeting with TA.
Prototyping	Wireframe	6.0		20/02/2023	Wireframe. Client meeting.
Prototyping	Wireframe	6.0		22/02/2023	Wireframe. Domain model. Class diagram.
Week 8		**12.5**			

Timesheet with weekly status report

Timesheet		John Ivar	Time	Date	Weekly status report
Activity	**Category**	**Duration (hours)**			
Project reporting	Documentation	2.0		27/02/2023	Review first draft of vision document.
Team meetings with supervisor	Adminstration	0.5		27/02/2023	Meeting with TA.
Coding	MVP	3.5		27/02/2023	Start coding. All participated in startup coding.
Self-education	MVP	4.0		01/03/2023	Learn Scene Builder (fxml) - Campus
Self-education	MVP	2.0		01/03/2023	Learn Scene Builder (fxml) - Homework
Week 9		**12.0**			

Timesheet		Håkon			
Activity	**Category**	**Duration (hours)**			
Coding	MVP	2.0		27/02/2023	Class diagram and plan start of coding.
Team meetings	Adminstration	0.5		27/02/2023	Meeting with TA.
Coding	MVP	3.5		27/02/2023	Start coding. All participated in startup coding.
Week 9		**6.0**			

Timesheet		Lotte			
Activity	**Category**	**Duration (hours)**			
Project reporting	Documentation	2.0		27/02/2023	Review first draft of vision document.
Team meetings	Adminstration	0.5		27/02/2023	Meeting with TA.
Coding	MVP	3.5		27/02/2023	Start coding. All participated in startup coding.
Week 9		**6.0**			

Timesheet		Birthe			
Activity	**Category**	**Duration (hours)**			
Project reporting	Documentation	4.5		27/02/2023	Review first draft of vision document.
Team meetings	Adminstration	0.5		27/02/2023	Meeting with TA.
Coding	MVP	5.0		27/02/2023	Start coding. All participated in startup coding.
Project reporting	Documentation	3.0		05/03/2023	Vision document.
Week 9		**13.0**			

Timesheet		Vemund			
Activity	**Category**	**Duration (hours)**			
Prototyping	Documentation	2.0		27/02/2023	Class diagram and plan start of coding.
Team meetings	Adminstration	0.5		27/02/2023	Meeting with TA.
Prototyping	MVP	3.5		27/02/2023	Start coding. All participated in startup coding.
Week 9		**6.0**			

Timesheet with weekly status report			Time	Date	Weekly status report
Timesheet		John Ivar			
Activity	Category	Duration (hours)			
Coding	MVP	4.0	kl 1000-1400	06/03/2023	MVP: Initial UI. Team decided to try building directly in JavaFX.
Week 10		4.0			
Timesheet		Håkon			
Activity	Category	Duration (hours)			
Coding	MVP	4.0		06/03/2023	MVP
Week 10		4.0			
Timesheet		Lotte			
Activity	Category	Duration (hours)			
Coding	MVP	4.0		06/03/2023	MVP
Week 10		4.0			
Timesheet		Birthe			
Activity	Category	Duration (hours)			
Coding	MVP	4.0		06/03/2023	MVP
Coding	MVP	1.0			
Week 10		5.0			
Timesheet		Vemund			
Activity	Category	Duration (hours)			
Prototyping	MVP	4.0		06/03/2023	MVP
Week 10		4.0			

Timesheet with weekly status report

Timesheet		John Ivar	Time	Date	Weekly status report
Activity	**Category**	**Duration (hours)**			
Coding	MVP	5.5		13/03/2023	Working on GUI for MVP. Team decided to go back to using SceneBuilder.
Team meetings with supervisor	Adminstration	0.5		13/03/2023	Guidance meeting 1.
Coding	MVP	5.0	kl 0800-1300	15/03/2023	Working on GUI for MVP in SceneBuilder: dashboard and settings.
Coding	MVP	8.0	kl 0830-1630	17/03/2023	Working on GUI for MVP in SceneBuilder: dashboard and settings.
Week 11		**19.0**			

Timesheet		Håkon			
Activity	**Category**	**Duration (hours)**			
Coding	MVP	5.5		13/03/2023	Working on GUI for MVP.
Team meetings with supervisor	Adminstration	0.5		13/03/2023	Guidance meeting 1.
Coding	MVP	5.0		15/03/2023	
Coding	MVP	8.0		17/03/2023	
Week 11		**19.0**			

Timesheet		Lotte			
Activity	**Category**	**Duration (hours)**			
Coding	MVP	5.5		13/03/2023	Working on GUI for MVP.
Team meetings with supervisor	Adminstration	0.5		13/03/2023	Guidance meeting 1.
Coding	MVP	5.0		15/03/2023	
Self-education	MVP	3.0		16/03/2023	Watched Scenebuilder tutorials
Coding	MVP	8.0		17/03/2023	
Week 11		**22.0**			

Timesheet		Birthe			
Activity	**Category**	**Duration (hours)**			
Coding	MVP	5.5		13/03/2023	Working on GUI for MVP.
Team meetings with supervisor	Adminstration	0.5		13/03/2023	Guidance meeting 1.
Coding	MVP	5.0		15/03/2023	
Coding	MVP	8.0		17/03/2023	
Week 11		**19.0**			

Timesheet		Vemund			
Activity	**Category**	**Duration (hours)**			
Prototyping	MVP	5.5		13/03/2023	Working on GUI for MVP.
Team meetings with supervisor	Adminstration	0.5		13/03/2023	Guidance meeting 1.
Prototyping	MVP	5.0		15/03/2023	
Prototyping	MVP	8.0		17/03/2023	
Week 11		**19.0**			

Timesheet with weekly status report			Time	Date	Weekly status report
Timesheet		**John Ivar**			
Activity	**Category**	**Duration (hours)**			
Coding	MVP	6.0	kl 1000-1600	20/03/2023	GUI for MVP. Controllers for FXML pages.
Coding	MVP	3.0	kl 0900-1200	21/03/2023	GUI for MVP. Tied Controllers to FXML pages on Settings > New/Edit Category. Also worked on Dashboard controllers.
Coding	MVP	6.0	kl 0800-1400	22/03/2023	Finished MVP. Tied controllers to Dashboard page and finished it with help from Vemund. Some controls on Settings.
Wiki	Documentation	2.0	kl 0900-1100	24/01/1900	Worked on Gitlab Wiki, specifically user test documents. Structuring wiki accordingly.
Wiki	Documentation	3.0	kl 1300-1600	24/03/2023	User Test documents formatting. Definitions for Technical Competence levels. Procrastination Blackbelt!
User testing	MVP	1.0	kl 1700-1800	24/03/2023	MVP User Test and documentation.
User testing	MVP	1.0	kl 1800-1900	26/03/2023	MVP User Test and documentation.
Week 12		**22.0**			
Timesheet		**Håkon**			
Activity	**Category**	**Duration (hours)**			
Coding	MVP	7.0		20/03/2023	GUI for MVP. Controllers for FXML pages.
Coding	MVP	6.0		22/03/2023	Finished MVP. Worked on finishing Budget view.
User testing	MVP	1.0		23/03/2023	MVP User Test and documentation.
Week 12		**14.0**			
Timesheet		**Lotte**			
Activity	**Category**	**Duration (hours)**			
Coding	MVP	7.0		20/03/2023	GUI for MVP. Controllers for FXML pages.
Coding	MVP	6.0		22/03/2023	Finished MVP. Worked on Wiki and main report.
Week 12		**13.0**			
Timesheet		**Birthe**			
Activity	**Category**	**Duration (hours)**			
Coding	MVP	7.0		20/03/2023	GUI for MVP. Controllers for FXML pages.
Coding	MVP	6.0		22/03/2023	Finished MVP. Worked on Wiki and main report.
Coding	MVP	1.0		23/03/2023	MVP User Test and documentation.
Self-education	MVP	0.5		23/03/2023	Paths logo.
Week 12		**14.5**			
Timesheet		**Vemund**			
Activity	**Category**	**Duration (hours)**			
Prototyping	MVP	7.0		20.03.2023	GUI for MVP. Controllers for FXML pages.
Prototyping	MVP	6.0		22/03/2023	Finished MVP. Worked on Dashboard and Budget view.
User testing	MVP	1.0		23/03/2023	MVP User Test and documentation.
Week 12		**14.0**			

Timesheet with weekly status report			Time	Date	Weekly status report
Timesheet		**John Ivar**			
Activity	**Category**	**Duration (hours)**			
User testing	Documentation	1.5	kl 0830-1000	27/03/2023	Documentation of MVP user test from 26.03.2023
Team meetings with supervisor	Adminstration	0.5	kl 1015-1045	27/03/2023	Guidance meeting 2.
Team meetings	Documentation	5.5	kl 1100-1630	27/03/2023	Group meeting: Discussed feedback from MVP user test and feedback from guidance meeting. Listed priorities.
Prototyping	Beta Client (MMP)	5.0	kl 0800-1400	29/03/2023	Working on Release candidate, MMP (Minimum Marketable Product). Adapt GUI acc. to feedback and priorities
Project reporting	Documentation	2.0	kl 1000-1200	02/04/2023	Report. Chapter 2 - Theory: Interaction Design, UX, UI, MMI, IA, UU.
Week 13		**14.5**			
Timesheet		**Håkon**			
Activity	**Category**	**Duration (hours)**			
Team meetings with supervisor	Adminstration	0.5	kl 1015-1045	27/03/2023	Guidance meeting 2.
Information search	Documentation	1.0	kl 1100-1200	27/03/2023	Group meeting: Discussed feedback from MVP user test and feedback from guidance meeting. Listed priorities.
Information search	Documentation	1.5	kl 1500-1630	27/03/2023	
Coding	Beta Client (MMP)	5.0	kl 0800-1400	29/03/2023	Working on Release candidate, MMP (Minimum Marketable Product).
Week 13		**8.0**			
Timesheet		**Lotte**			
Activity	**Category**	**Duration (hours)**			
Team meetings with supervisor	Adminstration	0.5	kl 1015-1045	27/03/2023	Guidance meeting 2.
Information search	Documentation	5.5	kl 1100-1630	27/03/2023	Group meeting: Discussed feedback from MVP user test and feedback from guidance meeting. Listed priorities.
Illness or leave	Leave	4.0		29/03/2023	Approved leave of abstence.
Week 13		**10.0**			
Timesheet		**Birthe**			
Activity	**Category**	**Duration (hours)**			
Team meetings with supervisor	Adminstration	0.5	kl 1015-1045	27/03/2023	Guidance meeting 2.
Team meetings	Documentation	5.5	kl 1100-1630	27/03/2023	Group meeting: Discussed feedback from MVP user test and feedback from guidance meeting. Listed priorities.
Prototyping	Release Candidate	5.0	kl 0800-1400	29/03/2023	Working on Release candidate, MMP (Minimum Marketable Product).
Week 13		**11.0**			
Timesheet		**Vemund**			
Activity	**Category**	**Duration (hours)**			
Team meetings with supervisor	Documentation			27/03/2023	Sick. Work from home, if up to it.
Prototyping	Release Candidate	5.0	kl 0800-1400	29/03/2023	Working on Release candidate, MMP (Minimum Marketable Product).
Week 13		**5.0**			

Timesheet with weekly status report			Time	Date	Weekly status report
Timesheet		**John Ivar**			
Activity	**Category**	**Duration (hours)**			
Project reporting	Documentation	2.0	kl 1000-1200	03/04/2023	Report. Chapter 2 - Theory: Interaction Design, UX, UI, MMI, IA, UU.
Project reporting	Documentation	2.0	kl 1000-1200	04/04/2023	Report. Chapter 2 - Theory: Interaction Design, UX, UI, MMI, IA, UU.
Coding	Beta Client (MMP)	1.0	kl 1100-1200	05/04/2023	SceneBuilder. Update scenes based on MVP feedback. Receipt page, Settings page and Accounting page.
Coding	Beta Client (MMP)	1.5	kl 0930-1030	07/04/2023	SceneBuilder. Worked on accountingPage, addAccountingEntry, addBudgetEntry, dashboardPage,
					documentsPage (previously receiptsPage), settingsCategoryDialog and settingsPage.
Project reporting	Documentation	1.0	kl 1300-1400	07/04/2023	Report. Chapter 2 - Theory: Interaction Design, UX, UI, MMI, IA, UU.
Week 14		**7.5**			
Timesheet		**Håkon**			
Activity	**Category**	**Duration (hours)**			
Project reporting	Documentation	2.0		08/04/2023	Main report theory: System development methods
Week 14		**2.0**			
Timesheet		**Lotte**			
Activity	**Category**	**Duration (hours)**			
User testing	MVP	1.0		06/04/2023	MVP User Test and documentation
Project reporting	Documentation	3.5		09/04/2023	Main report, Theory and relevant literature
Week 14		**4.5**			
Timesheet		**Birthe**			
Activity	**Category**	**Duration (hours)**			
Project reporting	Documentation	2.0		09/04/2023	Main report theory: System development methods
Week 14		**2.0**			
Timesheet		**Vemund**			
Activity	**Category**	**Duration (hours)**			
Week 14		**0.0**			

Timesheet with weekly status report			Time	Date	Weekly status report
Timesheet		**John Ivar**			
Activity	**Category**	**Duration (hours)**			
User testing	Beta Client (MMP)	1.0	kl 1100-1200	10/04/2023	User tested MVP client to improve MMP. User Test and documentation.
Coding	Beta Client (MMP)	1.0	kl 0830-0930	11/04/2023	SceneBuilder. Worked on accountingPage,, dashboardPage and Settings page.
Coding	Beta Client (MMP)	4.0	kl 0800-1200	12/04/2023	Tied controllers and buttons together with reworks of UI. AccountingPageController to populate tables (ongoing).
Coding	Beta Client (MMP)	2.0	kl 1200-1400	12/04/2023	Reworked budgetPage (v3). Made alternate version of accountingPage (v3, buttons instead of tabs).
Coding	Beta Client (MMP)	4.0	kl 0830-1230	13/04/2023	Worked on AccountingPageController to populate tables with data. Connecting FXML controllers.
Information search	Beta Client (MMP)	2.0	kl 1530-1730	13/04/2023	Worked on AccountingPageController to populate tables with data. Stuck! >_<
Coding	Beta Client (MMP)	7.5	kl 0830-1600	14/04/2023	Worked on AccountingPageController to populate tables with data. FXML fine-tuning of values and design.
Coding	Beta Client (MMP)	4.0	kl 0830-1230	16/04/2023	Added Accessibility texts and tags to all scenes. Added scene "aboutDialog".
Week 15		**25.5**			
Timesheet		**Håkon**			
Activity	**Category**	**Duration (hours)**			
Illness		4.0		12/04/2023	Out sick.
Testing of code	Quality assurance	6.0	kl 1030-1630	14/04/2023	Writing testing classes
Week 15		**10.0**			
Timesheet		**Lotte**			
Activity	**Category**	**Duration (hours)**			
Project reporting	Beta Client (MMP)	2.0		10/04/2023	Main report, Introduction
Coding	Beta Client (MMP)	6.0	kl 0800-1300		
Coding	Beta Client (MMP)	6.0	kl 1030-1630	14/04/2023	
Week 15		**14.0**			
Timesheet		**Birthe**			
Activity	**Category**	**Duration (hours)**			
Coding	Beta Client (MMP)	5.0	kl 0800-1300		Validitation
Coding	Beta Client (MMP)	6.0	kl 1030-1500	14/04/2023	GUI
Week 15		**11.0**			
Timesheet		**Vemund**			
Activity	**Category**	**Duration (hours)**			
Prototyping	Beta Client (MMP)	7.0	kl 0800-1500		
Prototyping	Beta Client (MMP)	6.0	kl 1030-1630	14/04/2023	
Week 15		**13.0**			

Timesheet with weekly status report			Time	Date	Weekly status report
Timesheet		**John Ivar**			
Activity	**Category**	**Duration (hours)**			
Coding	Beta Client (MMP)	6.5	kl 1000-1630	17/04/2023	Fine-tuning FXML/GUI: budgetPage, accountingPage, sums.
					Wiki: Started working on Universal Design, User Manual and Installation Manual pages.
Coding	Beta Client (MMP)	2.5	kl 0830-1100	18/04/2023	FXML: Made v4 of budget and accounting (tabs, removed combobox). Hyperlink in About dialog.
					Added logo banner to generalLayout. Fixed some bugs in settings FXML. Accessibility texts.
Wiki	Documentation	6.0	kl 0800-1400	19/04/2023	Wiki: UU, Wireframes and design. FXML: Fine-tuning and polish.
Wiki	Documentation	3.0	kl 1300-1600	20/04/2023	Wiki: Wireframes and design, Installation manual, Use Case Diagram
Wiki	Documentation	8.0	kl 0800-1600	21/04/2023	Wiki: Source code, Persistence, Unit Testing, Home, and others.
Wiki	Documentation	3.0	kl 1000-1300	23/04/2023	Wiki: User Manual.
Wiki	Documentation	2.5	kl 1830-2100	23/04/2023	Wiki: User Manual. Some code pruning. FXML tags.
Week 16		**31.5**			
Timesheet		**Håkon**			
Activity	**Category**	**Duration (hours)**			
Coding	Beta Client (MMP)	6.5	kl 1000-1630	17/04/2023	Writing test classes
Coding	Beta Client (MMP)	4.0	kl 1500-1900	18/04/2023	Bug fixing
Self-education	Quality assurance	1.5	kl 2000-2130	18/04/2023	Bug fixing
Self-education	Final delivery	3.5	kl 0800-1130	19/04/2023	Researching test configuartion requirements
Coding	Quality assurance	6.5	kl 1130-1800	19/04/2023	Writing test classes
Approved leave of absence	Leave	6.0	kl 1000-1600	21/04/2023	Aproved leave for extracurricular activities
Week 16		**28.0**			
Timesheet		**Lotte**			
Activity	**Category**	**Duration (hours)**			
Coding	Beta Client (MMP)	6.5	kl 1000-1630	17/04/2023	
Coding	Beta Client (MMP)	6.0	kl 0800-1400	19/04/2023	
Coding	Beta Client (MMP)	3.0	kl 1000-1300	21/04/2023	
Project reporting	Documentation	3.0	kl 1300-1600	21/04/2023	
Project reporting	Documentation	1.0		22/04/2023	Main report, Results
User testing	Final delivery	1.0		22/04/2023	Final Product User Test and Documentation
Week 16		**20.5**			
Timesheet		**Birthe**			
Activity	**Category**	**Duration (hours)**			
Coding	Beta Client (MMP)	6.5	kl 1000-1630	17/04/2023	
Project reporting	Documentation	6.0	kl 0800-1400	19/04/2023	Organizing the main report
Project reporting	Documentation	4.0		24/04/2023	Main reprot: methods
Week 16		**16.5**			
Timesheet		**Vemund**			
Activity	**Category**	**Duration (hours)**			
Coding	Beta Client (MMP)	6.5	kl 1000-1630	17/04/2023	
Coding	Beta Client (MMP)	6.0	kl 0800-1400	19/04/2023	
Coding	Beta Client (MMP)	6.0	kl 1000-1600	21/04/2023	
Coding	Beta Client (MMP)	4.0	kl 1200-1600	22/04/2023	
Coding	Beta Client (MMP)	4.0	kl 1400-1800	23/04/2023	
Week 16		**26.5**			

Timesheet with weekly status report			Time	Date	Weekly status report
Timesheet		**John Ivar**			
Activity	**Category**	**Duration (hours)**			
Team meetings	Adminstration	0.5		24/04/2023	Team meeting. Meeting with TA. Scrum meeting/Daily standup.
Wiki	Documentation	8.5	kl 0830-1700	24/04/2023	Wiki: Persistence, Unit Testing. Some editing of existing pages based on new final designs.
Wiki	Documentation	3.0	kl 0900-1200	25/04/2023	Wiki: Finising touches. Added some details tags.
Project reporting	Final delivery	8.0	kl 0800-1600	26/04/2023	Project report: Conlcusion, Software, Documentation.
Project reporting	Final delivery	6.5	kl 0900-1530	27/04/2023	Finalize report. Proof-reading and polish.
Week 17		**26.5**			
Timesheet		**Håkon**			
Activity	**Category**	**Duration (hours)**			
Team meetings	Adminstration	0.5	0800-0830	24/04/2023	Team meeting. Meeting with TA. Scrum meeting/Daily standup.
Project reporting	Documentation	8.5	0830-1700	24/04/2023	Planing and discussing report.
Project reporting	Final delivery	5.0	1200-1700	25/04/2023	Project report: Discussion
User testing	Quality assurance	1.0	1700-1800	25/04/2023	User testing
Project reporting	Final delivery	8.0	0800-1600	26/04/2023	Project report: conclusion and preface
Testing of code	Quality assurance	2.0	1600-1800	26/04/2023	Program testing with Vemund
Project reporting	Final delivery	5.5	0930-1500	27/04/2023	Project report
Week 17		**30.5**			
Timesheet		**Lotte**			
Activity	**Category**	**Duration (hours)**			
Team meetings	Adminstration	0.5	kl 0800-0830	24/04/2023	Team meeting. Meeting with TA. Scrum meeting/Daily standup.
Project reporting	Documentation	6.5	kl 0830-1500	24/04/2023	Main report, Results.
Project reporting	Documentation	2.0	kl 1500 - 1700	24/04/2023	Main report, planned and discusssed structure
Project reporting	Documentation	6.0		25/04/2023	Main report, Discussion
Project reporting	Documentation	6.0	kl 0800-1500	26/04/2023	Main report, Discussion
Project reporting	Documentation	1.0	kl 1500-1600	26/04/2023	Main report, Discussion
Project reporting	Final delivery	5.0		27/04/2023	Proofreading and delivert
					k
Week 17		**27.0**			
Timesheet		**Birthe**			
Activity	**Category**	**Duration (hours)**			
Team meetings	Adminstration	0.5	kl 0800-0830	24/04/2023	Team meeting. Meeting with TA. Scrum meeting/Daily standup.
Project reporting	Documentation	8.5	kl 0830-1700	24/04/2023	Main report, Methods
Project reporting	Documentation	6.0		25/04/2023	Main report, Methods + Discussion + edits
Project reporting	Final delivery	8.0		26/04/2023	Final touches on the main report
Project reporting	Final delivery	5.0		27/04/2023	Proofreading and delivery
Week 17		**28.0**			
Timesheet		**Vemund**			
Activity	**Category**	**Duration (hours)**			
Team meetings	Adminstration	0.5	kl 0830-0900	24/04/2023	Team meeting. Meeting with TA. Scrum meeting/Daily standup.
Coding	Quality assurance	8.5	kl 0830-1700	24/04/2023	Quality assurance of code + Gitlab pages
Coding	Quality assurance	6.0	kl 1000-1600	25/04/2023	Quality assurance of code
Coding	Quality assurance	8.0	kl 0800-1600	26/04/2023	Quality assurance of code + release of product
Coding	Quality assurance	5.0	kl 1000-1500	27/04/2023	Release of product and proofreading
Week 17		**28.0**			

Meeting notice

Meeting notice 7/2023 for team 1

Trondheim, 17.04.2023

This meeting notice goes to:
Birthe Emilie Christiansen, Lotte Christine Walla Aune, Vemund Ellingsson Røe, John-Ivar Dalhaug Eriksen, Håkon Rene Billingstad and Daniel Andre Evensen.

Time and place: Monday 24th April at 08:15-08:30. Gløshaugen Realfagsbygget (A4-112). Mazemap-link: https://link.mazemap.com/zU2aafdk

Agenda:

Case number.	Cases	Time	Conclusion	Responsible person
01	Approval of the meeting notice	1 min		Birthe
02	Approval of the minutes of the last meeting	1 min		Birthe
03	Project status	2 min		Birthe
04	Final product and documents	8 min		Birthe
06	Any other business	3 min		Birthe

Breaks are made by joint decision.

Contact Birthe Emilie Christiansen (by email: birtheec@stud.ntnu.no or by phone: 45297115) to let us know if you are prevented from attending.

Welcome!

Birthe Emilie Christiansen

Meeting notice 6/2023 for team 1

Trondheim, 16.04.2023

This meeting notice goes to:
Birthe Emilie Christiansen, Lotte Christine Walla Aune, Vemund Ellingsson Røe, John-Ivar Dalhaug Eriksen, Håkon Rene Billingstad and Daniel Andre Evensen.

Time and place: Monday 17th April at 16:00-16:15. Gløshaugen Realfagsbygget (A4-112). Mazemap-link: https://link.mazemap.com/zU2aafdk

Agenda:

Case number.	Cases	Time	Conclusion	Responsible person
01	Approval of the meeting notice	1 min		Birthe
02	Approval of the minutes of the last meeting	1 min		Birthe
03	Project status	2 min		Birthe
04	The application	8 min		Håkon
06	Any other business	3 min		Birthe

Breaks are made by joint decision.

Contact Birthe Emilie Christiansen (by email: birtheec@stud.ntnu.no or by phone: 45297115) to let us know if you are prevented from attending.

Welcome!

Birthe Emilie Christiansen

Meeting notice 5/2023 for team 1

Trondheim, 22.03.2023

This meeting notice goes to:
Birthe Emilie Christiansen, Lotte Christine Walla Aune, Vemund Ellingsson Røe, John-Ivar Dalhaug Eriksen, Håkon Rene Billingstad and Muhammad Ali Norozi.

Time and place: Monday 27th of March at 10:15-10:35. Gløshaugen IT-bygget, Sydfløy 1. etasje (Møterom 119c).
Mazemap-link: https://link.mazemap.com/KP685ykM

GitLab link for WIKI: https://gitlab.stud.idi.ntnu.no/team_01-idatt1002/project-assignment-idatt1002-y2023_spring-t01/-/wikis/home

Agenda:

Case number.	Cases	Time	Conclusion	Responsible person
01	Approval of the meeting notice	1 min		Birthe
02	Project status	2 min		Birthe
03	GitLab Wiki	3 min		Birthe
04	MVP	11 min		Vemund
05	Any other business	3 min		Birthe

Breaks are made by joint decision.

Contact Birthe Emilie Christiansen (by email: birtheec@stud.ntnu.no or by phone: 45297115) to let us know if you are prevented from attending.

Welcome!

Birthe Emilie Christiansen

Meeting notice 4/2023 for team 1

Trondheim, 13.03.2023

This meeting notice goes to:
Birthe Emilie Christiansen, Lotte Christine Walla Aune, Vemund Ellingsson Røe, John-Ivar Dalhaug Eriksen, Håkon Rene Billingstad and Daniel Andre Evensen.

Time and place: Monday 20th March at 12:15-12:45. Gløshaugen Realfagsbygget (A4-112). Mazemap-link: https://link.mazemap.com/zU2aafdk

gitLab link for required documents: https://gitlab.stud.idi.ntnu.no/team_01-idatt1002/project-assignment-idatt1002-y2023_spring-t01

Agenda:

Case number.	Cases	Time	Conclusion	Responsible person
01	Approval of the meeting notice	1 min		Birthe
02	Approval of the minutes of the last meeting	2 min		Birthe
03	Project status	2 min		Birthe
04	GitLab Wiki	4 min		Birthe
05	Source code	16 min		Vemund
06	Any other business	5 min		Birthe

Breaks are made by joint decision.

Contact Birthe Emilie Christiansen (by email: birtheec@stud.ntnu.no or by phone: 45297115) to let us know if you are prevented from attending.

Welcome!

Birthe Emilie Christiansen

Meeting notice 3/2023 for team 1

Trondheim, 01.03.2023

This meeting notice goes to:
Birthe Emilie Christiansen, Lotte Christine Walla Aune, Vemund Ellingsson Røe, John-Ivar Dalhaug Eriksen, Håkon Rene Billingstad and Muhammad Ali Norozi.

Time and place: Monday 13th of March at 12:45 -13:05. Gløshaugen IT-bygget, Sydfløy 1. etasje (Møterom 119c).
Mazemap-link: https://link.mazemap.com/KP685ykM

gitLab link for required documents: https://gitlab.stud.idi.ntnu.no/team_01-idatt1002/project-assignment-idatt1002-y2023_spring-t01/-/wikis/home

Agenda:

Case number.	Cases	Time	Conclusion	Responsible person
01	Approval of the meeting notice	1 min		Birthe
02	Project status	2 min		Birthe
03	Vision document	5 min		John-Ivar
04	Wireframe	4 min		Håkon
05	Domain model	3 min		Vemund
06	Use case diagram	2 min		Håkon
07	Any other business	3 min		Birthe

Breaks are made by joint decision.

Contact Birthe Emilie Christiansen (by email: birtheec@stud.ntnu.no or by phone: 45297115) to let us know if you are prevented from attending.

Welcome!

Birthe Emilie Christiansen

Meeting notice 2/2023 for team 1

Trondheim, 20.02.2023

This meeting notice goes to:
Birthe Emilie Christiansen, Lotte Christine Walla Aune, Vemund Ellingsson Røe, John-Ivar Dalhaug Eriksen, Håkon Rene Billingstad and Daniel Andre Evensen.

Time and place: Monday 27. February at 12:15-12:45. Gløshaugen Realfagsbygget (A4-112). Mazemap-link: https://link.mazemap.com/zU2aafdk

Agenda:

Case number.	Cases	Time	Conclusion	Responsible person
01	Approval of the meeting notice	2 min		Birthe
02	Approval of the minutes of the last meeting	4 min		Birthe
03	Project status	3 min		Birthe
04	Domain model	9 min		Vemund
05	User test (Wireframe)	6 min		Håkon
06	Any other business	6 min		Birthe

Breaks are made by joint decision.

Documents will be available upon request.

Contact Birthe Emilie Christiansen (by email: birtheec@stud.ntnu.no or by phone: 45297115) to let us know if you are prevented from attending.

Welcome!

Birthe Emilie Christiansen

Meeting notice 1/2023 for team 1

Trondheim, 13.02.2023

This meeting notice goes to:
Birthe Emilie Christiansen, Lotte Christine Walla Aune, Vemund Ellingsson Røe, John-Ivar Dalhaug Eriksen, Håkon Rene Billingstad and Daniel Andre Evensen.

Time and place: Monday 20. February at 12:15-12:45. Gløshaugen Realfagsbygget (A4-112). Mazemap-link: https://link.mazemap.com/zU2aafdk

Agenda:

Case number.	Cases	Time	Conclusion	Responsible person
01	Approval of the meeting notice	1 min		Birthe
02	Project status	2 min		Birthe
03	Collaboration agreement	9 min		Birthe
04	Wireframe	8 min		Håkon
05	Vision document	5 min		John
06	Any other business	5 min		Birthe

Breaks are made by joint decision.

Contact Birthe Emilie Christiansen (by email: birtheec@stud.ntnu.no or by phone: 45297115) if you are prevented from attending.

Welcome!

Birthe Emilie Christiansen

Minutes of meeting

Minutes of meeting 7/2023 for team 1

Trondheim, 24.04.2023

Location: Gløshaugen Realfagsbygget (A4-112).

Present: Birthe Emilie Christiansen, Lotte Christine Walla Aune, Vemund Ellingsson Røe, John-Ivar Dalhaug Eriksen, Håkon Rene Billingstad and Daniel Andre Evensen.

Agenda:

Case num-ber.	Cases	Time	Conclusion	Responsible person
01	Approval of the meeting notice	1 min	X	Birthe
02	Approval of the minutes of the last meeting	1 min	X	Birthe
03	Project status	2 min		Birthe
04	Final product and documents	8 min		Birthe
06	Any other business	3 min		Birthe

Reports:

1. Meeting notice approved.
2. Minutes of the last meeting approved.
3. Project status
    a. The application is virtually complete, and only missing a few tweaks.
    b. Planning to finish writing the report by Wednesday.
    c. The whole team will proofread the report on Thursday.
    d. Wiki is almost finished.
    e. The GitLab Pages need to be reviewed.
4. Final product and documents
    a. Chart colors
        i. Student Assistant Evensen said it should be fine to use green and red as the default colors on the charts because the application has a colorblind mode.
5. Any other business
    a. Project presentation
        i. The project presentation should include a description of the application, a demonstration of the application, and a description of how the project work was distributed.

Lotte Aune

Birthe Emilie Christiansen

Lotte Christine Walla Aune
Secret

Birthe Emilie Christiansen
Meeting leader

Minutes of meeting 6/2023 for team 1

Trondheim, 17.04.2023

Location: Gløshaugen Realfagsbygget (A4-112).

Present: Birthe Emilie Christiansen, Lotte Christine Walla Aune, Vemund Ellingsson Røe, John-Ivar Dalhaug Eriksen, Håkon Rene Billingstad and Daniel Andre Evensen.

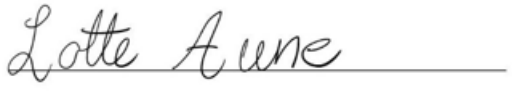
Next meeting: 24 April at 08:15 – 08:30, A4-112, Gløshaugen.

Agenda:

Case number.	Cases	Time	Conclusion	Responsible person
01	Approval of the meeting notice	1 min	X	Birthe
02	Approval of the minutes of the last meeting	2 min	X	Birthe
03	Project status	2 min		Birthe
04	The application	10 min		Håkon
06	Any other business	15 min		Birthe

Reports:

1. Meeting notice approved.
2. Minutes of the last meeting approved.
3. Project status
    a. Aiming to have finished the application by Friday.
    b. Project report has been started.
4. The application
    a. Started adding more colors to the application design.
    b. Dashboard and budget page has been updated to use table view.
    c. Both comma and period can be used when entering an amount.
    d. Application automatically displays data for the current month and year when application is opened.
    e. Combo box displays years from 2020 – 2030.
    f. Haven’t decided if a combo box or buttons should be used to select a month on the accounting page.
        i. Student Assistant Daniel Andre Evensen recommended using a combo box for consistent design.
    g. Added sum and result on dashboard, accounting, and budget page.
    h. Added option to change currency in settings, updates the text.
    i. Want to add option to display negative numbers in red.
    j. Added option to enable colorblind mode in settings.
    k. Added link to Wiki in menu bar.
    l. Added screen reader.
5. Any other business
    a. Unsure if each controller should have a test class and when the deadline for the individual reports is.
        i. Student Assistant Evensen suggested writing an email to Associate Professor Surya Kathayat.



Lotte Christine Walla Aune

Birthe Emilie Christiansen

Minutes of meeting 5/2023 for team 1

Trondheim, 27.03.2023

Location: Gløshaugen IT-bygget, Sydfløy 1. etasje

Present: Birthe Emilie Christiansen, Lotte Christine Walla Aune, John-Ivar Dalhaug Eriksen, Håkon Rene Billingstad and Muhammed Ali Norozi.

Next meeting: 17 April at 12:15 – 12:30, A4-112, Gløshaugen.

Agenda:

Case number.	Cases	Time	Conclusion	Responsible person
01	Approval of the meeting notice	1 min	X	Birthe
02	Project status	2 min		Birthe
03	GitLab Wiki	3 min		Birthe
04	MVP	11 min		Vemund
05	Any other business	3 min		Birthe

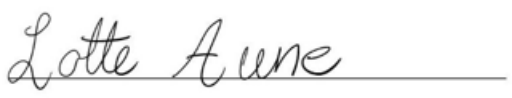
Reports:

1. Meeting notice approved.
2. Project status
    a. MVP development progress since the last meeting with Associate Professor Norozi.
        i. Completed the MVP
        ii. Switched to zbuilder from JavaFX for better efficiency.
        iii. Conducted 6 user tests of the MVP.
3. GitLab Wiki
    a. Birthe demonstrated the GitLab Wiki to Associate Professor Norozi.
    b. User tests have been divided based on the tester's technical competence level, and a description of technical competence level has been added to the Wiki.
    c. Domain model has been updated.
4. MVP
    a. Dashboard page
        i. Graphs on the dashboard need to update based on the user data.
    b. Budget page
        i. Plan to make it possible to add a new category from the "new income" or "new expense" window, given enough time.
        ii. Text saying "$$$" will be replaced with different summations.
        iii. Associate Professor Norozi suggested using a text field to select a category in the "new income" or "new expense" window.
            1. This has been previously discussed in the team, but the team decided to stick with a combo box for better user experience.
        iv. Associate Professor Norozi suggested making the budget page look more like a spreadsheet.
            1. This has been previously discussed with the client, but the client prefers the current design where the data is not stored in a tabular form.
    c. Accounting page
        i. The client is pleased with the sorting feature for expenses and incomes by date.
        ii. The accounting page will display both incomes and expenses in the same place.

1. The client didn't wish for the incomes and expenses to be differentiated by colors.

d. Receipts page
    i. More work needs to be done on the receipts page.

5. Any other business
    a. The client prefers a non-colorful application.
    b. Name and candidate number
        i. Associate Professor Norozi will check if we should use the candidate number or our names in the source code and on the Wiki pages.



Lotte Christine Walla Aune
Secret

Birthe Emilie Christiansen
Meeting leader

Minutes of meeting 4/2023 for team 1

Trondheim, 20.03.2023

Location: Gløshaugen Realfagsbygget (A4-112).

Present: Birthe Emilie Christiansen, Lotte Christine Walla Aune, Vemund Ellingsson Røe, John-Ivar Dalhaug Eriksen, Håkon Rene Billingstad and Daniel Andre Evensen.

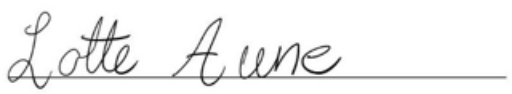
Next meeting: 27 March at 09:00 – 09:20, Gløshaugen IT-bygget, Sydfløy 1. etasje.

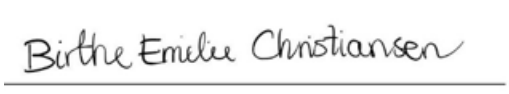
Agenda:

Case number.	Cases	Time	Conclusion	Responsible person
01	Approval of the meeting notice	1 min	X	Birthe
02	Project status	2 min		Birthe
04	GitLab Wiki	4 min		Birthe
05	Source code	18 min		Vemund
06	Any other business	5 min		Birthe

Reports:

1. Meeting notice approved.
2. Project status
    a. Feedback from Associate Professor Muhammed Ali Norozi.
        i. Associate Professor Norozi was satisfied with the current process and didn't suggest a lot of changes.
            1. We decided to not follow Associate Professor Norozi's suggestion of combining the Budget and BudgetEntry class into a single class.
            2. We decided to not follow Associate Professor Norozi's suggestion of combining the Account and AccountEntry class in a single class.
    b. Project is on track.
        i. Done two additional user tests since the last guidance meeting with Student Assistant Daniel Andre Evensen.
        ii. Backend for the MVP is finished.
        iii. GUI for the MVP is close to finished.
3. GitLabWiki
    a. Need to add a picture to the main page that displays the wiki's structure.
    b. Need to create a requirements page.
4. Source Code
    a. HBox and VBox are scalable and can be used to create layouts that can adjust to changes in window size or screen resolution.
    b. Student Assistant Evensen thinks the MVP looks good.
5. Any other business
    a. It's possible to have a meeting with Student Assistant Evensen even when there's a guidance meeting with the teacher the same week.
    b. Should start the writing the main report.





Lotte Christine Walla Aune
Secret

Birthe Emilie Christiansen
Meeting leader

Minutes of meeting 3/2023 for team 1

Trondheim, 13.03.2023

Location: Gløshaugen IT-bygget, Sydfløy 1. etasje (Møterom 119c).

Present: Birthe Emilie Christiansen, Lotte Christine Walla Aune, Vemund Ellingsson Røe, John-Ivar Dalhaug Eriksen, Håkon Rene Billingstad and Muhammed Ali Norozi.

Next meeting: 20 March at 12:15 – 12:45, A4-112, Gløshaugen.

Agenda:

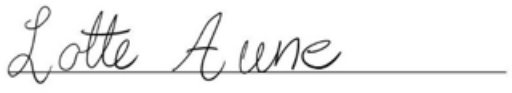
Case number.	Cases	Time	Conclusion	Responsible person
01	Approval of the meeting notice	1 min		Birthe
02	Project status	2 min		Birthe
03	Vision document	5 min		John-Ivar
04	Wireframe	4 min		Håkon
05	Domain model	3 min		Vemund
06	Use case diagram	2 min		Håkon
07	Any other business	3 min		Birthe

Reports:

1. Meeting notice approved.
2. Project status
    - Project is on track.
        - Finished first draft of use case diagram, wireframes, class diagram, domain model and vision document.
        - Well into programming the backend.
        - GUI is in start phase.
3. Vision document
    - Overall impression of vision document is good.
    - Followed the structure of the vision document example from last year.
    - Didn't include chapter 12.
        - All the information in chapter 12 would have been previously mentioned and don't need to be repeated.
4. Wireframe
    - Current version of wireframes is altered from user feedback.
    - Unsure how much of the visual representations of the user's economy we'll have time to implement.
    - Receipts saved as PDF files.
        - User should be able to upload a receipt as a PDF file.
        - The PDF files should be saved in the disk.
            - Can open and close the application without losing the saved receipts.
5. Domain model
    - Mistake next to the box saying Dashboard, should say 1 on both sides instead of 0.
    - AccountingEntry has a Boolean to decide whether the entry is an expense or an income.
    - Associate Professor Muhammed Ali Norozi suggested making a reoccurrence system for repeating expenses or incomes.
        i. When adding a reoccurring expense or income, there should be an option to decide which date the expense or income will stop repeating.

- Associate Professor Norozi suggested combining the Budget and BudgetEntry class into one class and combining the Accounting and AccountingEntry class into one class.

6. Use case diagram
   - Associate Professor Norozi suggested making additional use case diagrams to showcase different parts of the system.
     - Budget
     - Accounting
     - Receipts



Lotte Christine Walla Aune
Secret

Birthe Emilie Christiansen
Meeting leader

Minutes of meeting 2/2023 for team 1

Trondheim, 27.02.2023

Location: Gløshaugen Realfagsbygget (A4-112).

Present: Birthe Emilie Christiansen, Lotte Christine Walla Aune, Vemund Ellingsson Røe, John-Ivar Dalhaug Eriksen, Håkon Rene Billingstad and Daniel Andre Evensen.

Next meeting: 06 March at 12:15 – 12:45, A4-112, Gløshaugen.

Agenda:

Case number.	Cases	Time	Conclusion	Responsible person
01	Approval of the meeting notice	2 min		Birthe
02	Approval of the minutes of the last meeting	4 min		Birthe
03	Project status	3 min		Birthe
04	Domain model	9 min		Vemund
05	User test (Wireframe)	6 min		Håkon
06	Any other business	6 min		Birthe

Reports:

1. Meeting notice approved.
2. Minutes of last meeting approved.
    - Student Assistant Daniel Andre Evensen specified that he can only give feedback on project, not decide if parts of the project are approved or declined.
3. Project status:
    - First draft of use case diagram, wireframes, class diagram, domain model and vision document completed.
    - Programming will commence today.
4. Domain model:
    - Overall impression of domain model is good.
    - Discussed difference between domain model and class diagram:
        i. Student Assistant Evensen showed example of domain model.
        ii. Domain model should be simple and easy to understand no matter technical knowledge.
        iii. Preferable to have a simple domain model, and more detailed class diagram.
        iv. Course leader will give more comprehensive feedback on current domain model and class diagram on March 13th.
5. User test (Wireframe)
    - Performed user test last Monday.
        i. Client wants toggle bar on dashboard for monthly selection.

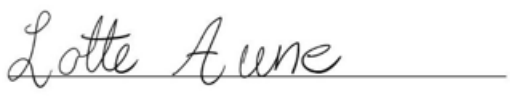
1. Student Assistant Evensen suggested using Java Event Listener
    a. Can be used to update content without refreshing whole page.

ii. Client wants to simplify repeatable income and expenses entries.
1. Instead of having option to add custom amount of time where income or expenses are repeated, change so you can only choose between “Day”, “Week”, “Month” or “Year”.
    a. If time, make feature to add custom amount of time where income or expense are repeated.

iii. Client confused by boxes around numbers on budget-page.
1. Remove boxes.

- Preferable to perform user tests on more people than just the client.
    i. Perform user tests on people with different backgrounds.
        1. Find someone without technological knowledge.

6. Any other business
    - Student Assistant Evensen showed example of Java Event Listener
    - Questions regarding team meeting with course lecturer
        i. Use case diagram should be presented at meeting with course lecturer.
        ii. At meeting with course lecturer, best to avoid going in depth in any of the documents due to time limitations.
    - In class diagram, the classes should be divided into packages.



Lotte Christine Walla Aune
Secret

Birthe Emilie Christiansen
Meeting leader

Minutes of meeting 1/2023 for team 1

Trondheim, 20.02.2023

Location: Gløshaugen Realfagsbygget (A4-112).

Present: Birthe Emilie Christiansen, Vemund Ellingsson Røe, John-Ivar Dalhaug Eriksen, Håkon Rene Billingstad and Daniel Andre Evensen.

Next meeting: 27 February at 12:15 – 12:45, A4-112, Gløshaugen.

Agenda:

Case number.	Cases	Time	Conclusion	Responsible person
01	Approval of the meeting notice	1 min	Yes	Birthe
02	Project status	2 min		Birthe
03	Collaboration agreement	9 min	Yes	Birthe
04	Wireframe	8 min		Håkon
05	Vision document	5 min		John
06	Any other business	5 min		Birthe

Reports:

1. Meeting notice approved.
2. Project status:
    - Wireframes almost done.
    - Started on domain model.
    - Started on vision document.
    - Met client and talked about specifications and requirements of software.
3. Collaboration agreement:
    - Looks pretty good.
    - Considered how to handle tasks and disagreements between team members.
    - Approved by Student Assistant Daniel Andre Evensen.
4. Wireframes:
    - Look at how to organize and store the data. Recommended to use file system. For example, organize files with year and month as name.
    - Prioritize functionality with a backlog system.
    - Add a way to sort entries in the wireframe.
    - Overall looks pretty good.
5. Vision document:
    - Follow the template.
    - Use the 2022 student report, not the 2015 one.
6. Any other business:

- Should start on use-case model.
- Start with user-testing and document it through the process. Make a template with tasks for the users to do and report what they did.
- Fork project posted by Associate Professor Surya Kathayat.
- Set up milestones based on the three iterations and link issues to the correct milestone.

Vemund E. Røe

Vemund Ellingsson Røe
Secret

Håkon R. Billingstad

Håkon Rene Billingstad
Team leader

GitLab Issueboard screenshots

Table 3 GitLab Issueboard Start

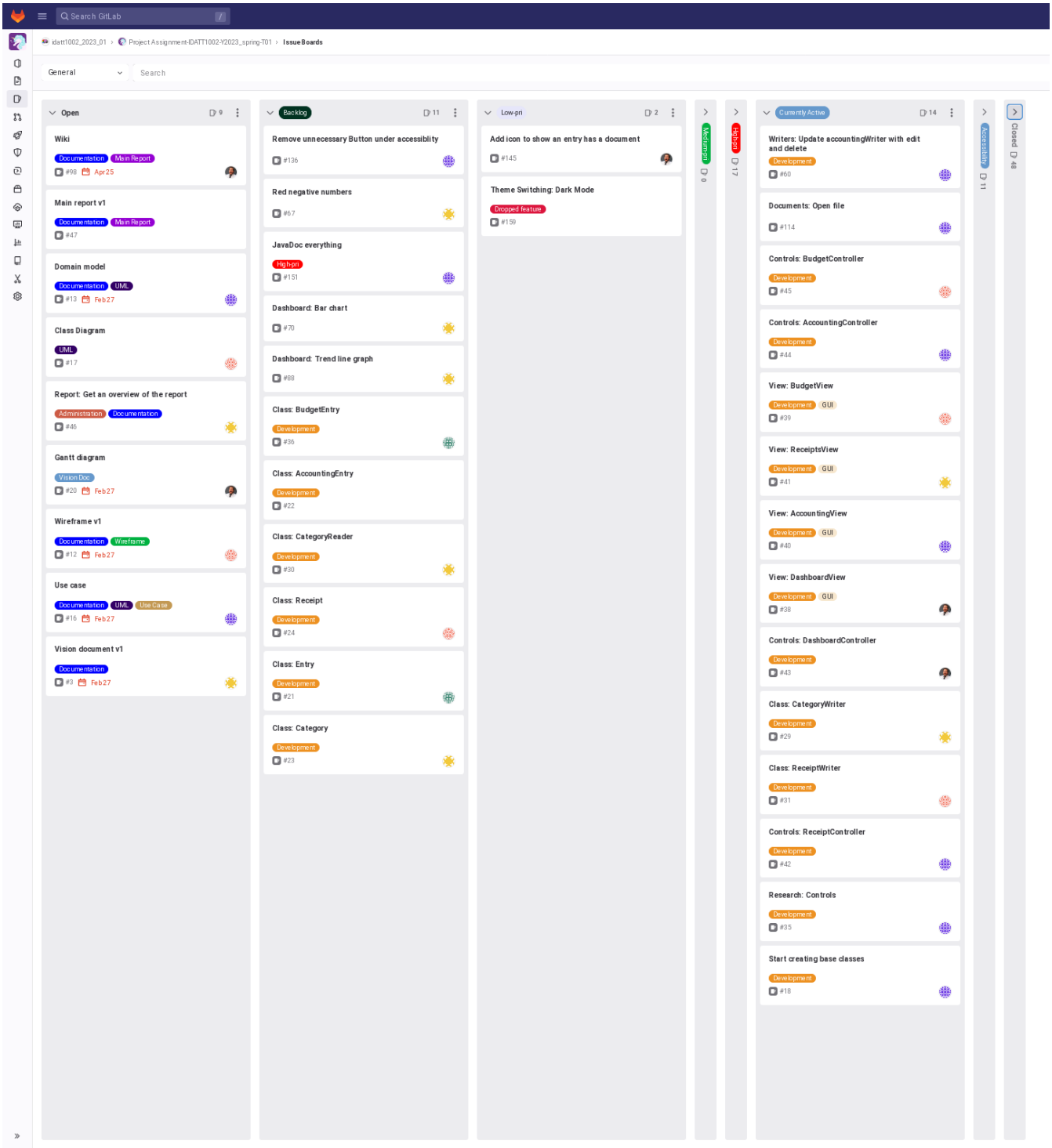


Table 4 GitLab Issueboard MVP

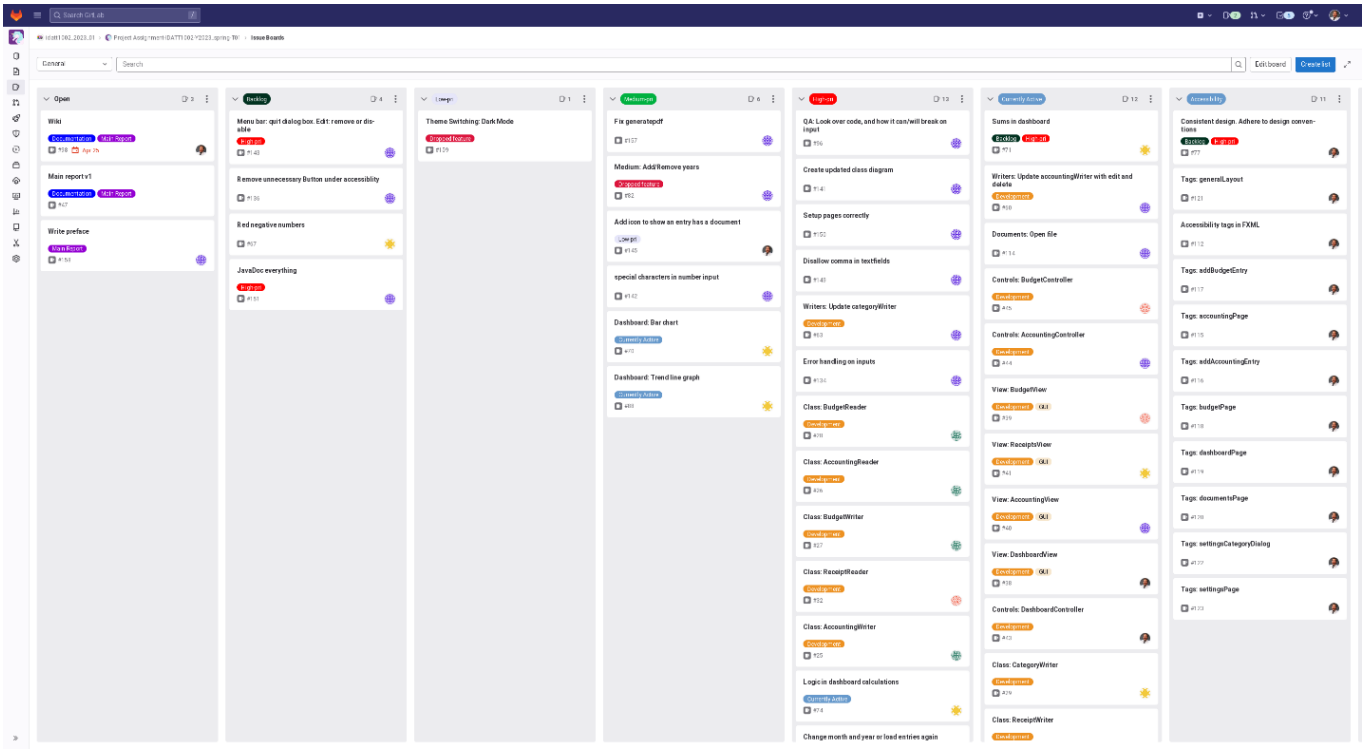


Table 5 GitLab Issueboard MMP

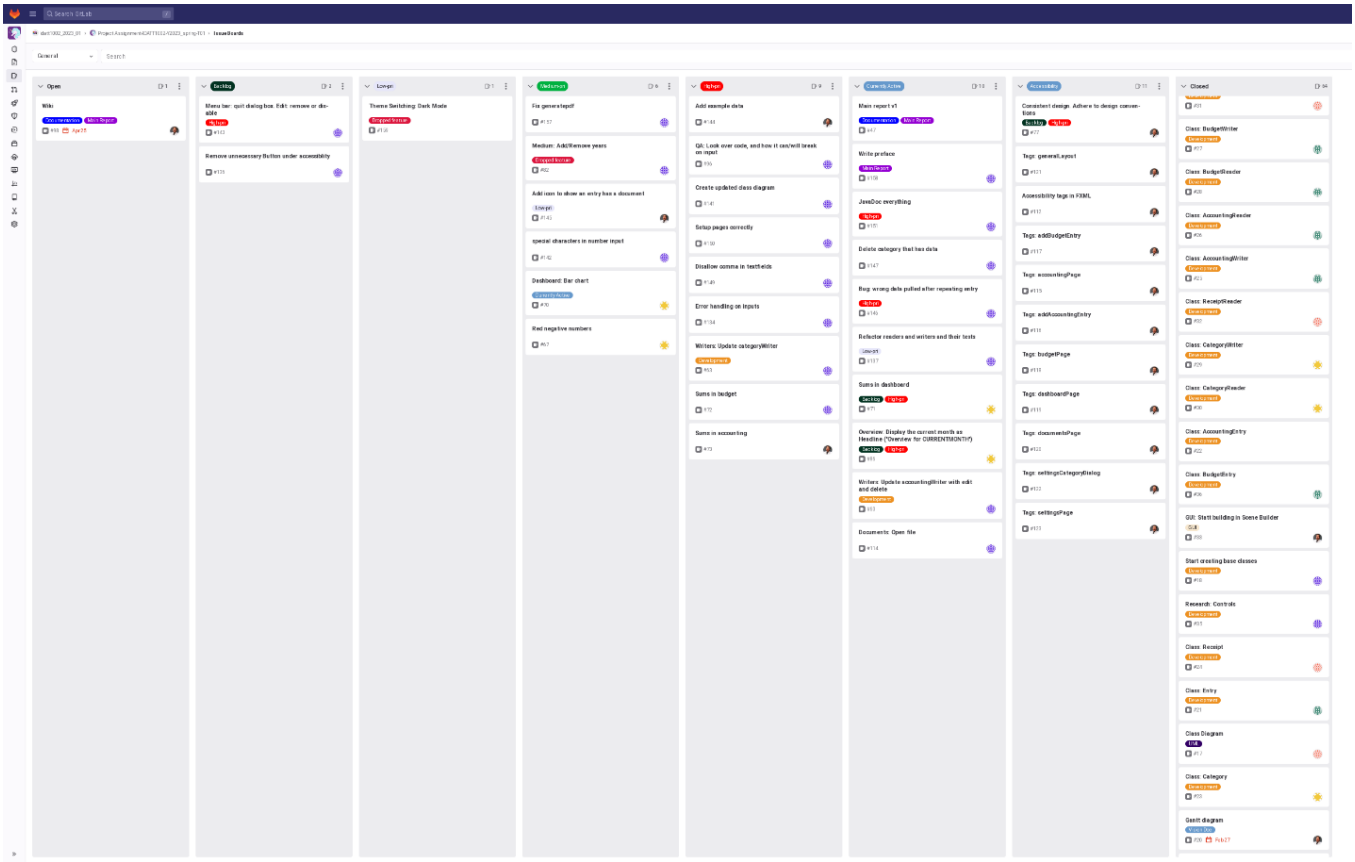
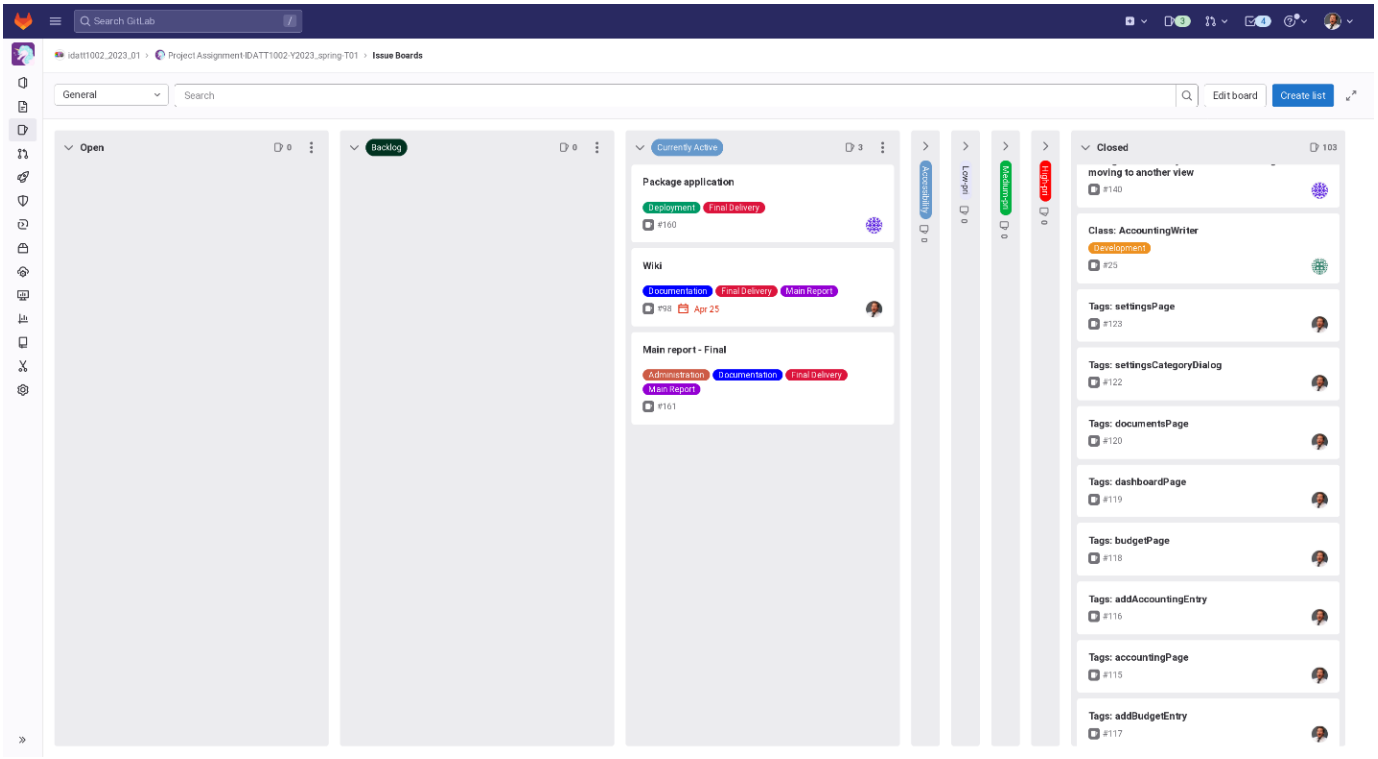


Table 6 GitLab Issueboard Final Delivery



Vision Document

Baecon

Vision

Version <1.0>

Revision History

Date	Version	Description	Author
13/02/23	1.0	First draft	John-Ivar Eriksen, Birthe Emilie Christiansen and Lotte Christine Walla Aune

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Vision

1. Introduction

The overall objective of this vision document is to present the project assignment and its attached requirements, included in the course IDATT1002 Systemutvikling. This complex project is counted as a part of the exam in the course, with emphasis on working with external stakeholders and target users in a scrum-project. The aim of the project is to deliver a functional product, that serves as a solution that gives an overview of income and expenses for a user's personal finances. This includes both budgeting and accounting. Furthermore, the given task description also provides guidelines for identifying and engaging external persons as users and client. While the scope of the project on the one hand is limited by the task description, the client, on the other hand, will have the opportunity to add extensions based on their personal preferences and wishes. The purpose of this Vision document is hence to present the team's vision for the final product, bearing in mind the given scope and the remote client. The details of how the project fulfils these is further detailed in separate UML-models and other documents, such as the domain and use-case model and wireframe.

The name:

Baecon: "**B**ig B**ae**rum E**con**omy"

Definitions, Acronyms, and Abbreviations

.jar	–	File ending, file format, for Java applications
F/LOSS	–	Free/Libre Open-Source Software
GUI	–	Graphical User Interface
JDK	–	Java Development Kit
JRE	–	Java Runtime Environment
JVM	–	Java Virtual Machine
LTS	–	Long Term Support
MVP	–	Minimum Viable Product
UI	–	User Interface
UML	–	Unified Modelling Language
UX	–	User Experience
WCAG	–	Web Content Accessibility Guidelines
Wireframe	–	Visual prototype of the graphical interface of the application

References

Doran, G. T. (1981). There's a SMART Way to Write Management's Goals and Objectives. In Management Review. 70, 35-36. New York.

Stene, M. (1999). Vitenskapelig forfatterskap: hvordan lykkes med skriftlige studentoppgaver. *Kolle Forlag.*

Overview

This Vision document will serve as a presentation of the team's vision for the project leading up to a functioning economic application. The following section will consist of an account of the positioning of the project, which includes a description of the problem and product statement. Subsequently it will follow a concretization of the team's objectives, where the impact, result and process goals will be presented in respective order. A more thorough description of the stakeholders and users will then follow, where the emphasis will be placed on the roles of those involved in the project. Then it will follow an overview of the product. This section will among other things include an elaboration of details and a risk analysis commenting on the potential risks that could arise. This section is followed up by a review of application features, development constraints, quality range and prioritization of development features. This document is culminated by an account of relevant documents required by the project.

In this regard it will also be appropriate to account for the chosen content in the Vision Document that diverges from the given template. Due to the given framework in combination with the status of the project, as a student assignment, changes have been made. The omission is centered around the chapters relating to the costs of the project, as they are irrelevant to the development of the final product. This applies in particular to chapter 5.5, 5.7 and 5.8 described in the template. Chapter 10.3 Performance Requirements and 10.4 Environmental Requirements, from the template, have been deleted in favor of chapter 8 Quality Ranges and 5.3 Assumptions and Dependencies, respectively, where their details have already been covered. Chapter 12 Features Attributes is removed because it does not provide any other details of what is already accounted for in the other parts of the Vision document. It has therefore been considered redundant.

2. Positioning

This chapter provides a broad summary of the target audience of the product and the potential benefits it can bring to them.

Business Opportunity

Our team was tasked with developing a tool to provide private individuals or small businesses with an overview of their income and expenses, with the goal of improving their financial situation. For this project, we have chosen to develop a tool for a private individual.

Problem Statement

The problem of	Efficiently tracking expenses and income
affects	Svein Magnus Walaas
the impact of which is	challenges in managing finances effectively
a successful solution would be	Accessible and easy to use Viable for both budgeting and accounting Contributing to improved finances

Product Position Statement

For	A private individual
Who	Wishes to improve their economy
Big Bærum Economy	Is a standalone Java application
That	Is custom made according to the client's preferences. The application aims to improve the user's economy by providing a comprehensive view of income and expenses through numerical data and visual representations. Furthermore, the application will be viable for both budgeting and accounting and give the user recommendations on how to effectively manage expenses.
Unlike	Other applications that can't be used for both budgeting and accounting and that often require a subscription to access all features. While spreadsheet software like Excel is a popular tool for managing finances, it can be challenging for inexperienced users to create an effective money management system in this software.
Our product	Is available free of charge and can be used for both budgeting and accounting purposes. It should be designed with user-friendly interfaces and clear visual representations of financial information. In addition, our product will have personalized features to fit the client's needs.

3. Project Goals

Given the various stakeholders involved in this project, the team has created several goals that will try to respond to the task description set by the course coordinators, while at the same time taking the client's wishes into account and assuring the team's own satisfaction with the final product. In order to achieve this composite undertaking, the need for comprehensible and well-defined objectives has arisen. Therefore, as a joint unit, the team has constructed objectives for the project following the guidelines of George Doran's SMART-goals template. That is, goals that are specified, measurable, accepted, realistic and limited by time and costs.[20] This allows for planning and structuring the work required in the progression of the project. Thus, the team can collectively maneuver to deliver a final product that meets the requirements set by the stakeholders. In his book on succeeding student assignments, Morten Stene has emphasized the importance of the goals being universally accepted internally for them to be considered as good.[21] The objectives of the team have been distinguished into three types: impact, result and process goals.

Impact Goals

The impact goal is directly linked to what the client's wants for the final product, as an application handling their personal finances. Therefore, the team's main impact goal for the project is to deliver a functioning economic application for the client to use on a day-to-day basis. By function as a comprehensible tool for handling budgeting and accounting, the team hopes that the final product strives to offer an overview of the user's personal finances. Consequently, the impact goal is to facilitate a simpler and structured everyday life for the end user. This can further be justified by the additional task requirement, demanding a feature advising for healthier economical choices.

Result Goals

The result goal of this project is directly related to the outcome of the final product. The goal is to deliver a fully functionally application by the 28th of April. As expressed in the collaboration agreement chapter 3.E, see attached documentation, the team has laid an emphasize on delivering the solution within the given deadline, and where all the team members are comfortable with both the content and quality. The result goal is also related to the client. The aim is for the product compete with alternative solutions and function as an attractive replacement. In order to achieve this, it will be appropriate to consider the client's input and wishes in the development of the final product. Despite this, result is also regulated by the requirements of the assignment, which states that the solution must be de-

[20] Doran 1981: 36.

[21] Stene, 1999: 67.

signed according to the WCAG 2.1 principle 1 Perceivable. This provides natural consequences for the development of the product, for the final solution to be universally designed.

Process Goals

It is possible to argue that the purpose of this project, at an overall level, is to provide training for the students in system development, while working agile in teams with an external client. Considering this the impact goal is therefore to increase the members competences in team collaboration and developing individual programming capabilities. In order to achieve this, the team must follow the guidelines reached in the collaboration agreement by supporting each other towards the joint goals.

4. Stakeholder and User Descriptions

For our project to be competitive within the budgeting and accounting market, we must understand the needs of our users and provide them with a tailored product. This is achieved through conducting research and collaborating with stakeholders to gather their requests.

Market Demographics

The application targets households and individuals in need of an easy-to-use application for budgeting and accounting a household economy. The specific market we target would be those who are in the market for a user-friendly, yet powerful, desktop application for managing their finances.

While there is an abundance of Mobile Apps and Web-based services for budgeting, who require the creation of accounts, paying subscriptions and are limited by “web technologies”, there is a glaring lack of standalone applications in this category. We target those who are not convinced by the online applications and services.

The market is drowning for web-based budget “software”, which makes it very hard to stand out. By having an actual application, which can be installed on a local computer, we aim to make our users feel actual in control of their own data, and not be bothered by online accounts and subscriptions. While this may be a niche group, it is one that is mostly overlooked by the app industry.

Stakeholder Summary

In this section, we provide a brief overview of our project stakeholders, including their backgrounds and responsibilities.

Name	Description	Responsibilities
Student team	Product developers	Develop the application according to client specifications and assignment requirements. Contribute to the team and the project to the best of their ability. Ensure that all work is completed and delivered within assigned deadlines. Ensure that the final product meets client specifications and assignment requirements.

Daniel Andre Evensen	Teaching Assistant	Guide students by suggesting solutions and providing feedback on project progression.
Svein Magnus Walaas	Client and end user	Communicate desired final product features and application design with developer team. Participate in product testing throughout development and provide feedback on user experience (UX), user interface (UI), and usability, as well as evaluate how well the current product aligns with the original vision.
Course Lecturer	End user	Evaluate the final product and offer feedback on project during team meetings.

User Summary

This section provides a brief description of the users involved in the project, their responsibilities, and their key problems that need to be addressed by the proposed solution, along with their names and stakeholder classification.

Name	**Description**	**Responsibilities**	**Stakeholder**
Client	Individual who has a personal connection to one of the team members and is interested in improving their financial situation	Manage income and expenses. Get overview of income and expenses.	Self-represented

User Environment

The target environment is a desktop/laptop personal computer. It will run offline, as a standalone application. It will run on Apple MacOS, Linux (target distro: Ubuntu and derivatives) and Microsoft Windows. The user environment requires a recent version of Java Runtime Environment to be installed on the local machine. The application has been developed using Java Development Kit 17 (LTS) to maximize compatibility and stability.

Key Stakeholder or User Needs

After meeting with our client, we have received the requested features that are to be added. These requests are just suggestions and might not be added.

Need	Priority	Concerns	Current Solution	Proposed Solutions
Add new type of income or new expenses	High	Recurring payments	None	
Categorize income and expenses	High		None	
Manage income and expenses	High		None	
Overview of income and expenses	High	Create graphic charts	None	
Manage receipts and other documents	Medium	Store documents	None	Receipts and other documents will be stored in a database
Dark mode	Low		None	
Password protected database	High	Security	None	

Alternatives and Competition

A plethora of competing products are available. The vast majority of these are online and web-applications. The fact that we are developing a standalone desktop application makes us stand out in the crowd and enables recruitment of a group of users that are overlooked by the mainstream application industry; namely those who do not want to register accounts, pay subscriptions and accept EULA and “Privacy” policies and give away their personal information.

A few examples of competing products would be:

Name	**Platform**	
YNAB (You Need A Budget)	Web	Subscription. Requires online account.
Honeydue	Mobile only	Free or subscription. Requires online account.
Pocket Guard	Web	Subscription. Requires online account. In-App Advertisement.
Intuit mint	Web, desktop	Subscription. Requires online account.
Google Spreadsheet	Web, Mobile	
Microsoft O365 Excel	Web	Online-Only. Subscription. Requires online account.
Microsoft Office Excel	Desktop: Windows, Mac OS	Offline files. Integrated Cloud (can be disabled). Subscription required.
LibreOffice Calc	Desktop: Windows, Mac OS, Linux	Offline files. No cloud integration.
GNUCash	Desktop: Windows, Mac OS, Linux	Offline. No cloud. Free. F/LOSS.
KMyMoney	Desktop: Windows, Mac OS, Linux	Offline. No cloud. Free. F/LOSS.

From the table above, we can identify our main competition as either the time-tested offline spreadsheets (Excel, Calc), or the offline applications (GNU Cash, KMyMoney).

In order to make a convincing argument for our application being a better alternative, we must make it more attractive in terms of user experience than a spreadsheet and be at least on-par with the dedicated desktop application in terms of usability and features. Even if we are not able to match them in the depth of advanced features, we should be able to make our core features so polished and easy to use that it will be worth the loss of some more advanced options.

5. Product Overview

The product will be a tool for managing personal finance, deployed as an offline desktop application. It will enable the user to manage budget and accounting for a household.

Product Perspective

The product is a standalone desktop Java application, and as such will be able to run on most modern desktop computers. Outside the need to interface with the local machine's file system, there will be no need for the application to be considered a part of any other system. The instances in which the interfacing will be required would be limited to:

- Storing application data on the local file system.
- Locate files in the computer file system and load these into the application's archive.

This interfacing will be handled via the JVM and .jar interaction with the local computer.

Summary of Capabilities

The table below gives an overview of how the application aims to benefit the client. It makes some assumptions regarding features being planned.

Customer Benefit	Supporting Feature
Easy overview of budgetary constraints.	- Overview of expenses and income. - Visual information via charts and trend lines.
Visualize financial status via easy-to-read charts and trend lines.	- Various charts and trend lines.
Management receipts and other documents, attached to a posting or as a single file in the Archive section.	- Archive function. - Manage documents via the application.
Privacy and security.	- Offline application. - Local installation. - Data stored locally. - Password protected database. - No data is ever transmitted outside the local machine.

Portability. No vendor Lock-In.	- Data can be exported in an Open and portable format, as stipulated by GDPR. - Can be imported into any application supporting the exported format.

Table 4-1: Application Capabilities

Assumptions and Dependencies

Operating System:

- The application will be written in Java, and as such be platform-agnostic.
- I will run on Mac OS, Linux and Windows, all of which are represented among the development team.

Software Requirements and Dependencies:

- The application will require the installation of Java Runtime Environment (JRE).
- This will need to be downloaded and installed, either via the Java home page (Windows, Mac OS, Linux) or via a package repository (Linux).

Computer System Requirements:

- Any reasonably recent computer (desktop or laptop) should be able to run this program.
- The development team will be able to test the application only on the range of laptops and desktops they have available, which will limit the ability to test lower limits of requirements but are confident that our combined computers represent a good average of what the average user would have.

Risk Analysis

The matrix below gives an overview of potential risks, as identified by the team. They have been assigned a Probability-Consequence score, based on their probability to occur, and the severity of the consequence should they occur.

		Consequences				
		Insignifi-cant	Minor	Moderate	Major	Catastrophic
Proba-bility	Highly probable					
	Likely		F	B		
	Possible		G		C	
	Unlikely		E		D	
	Highly improbable				A	

Risk acceptance criteria	
Level	
High risk	The red colour represents risks that is not regarded acceptable, and measures must accordingly be taken immediately.
Moderate risk	The yellow colour alerts the needs for introduction of measures. These risks are not considered as urgent as the red ones, but the must never-theless be taken seriously and attempted solved to the best of their abil-ity.
Low risk	The green represents an acceptable risk. Action will only be assessed if the measure will have a positive effect on the project.

Risks identified:

A. Limited development time. May result in a final product not meeting the task description of the course.

B. Incomplete or poorly executed features and functionalities due to lack of time

C. Limited testing resources due to limited development time

D. Limited knowledge in programming within the team

E. Lack of feedback from client, due to availability.

F. A team member becomes unavailable due to illness or similar circumstances.

G. Disagreements and conflict between team members impede progress.

Each of the potential risks has been discussed and evaluated internally within the team. This making them recognizable to all, so that necessary measures can be taken when required. The evaluation is based upon the fact that there is some probability attached to all of them. Nevertheless, as illustrated in the matrix, most of the potential risks were considered as moderately risky. Although they were not considered as urgent, they could still be significant for the progression of the project. Hence the internal acceptance of the team's milestones and communication will serve as two important factors in handling these kinds of risks. Nonetheless, this also applies to the potential risks that are beyond the team's control. Issue E, F and G can be highlighted in this context. In these cases, planning and communication can impede them from occurring, and thereby minimizing its negative impact on the final product. Due to the diversity of potential risks, it would be appropriate to account for them individually in the following sections:

The team has identified limited development time as one significant potential risk affecting the final product while working on the project. This limitation can be realized as a result of various reasons, for instance unforeseen challenges, low work efficiency and the realization of the other risks, to name a few.

Risk A have consequences directly linked to the final product not meeting the given task description. As this will result in a final product not working as intended, and therefore arise as a major consequence. For instance, if the product is lacking guidelines for economic improvements or not meeting the WCAG standards, as set in the project's requirements. This can further be justified by the fact that a lacking final product will not be graded highly, and therefore not meeting the team's result goal. However, the risk is considered highly improbable, as a result of the agreement to constantly communicate and make plans to focus on product functionality rather than desired features. This way prioritization of necessities can ensure that the requirements in the task description are met.

Risk B is about how a lack of time can lead to incomplete or poorly executed features and

functionalities, resulting in a final product that might not meet the client's expectations or requirements. This risk is regarded as likely to happen, because the student team doesn't have any previous experience with larger projects, and therefore may have agreed upon a project scope that is too big to succeed. The consequences of the risk occurring are considered moderate, because the final product would still be viable, but lack level of quality, features and polish, leading to customer dissatisfaction. To prevent risk B from happening, the team should break the project into smaller, more manageable tasks, and set clear goals and milestones for each scrum sprint. They can also involve the client in the prioritization process to ensure that the most critical features are delivered on time. If a deadline has passed without the intended goal being reached, the team must reconsider the scope of the project and possibly make changes.

Risk C, which is limited testing resources due to limited development time, can result in undiscovered bugs in the final product. This would have major consequences for the project because bugs and error could lead to user frustration and the application crashing or not working as intended. Risk C is considered probable, because testing often gets overlooked or reduced in projects with limited time and resources. To reduce the chance of risk C occurring, the team should use available resources efficiently and prioritize testing efforts strategically. For instance, the team should write test classes using JUnit, because it can be used to automate the testing process and reduce the time and resources required for manual testing. If risk C becomes a reality, the team must prioritize their testing efforts based on the most critical features and functionalities. They should also conduct a risk assessment to identify the most severe and probable issues and address them as soon as possible.

Risk D is a significant risk that can impact the success of the project, which is limited knowledge in programming within the team. If team members lack the necessary knowledge and experience in programming, it can lead to poor programming decisions and ineffective solutions. Early bad choices in programming can also make it difficult to expand the codebase in the future. The consequences of the risk happening can be major, resulting in delays and reworks. Moreover, the delays can have a cascade-effect, where for example feature X requires feature Y to be complete before it can progress. Although the consequences of risk D are major, it is unlikely to happen, since the team can seek guidance from each other or the teacher assistant to help make effective programming decisions. In addition, a class diagram will have been made and discussed before the programming begins. If risk D happens, the team must seek advice from the teacher assistant. Another option is to review and refactor existing code to improve its quality. The team can also conduct throughout testing to identify and fix any issues or bugs that might arise from programming mistakes.

Risk E the lack of client feedback is another risk identified by the team. As opposed to the rest of the risks, this is the only one regarded as a low risk due to its minor consequences and minor probability of occurrence. This evaluation can be justified by our experiences with the client thus far, and the relation we established through the meetings we have performed. If the contact with the client were to fade due to availability or some other occurrence, the consequences for the final product would mostly impact user testing and external

feedback for the design and feature set of the application (both MVP and final product). Proactive communication and planning can be emphasized as a solution to this potential risk.

Risk F is related to a team member becoming unavailable due to illness or similar circumstances. This risk is likely to happen and can have some minor consequences, such as delays in project delivery, decreased productivity, and increased workload on the remaining team members. To minimize the risk, it's essential for the team to maintain clear documentation on ongoing tasks and responsibilities and communicate effectively. This way, in the event of a team member becoming unavailable, another team member can easily step in and take over their responsibilities without causing any delay or issues. If a member reports that they will be absent for a longer period, the team should immediately assess the impact of the absence and adjust the project timeline accordingly.

Risk G deals with disagreements and conflict between team members that impede progress are considered as possible, due to the composition of five individuals coming together as a joint team. In the working on the project, disagreements will naturally arise within the team. This can be understood as a healthy part leading up to the final product because the collaboration agreement allows for discussion if it results in benefits for the project, not just as a distraction. This risk is set to a low consequence, as the collaboration agreement also states clear guidelines for conflicts impending the work progress. For instance, chapter 5.A *General*, addresses the measures evoked by disagreements and internal conflicts by the use of majority rule and veto. These actions can in combination with sincere communication be used as guidelines in case of potential disagreements and conflicts within the team.

Quantifiable and Non-Quantifiable Benefits

Since this is a student project, there will be no hard, quantifiable benefits outside that of having a working application for budgeting and accounting.

One can argue that there is a quantifiable quality to the knowledge that each team member will acquire through the work put in, in comparison to what one knew prior to the project. We argue that this is the primary benefit of the project.

Licensing and Installation

The Application will be released as Free/Libre Open-Source Software (F/LOSS), under the GNU Public License v3.0 (GPLv3).

6. Product Features

The development team have, through meeting with the client and team-internal discussions, arrived at a set of basic functionalities we agree should be present in the final application. The features listed below are not final, and subject to change according to the progress of the project and by agreement with the client.

Standalone Desktop Application

- Offline application, running locally on the user's laptop or desktop computer.
- Password protected database.
- Ability to export the database, or load/import data from external database

Budget Overview

- A view which shows both monthly and annual budgeted income and expenses.
- Budget overview, both monthly and annual view.
- Data should be represented both with cold, hard numbers, and by easy-to-digest visual methods such as pie charts, bar charts and trend line graphs.
- Recurring payments.

Accounting and Expenses

- A view, separate from the main budget, where expenses can be added.
- Option to append files (such as a PDF) to an entry.
- Adding expenses on a rolling basis. Spending will appear in a summary.

File Archive

- Overview of all files (PDF, etc.) appended to entries, with relevant information to identify the entry and content.
- Section for miscellaneous documents not tied to a specific entry.

Recurring Payments

- Ability to add a payment and define it as a recurring. Weekly, monthly and yearly.

Dark Mode

- Dark colors in the interface, to reduce eye strain.

Visual representation: Charts and trends

- Financial situation should be shown “at a glance” via charts.
- Trend lines, tracking spending.

7. Constraints

The team have identified several constraints, and it's important to keep these in mind as we plan the progress of our project. The constraints present themselves in several forms, such as the project specifications, technical limitations, time limitations, and the available programming knowledge within the team.

Technical constraints of the application will mostly be that it is an offline desktop application. As such, there will be no login to external services, nor any need to adapt the interface to a mobile device. This also frees us from any concern regarding privacy regulation, as there will be no personal data leaving the User's desktop system.

Other technical constraints will be that it is to be made in Java, with JavaFX as the GUI toolkit. As such, dependencies for running the application are mostly the Java Runtime Environment.

Time constraints lie mostly in the deadlines provided in the assignment. They stipulate the time allotted for certain project milestones to be met. As such, we have a limited time in which to complete the assignment and must plan and prioritize accordingly.

Human constraints present themselves most prominently in the lack of Programming experience across the team. Therefore, the team will need to expand their programming abilities during the project. This will consume time that could overwise be used for working on the application. The constraint will be in balancing education with actual progress in building the application, and it is imperative that the members are honest and open about any difficulties or needing assistance.

There will also be constraints in how much access we have to the client for feedback and testing, in addition to a lack of resources for performing a wide set of user tests, hardware tests and quality assurance.

Design constraints are those imposed by the Client, as well as those specified in the project assignment. We must strive to achieve WCAG compatibility, as well as meet our client's wishes with regards to UI, UX, Usability and Accessibility.

8. Quality Ranges

Usability is a very important aspect of modern application development, and the initial impression of quality is essential for the likelihood of a potential user sticking with an application. As such, we will have a steady focus on providing easy-to-read interface elements. To achieve a good sense of quality, we have identified certain key quality aspects:

- Be able to handle a large database of budgetary information without suffering performance loss. The application should feel smooth and responsive to use.
- Be protected from data loss and must be tested for this. We will not accept the loss or corruption of data. The error handling must be robust and thoroughly tested.
- Have a user-friendly, reasonably attractive and intuitive layout.
- Be rooted in universal design, and solid design principles.
- Be tested as thoroughly as possible to ensure (ideally) no bugs or errors in the finished application.

9. Precedence and Priority

The team has arrived at the following features as priorities:

Feature	**Priority**	**Importance**
Budget overview	1	Highest
Accounting overview	1	Highest
Expense and income	1	Highest
Visualized data (charts, etc.)	3	Medium, Nice to have
File archive	2	Important
Dark Mode	4	Low, Nice to have

10. Other Product Requirements

Applicable Standards

- The application will adhere to ISO standards.
- The first day of the week is Monday, as according to ISO-8601
- Dates are especially important in a budget and accounting program. Thus, it will be displayed in one of two standardized ways.
    - ISO-8601, Technical archival format: “yyyy-mm-dd", e.g.:
        - 2023-01-18
    - ISO and European “normalized” standard: “dd-mm-yyyy", e.g.:
        - 18-01-2023
        - Or formatted as: 18 January 2023
- Time will be displayed in the international standard 24-hour format.
- Thousand separators shall be a hard space, as per ISO standards and B*ureau International des Poids et Mesures*, Resolution 10 of the 22nd CGPM (2003):
    - ***declares*** *that “the symbol for the decimal marker shall be either the point on the line or the comma on the line”*
    - ***reaffirms*** *that "Numbers may be divided in groups of three in order to facilitate reading;* ***neither dots nor commas are ever inserted in the spaces between groups****", as stated in Resolution 7 of the 9th CGPM, 1948. (Emphasis ours)*
- Decimal separator shall be “comma on the line”, as per ISO 80000-1.
    - *The standard does not stipulate any preference, observing that usage will depend on customary usage in the language concerned, but adds a note that* ***as per ISO/IEC directives, all ISO standards should use the comma as the decimal marker****. (Emphasis ours)*

System Requirements

- The application will run on the operating systems Apple Mac OS, Linux (target distro: Ubuntu, and derivatives), and Microsoft Windows.
- It will require Java Runtime Environment JRE 17 (LTS).

11. Documentation Requirements

The documentation of use must stand in relation to the scope of the project. As such, a User Manual and guide for configuration and installation will be required. Anything beyond this would exceed reasonable levels of documentation for an application of our intended scope.

Internal Documentation

To facilitate easier collaboration, and to make it easier to plan ahead, not to mention finalizing the project report, all source code, models, mock-ups, meeting reports and other documents produced during the project is to be stored on the team's cloud drive. During the later stages of the project, this documentation is to be presented in the project Wiki page on GitLab.

Source code will adhere to best practices for code documentation (comments and JavaDoc). It should be written in a precise and clear manner.

Documentation shall be performed in parallel with the project work

User Manual

The User Manual will give the user an easy Get Started guide to the basic functionality of the application, in addition to information about the more advanced features. The manual must describe how these features, both basic and advanced, are intended to be used and how they will improve the usefulness of the program.

Online Help

A dedicated Wiki will be made available on the projects GitLab page, tied to the project repository. All documentation relevant to the function of the application will be made available there.

Installation Guides, Configuration, and Read Me File

Readme-files for configuration and installation will provide clear and simple instructions for how to set up the initial installation of the application, e.g. dependencies needed and how to build the software if compiled from source, in addition to providing a short troubleshooting section, usually of known issues a user may have during initial installation and setup, issues with compatibility.

Labeling and Packaging

The project does not use any copyrighted or patented labelling. GUI icons and help systems will use the icons and labeling provided by the service or toolkit. Other logos, artwork, etc., will use either Original Content, or items released under a permissive license or in the Public Domain.