

Requirements documentation

Dumpster Finder

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Task 17
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Audit history

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1 Introduction

This document was made in connection with our bachelor thesis in Computer Engineering at the Norwegian University of Science and Technology. Our assignment was to create an application where dumpster divers can publish and view information about different dumpsters, with focus on security and anonymity. The purpose of this document is to describe the different technical and functional requirements for this application. The document contains different user stories created to document the intended use and functionality of the application. The domain model attempts to explain the problem area and how the application's data should be organized, while the prototypes show a starting point for our user interface.

2 User stories

2.1 Map View

As a user
I want to get an overview of dumpsters in a given area
so that I can see if there are any dumpsters near my location

Acceptance criteria:

- ☒ I can see dumpsters as markers on a map
- ☒ I can see my own position on the map
- ☒ I can easily change my location by dragging the map (disputable)
- ☒ I can apply filters to e.g. only see dumpsters that are *not* locked
- ☒ I can tap a dumpster marker to see some information about it

2.2 List View

As a user
I want to see a list of dumpsters in my area
so that I can see if there are dumpsters close to me that have contents I desire

Acceptance criteria:

- ☒ I can see a list of nearby dumpsters
- ☒ I can easily change my location
- ☐ I can sort the list by rating, food quality and other measurements
- ☒ I can apply filters to e.g. only see dumpsters that are *not* locked

2.3 Filtering

As a user
I want to be able to filter out dumpsters
so that I only see dumpsters that meet my requirements

Acceptance criteria:

- ☒ I can filter out locked dumpsters
- ☒ I can filter dumpsters by type
- ☒ I can apply a cleanliness threshold
- ☒ I can filter dumpsters by content
- ☒ I can choose store types
- ☒ I can filter by rating

2.4 Location

As a user
I want to be able to change my location
so that I can see dumpsters in other areas

Acceptance criteria:

- ☒ I can change my location permanently
- ☐ I can change my location temporarily (just in the map view, perhaps)

2.5 Dumpster Info

As a user
I want to get information about different dumpsters
so that I can see if going to a particular dumpster is worth it

Acceptance criteria:

- ☒ I can view details about a dumpster (from the map or list view)
- ☒ I can easily go back to the previous view
- ☒ I can easily get to other parts of the UI with different kinds of information from this view

As a user
I want to be able to add a new dumpster to the system
so that other dumpster divers get to know about the dumpster and can collect from it

Acceptance criteria:

- ☒ I can add a new dumpster and register information about it
- ☒ I can easily mark the dumpster's position on the map

2.6 Revisions

As a user
I want to see the edit history of a dumpster
so that I can check if there has been any malicious changes to the information

Acceptance criteria:

- ☒ I can view all information related to each version of the dumpster
- ☒ The most recent version is displayed first
- ☒ I do not see everything immediately and have to select a revision to see its information

As a user
I want to be able to revert to an older version of a dumpster
so that other users can see information that is more correct than what it was changed to

Acceptance criteria:

- ☒ I can switch to a different version of a dumpster quite easily
- ☒ After reverting, I am taken back to the details view, now with the information from the

version I chose

2.7 Locked Dumpsters

As a user
I want to know if (and when?) a dumpster is locked
so that I can know if I can access the contents of the dumpster <i>easily</i>

Acceptance criteria:

- ☒ I can easily tell if the dumpster I view is locked by an icon and/or some text
- ☒ This information is easily visible on the map, by color-coding

As a user
I want to be able to update if a dumpster is locked
so that others can be updated about any changes to the dumpster

Acceptance criteria:

- ☒ I can set this when creating a dumpster
- ☒ I can toggle this information

2.8 Ratings

As a user
I want to look at the rating of a dumpster
so that I can know about other peoples' experiences going dumpster diving in that dumpster

Acceptance criteria:

- ☒ The rating for this dumpster is displayed in an understandable manner

As a user
I want to be able to add a rating to a dumpster
so that I can tell other dumpster divers about my experience with that dumpster on a given scale

Acceptance criteria:

- ☒ I can rate a selected dumpster
- ☒ The displayed rating changes because of my rating

2.9 Pictures

As a user
I want to view pictures of a dumpster
so that I can see what it contains and what the state of the container is

Acceptance criteria:

- ☒ I can see various pictures of a dumpster

- ☒ If there are no submitted pictures, I see a placeholder image
- ☒ The images are zoomed in when placed in smaller views (e.g. the list view)

As a user
I want to be able to share a picture of a dumpster
so that others can see what the dumpster contains and what state the dumpster is in

Acceptance criteria:

- ☒ I can upload a picture I've taken before
- ☒ I can take a picture on the spot and upload it
- ☒ I get feedback if the image is too large
- ☒ I get feedback if the image format is unsupported or invalid
- ☒ I get to see a preview of the image in the app
- ☒ The image appears among the other images immediately after upload

2.10 Emptying of Dumpsters

As a user
I want to know when a dumpster is emptied
so that I know when the dumpster is likely to have the most content

Acceptance criteria:

- ☒ I can see on what days the dumpster is emptied if this is known
- ☒ If the schedule is unknown, that should be stated.

As a user
I want to update the emptying schedule of a dumpster
so that others can dive in the dumpster when it is most likely to be full

Acceptance criteria:

- ☒ It is possible to edit when a dumpster is emptied if the schedule changes
- ☒ The schedule is entered in a user-friendly way

2.11 Best-Before Dates

As a user
I want to see the best-before dates of the products in a dumpster
so that I know if it is worth going to the dumpster to collect the contents

Acceptance criteria:

- ☒ The dates are displayed in an intuitive way
- ☐ Items that are close to expiring are highlighted (moved up on list?)
- ☐ Items that are long past the expiry date, are moved lower on the list

As a user
I want to be able to add best-before dates to the registered contents of a dumpster
so that other dumpster divers can get some of the content before it expires

Acceptance criteria:

- ☒ This information is treated as optional
- ☒ Dates are entered in a sensible way

2.12 Compressors

As a user
I want to know if a dumpster is a compressor or a different type of dumpster
so that I know if it is likely that I will find items that are intact

Acceptance criteria:

- ☒ It is clearly stated what kind of container the selected dumpster is

As a user
I want to be able to edit what kind of container a dumpster is
so that the data is updated and other dumpster divers can get the information

Acceptance criteria:

- ☒ It is possible to edit what kind of container a dumpster is

2.13 Dumpster Contents

As a user
I want to see a list of <i>types of</i> contents in a dumpster
so that I can see if the dumpster contains what I want

Acceptance criteria:

- ☒ It displays a list of the types of content that others have found in the dumpster
- ☒ Optional data is not shown

As a user
I want to update/add to a list of what a dumpster contains
so that others can see if what they need is in that dumpster

Acceptance criteria:

- ☒ Items can be added to the list if new items are found in the container
- ☒ Optional data is treated correctly
- ☒ Items can be removed from the list if that sort of item is not found in the container anymore

2.14 Favorability

As a user
I want to know if the supermarket, shop or store views dumpster diving favorably
so that I am aware of what I can expect if I end up stumbling upon a staff member

Acceptance criteria:

- ☒ Whether the store views dumpster diving favorably or not, is displayed
- ☒ What this *favorability thing* means, is clearly stated

As a user
I want to be able to edit whether the supermarket, store or shop views dumpster diving favorably or not
so that it can reflect changes in the store's opinion on dumpster diving

Acceptance criteria:

- ☒ I can change this if the store changes its view on dumpster diving
- ☒ I cannot enter an invalid value

2.15 Cleanliness

As a user
I want to check how clean a dumpster is deemed to be
so that I can make sure to dress appropriately for the job (and possibly reevaluate my decision about going diving in that dumpster)

Acceptance criteria:

- ☒ I can see how clean a dumpster is, on a scale from impeccably clean to utterly filthy

As a user
I want to be able to edit a dumpster's cleanliness rating
so that others can know what state the dumpster is in

Acceptance criteria:

- ☒ I can edit how clean the dumpster is said to be
- ☒ I cannot enter an invalid value

2.16 Visits

As a user
I want to see how many people have been to a dumpster in the past few days
so that I can avoid going to a dumpster that has been stripped clean by other people

Acceptance criteria:

- ☒ I can see how many people have visited a dumpster within a certain time frame
- ☒ I can change what time frame I would like to see this count for, to account for the amount of activity in my area

As a user
I want to state that I have visited a dumpster recently
so that others can know that people have been there, and make more informed decisions

Acceptance criteria:

- ☒ I can register my visit with the click of a button
- ☒ I cannot register a visit if less than x hours have passed since my last visit, to prevent

spam

2.17 Navigation

As a user
I want to be able to easily navigate between the different views of dumpsters
so that I can use what is best in any situation without losing data

Acceptance criteria:

- ☒ Users find it easy to navigate between different pages in the app
- ☒ The app can store your position locally so it can show dumpsters close to you
- ☒ No information is lost (in unpredictable ways) when you navigate between the screens

2.18 Intro page

As a user
I want to be shown an intro page the first time I launch the app
so that I can get introduced to the app and set my position the first time I am using the app

Acceptance criteria:

- ☒ When a user first opens the app, they will be shown an introduction page
- ☒ I can set my position here, before I enter the main functionality of the app
- ☒ The user ID is displayed and explained
- ☒ I see a brief introduction to what this app is
- ☒ I can read some tips about dumpster diving before I start using the app

As a user
I want to get some tips about dumpster diving
so that I know some tips and tricks as a novice dumpster diver

Acceptance criteria:

- ☒ I see some tips when I first launch the app
- ☒ I can read these tips again, if I want

2.19 Report misinformation

As a user
I want to be able to report dumpsters that don't exist
so that non-existent dumpsters don't fill the lists

Acceptance criteria:

- ☒ I can report a dumpster that doesn't exist
- ☐ Fake dumpsters are removed or archived when enough people report them

2.20 Report unwanted images

As a user
I want to be able to report images that aren't relevant for the dumpster
so that offensive and irrelevant images can be removed

Acceptance criteria:

- ☐ I can report an image
- ☐ When enough people report it, the image is removed

2.21 Read comments

As a user
I want to be able to read comments other users have written
so that I can learn peoples experience with the dumpster

Acceptance criteria:

- ☒ I can see comments from other users

2.22 Write comments

As a user
I want to be able to write a comment about a dumpster
so that share my experience with others

Acceptance criteria:

- ☒ I can write and add a comment
- ☒ I cannot add an empty comment
- ☒ My comments are visible in future viewings

2.23 Downvote/upvote comments

As a user
I want to be able to upvote and downvote comments
so that My view of a comment can be shared with others

Acceptance criteria:

- ☒ I can press the upvote or downvote button and the rating changes as expected
- ☒ If I press the same button again, the vote is negated
- ☒ If I press the other button after I have voted, the vote is changed
- ☒ I cannot vote on my own comments

2.24 Hide negatively rated comments

As a user
I want to be able to filter out negatively rated comments
so that I don't have to see comments other users have deemed negative

Acceptance criteria:

- ☒ Negative comments don't appear when i look at comments
- ☒ I can choose to see negatively rated comments

3 Domain model

Dumpsters are the primary entities in the system. The other entities *mainly* represent different features a dumpster can have. If an uploaded photo is inappropriate or a dumpster isn't there, users can report it. Dumpsters can have contents of various ContentTypes, recorded as DumpsterContents. Users can give a Dumpster a Rating, and leave a Comment to tell others about their experiences. To keep the information in the application relevant, we will only use the most recent ratings for the specific dumpster. Ratings and Photos have keys. These will be used to keep track of the user that posted the image or rating, so they can change a rating or delete an image they posted. In the case of ratings, this prevents one person from adding multiple ratings for the same dumpster to the system. It is possible that the system will be altered over time if a better solution is found.

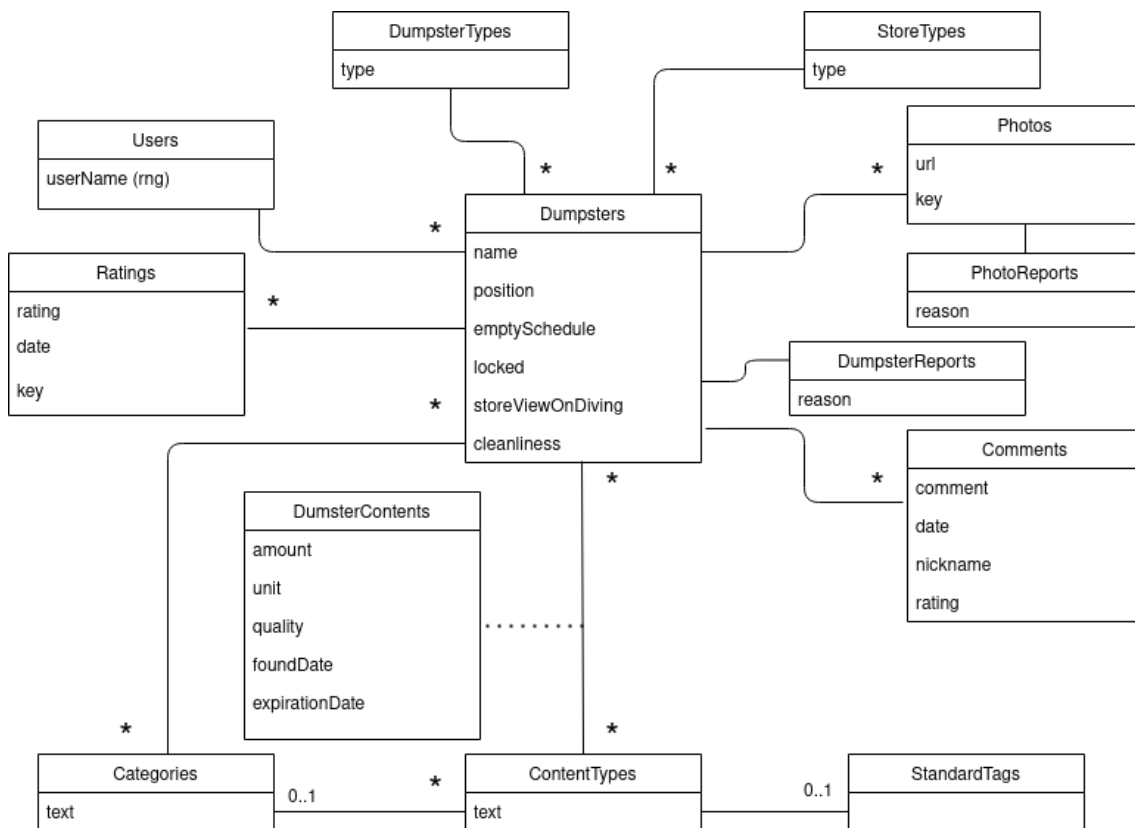


Figure 1: Domain model of the product

4 Prototypes

4.1 Wireframes

We made some wireframes using Figma, a popular prototyping tool. View an interactive version of the wireframe [here](#) (it really is a better experience than wading through the following pages).

Dumpster Finder

Dumpster diving advice

1. Don't go diving in locked dumpsters
2. Don't go in dumpsters marked private
3. Don't go dumpster diving alone
4. Dress accordingly

Proceed



Dumpster Finder



When the dumpster is emptied



Rating



The shop's view on
dumpster diving

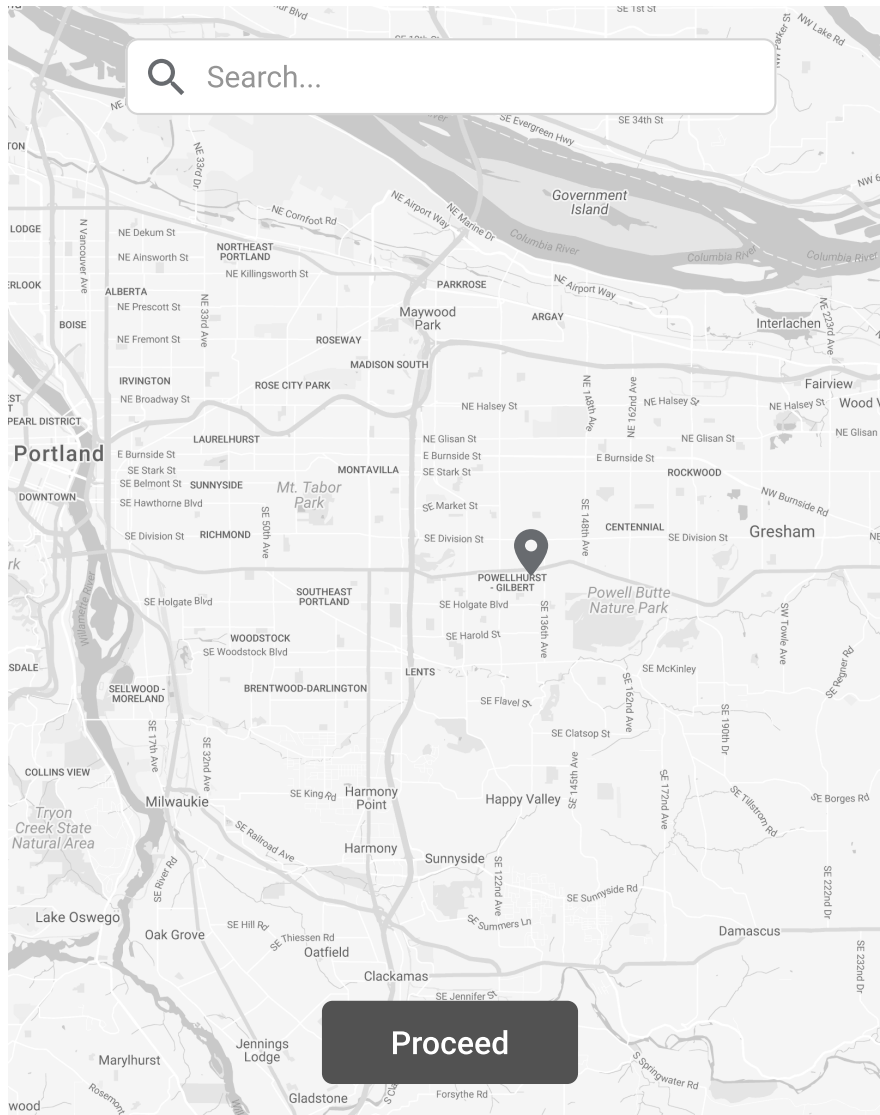


Is the dumpster
locked

Proceed



Set your location

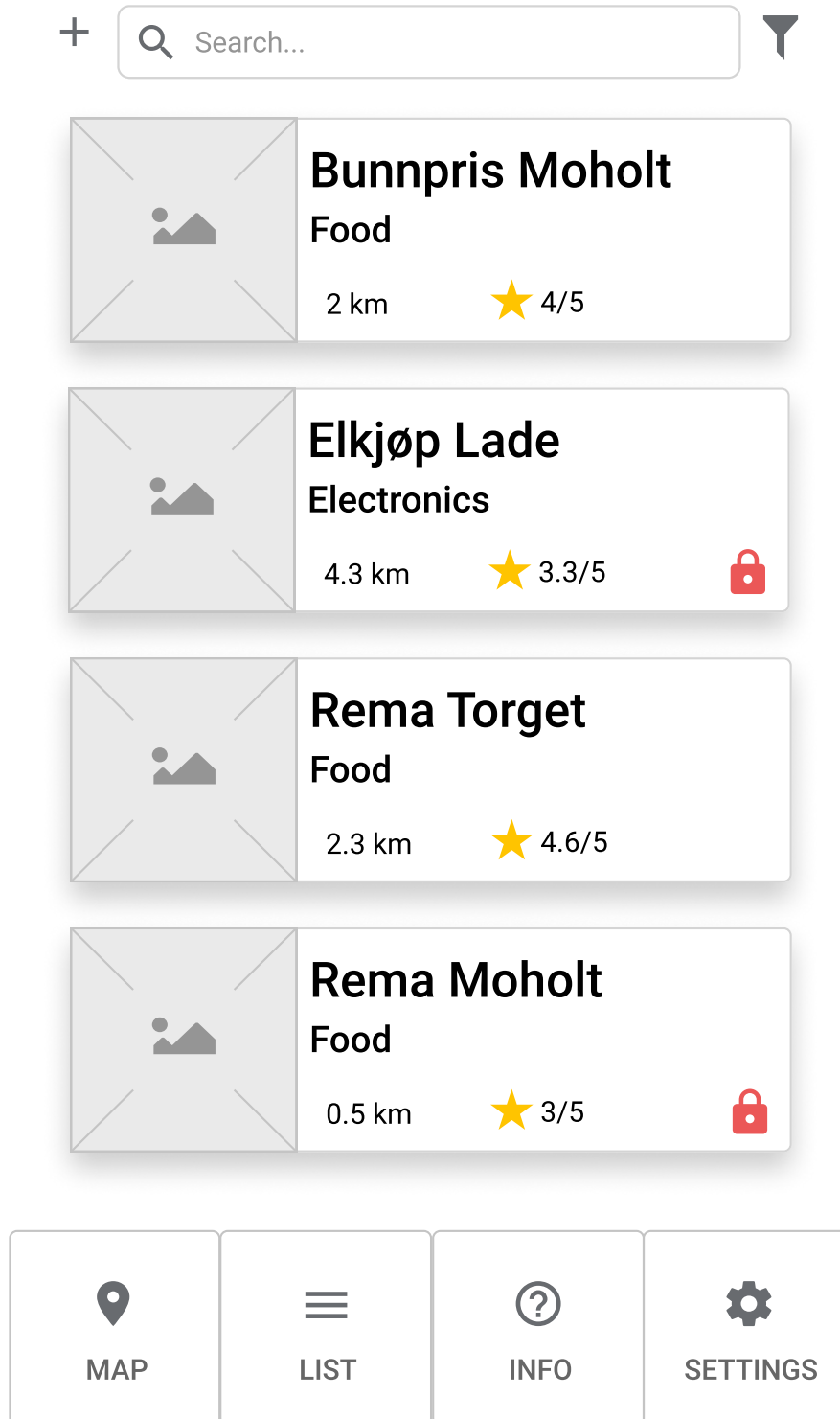


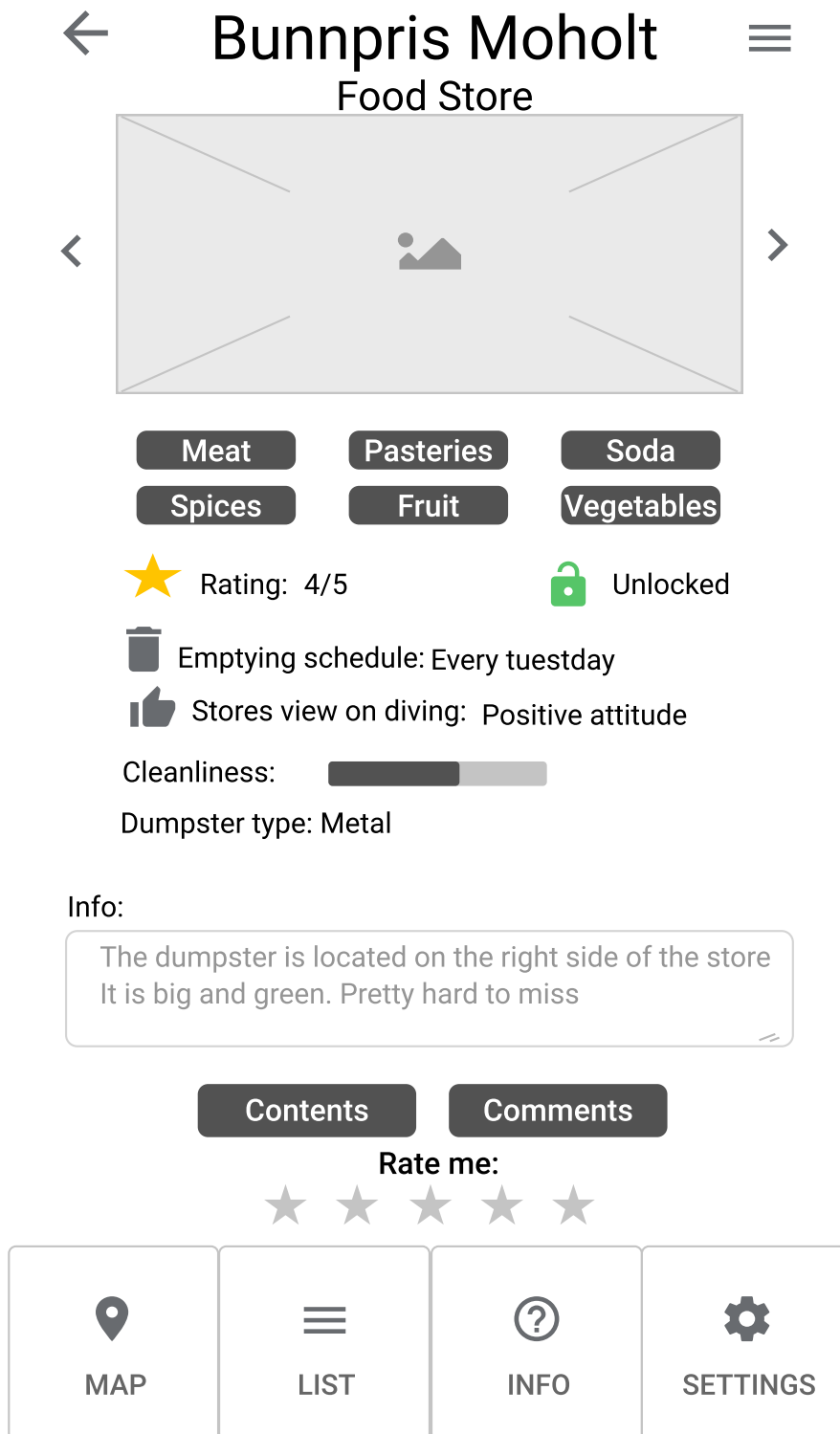
(23.1258685, 33.10461086)


Your location is only stored locally on your device. It will be sent to our server when dumpster data is fetched. It is never shared with any third-party application.













Bunnpris Moholt



Food Store



Add photo

Delete photo

Dumpster type

Select... ▼


Store type

Select... ▼

Categories

Select... ▼

Store's view on dumpster diving




Positive

Neutral

Negative


Is the dumpster locked



Unlocked


Locked


Emptying schedule





Emptied at...

Cleanliness













Clean







Save

 MAP

 LIST

 INFO

 SETTINGS

Info



When the dumpster is emptied



Rating



The shop's view on
dumpster diving



Is the dumpster
locked

Dumpster diving advice

1. Don't go diving in locked dumpsters
2. Don't go in dumpsters marked private
3. Don't go dumpster diving alone
4. Dress accordingly



MAP



LIST



INFO



SETTINGS

Settings

Location

 Search...

Change

Nickname

Tore på Sporet

Change



Dark mode



Show comments with negative score



MAP



LIST



INFO



SETTINGS

Set Info

Name

Info:

Dumpster type

Store type

Categories

Store's view on dumpster diving



Positive

Neutral

Negative

Is the dumpster locked



Unlocked

Locked

Emptying schedule



Cleanliness



Clean

Add photo

Save dumpster



MAP



LIST

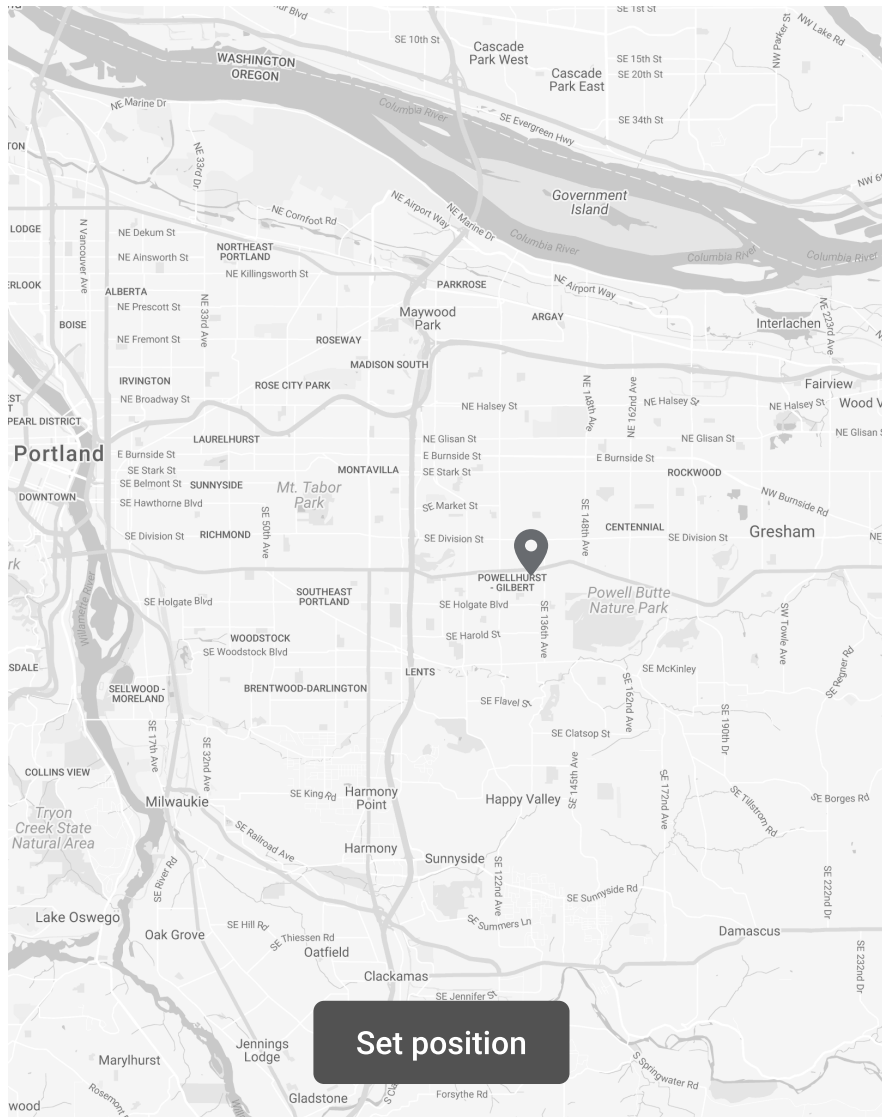


INFO

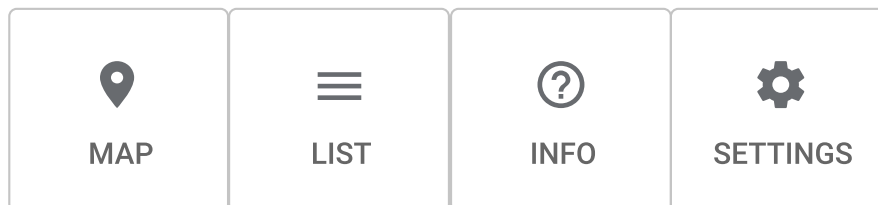


SETTINGS

Set Position



(23.1258685, 33.10461086)



Categories:

dairy ✕ er text...

Tags:

carrot ✕ bread ✕

Locked: Any ▼

Cleanness: Any ▼

Type: Any ▼

Rating: Any ▼

Dumpster Types

☒ Foodstuff ☒ Hardware ☒ Electronics

Cancel

Apply filters



Bunnpris Moholt

Food Store



Milk - 21.01.21



Back



MAP



LIST



INFO



SETTINGS



Bunnpris Moholt

Food Store



Milk - 21.01.21



Save

Cancel



MAP



LIST



INFO



SETTINGS

← **Bunnpris Moholt** ≡
Food Store

Flapjack

25.01.2021

Very good dumpster, I found 15 burgers.

I love burgers

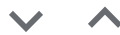


+17

Tore på Sporet

26.01.2021

I hope there are some burgers left for me....



+1

Nickname

Placeholder text...



Post comment



MAP



LIST



INFO



SETTINGS

Upload an image:

Choose File

No file selected

Upload



Bunnpris Moholt

Food Store



Revision history

18.03.2020 ▼

15.02.2020 ▼

05.01.2020 ▼

Bunnpris Mohoolt

Meat

Pasteries

Soda

Spices

Fruit

Vegetables



Every Tuesday



Unlocked



Positive attitude

Dumpster type: Metal

Cleanliness:



Store type: Electronics

Revert to this revision

07.11.2019 ▼



MAP



LIST



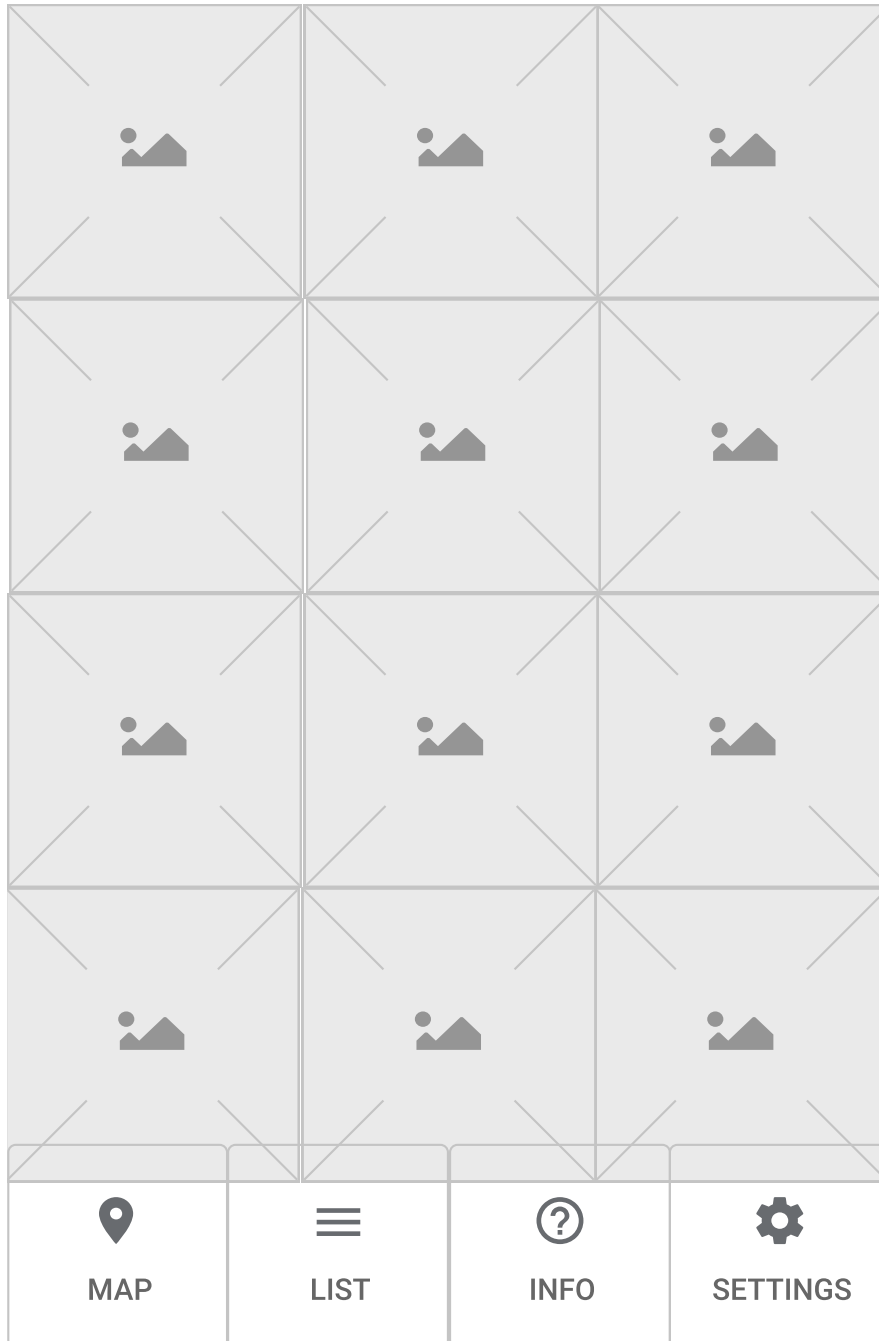
INFO



SETTINGS



Gallery





Photo



MAP



LIST



INFO



SETTINGS

Delete this photo?

Cancel

Delete

Report this dumpster?

Report it if you are certain it does not exist or it contains misinformation.

Cancel

Report