Second Iteration Document

Mikkel Aas Magnus Gluppe Jakob Frantzvåg Karlsmoen
Mikael Falkenberg Krog

March 2020

Contents

1 Project Process Document

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Collaboration Agreement for Gruppe 2

Mikkel Aas, Magnus Gluppe, Jakob Karlsmoen, Mikael Krog

February 2020

1 Introduction

The Collaboration agreement is based on a collection of goals, role responsibilities, procedures and guidelines for interaction within the team. The agreement is developed and complemented by the team members with their own interpretations of what you mean by these and how to achieve the goals.

2 Goals

2.1 Effect Goals

1. To become acquainted, build trust in each other and increase motivation for the project there will be held regular study sessions, where the members will work as a team and help each other if any problems should arise. There will also be social gatherings to get more comfortable with each other.
2. Respect each other's opinions and suggestions.
3. Finish the individual assigned work, as to not slow down and / or cause problems for others work.

2.2 Result goal

The group should be able to hand in all deliveries on schedule. To achieve this, all members will have a clean overview of everyone's work, and the progress of each individual. Members can then see who has done what, and what remains to be done. There is also the option to assign more people to tasks if deemed necessary.

3 Roles and responsibilities

- **Project leader**
  Krog was elected project leader by acclamation. His responsibilities involve but are not limited to, delegating assignments, keeping the schedule, solving potential conflicts and the overall vision of the project.
- **Organization responsible**
  Gluppe has been given the assignment of organising the teams meetings. He will be responsible for leading and documenting the meetings during the project. Considering the groups familiarity with each other, the summons will be quite informal, but still enforced.

- **Documentation responsible**
  All group members are responsible for documenting their work, both their work hours and what work they have done on the current task through GitLab. However, Karlsmoen has the responsibility of coordinating all the teams documentation into a cohesive, easily comprehensible document.

- **Head of Design**
  The UI/UX design is an important part of the application. Aas has the responsibility of making sure the UI/UX is up to standard, and meets all requirements. While other members will work on the UI/UX as well, everything must be approved by the head of design if it is to be included in the final design.

4 Procedures for the teamwork

- **Meetings**
  Meetings are to occur at least once a week. The organization of meetings is handled by Gluppe, therefore he summons the group to meetings. The idea is one formal meeting a week, with additional working sessions. This number can be increased if deemed necessary.

- **Notification in case of absence or other incidents**
  If a member is late for a meeting or cannot attend, the member must contact the one responsible for organising the meeting. Either contact them on Discord or by phone. The person that is late for the meeting is still allowed to attend, unless it is a repeated problem, which will require more attention to solve.

- **Documents**
  The main method for sharing documents is through Google Drive and GitLab. Google Drive will mainly be used for documents such as this. The main report for the project will be written in Latex using Overleaf. GitLab will be the main resource for sharing code and documentation. Both manual documentation of the code, and auto-generated JavaDoc is going to be handled on GitLab.

- **Policy for monitoring tasks**
  All tasks should be listed as issues on the GitLab project. The issues will be placed on a Kanban board, and updated according to the progress being made on them. This way all members will have a good overview of how the project is coming along.

- **Submission of teamwork**
  To ensure the quality of all members' work there will be a great use of GitLab commit logs to inspect the quality of members' work. This way there will be more than one pair of eyes on anything added to the project. All group members must coordinate with Karlsmoen to ensure proper documentation.

5 Interaction

- **Attendance and preparation**
  For meetings, lectures and work sessions there will be a specified time to meet. To make room for errors out of members control, the session will start 15 minutes after the agreed upon meeting time. During the 15 minutes between the set meetup time and actual start, it is encouraged for members to prepare themselves. Any follow-up meetings will be decided upon during the meeting, and follow the same structure as a normal meeting.

- **Presence and commitment**
  During collective work sessions, it is expected that everyone focuses on actual work, and takes dedicated breaks when needed. If a person decides to take an individual break, the person should not disturb the other still working members, and preferably should leave the working area.

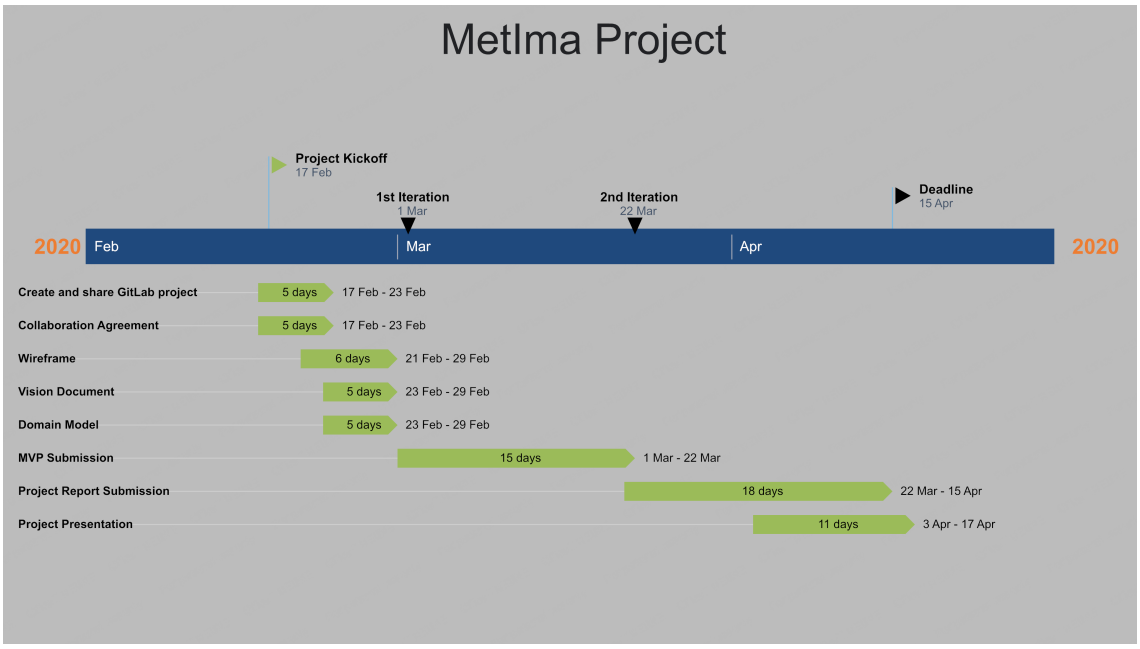
- **How to support each other**
  During meetings, there will be a summary of the work that has occured since the last meeting. Every member then has the opportunity to show off what they have done and receive feedback. This allows for everyone to have a good overview of how the project is coming along, and to help each other if someone is having trouble with their tasks.

- **Disagreement, breach of contract**
  Considering the previous work experience and familiarity of the group, there is not expected any major conflicts. However, if one arises, the involved group members will try to solve it themselves. If this turns out to be hard, the problem will be tackled by the group leader. If this does not help either, there will be brought in a mediator from outside the group, possibly from the school. If the breach of contract is critical enough, the team member will be removed from the project.

6 Signatures

Project Leader	25-2.2020 Date
Magnus Gluppe Organization Responsible	25.2.2020 Date
Jakob Karlsmoen Documentation Responsible	25/2 - 2020 Date
MAA Head of Design	25/2 - 2020 Date

Gantt Diagram



Meeting Summons

Mikael Falkenberg Krog Magnus Gluppe Jakob Frantzvåg Karlsmoen
Mikkel Aas

February - April 2020

Contents

1 Meeting summons

1.1 Meeting summon: Project Group 2 28.02.2020, 11:00, Atriet A-bygget NTNU Gjøvik

Magnus Gluppe is currently permanent meeting Chairman and minutes responsible.

Agenda

- Case no. 01/2020: Opening meeting
- Case no. 02/2020: Approval of agenda
- Case no. 03/2020: Eating protocol during meetings
- Case no. 04/2020: Startpoint and endpoint for a work sessions
- Case no. 05/2020: Group versus individual work
- Case no. 06/2020: Briefing everyone on individual work

Please contact me if you are unable to attend the meeting.

1.2 Meeting summon: Project Group 2 19.03.2020, 19:30, Online Call

Mikael is the meeting Chairman and minutes responsible for this meeting

Agenda

- Case no. 01/2020: Opening meeting
- Case no. 02/2020: Approval of agenda
- Case no. 03/2020: Compression?
- Case no. 04/2020: Workings of export
- Case no. 05/2020: Adding folders instead of individual images
- Case no. 06/2020: Consistency in UI
- Case no. 07/2020: Communication

Please contact me if you are unable to attend the meeting.

2 Minute

2.1 Minute from project meeting in Project Group 2

Time/location: 28.02.2020, 11:00, Atriet A-bygget NTNU Gjøvik
Present: Mikkel Aas, Magnus Gluppe, Jakob Karlsmoen, Mikael Krog
Absent: No one
Moderator: Magnus Gluppe

Case no 2/2020
Approved by acclamation.

Case no 3/2020
Anyone can eat during the meeting or work sessions, but we should avoid noisy food like chips. At important deadlines, the group can go out to eat.

Case no 4/2020
Issue undecided, we like the approach of working until we are done with what we started. However, this method can have its disadvantages. Not everyone is productive at the same time, and might wish to end a session early and pick up the work later. If no one else does this, you can feel obligated to stay and produce a sub-par product.

Case no 5/2020
When we are further along with the project, it will become easier to work individually. The group still wishes to have joint work sessions, even if our tasks do not overlap. This ensures a certain amount of structure for everyone, and we can ask each other for help.

Case no 6/2020
In this part of the project, all the group members have cooperated on various documents and diagrams. So this point is not very relevant to this stage of the project.

28.02.2020, Magnus Gluppe

2.2 Minute from project meeting in Project Group 2

Time/location: 19.03.2020, 19:30, Online Call
Present: Mikkel Aas, Magnus Gluppe, Jakob Karlsmoen, Mikael Krog
Absent: No one
Moderator: Mikael Krog

Case no 2/2020
Approved by acclamation.

Case no 3/2020
We have decided that compression is not to be prioritized, and instead try to find other solutions. We may come back to compression later.

Case no 4/2020
The export function is currently under development.

Case no 5/2020
We have some ideas to import multiple images is imported at once. We will begin testing this later.

Case no 6/2020
It will be taken into consideration.

Case no 7/2020
We will keep on using discord as communication, it is working well.

19.03.2020, Mikael Krog

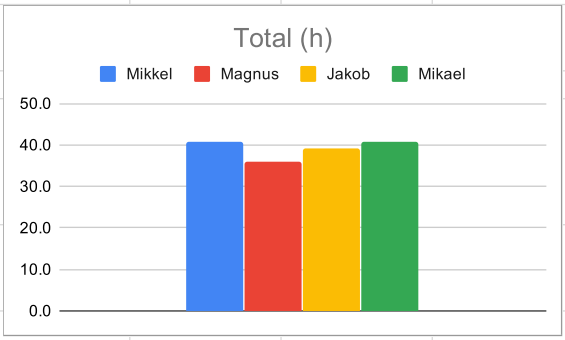
Timetable

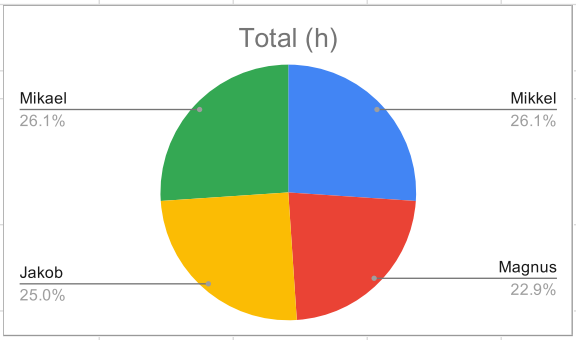
Per Session (min)					
Date	Mikkel	Magnus	Jakob	Mikael	Notes
20. February 2020	90	90	90	90	Created GitLab project, Google Drive sharing documents, brainstorming
21. February 2020	240	240	240	240	Started work on wireframe, prepared GitLab project for development, wrote collaboration agreement
25. February 2020	180	0	0	0	Learned the fundementals of javaFX and java scene builder.
25. February 2020	180	180	180	180	First draft for gui, signed and uploaded collaboration agreement, started work on vision document.
26. February 2020	120	0	180	180	Worked on vision document, got the first revision of the vision document done, did usability testing on wireframe, made gantt diagram
27. February 2020	180	180	180	180	Finished vision document second revision and made the domain model draft
28. February 2020	180	180	180	180	Meeting, finished usability test report, finished domain model
10. March 2020	360	360	360	360	Started working on the MVP.
12. March 2020	360	360	360	360	Added a lot of functionality on the application. Got a basic gallery working, got "add image" working, got stage switching working and prototyped a compression system for thumbnails
16. March 2020	120	120	120	120	Imageview now works with basic metadata output, search now works, fixed some small bugs and refactored a lot of code
19. March 2020	200	200	220	200	Performed user testing, finalized documents for MVP hand-in, started work on finalizing code for hand-in
20. March 2020	0	0	0	120	Worked on the MVP.
22. March 2020	240	240	240	240	Finalized the MVP and handed it in.

Total (h)			
Mikkel	Magnus	Jakob	Mikael
40.8	35.8	39.2	40.8

Remaining (h)			
Mikkel	Magnus	Jakob	Mikael
109.2	114.2	110.8	109.2

Overview (h)	
Total hours	Remaining hours
156.7	443.3





2 Vision Document

Vision Document

Mikkel Aas Magnus Gluppe Jakob Frantzvåg Karlsmoen
Mikael Falkenberg Krog

February 2020

Revision History

Date	Version	Description	Author
26.02.2020	0.1	First revision	Mikkel Aas, Magnus Gluppe, Jakob Karlsmoen, Mikael Krog
27.02.2020	0.2	Second revision	Mikkel Aas, Magnus Gluppe, Jakob Karlsmoen, Mikael Krog
28.02.2020	0.3	1st iteration submission	Mikkel Aas, Magnus Gluppe, Jakob Karlsmoen, Mikael Krog
19.03.2020	0.4	2nd iteration submission	Magnus Gluppe, Mikael Krog

Contents

1 Introduction

This document outlines the vision of MetIma, an image application. MetIma is the name of our application and organization. The goal of the project is to design and develop an application that gathers metadata and organizes images. We aim to deliver a product that is easy to use, while still being sophisticated. User interaction and design are key values in our group. The product should be designed with good programming principles in mind, and use modern programming philosophy. This will ensure that the MetIma application is not rapidly outdated.

1.1 Purpose

This vision document outlines the the purposes and aspirations for our image gallery application MetIma. Here we state what we wish to achieve and how we want to achieve it.

1.2 Scope

The MetIma application can have potential use for both consumers and private businesses. However, the scope of this project is to creating a functioning and well design application, but a rather limited one. Considering this is a school assignment and our team of programmers are not fully educated, MetIma will have a negligible market share if it is ever released to the public.

1.3 Definitions, Acronyms and Abbreviations

The only abbreviations used in this document is NTNU and NOK. NTNU is an acronym for Norges teknisk-naturvitenskapelige universitet. In english this is Norwegian University of Science and Technology. NOK is an acronym for Norwegian Krone, which is the Norwegian currency.

1.4 Overview

The rest of the vision document describes what goals we have for this project, and how we intend to achieve them. It also contains risk analysis and cost estimations. The end product we aim for is described in the vision document, and the different requirements we have are included.

2 Positioning

2.1 Problem Statement

Digitally stored images are the norm today, and can be a struggle to sort and organize. When the images are stored in a file system, there is no easy native way to organize these images unless the user does it manually. This makes it cumbersome to store images digitally. This exact problem affects a lot of users. A solution to this problem is an application that can take these images and organize them automatically for the user, which is what MetIma will be able to do.

2.2 Product Statement

This product is made for any individual that stores images and photos digitally. Today, that covers almost every person in the developed world. Many of these individuals are in need of a way to organize these files, and that is where our application comes in. The MetIma application is an image organizer, that unlike other similar apps, can be run locally on the users machine and does not require the user to use any cloud services.

3 Project goals

3.1 Efficiency goal

We want our application to enable an easier way to organize digital image collections. By giving the user an automated way to have their images organized, it will be easier for them to work with their collection and find the images they need when they want them. The application will be easy to use for all users no matter their computer proficiency.

3.2 Result goals

The main result goal for this application is to increase productivity for the user. Both for storing and accessing the digitally stored images. While the users productivity is greatly dependent on the users technical proficiency. However, an indication of a reached goal is a significant speed increase in the time it takes for a user to organize a set of images and later to access a specific image.

The other result goal is increased earnings in a business environment. While this also partially included in the increased productivity goal, this goal is more of a commercial goal. In a world where "time is money", the less effort a user has to put in to doing mundane tasks, the better. A user can spend more time with their clients, or have the resources to bring in more clients. Increasing the number of clients, results in higher revenue.

3.3 Process goals

During the process we want to improve the developers competence in coding and development. By learning to use different libraries, tools and strategies the developers will improve their personal skills. They will be able to apply this newfound competence in future projects, and also in this project by refactoring code at a later stage in the development process.

Taking into consideration that this is a student project, there are a lot of positive learning experiences that can be obtained. We have to work closely with other students, getting to know them better and creating a functionally working environment. There are several new concepts in the realm of documentation and project planning, this can be vital for future projects in a business setting.

4 User description and Stakeholders

4.1 Market Demographics

MetIma aspires to reach a vast audience for our product, by using open source software and cutting edge technology. We strive to have the MetIma application work cross platform on all devices. This makes the company's potentially user base substantial. Anyone with a smartphone or computer can enjoy our product. However, as our company is a currently unknown startup, we have limited market share.

4.2 Stakeholders

MetIma does not currently have any shareholders and the value of the company is equally split between the four developers. Therefore the main stakeholder is the developers.

Name	Description	Responsibilities
Developer	The developer is in charge of developing and maintaining the application	– Developing the product – Maintaining the application – Meet the user requirements – Ensure the viability in the marketplace
Client	This is the person or organization that has commissioned this project	– Paying the developers. – Give specific requirements to the developers.

4.3 Users

Name	Description	Responsibilities
User	End user	– User testing – Provide feedback – Use the platform regularly to maintain a stable user base

5 Product Overview

5.1 Product Perspective

Our product is independent and self-contained. It does not belong to a larger system. This product is an alternative to other photo gallery solutions.

5.2 Risk Analysis

There are multiple risks which could be detrimental to the project:

Risk	Risk Probability
The team could overreach, and try to develop something unachievable, which would make our end product unusable.	unlikely
The developers may not be able to exclusively work on this project, this might cause delays.	Very likely
There is a risk of exceeding our budget.	unlikely
Not being able to finish the product before the deadline.	unlikely

5.3 Estimated costs

The development costs of the project is all our developers salary. Our developers hourly salary rate is 1470 NOK. Each team member is estimated to spend 150 hours on the project. +/- 10%. We have four developers working on this project. This means our expected development cost is a minimum of about 800 000 NOK and a maximum of about 970 000 NOK. Location and development tools are supplied by NTNU. Therefore, we have no other estimated costs.

6 Product Features

This section will present the first draft of the functional features of the MetIma application.

6.1 The home page

The first page the user is represented with is the home page. The homepage contains three buttons and the title of the application. Since the two main features of the application are to view a gallery and add new images, we thought it would be natural to have these two options as buttons on the homepage. The third button on the home page toggles dark mode for the application.

6.2 The gallery page

The gallery page mainly consists of an area where all the pictures in the gallery are presented to the user. The second biggest feature of the gallery page is the search bar. The search bar allows the user to search for images based on tags, filenames, and metadata. The user will be able to export the search results to a PDF document with an export button. There will also be home button and an add new image button that grants the user quick access to their respective pages.

6.3 The add new image page

To add a new image the user either has to click the button on the home page or use one of quick access buttons that are placed in the top left corner. When the user clicks the button they will be prompted to choose either a singular image, or a folder of images on the computer. If the user chooses a singular image they will be taken to a page where they can set the filename and add appropriate tags. However, if the user chooses a folder, all the pictures will have the filename followed by a sequence of numbers, and they will all share the same tags. Before the image or images are added to the program, the user will have to confirm or deny the import by clicking either add or cancel. The page will contain relevant quick access buttons in the upper left corner.

6.4 The image-view page

The last and simplest page is the view image page. It encompasses two main features. The first is the ability to view the selected image. The second is the availability to view a list of the metadata of the image, which you can simply scroll through. This page will also contain quick access buttons.

7 Product Requirements

For this project we have a multitude of requirements. Including System requirements, technical requirements and documentation requirements.

7.1 System Requirement

The only real system requirement for our application is to have Java Runtime Environment installed on your computer. The application is written in Java 11, and therefore Java will be needed to run the program.

3 User Test Report Document

Usability test report (MVP)

Mikkel Aas Magnus Gluppe Jakob Frantzvåg Karlsmoen
Mikael Falkenberg Krog

March 2020

1 Introduction

MetIma serves as an image gallery that allows the user to view the metadata of each image. We have conducted a usability test using the MVP. There were two participants; an observer and a participant. The observer captured the participants comments, navigational choices, task completion rate, comments, overall satisfaction rating, questions and feedback.

1.1 Summary

The most important findings were that our design was mostly intuitive, but a feature to import multiple images at the same time and prioritization of more relevant metadata would be good to include.

1.2 Demographic

For a demographic we wanted to include several different age groups. We therefore found four individuals to perform user testing on. One in their late 10's, one in their mid-20's and two in their early 50's. We felt this was a diverse age group, and would give valuable feedback to use in developing the application for most users.

1.3 Tasks

Since we now had our MVP working, we could almost test the application to it's full extent. While it was still very basic UI-wise, it had almost all functionality implemented and working enough to have it tested.

2 Results

2.1 Usability Problems

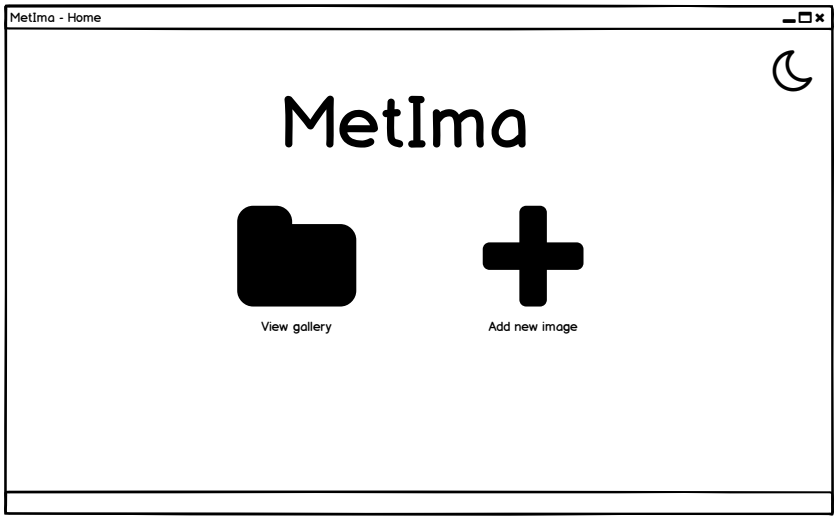
The main complaint among all testers were the missing ability to add several images at once. In the current state, both the UI and performance is not able to handle a huge amount of images. We expect this problem to be solved in the final product.

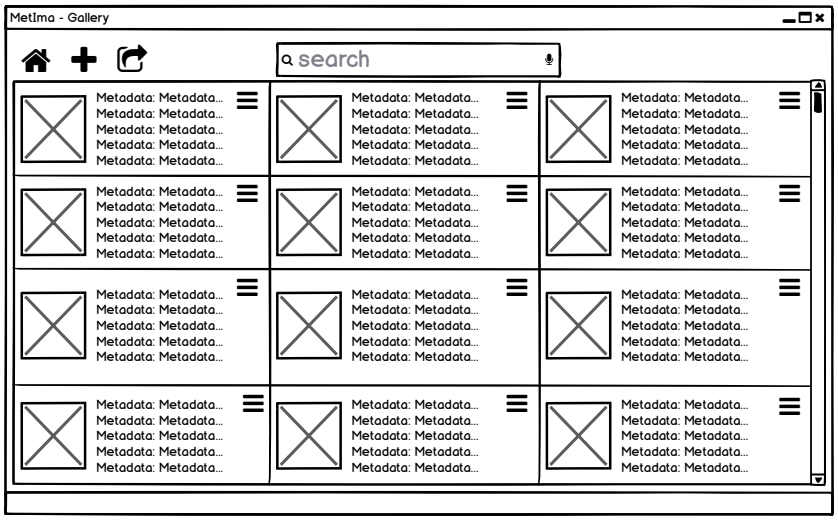
Another big complaint was that the metadata displayed for the images is not very useful to the average user. The metadata displayed is the raw metadata extracted from the image, and includes all data available. A possible solution to this is to only display the most relevant information (date, resolution, camera etc), and have an option to display the rest of the data.

2.2 Other Feedback

A lot of the feedback was directly on the usability and design of the application. Elements such as design of input boxes, no icons and small buttons are all problems that will be solved in the final product where we will have fully developed the UI to be like the wireframe.

3 MetIma Wireframe





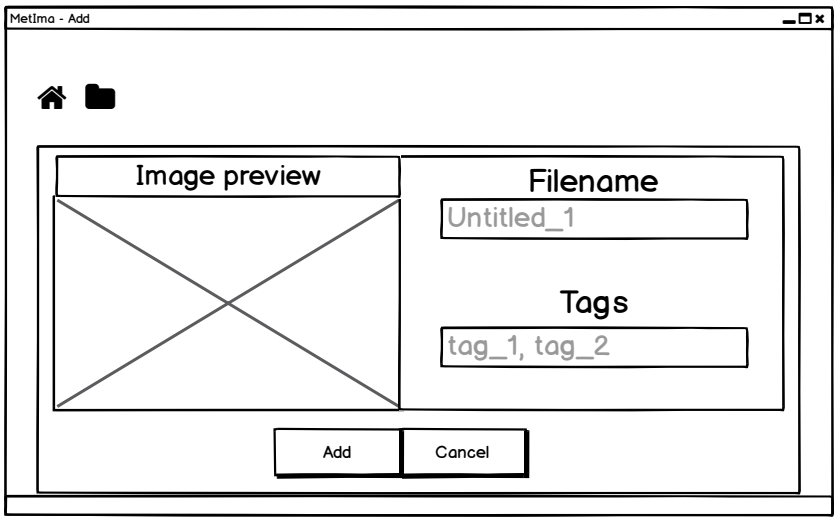

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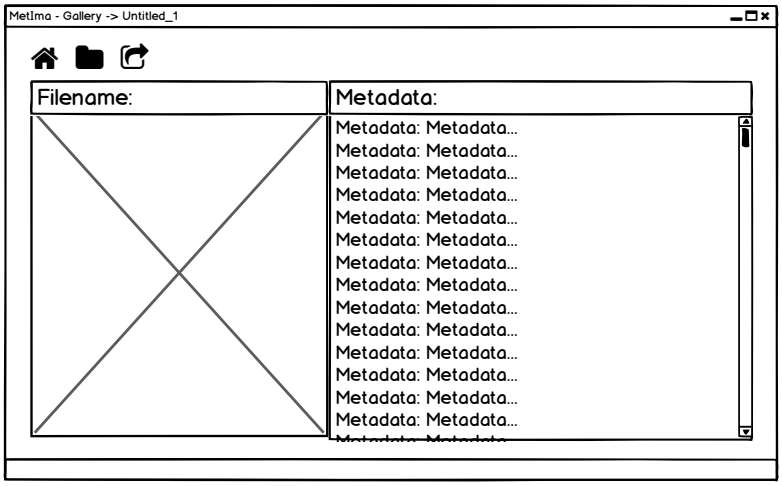
Image preview
Filename
Untitled_1
Tags
tag_1, tag_2
Add
Cancel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4 Domain Model