FullStack application for a harbour system

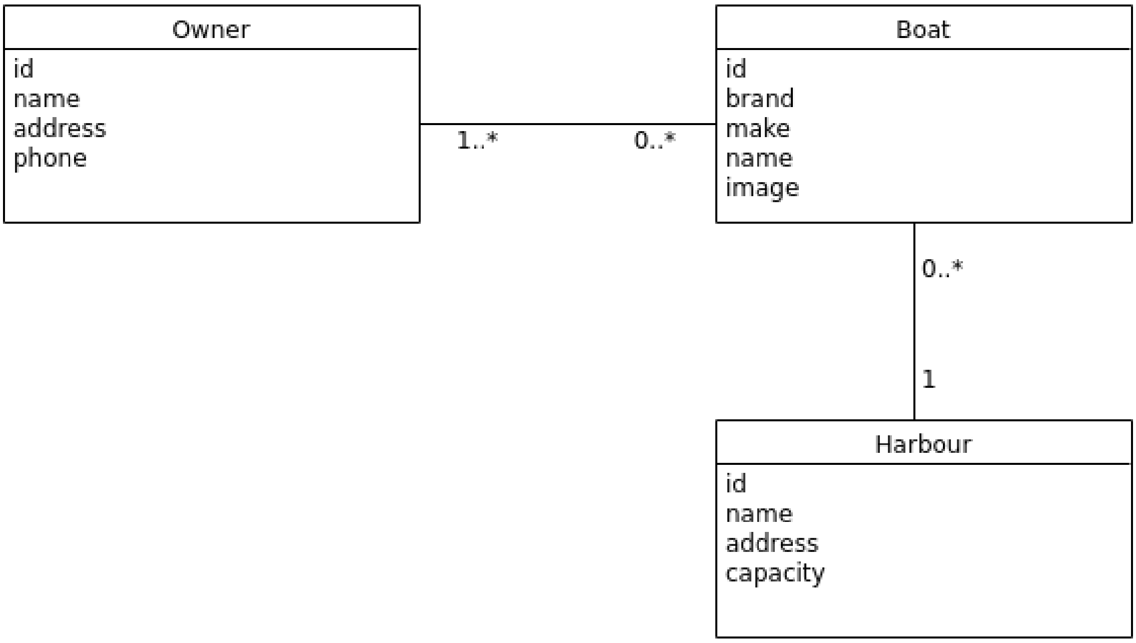
You are required to create a harbour system web application for a national database, so users can log in and see what harbour a specific boat belongs to and what boats belong to a specific owner. As an admin you can find, update, create and delete all information about harbours, owners and boats

Your task is to create a proof of concept solution for this app. As of now, the requirements are a bit vague, with only the information given below. You are free to add whatever you find relevant if it makes sense for the overall task and you can provide arguments for what you did since you don't have a product owner to consult for this exercise

Non-functional requirements

- It must be implemented as a modern Single Page Application
- The backend must be implemented with Java, JPA, REST (with JAX-RS) and a MySQL database
- We do expect Test Cases for most of what you do on the backend, both UnitTests and Integration Tests (testing your REST API)
- The frontend must be implemented with React
- The project must use a modern DevOps pipeline, using Travis as a build server. This should be the VERY FIRST thing you set up, and we expect it to build, run your tests and deploy to your droplet which should be set up with your own domain name and use HTTPS.
- We expect that you can demonstrate your project, both locally (so we can add changes) and remotely on your Droplet.
- The “product owner” has come up with this initial domain model. Feel free to add missing fields and also change it, as long as you can provide arguments for why you made the changes.
- Setup test data in the database any way you like

Domain model



In the above domain model, there are 3 entities but the relationship between owner and boat is a many-to-many relationship

Functional requirements

Read all the requirements before you start coding. You do not have to implement them in the given order, if a different order makes more sense to you and if you may be pressed for time.

- The site requires the member to authenticate for all operations and only an admin can update and create new owners, harbours and boats. Users and roles are not shown in the model above. If you have a ready to use start project with support for this, feel free to use it for the application.
- For the client application, we would like the following features written up as user stories here:

~~US-1~~	~~As **a user** I would like to see all owners~~
~~US-2~~	~~As **a user** I would like to see all boats belonging in a specific harbour~~
~~US-3~~	~~As **a user** I would like to see all owners of a specific boat~~
~~US-4~~	~~As **an admin** I would like to create a new boat~~
~~US-5~~	~~As **an admin** I would like to connect a boat it with a harbour~~
~~US-6~~	~~As **an admin** I would like to update all information about a boat, its owner and its harbour~~
~~US-7~~	~~As **an admin** I would like to delete a boat~~

- Add any features you find relevant (to showcase your skills) if they are not present in the above list.

Hints for this exercise

Make sure, in your solution, to include both backend (with tests) and frontend code. **This is much better than having a complete backend, but no frontend at all**.

Expected details for the hand-in

You must hand in a single document via Wiseflow with the following information, no later than 08.00 AM, the day after you received the exercise.

- Your full name and student-number
- A link to your GitHub repo(s)
- A link to your Travis Logfile
- A link to your Deployed Client Application
- A link to your Deployed backend server

This document should also include a short description (5-10 lines) describing how far you got with the exercise. This can be in Danish or English. You should include a list with a few test-users found in your database including their role(s), username and password.

Important:

You **may NOT push to your GitHub repo after 08.00 AM, 24 hours after you received the exercise**. This could make your hand-in invalid. At the exam, we will probably request minor changes, and verify whether Travis deployed those changes to your Droplet.