

Requirements and Analysis Document for Gym Companion

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Table of Content

1	Introduction	3
1.1	Definitions, acronyms, and abbreviations	3
2	Requirements	3
2.1	User Stories	3
2.1.1	M01	4
2.1.2	M02	5
2.1.3	M03	6
2.1.4	M04	7
2.1.5	M05	8
2.1.6	M06	9
2.1.7	M07	10
2.1.8	M08	11
2.1.9	M09	12
2.1.10	M10	13
2.1.11	M11	14
2.1.12	M12	15
2.1.13	M13	16
2.1.14	M14	17
2.1.15	M15	18
2.1.16	M16	19
2.2	User interface	20
2.2.1	Common elements of all pages	20
2.2.2	Home Page	21
2.2.3	Browse/Search Page	23
2.2.4	Schedule Page	25
2.2.5	My Routines Page	27
2.2.6	Statistics Page	29
3	Domain model	31
3.1	Class responsibilities	31
3.1.1	GymCompanion	31
3.1.2	Exercise	31
3.1.3	Routine	31
3.1.4	Schedule	31
3.1.5	User	31
4	References	33

1 Introduction

Gym Companion is an application suited for helping both advanced and beginner users to keep track of their progress in the gym. The application offers a way to use both existing and customized routines and scheduling them through a calendar. Users can view their progress both on-the-go and after the workout through an intuitive statistics page, including an interactive graph and lifetime stats.

1.1 Definitions, acronyms, and abbreviations

- **Routine:** a workout routine, training routine
- **Schedule:** a lists of intended routines and times
- **GUI:** Graphical User Interface (what the user sees and interacts with)
- **MVVM:** Model-View-ViewModel is a design pattern that helps us separate the logic from the user interface.
- **User Story:** A user story is a short description in common language of what a user wants to achieve.

2 Requirements

2.1 User Stories

There are in total 16 User Stories for the application. They each have a set priority depending on how important they are for the functionality and purpose of the application.

2.1.1 M01

Story Name Gym Scheduler/Calendar

Description As a very busy gym-goer, I need a quick and easy way to schedule my workout routines so that I have time for other things.

Functional Confirmation

- Is it easy to create a weekly schedule?
- Can I schedule routines?

Non-functional Confirmation

- Can I schedule my routine any time of the day?

Tasks

- Implement a calendar
- Integrate a calendar library
- Allow user to add a routine to a selected day
- Allow user to pick a routine from My Routines
- Create a method that returns a routine

Priority 2

Estimate 10-12 hours

2.1.2 M02

Story Name Avoid harmful mistakes

Description As a novice gym-goer, I need help understanding how to perform certain exercises because I don't want to make potentially harmful mistakes.

Functional Confirmation

- Is there a written guide to aid me in understanding?
- Are there video guides/pictures to aid me in understanding?
- Is there a description for how to best avoid mistakes that can be harmful?

Non-functional Confirmation

- Can I access the app 24/7?

Tasks

- Add exercise information to every exercise
- Add pictures to each exercise. Take pictures or get permission/non-copyrighted.
- Embed exercise-video. Get permission or find non-copyrighted.

Priority 4

Estimate 4-6 hours

2.1.3 M03

Story Name Workout Reminder

Description As a forgetful person, I would like to be reminded when my appointed training time is about to start so that I don't miss it.

Functional Confirmation

- Is there a way to get reminded a while before the workout is scheduled?
- Will I be able to choose when and how I get reminded?

Non-functional Confirmation

- Will the reminders happen no matter the time of day?

Tasks

- Allow the user to choose when to be reminded
- Remind the user at the given time

Priority 5

Estimate 4-6 hours

2.1.4 M04

Story Name Logging exercises

Description As a gym-goer, I need a way of logging my exercises so that my performance is saved.

Functional Confirmation

- When Im done with a exercise will it be stored/saved?
- Will I be able to see what I've completed/not completed?

Non-functional Confirmation

- N/A

Tasks

- Allow the user to insert a message or a note to accompany the logged information. Part of the "well done"-page.
- Establish a database connection
- Save the information to the database

Priority 3

Estimate 12-15 hours (without dababase) 4-6 (with database)

2.1.5 M05

Story Name Browse Routines and Exercises

Description As a non-creative gym practitioner I want to be able to browse for routines and exercises so that I can exercise effectively.

Functional Confirmation

- Can I find routines and exercises by name?
- Can I browse for routines or exercises specifically?
- Can I navigate by difficulty?
- Is it possible to sort by muscle group?
- Can I save things I find when I browse?

Non-functional Confirmation

- N/A

Tasks

- Implement search-function
- Allow user to filter exercises by muscle group, difficulty etc.
- Allow user to filter routines by difficulty, general muscle group etc.
- Implement save/favourite function

Priority 2

Estimate 10-15 hours

2.1.6 M06

Story Name Creating a workout routine

Description As a advanced gym-goer, I want to be able to customize my own work-out routine so I can focus on specific body parts.

Functional Confirmation

- Will I be able to create my own workout routine?
- Can I create more than one customizable routine?
- Will I be able to customize the workout routine with different exercises?
- Can I edit an already existing workout routine?

Non-functional Confirmation

- N/A

Tasks

- Create custom routine. The parts included are: Create, pick, calculate.
- Create My Routines list

Priority 1

Estimate 8-10 hours

2.1.7 M07

Story Name Friends

Description Since I often work out with a group of friends, I want to be able to get connected to them through the app so that I can keep in touch.

Functional Confirmation

- Can I add a friend to my contact list?
- Can I remove a friend from my contact list?
- Will I be able to see my friends profile?

Non-functional Confirmation

- Is there a way to confirm another user as a friend?

Tasks

- Create FriendList
- Create Add and Remove from Friendlist
- Show User a Friends Page
- Friend Requests and Confirmation

Priority 5

Estimate 5-7 hours

2.1.8 M08

Account

Description As a user of multiple platforms, I need to be able to view my data on many different devices so that I have the same data everywhere.

Functional Confirmation

- Can I access my information?
- If I log into my account, will I be able to access information from any device I use?
- Will I be able to create a complicated password? (Not only letters/numbers)

Non-functional Confirmation

- Can I access my information any time of the day?
- Will my password be hashed?

Tasks

- Create a login
- Password Confirmation; get login information, compare password with database info.
- Hash Password
- Create Account

Priority 3

Estimate 10-12

2.1.9 M09

Story Name Profile

Description As a gym-goer, I need to be able to store my personal and training information so that I wont have to enter it every time I start the app.

Functional Confirmation

- Can I later alter or remove previously entered information?
- Will I only have to enter information once?
- Is this information available for use by the app in all applicable scenarios?
- Can I set a profile picture?
- Can I set my experience level?

Non-functional Confirmation

- Can I set my profile to private/public?

Tasks

- Add profile information
- Implement privacy settings
- Connect user to dataHandler

Priority 3

Estimate 14-15 hours

2.1.10 M10

Story Name On-the-go edits

Description As an indecisive person, I need to be able to change my current work-out routine on the go if I change my mind.

Functional Confirmation

- Can I modify the current routine while its in progress?
- Can I modify the amount of repetitions and sets of individual exercises?

Non-functional Confirmation

- Can I change it from the beginning of the workout routine until the very end of it?

Tasks

- Create edit tool. This includes: UI and the reuse of "edit workout routine"-method

Priority 3

Estimate 3-4 hours

2.1.11 M11

First time at the gym

Description As a novice gym-goer, I need the app to introduce me to beginner level routines and exercises that fit me.

Functional Confirmation

- Can I get recommended routines for beginners?
- Can I get recommended exercises for beginners?

Non-functional Confirmation

- N/A

Tasks

- Upon account creation, allow user to set their level of expertise.
- Sort lists accordingly, e.g Beginner user gets shown more of the beginner exercises

Priority 4

Estimate 3-5 hours

2.1.12 M12

Story Name Workout statistics

Description As a gym-goer, I need a way of seeing my development over time so that I can decide how to train.

Functional Confirmation

- Is this information presented to me?
- Are there graphs showing development over time?
- Can I see a history of performed exercises?

Non-functional Confirmation

- N/A

Tasks

- Create a graph calculator (from library)
- Create workout history
- Make sure stats are calculated and saved to database

Priority 2

Estimate 10-12 hours

2.1.13 M13

Story Name Share Workout routines

Description As a personal trainer, I want to be able to share custom-made workout routines so that others can access it.

Functional Confirmation

- Will I be able to share my workout routines?
- Will I be able to add additional information like description and muscle group for the workout routine once I share it?

Non-functional Confirmation

- N/A

Tasks

- Implement possibility for user to add personal routines to public access

Priority 5

Estimate 4-6 hours

2.1.14 M14

Story Name Track current workout routine

Description As a gym-goer, I want to keep track of what Im doing during my work-out so that I dont forget about anything.

Functional Confirmation

- Can I see what Ive done?
- Can I see what I have yet to do?
- Is this displayed to me in a intuitive way?
- Can I leave exercises unfinished but still finish the routine?
- Can I quit if I do not want to finish the routine?

Non-functional Confirmation

- N/A

Tasks

- Keep track of what user has done and what is yet to be done.
- Allow user to finish or quit.

Priority 1

Estimate 10-12 hours

2.1.15 M15

Story Name Begin and end training

Description As a gym-goer, I need to be able to start a workout routine and get satisfactory finishing results upon completing the workout, so that my performance is documented.

Functional Confirmation

- Can I start a workout routine?
- Is the correct workout routine for the day chosen as default when I start?
- Can I choose which workout routine to perform when starting?
- Can I end a workout routine?

Non-functional Confirmation

- N/A

Tasks

- Allow user to start a routine. Both with routine from calendar and MR.
- Allow user to finish a routine. Display relevant information.

Priority 1

Estimate 6-8 hours

2.1.16 M16

Story Name Sorting and Filtering

Description As a picky person, I need to be able to sort and filter when I search and browse so that I will easily find things that fit my preference.

Functional Confirmation

- Can I filter my searches?
- Can I filter what I browse?
- Can I sort my search results in specific ways?
- Can I sort what I browse?

Non-functional Confirmation

- N/A

Tasks

- Implement several sorting algorithms. Preferably using the Strategy Design Pattern
- Implement several filtering algorithms. Preferably using the Strategy Design Pattern
- Implement functionality that lets the user choose to filter or sort their searches and browsing

Priority 3

Estimate 3-5 hours

2.2 User interface

There are in total 5 main pages that are atop of their own page-hierarchy. The names of these pages are: **Home**, **Browse/Search**, **Schedule**, **My Routines**, and **Statistics**.

2.2.1 Common elements of all pages

All the pages mentioned above have a common element, the navigation bar. This bar allows the user the jump between all the Start Pages that are at the top of every Hierarchy. This element remains constant throughout the app, so that the user can always navigate back to one of the start pages when necessary. The only exceptions are the **Progress Page** and the **Edit Page**, where the user has to either complete their current routine or exit out of it.

2.2.2 Home Page

Start Page The home page is the main page of the application. This is where the user ends up when first starting the app. The first thing a user will see is a big button that leads to the apps main functionality, tracking a users workout. Other than that, the page simply contains a text that tells the user which routine will be used for the days workout.

Progress Page Pressing the button leads the user to the second page, where they're able to see which exercises they have to do and what they've already done. Here the user can check off exercises as they finish them, and also edit the list if they feel that it's necessary. The edit button however will lead them to a different page. They are also able to press a button to finish a workout, and are then sent to the next page.

Edit Page If the user presses the edit button on the progress page, they will be sent to the edit page. Here they are able to add, remove and modify the exercises that are part of their current workout. When they are finished they can simply return to the progress page and continue their workout.

Finished Page When the user finishes their workout they're sent to the final page of the home page hierarchy. Here they can see their stats from the workout they just finished, for example time spent and exercises completed. If they made any changes to the routine during the workout they're also prompted to either overwrite the old version, keep both, or not to save the new version. There is also a back to home button, so that the user can return to the start page.

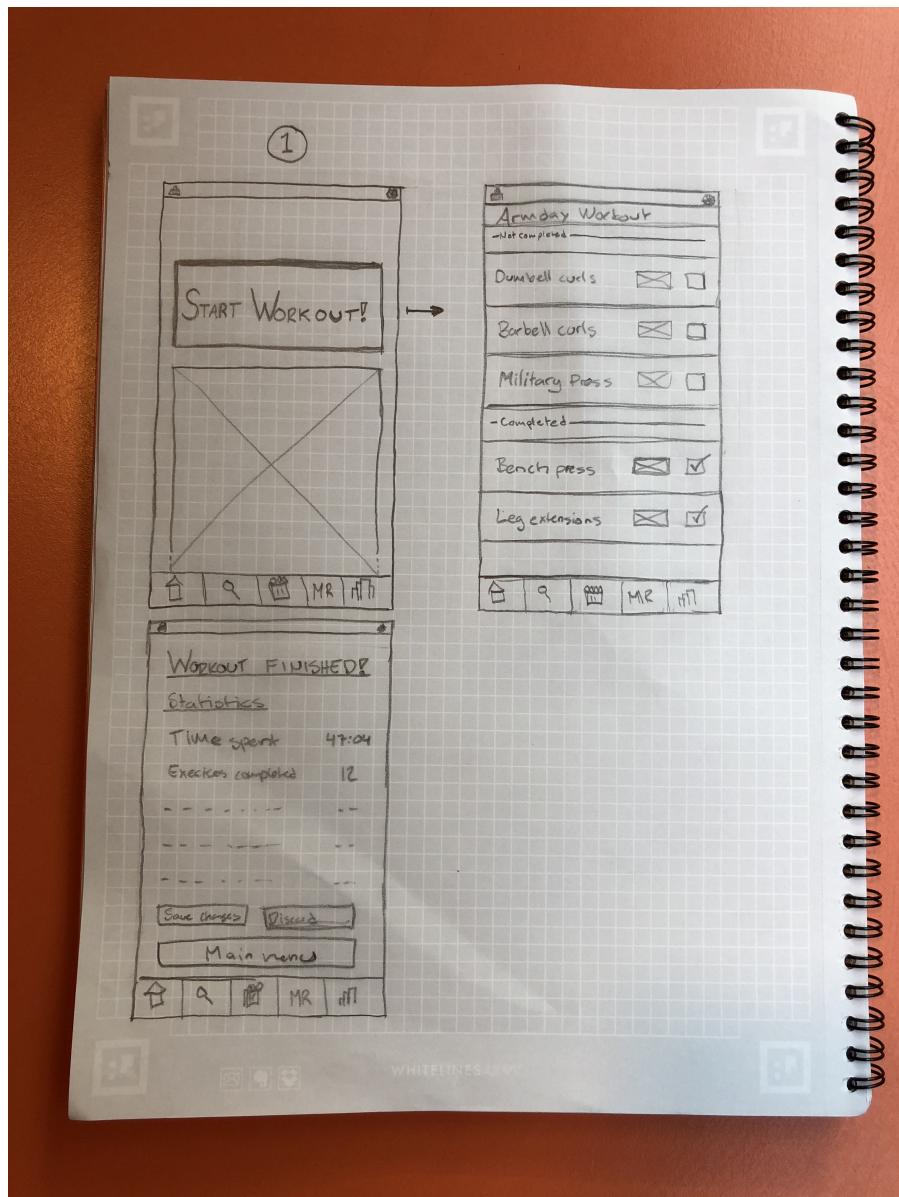


Figure 1: The Home Page Hierarchy

2.2.3 Browse/Search Page

Start Page The first page the user sees when they go to search/browse is a page that offers the users a choice between searching directly or picking categories to browse. Search simply shows all exercises and routines that fits the users search on the result page. Browse on the other hand has an extra step. First the user picks if they're looking for routines/exercises or if they want to filter in another way. They are then sent to the next page.

Muscle Group Selection Page This page is only shown to the user if they picked either routines or exercises on the last page. Here the user is prompted to make a choice between muscle groups, and when they do they're sent to the result page.

Filter Selection Page This page is only shown to the user if they picked filters on the last page. Here the user can pick which filter they want to apply. These filters are similar to recommendations. For example there is a beginner filter that only leaves a handful of easy exercises for the user to browse. When something is selected they're sent to the next page.

Result Page This page shows the user the result of either their search or what the category they've chosen contains. They are also able to sort the results in a variety of ways. From here the user is able to directly add routines to the *My Routines Page* list or add exercises to a new or already existing routine in the *My Routines Page*.

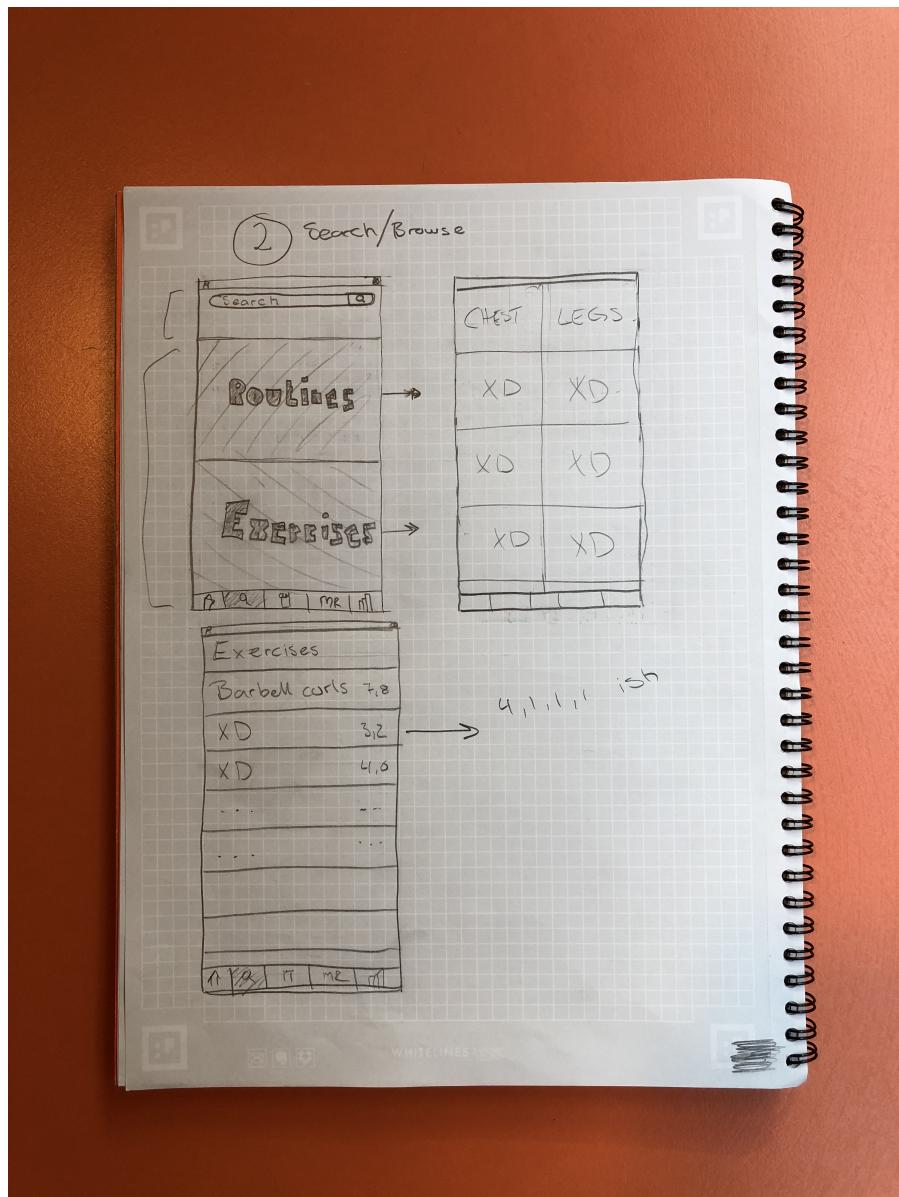


Figure 2: The Browse/Search Page Hierarchy

2.2.4 Schedule Page

Start Page This page hierarchy has only one page. It displays a weekly calendar that the user is able to add routines to. When a day contains a routine the user will be able to see the name and the amount of exercises it contains. When the user wants to add a routine to a certain day, they can select that day and are then sent to the *My Routines Page* where they can select the routine they want to add.

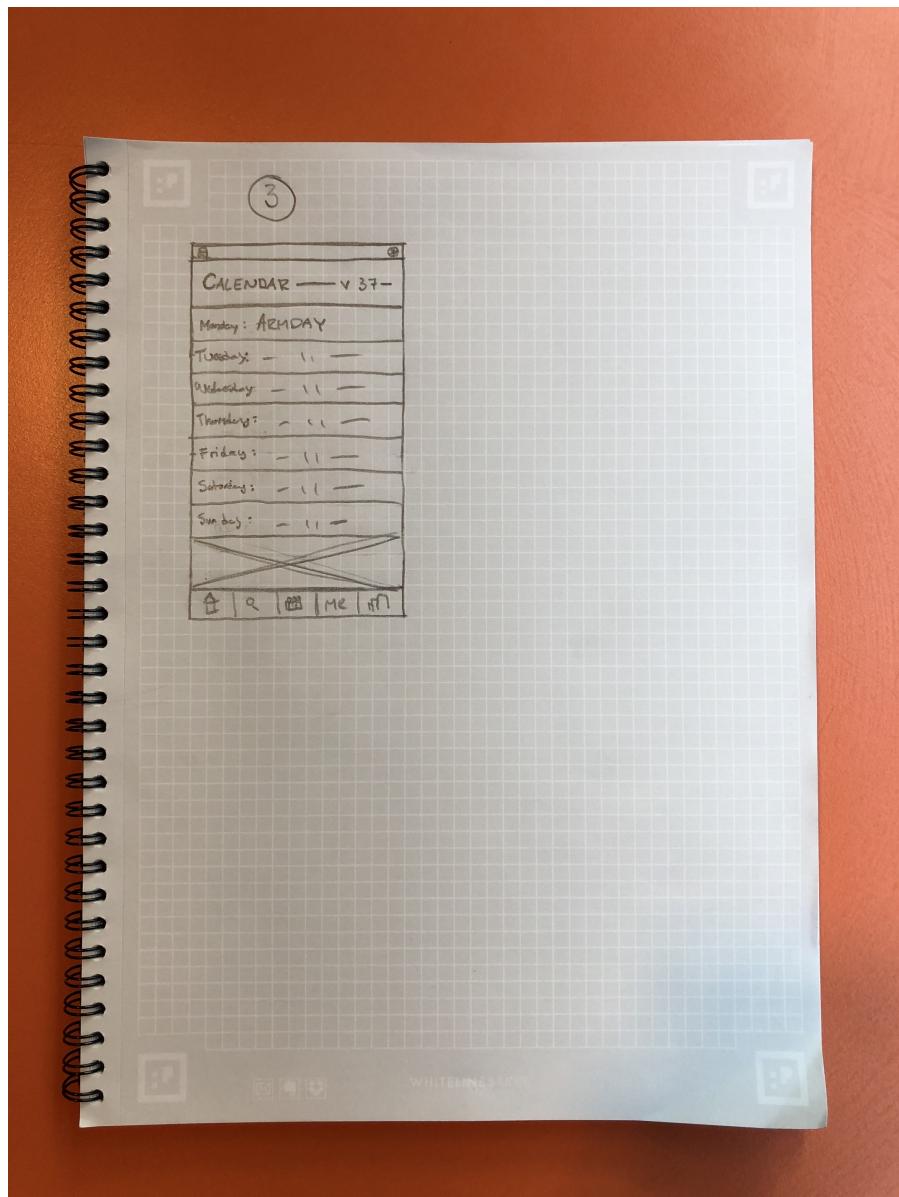


Figure 3: The Schedule Page Hierarchy

2.2.5 My Routines Page

Start Page The first page that the user sees when they go to my routines is a list of all their current routines and a button that allows the user to create new ones. Pressing a routine in the list takes the user to a page detailing that routine and the exercises it contains. Pressing the button to create a new one does the same thing, but the page that opens is an empty template of a routine.

Routine Info Page This page displays info about the selected routine. For example the name, the amount of exercises and which exercises it contains. For a newly created routine most of these would be a default value or empty. The user is able to modify all of this information by simply pressing it. There is also a button that allows the user to add exercises which sends the user to the browse page with exercises selected. If the user on the other hand selects an exercise that is already in the list, they're sent to a page with more information about that exercise.

Exercise Info Page This page display info about the selected exercise and allows the user to modify the version that is in their routine. For example they can change the amount of sets included and the amount of reps and weight that every set contains. Other than that there is also a description of the exercise, a list of affected muscle groups and a written guide of how to perform the exercise.

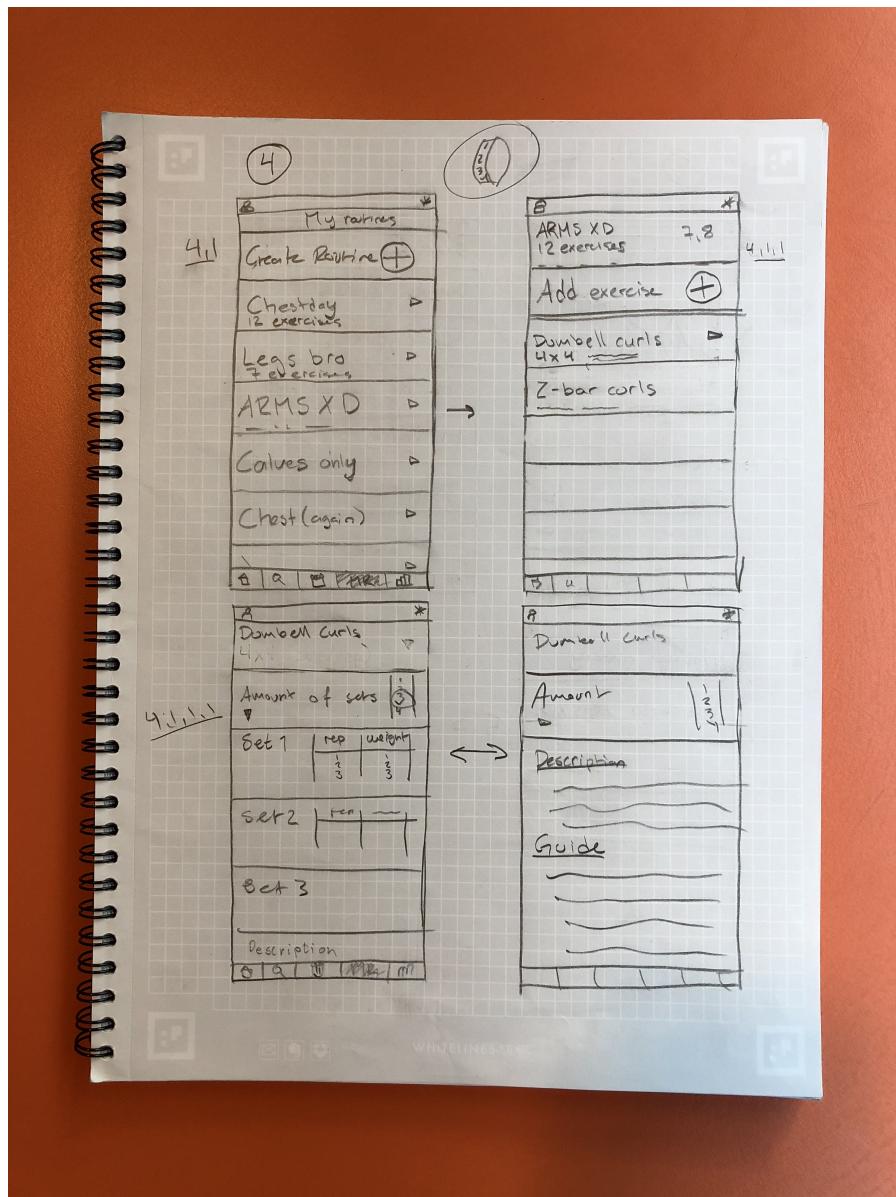


Figure 4: The My Routines Page Hierarchy

2.2.6 Statistics Page

Start Page The first page that the user sees when they go to the statistics page shows them a graph and a list of different options. The graph shows them their progress, and they can modify exactly what it is that the graph shows the progress of. For example a certain exercise over a certain time. The options in the list are Lifetime Stats, Exercise Stats and Workout History. All of these open up their own respective page.

Lifetime Stats Page This page contains all the information that has been gathered by the user since they began using the app. Other than that there is also a button that allows them to go back to the Start Page.

Pick Exercise Page The user goes to this page when they select Exercise Stats on the Start Page. They get to pick which exercise they want to see from a list, and they're then sent to a page which shows them information in a similar way to the Lifetime Stats Page.

Exercise Stats Page This page is similar to Lifetime Stats Page except that it allows the user to see their stats for a certain exercise. It also has the same button which allows the user to return to the previous page.

Pick Old Workout Page The user goes to this page when they select Workout History on the Start Page. It contains a list with old workouts and the date which they were performed. When the user selects one they're sent to a page with more information about that workout.

History Page The user goes to this page when they pick an old workout from the list on Pick Old Workout Page. This page shows the user more information about the routine that was performed during this workout. For example they can see how long they spent, how many exercises they completed out of the total and also which exercises were included.

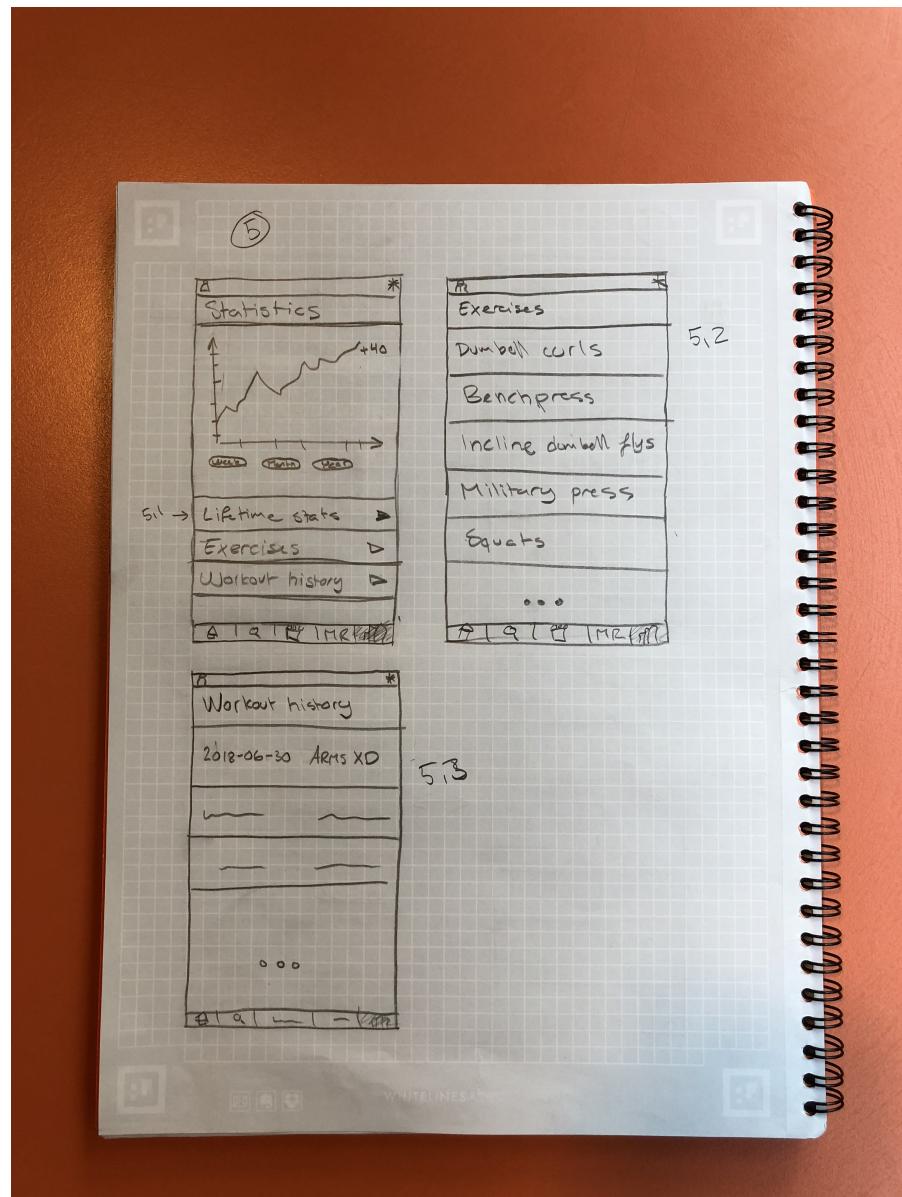


Figure 5: The Statistics Page Hierarchy

3 Domain model

3.1 Class responsibilities

Explanation of responsibilities of classes in diagram.

3.1.1 GymCompanion

This module represents the app. It has knowledge of all other modules.

3.1.2 Exercise

This module is an entity that represents an exercise. It knows details about a particular exercise such as how it is to be performed.

3.1.3 Routine

This module is an entity for an exercise routine. It consists of a collection of Exercises that are performed in some sequence. A Routine knows the order in which Exercises are to be performed.

3.1.4 Schedule

This module is an entity for a schedule. It puts Routines in a calendar so that the User knows when a particular Routine is to be performed.

3.1.5 User

This module has a Schedule. It represents the user of the app. It only knows what the user needs to know, i.e. when the user should exercise and which Routine that is to be performed at those moments.

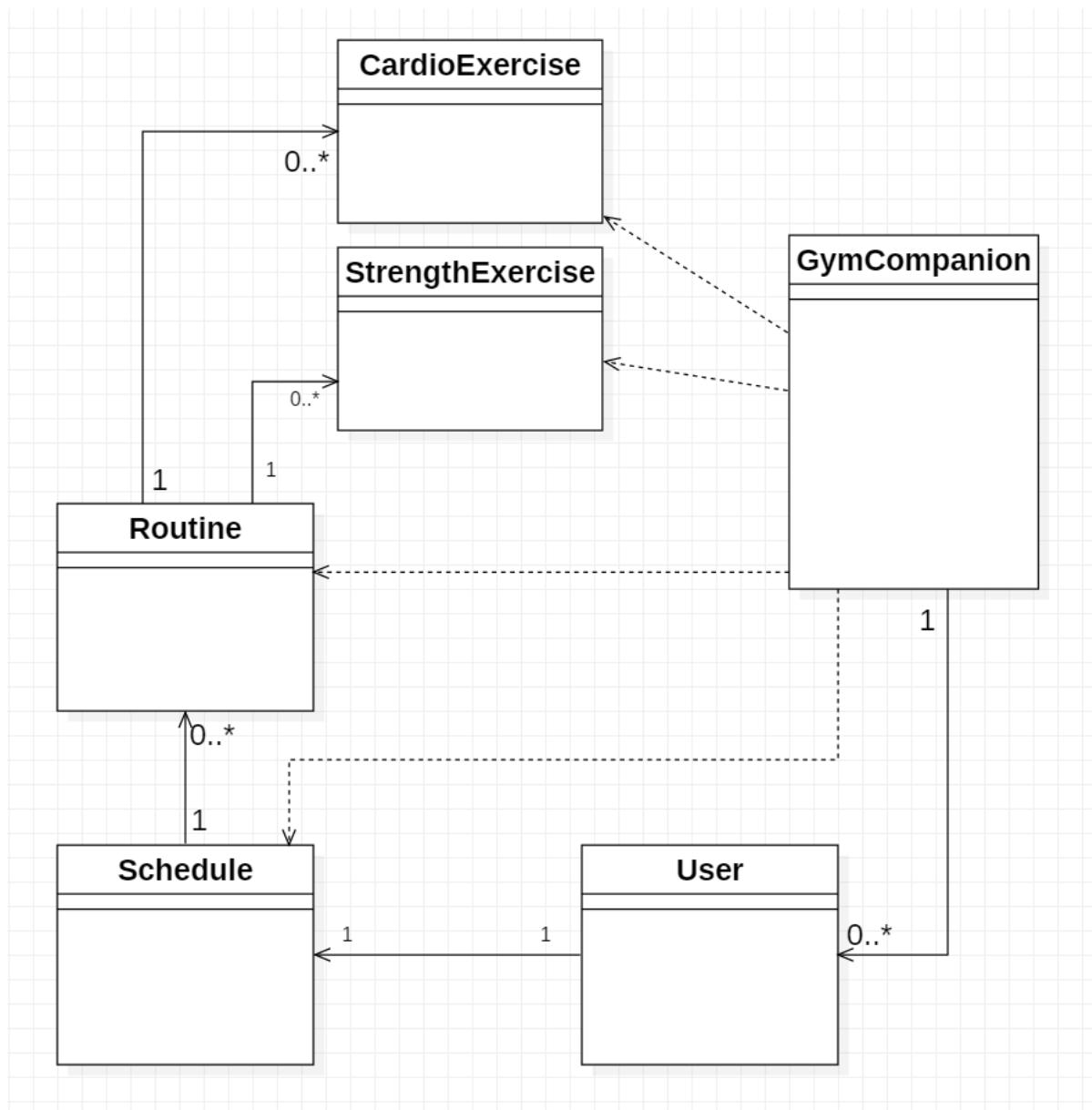


Figure 6: A high level overview of the application using a UML diagram

4 References