ELEC 390 / COEN 390
Engineering Team Design Project

Final Submission

Team H

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Marie Pier Charlton	27179243
Aurélie d'Anjou Drouin	27453671
Valérie Dubé	27761600
Subhi El-Farram	27395744
Ryan Nichols	29787739

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1.Mission Statement

A customer would buy our product to aid in their recovery from a traumatic brain injury. The recovery time from these injuries can range from days to years and there are no medications that can speed the recovery process. A light exercise program that increases in intensity very gradually over a period of weeks or months will help athletes get back to a level of health in which they can begin participating in sports.

The development team will provide an app that allows the user to set daily limits on their heart rate for their therapeutic exercise sessions as well as collect data on how long they exercised, their maximum heart rate attained and their average heart rate for that session. The information will be stored and available to the user. Should they notice their symptoms returning or getting worse they will be able to review their settings used in previous days and lower them to a level that will allow them to engage in light exercise without the return of their symptoms.

Our goal for cost will be to get this app into as many hands that need it as possible so that we can build our user base before approaching larger organizations about forming partnerships and or selling our customers data. We will sell the app for one dollar in order to recover some of the development costs but expect only to make a profit after our app becomes used widely by different youth sport organizations, university athletics programs etc. We think we have a very good value proposition for our customers and see a very large potential market in the U.S since the cost of health care treatments can be high their and limit many peoples access to a recovery program such as the one we provide through our app

One of our constraints will be that most people who own an Android device will not likely own a heart monitory to go with it in order to use our app. This is a problem but after the semester we could work on a version of our app for wearables like an Android watch.

Our stakeholders are anyone has suffered a traumatic brain injury already or who engages in high risk activities as well as their friends and families. Student athletes at the high school and university level are most at risk so we could see some support from the schools themselves since we're offering an extremely cheap way to help their athletes recover. Research groups studying the effects of concussions as well as any clinics or medical groups treating patients who've suffered brain injuries also we consider stakeholders.

2. Design Document

2.1 Introduction

NoCussion is an application designed for physiotherapist and mostly used by an injured athlete. It is a communication tool for the care provider and the athlete to ensure that each steps of the concussion recovery are followed. The application has been designed with the constraint of a concussed person, such as the use of dark color and simple interface in order to not stimulate the brain. The user will have to wear a heart sensor and her/his heart beat will be recorded during each step of the recovery. The heartbeat boundaries will be set by the care provider. Briefly, once the training session is over, the user will have to rate her/his symptoms after a stimulus and all data recorded will be sent to the care provider. The member of the medical team will be able to analyse each step will tell the athlete if she/he can move further in their recovery.

2.2 Architecture

2.2.1 Design Decisions

In order to meet the customer needs, the development team has been in constant communication with the stakeholders to ensure a valuable product. The

actual app flow is designed so that the user as access to some concussion documentation, in order to understand the illness. Once the athlete is ready to start the recovery, she or he needs to select which recovery step will be done today, so the care provider can have a follow up on the recovery process. The athlete will be asked to set boundaries for her or his heart beat and will select the time duration for the training. During the training, the heart beat and the time will be displayed. Once time is up, the user will have to rate some post-concussion symptoms after a stimulus, i.e. training. The purpose of this symptoms evaluation is to see how the body will react after a stimulus because the symptoms tend to come back after a stimulation. All input data will be sent to the care provider at the end of each recovery step. The care provider will decide if the athlete can move further in the recovery process.

2.2.2 Software Structure

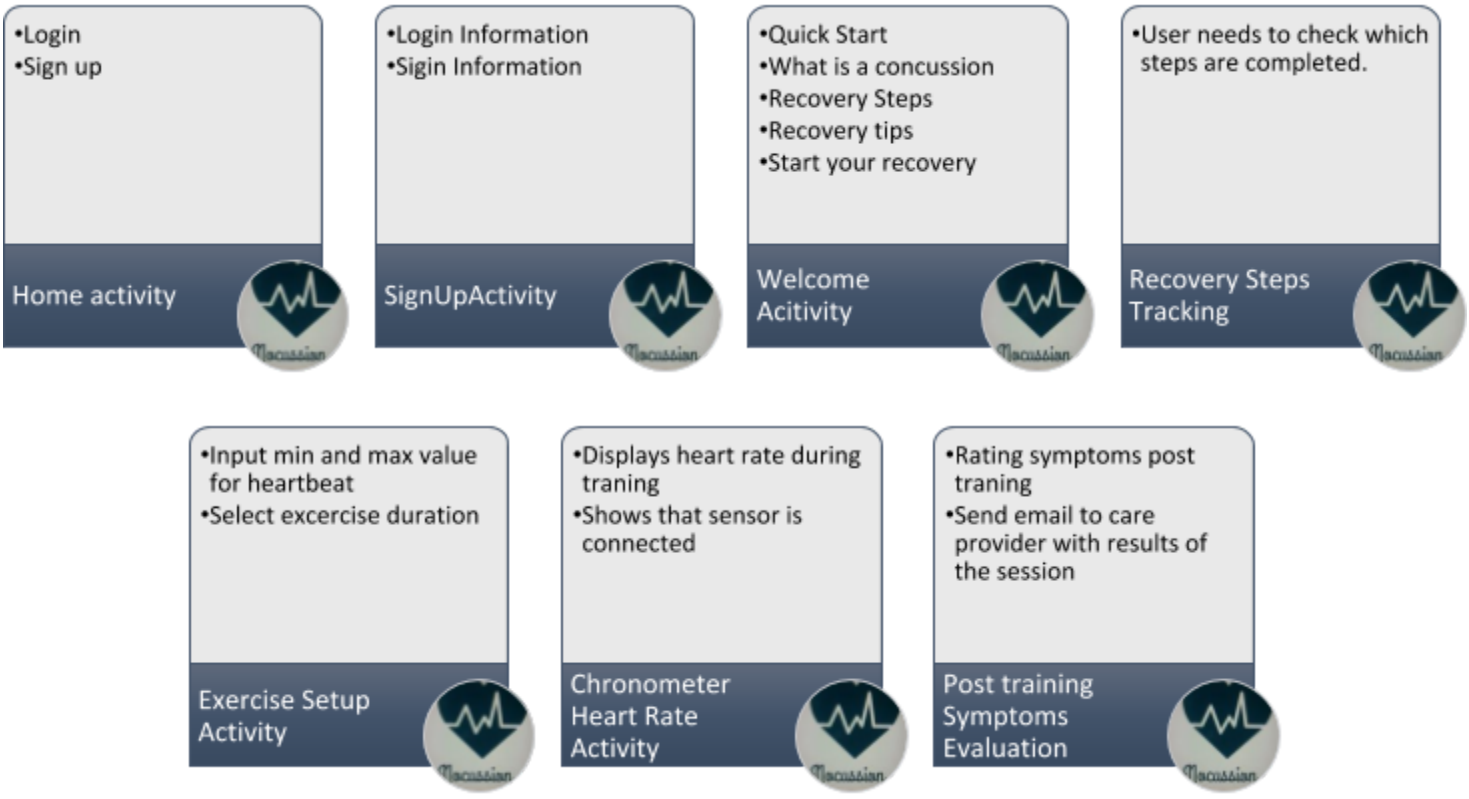


Figure 1: Software Structure

HomeActivity is the welcoming page when the user opens the application. From this page, four options are available. The user can create an account if it is its first time or he can login to his account. Moreover, an about us activity is linked to the home page so the user can read the motivation behind this application. Finally, the user has the option of doing a quick start, which simply displays the Chronometer heart rate activity.

SignupActiivity is where the user creates an account or simply login into the app. The account creation requires three fields, a username, a password and an email address.

WelcomeActivity is the main page once the user is logged in. This activity provides information on concussion and tips for a better recovery. It is from this activity that the training session starts.

ExerciseSetupActivity is where the user input the minimum and maximum value of her/his heartbeat so it can range within these values during the training. Also, the user must select a time duration for the exercise session.

ChronometerHeartRateActivity is used to display a clock watch as well as the heartbeat during the training. Also, the activity displays the heart sensor connection.

ConcussionSymptomsEvaluation activity displays a lists of symptoms and the user must rate how they feel from 0 to 5. The results from this survey are send to the user's care provider after each session.

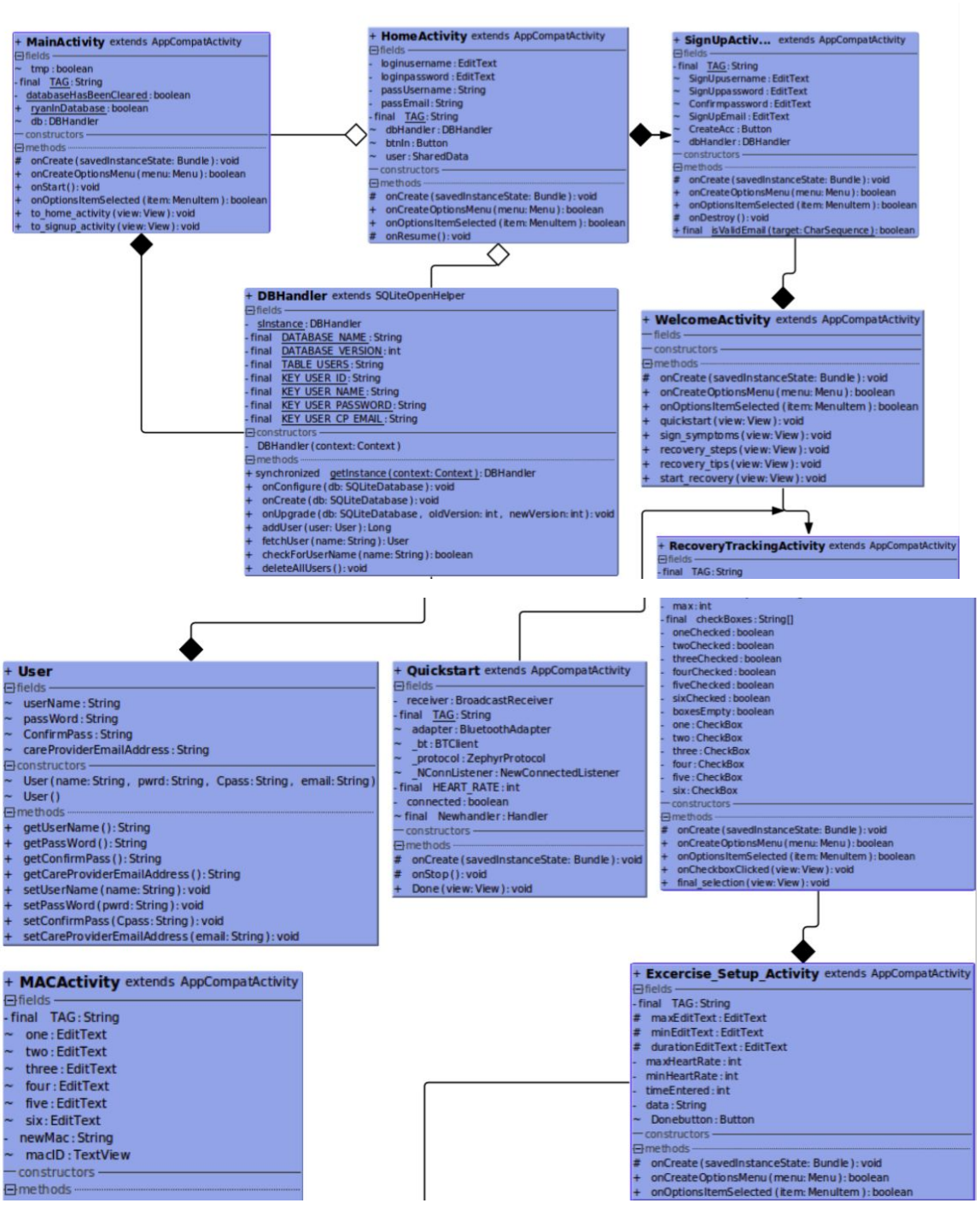
2.2.3 Application Programming Interface (API)

From the sensor to the device, data packets are sent once every second. Data packets contain info on heart rate of the user, instantaneous speed of the user, battery % remaining and distance travelled by the user since the Bluetooth connection has been made. A function in NewConnectedListener called Connected() received the data packets and decodes them. Then the data is sent to UI thread via a 'message' passed through a Handler. Then in UI thread we use Broadcast Receivers and Intent Filters to listen for actions associated with the sensor such as connections, disconnections, pairing requests etc. When the connect button is pressed by the user our app generates a list of paired Bluetooth devices and searches the list for a device name that starts with 'HXM'

to identify the corrected paired device. It then gets the correct MAC address from that device and uses it to create an instance of the Android class Bluetooth Device. An instance of BTClient is created from that instance of Bluetooth Device and then an instance of NewConnectedListener is created and the instance of BTClient is connected to the sensor using the instance of NewConnectedListener.

2.3. Static Model

2.3.1 UML class Diagram



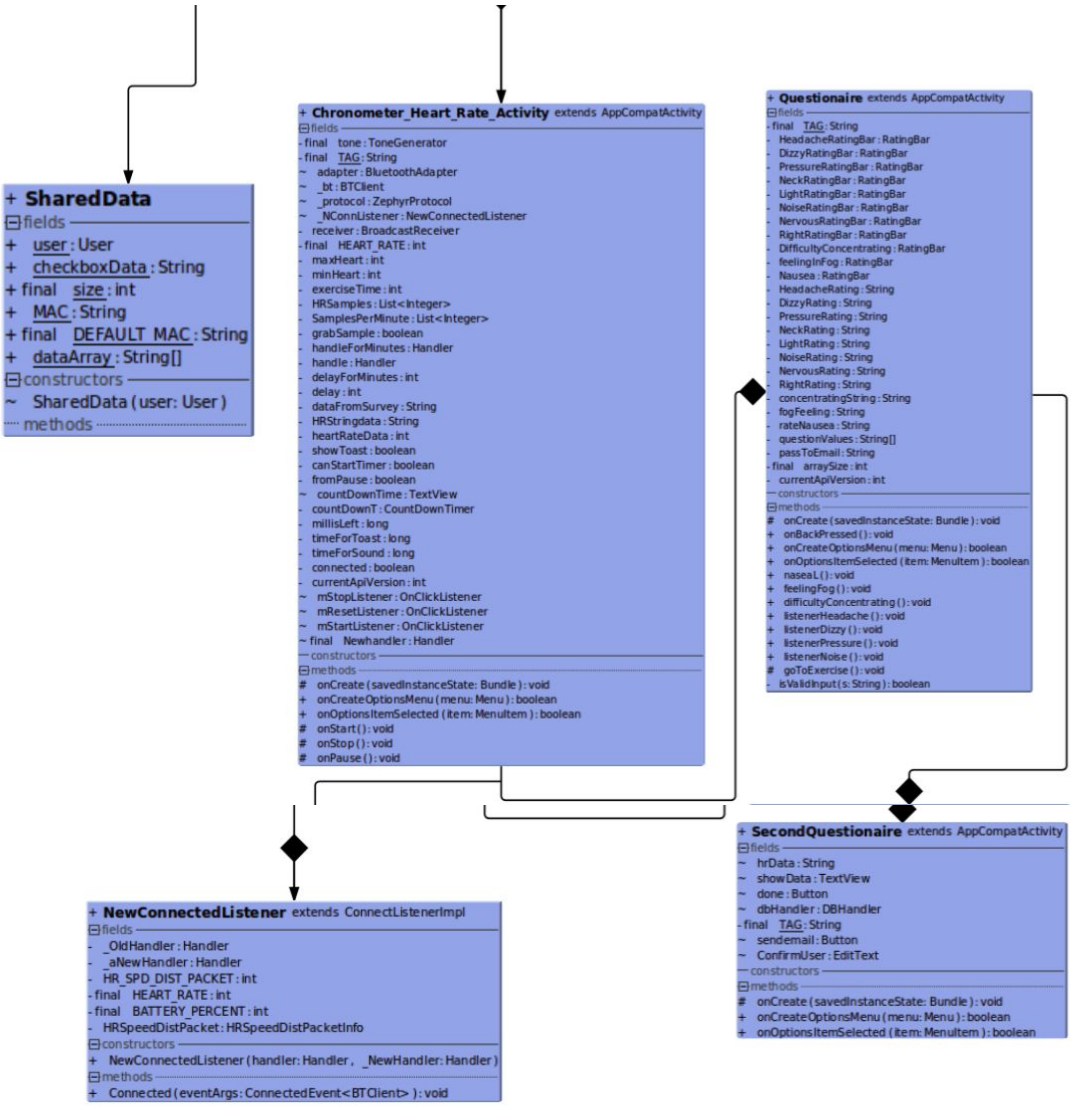


Figure 2 : UML and Class relationship

2.4 Dynamic Model

In order to understand how the *NoCussion* application runs, it is important to look at the following flowchart, call graph, sequence diagrams and finite state machine diagram. This helps us have a clearer understanding of how and when methods get called and information is passed.

When the user is signing up the information he/she inputs gets stored in an SQL database on the phone. This will later be accessible when we want to send the email. When the user is signing in to the application, the information he/she inputs is checked with the existing usernames and password in the database. If the information is correct, they have access to the following activity, which is where they will be offered different options such as described in the flowchart below. Once they moved on from that activity, they will have the obligation to input the limits (max, min and time) of their current exercise.

This information will be passed to the following activity where it will notify the user when he/she goes out of range (min and max). This activity will receive the heartbeat from the sensor and create an array that has an average heartbeat for each minute the user trains. Once the timer on this activity, which will be set at the amount entered in the previous activity, reaches zero, the application will automatically send you to the following activity where you will have to answer a questionnaire.

The answers provided by the user will be stored in a string array, which will include the username, his/her inputs, the average heartbeat and the

questionnaire answers. This will then be sent by email to the care provider email, which is entered in the database during signup.

2.4.1 Sequence Diagrams

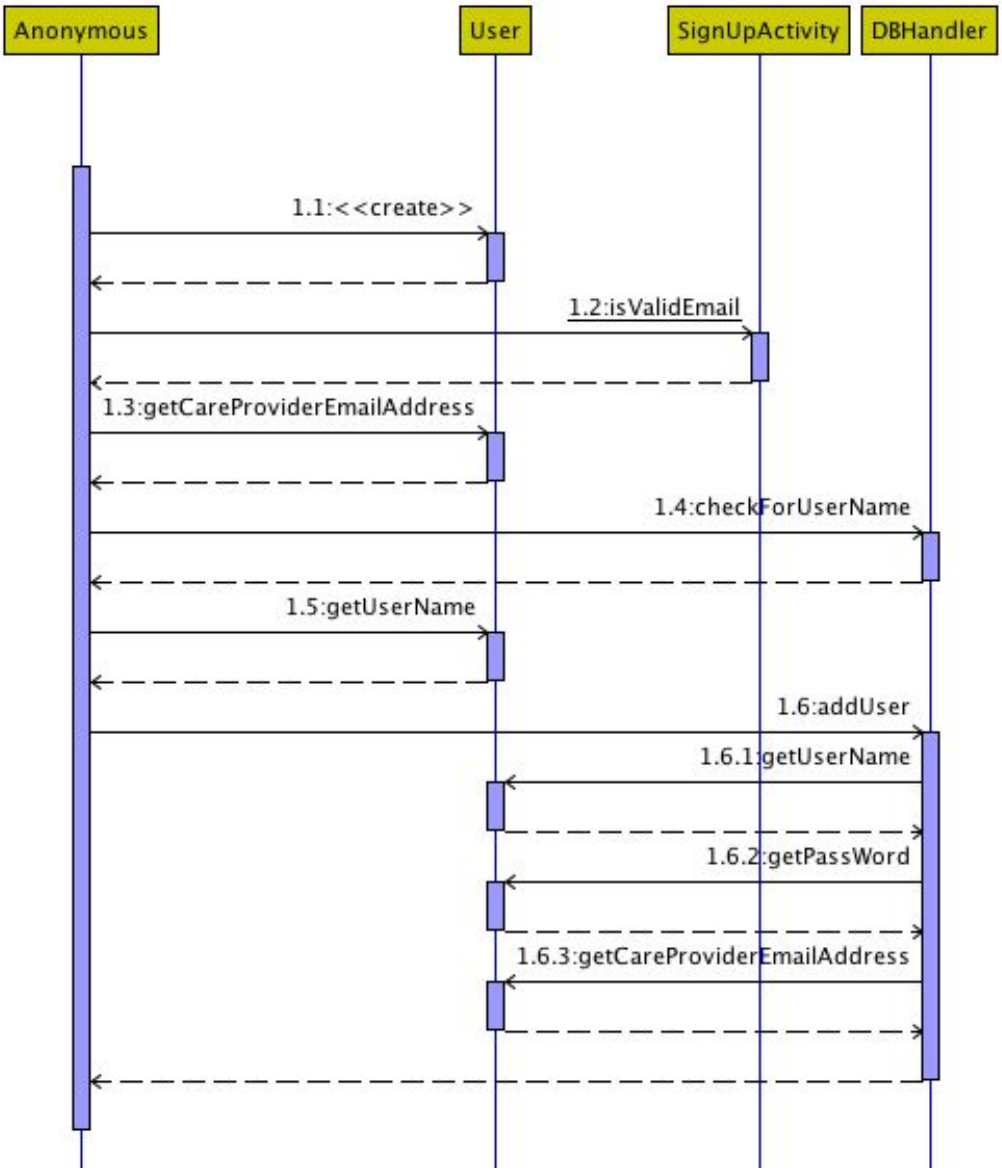


Figure 3: Sequence Diagram

2.4.2 Finite State Machine

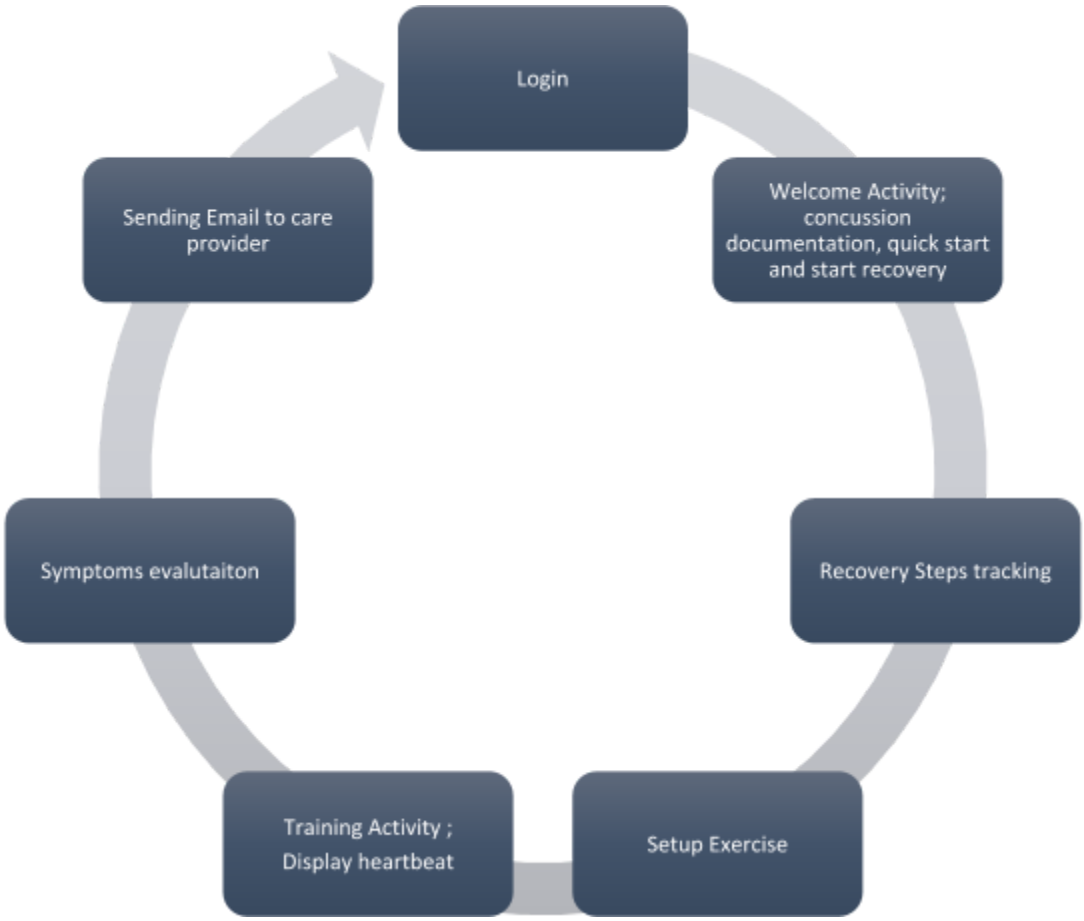
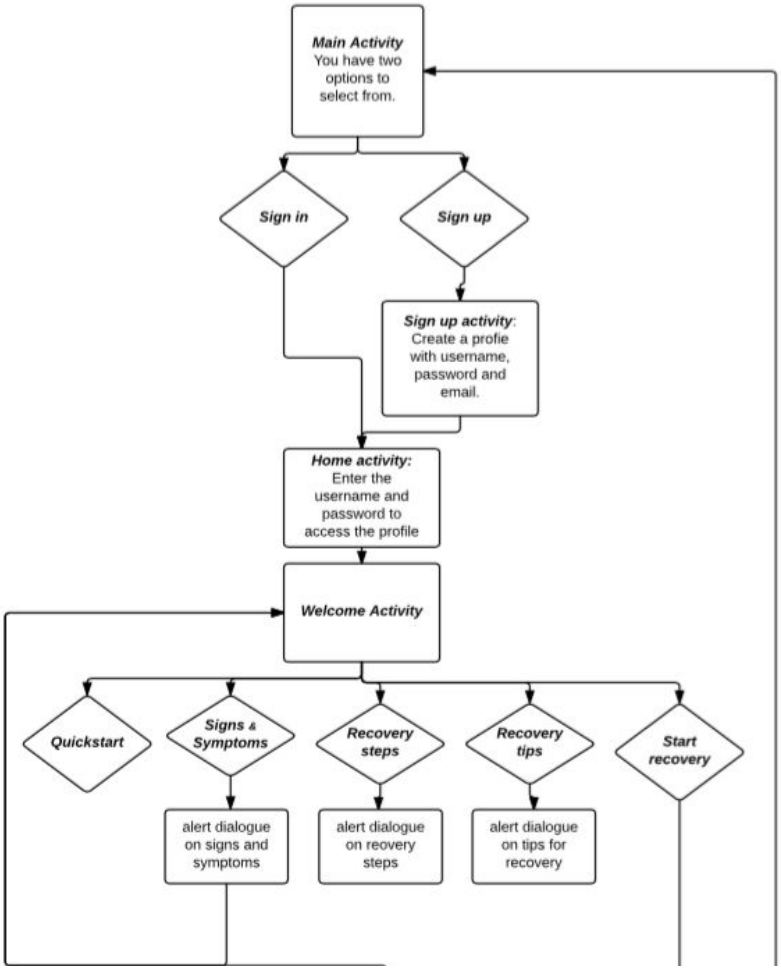

Login
Welcome Activity; concussion documentation, quick start and start recovery
Recovery Steps tracking
Setup Exercise
Training Activity ; Display heartbeat
Symptoms evalutaiton
Sending Email to care provider

Figure 4: Finite State Machine

2.4.3 Flow chart



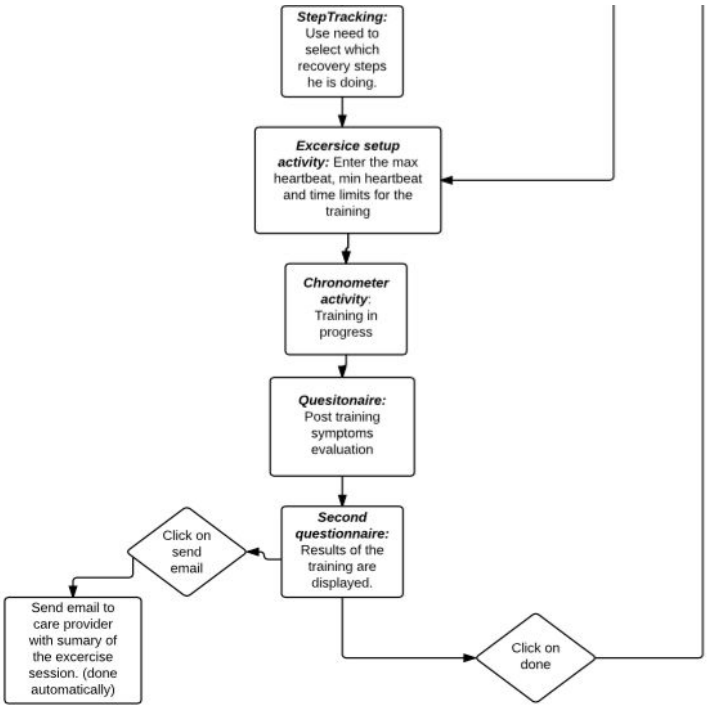


Figure 5: Flow chart

2.4.4 Call graph

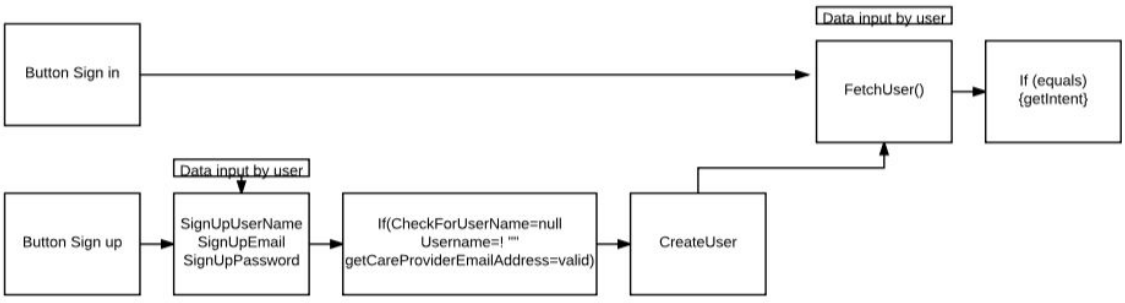


Figure 6: Call graph for login page

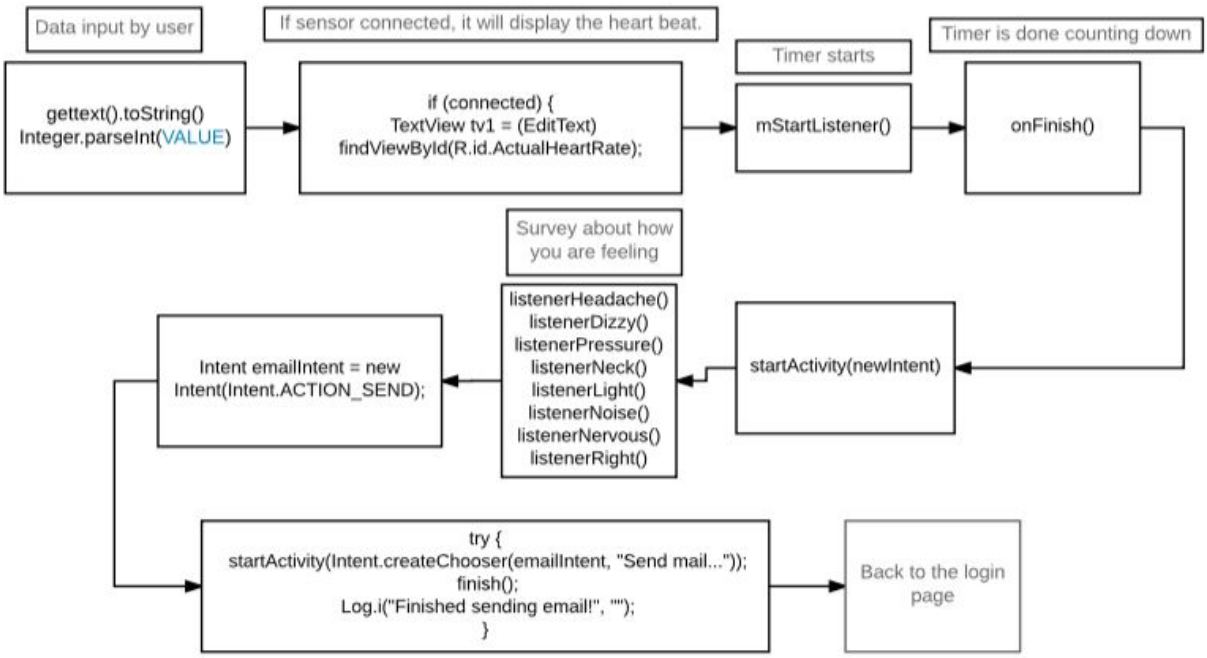


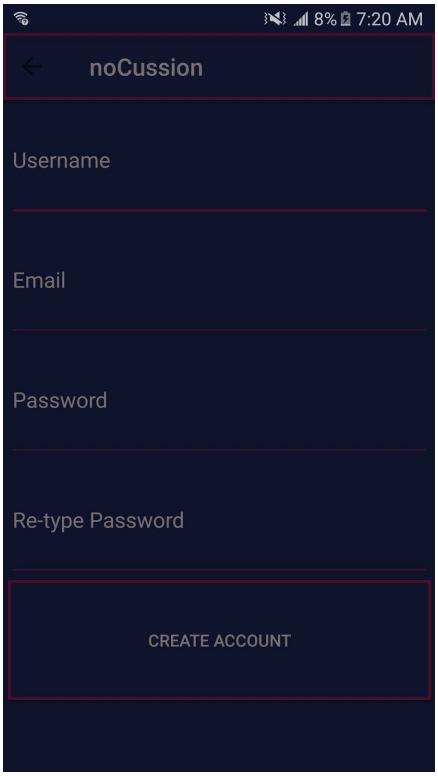
Figure 7: Application most important subroutines

2.4.5 Plant UML

Plant UML for Sequence diagram in section 2.4.1

```
@startuml
Anonymous -> user : create()
 activate User

Anonymous -> SignUpActivity : isvalidemail()
 Verify email adress

Anonymous -> user : getCareProviderEmailAdresse()
Associate care provider email adress with user

Anonymous -> DBHandler : checkForUserName()
Chek for username

Anonymous -> user : getUserName()
Get user name from user

Anonymous -> DBHandler : addUser()
Add User name in DB

DBHandler -> user : getUserName()
User get user name

DBHandler -> user : getPassWord()
User password is created

DBHandler -> user : getCareProviderEmailAddress()
User has email for care provider

@endum1
```

3. User Manual



The first step is to verify that the Bluetooth on your device is turned on. To do that, you must go in the settings of the phone and go in the Bluetooth option. Then simply select to turn on your Bluetooth if it is not already on. Once your Bluetooth is successfully turned on, open the NoCussion application. From there you have two options. If you are a first time user, you do not have a profile created and thus have to create one so you would press the sign up button.

While if you have used the app in the past you would select the sign in button.

Figure 8: Signup page

For the first time user, enter a username and your care providers email address so he can receive the summary of your training exercise and finally your password twice. It is important to remember the username and password you

chose since you will be asked to enter them every time you desire to use the app and access your profile. Press create account when you are finished.

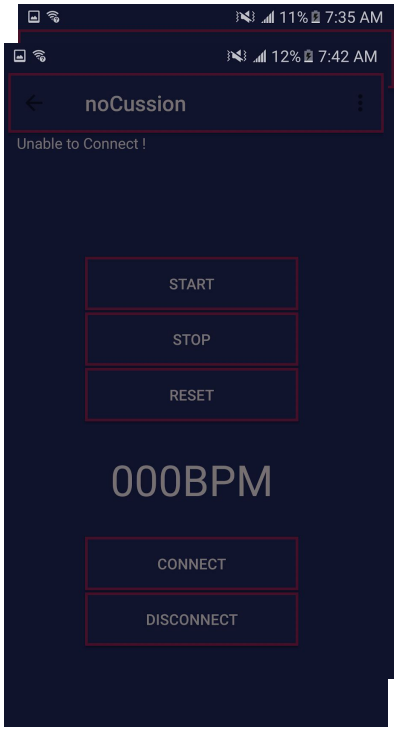
Both types of users (new and old) will now be at the same page. You must enter your username and password without any mistakes to move on to the following page. Once this part is complete press the “Sign in” button. If you have entered the information correctly you will proceed to the next page and if not, you can try again until you succeed.

*Note that if you press the back button on your phone and return to this page or the one before, you will be logged out of your profile for privacy reasons.

On the next page you have five different options:

1. QUICKSTART: This is to display your heart rate without going through the entire application. This can be used to determine your base heart rate or maximum.
2. SIGNS & Symptoms: This will cause an alert dialogue to appear on the screen describing what are the signs of a concussion and help you better detect one. When you are done reading you may press the “OK” button, which will bring you back to the page with the five different options.
3. RECOVERY STEPS: This will cause an alert dialogue to appear on the screen describing what are the recovery steps to healing from a concussion. When you are done reading you may press the “OK” button, which will bring you back to the page with the five different options.

4. RECOVERY TIPS: This will cause an alert dialogue to appear on the screen giving you tips about how to better recover from a concussion. When you are done reading you may press the “OK” button, which will bring you back to the page with the five different options.
5. START RECOVERY: This will bring you to the following page of the app where you have to select which recovery steps you have completed so far. Remember that your care provider will be getting this information. Once this is complete, you may press the “DONE” button. This will bring you to the exercise setup.



On this page you have to enter the range your heartbeat should stay in during this exercise session. You should always keep in mind that your care provider will be getting this information. So enter the heart rate you should stay under and then the heart rate you should stay above. Finally enter the duration your exercise activity should take. Once this is complete, you may press the “DONE” button. This will bring you to the exercise page so be ready to start your training.

In order to start the timer, you must first connect the heart sensor. To successfully do that, you must press the “CONNECT” button on the page. Once it

is connected, you will be able to see your heart rate and then start the timer. Complete your exercise session. If the phone alarms you that you have passed the limits you have previously set, simply lower or increase your heart rate to remain within the entered range. Once the timer is over, you will be redirected to the next page.

On this page you will have to fill in a survey based on how you are feeling. You simply have to select the amount of stars you want to rate each symptom. Remember that your care provider will be getting this information. Once you have completed all the symptoms, press the “DONE” button at the bottom to send the completed exercise data to your care provider.

You will have to select the application you wish to use to send your email. Select your default application or the one you use on a daily basis. Once you are satisfied with the email you can press send. This will log you out of your account and redirect you to the first page.

4. Ethical dimension

The android application NoCussion may be subject to many ethical issues. Here follow the ethical issues related to the app and the step that we are willing to take to address those issues.

The first ethical issue for the product is potential for misuse. Use the application as a mean to evaluate ones' self without the consultancy of a health professional. In fact, our app is not to be use as a replacement for health professional. The app has to be use as a tool to help health profession, such as doctor or sports therapist, in order to come in help with people with concussion. In order to prevent this from happening, we encourage the health professional to be as much involved as possible in the use of the app. Every time an exercise is

performed using the app the health professional will be advise by email to allowed him to interact as much as possible with the user.

Another issue is privacy issue; the app is using personal information about the user. In order to protect the privacy users as much as possible, we reduce the number of information required to a minimum needed. Name and email address are the only personal information required for someone to use the app. In fact, any other information necessary for an health professional will not be taking care in the app in order to protect the user.

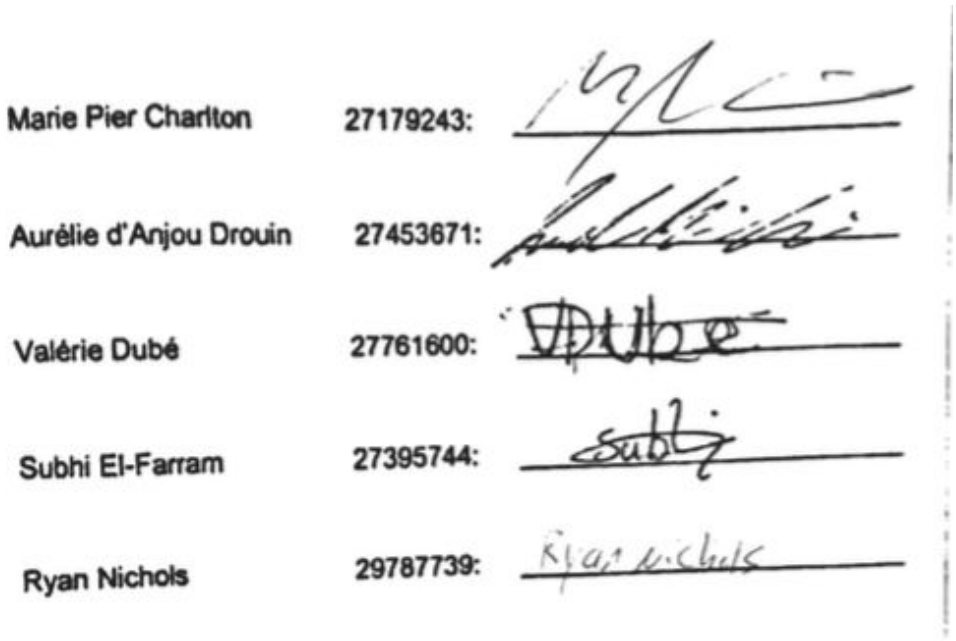
Since the app is related to health issues it is subject to not respecting health condition. Also Active research is being done on concussion and this might affect the app itself. For that, we will ensure that the app will have regular maintenance. In fact, a relation will be establishing will an health professional and the app creator in order to control the quality of the app. One or many health professionals will in fact be hired to ensure that the app provide sufficient and correct functions for the user to have the best rehab as possible.

Marketing can also bring ethical issue, we need to ensure that people understand correctly the use of the app. Misunderstanding of how the app can help people recovering from concussion is an issue. People might believe that with this app, will guaranty them from recovering from concussion. This is the

reason why the marketing of the app will be done for the health professional and not for the athletes. In fact, it will be promoting as a tool for health professional to make sure that they will not be any confusion with athlete. In fact, it will be the health professional responsibility to make an athlete use the app.

5. Team blog

5.1 Team member signatures



5.2 Team H Blog

Date	*Who*	*Activity and time log*	*Purpose*	*Output*
01- 20-17	All	Work at home 2h each	Think of ideas and opportunities	Prepare for the meeting on January 25.
01-25-17	All	Meeting 3h	Discuss the different opportunities. And come with a mission statement	Come with three project opportunities and ranked them from 1 to 3.
01- 29-17	Ryan	Work at home 1.5h	Heart rate proposal, evaluation and mission statement	Mission statement written.
01- 29-17	Marie-Pier	Work at home 1h	Evaluation of the Diet and nutrition app	Evaluation of opportunities.
01- 29-17	Subhi	Work at home 1h	Evaluation of the forms application	Evaluation of opportunities.
01- 29-17	Aurélie	Work at home 1.5h	Creation of Team Blog	Team Blog.
01- 29-17	Valérie	Work at home 1.5h	Ranking, evaluation of properties, opportunity statement, grouping parts.	Milestone 1.
02-08-17	All	Meeting 2h	Planning and schedule the interviews.	Come up with interview questions for 2 schedules interview.
02-08-17	All	Interview 0.5h	Information on stakeholder no1.	Interview and script no1.
02-09-17	All	Interview 0.5h	Information on stakeholder no2.	Interview and script no2.
02-09-17	All	Meeting 2h	Review of the interview data we collected and how this will affect our app.	Our constraints and expectations for our app.
02-10-17	Ryan	Work at home 2h	Researching issues to be studied.	Simulation Plan.

02-12-17	Subhi	Work at home 1.5h	Ethical dimension.	Milestone 2.
02-12-17	Marie Pier	Work at home 1.5h	Study important stories.	Backlog
02-13-17	Aurélie	Work at home - 1.5h	Script.	Information on stakeholder and script.
02-14-17	Valérie	Work at home 2h	Gathering information on stakeholder.	Script and information on stakeholder.
02-17-17	Valérie	Work at home 4h	Putting the milestone together and finishing the backlog	Milestone 2 and backlog
02-27-17	All	Meeting with Bipin 1h	Plan Sprint 1 and establish our goals and tasks	Sprint 1 Backlog Review
03-03-17	Ryan	Work at home 4h	Create basic app with toolbar, database construction	COM 1.4 completed
03-03-17	Subhi	Work at home 15h	Creating Login page	COM 1.1 - COM 1.3 completed
03-03-17	Subhi	Work at home 2h	Login page Testing	Toast when password does not match.
03-03-17	Valérie	Work at home 2h	Testing the login page	UI 8-1 completed
03-04-17	Ryan	Work at home 3h	Database debugging, started connecting Sensor to get data	COM 1.4 -COM 2.2 completed
03-05-17	Ryan	Work at home 2h	Working on getting sensor data	COM 2.2
03-06-17	All	Meeting at school 2h	Scrum meeting	Shuffled task responsibilities, shared updates on progress, debugged code

03-07-17	All	Meeting at School 3h	Update project with our individual progress	Made sure everyone can push their changes to GitHub. Debugged code. Still some problem with git tracking changes in uml files. May need to start a new project for sprint 2 setting git to not track these changes
03-07-17	Aurélie	Work at home 5h	Work on the Questionnaire Activity	The activity where people will have to answer question before and after their training.
03-07-17	Marie-Pier	Work at home 3h	The page where the max,min and time were inputted	The page where you input the data
03-08-17	Marie-Pier	Work at home 4h	Making the chronometer and passing the data from the first page to the next.	The activity where the chronometer is and a link between the two activities.
03-08-17	Aurélie	Work at home 6h	Work on the Questionnaire Activity	The activity where people will have to answer question before and after their training.
03-09-17	Ryan	Work at Home 5h	Getting our code pass ready to hand in for Friday.	Merging everyone's work into 1 project version, testing/ debugging code, making some changes to layouts

03-09-17	Aurélie, Ryan, Subhi & Valérie	Meeting 3h	Discuss goals for sprint 2, small retrospective of sprint 1	Status for all tasks of sprint 1 is up to date. Goals for sprint 2 are now defined.
03-09-17	Valérie	Work at home 2h	Final testing	DOC 3.1 completed
03-09-17	Valérie	Work at home 2h	Implementation of Testing document	DOC 2.1 completed
03-09-17	Valérie	Work at home 5h	Implementation of Design document; class diagram, software architecture	DOC 1.1 completed
03-09-17	Valérie	Work at home 2h	Implementation of tasks for sprint 2	Product Backlog
03-13-17	All	Meeting at School 3h	Meet with the TA and discuss tasks for sprint 2	Obtained guidance on project and some sprint 2 tasks set
03-13-17	Ryan	Work at home 2h	Reviewing pull requests & code, testing app, generating more tasks for sprint 2	pull requests reviewed and code tested. More tasks sent to Val to be put in backlog
03-13-17	Valérie	Work at home 2h	Working on the logout, once the exercise is over, the session should be over.	Logout
03-13-17	Valérie	Work at home 3h	Working and Researching for the Scroll view. Testing scroll view with different activities	Scroll view on the survey activity.
03-13-17	Ryan	Work at home 3h	Researching git rebasing, incorporating Aurelie's code, testing code, made some final changes before demo	App is tested and ready for demo of sprint 1.

03-15-17	Valérie	Meeting with stakeholder 1h	Short meeting to show our app to our user, gathering feedback	User like that app, approved the layout and the main functionalities
03-16-17	All	Meeting with Bipin 1h	Sprint 2 planning and first demo of shippable product	Sprint 1 retrospective.
03-18-17	Ryan	Work at home 3 hr	Work on app and sprint 2 tasks	Resolved git conflicts, updated master. Added function to database. Validation for email and username on sign up. Continuous testing of sensor
03-20-17	Ryan	Work at Home 3hr	Work on app and sprint 2 tasks	Resolved git conflicts, updated master. Values from exercise setup activity now passed to chronometer activity
03-21-17	Marie-Pier	Work at home 3h	Work on the simulations task to send an email from android studio.	Got a basic code but that still had errors and did not run.
03-21-17	Aurélie	Work at home 4h	Doing research on concussion on how the survey should be.	Got the confirmation on the list of question that should be asked.
03-22-17	Valérie	Work at home 3h	Research on app flow improvement. Research on concussion, make sure that our goal is respected	Modification to survey activity.
03-22-17	Marie-Pier	Work at home 2h	Wrote the about us text and researched how other apps do this page.	A strong text describing the flow of this app and its purpose.
03-23-17	Ryan	Work at home 2h	Work on app and sprint 2 tasks	Changed chronometer to Countdown Timer, Tell user if heart rate is too high or low via a Toast message

03-23-17	Subhi	Work at home 15h	Managing layout	Design pages, logo, layout, managed order of appearance, customization etc.
03-23-17	Aurélie	Work home 4h	Working on the new layout for the questionnaire.	Questionnaire activity is 30% complete
03-24-17	Ryan, Subhi and Valérie	Meeting 1h	Sprint 2 review and Planning Sprint 3	Backlog Sprint 3
03-24-17	Valérie	Work at home 4h	Improvement of Product Backlog	Product Backlog Sprint 2 summary
03-24-17	Valérie	Work at home 3h	Improvement design document with new material of sprint 2	Design document review Sprint 2
03-24-17	Valérie	Work at home 2h	Implementation start rating for the survey activity.	Survey activity is most likely done. Might go for a process bar.
03-24-17	Marie-Pier	Work at home 4h	Work on the implementation of the about page.	A working about page, but might have to alter the design of it.
03-24-17	Aurélie	Work at home 8h	Work on the questionnaire activity.	Add Scroll view and rating bar.
03-24-17	Subhi	Work at home 8h	Worked on survey page	Change format, add Rating Bar and customized it
03-24-17	Marie-Pier	Work at home 3h	Worked on the email simulation.	A code semi functional. Will still need to work on it in sprint 3.
03-25-17	Ryan	Work home 3h	Updating master, testing, Email & timer delays research	Tests added to test log, sensor is working but not perfectly. Will user Handler to implement delays

03-26-17	Ryan	Work home 7h	Saving data from heart rate sensor involves multithreading using Handler	The data is successfully passed to the next activity
03-26-17	Valérie	Work at home 3h	Research on pop notification. Implementation post training evaluation activity.	Post training evaluation has pop notification.
03-27-17	All	Meeting - 1h	Review of what is to be completed for sprint 3 and everyone picked a task.	A sprint 3 that we are sure to complete.
03-27-17	Ryan	Work home 6h	Merging everyone's code, testing, debugging.	About Us Activity is now included. Small bugs have been fixed
03-28-17	Ryan	Work home 6h	Testing, debugging, Getting app ready for presentation	There's a bug w/ showing Toast msg, leaving activity doesn't stop toast from being displayed. Couldn't resolve
03-28-17	Valérie	Work at home 6h	Problem with GitHub, needed to redo the logout and the end of training 'survey'. Testing the app before the demo	End of training survey is now included, same for the logout.
03-28-17	Marie-Pier	Work at home 3h	The java limits verifying that the user input is within range (Heartbeat).Edit Text have limits to ensure it doesn't crash.	Edit texts that cannot crash and a heartbeat limit that is reasonable.
03-29-17	All	Meeting with Bipin -1h	Demo of shippable code and Sprint 3 planning	Sprint 2 retrospective
03-30-17	Aurélie	Work at home 2h	New design of questionnaire and selection of questions approved by Athletic therapist	Ready to make changes on the questionnaires.

04-02-17	Aurélie	Work at home 6h	Implement changes on the questionnaire, add the scroll view.	New questionnaire layout is completed.
04-02-17	Marie-Pier	Work at home 3h	Included new ideas discussed all together in the backlog and polishing it.	A backlog that includes more ideas and looks more uniform.
04-03-17	Aurélie	Work at home 3h	Testing scroll view and make changes on the layout according to teammates feedback.	Scroll view is working the questionnaire is done.
03/04/2017	Subhi	Work at home 8h	To setup the email to be sent to the care provider	App can send an email using already registered email from phone
04-03-17	Ryan	Work at school & home 5h	Debugging, help from TA w/ timing of Toasts messages and Hr sampling	Not using Handler + busy waiting anymore. Using event based technique
04-04-17	Ryan	Work at home and school 5h	Gathering data and formatting email content. Debugging sensor	Found a way to stop the sensor when switching activities. Email format improved
04-05-17	Marie-Pier	Work at home 4h	Work on the flow chart for the app and looked into the final document requirements.	A flowchart of the app
04-05-17	Subhi & Valerie	Work at school 7h	New activity for better UI	A more user-friendly interface
04-05-17	Valérie	Work at home 2h	App testing	To do list of improvement. Must be done before final demo.
04-06-17	Ryan	Work at home 5h	Making the app unbreakable	Added Broadcast Receiver so we know when connections and disconnections are made. Pressing disconnect multiple times no longer crashes app

04-06-17	All	Meeting - 1h	Going over the tasks that have been completed and helping others that are facing roadblocks.	Every team member is on the same page as to what needs to be completed.
04-06-17	Valérie	Meeting with stakeholder 2h	Gathering feedback on the almost final product.	Need to add a new activity that tell which step the athlete is doing
04-05-17	Valérie	Work at home 3h	Research and implementation on the check box page	Able to check the box. Need to put values in array to record for email. Need to adjust layout
04-07-17	Marie-Pier	Work at home 6h	Worked on the backlog and the call graph.	The backlog is corrected as per the feedback we got during the sprint 2 meeting.
04-07-17	Aurélie	Work at home 5h	Working on final document (user's guide and ethical dimension)	A first draft of both document is completed.
04-07-17	Valérie	Work at home 3h	Implementation of check box pages.	Information need to be stored in an array list to be sent to care provider.
04-07-17	Valérie	Work at home 2h	App testing. Getting the latest version.	UX is decent, may need to change some wording for the email, to be clearer.
04-08-17	Subhi	Work at home 10h	Checkboxes for steps+ layout and inflate menu	Working checkboxes, well organized layout and now has help button for more user-friendly interface.
04-08-17	Valérie	Work at home 2h	Preparing the presentation and final demo	Visual for presentation and content done.
04-08-17	Ryan	Work at home 4h	Incorporating new Survey into app. More formatting of data for email.	Aurelie's version of the survey is now working

04-08-17	Marie-Pier	Work at home 4h	Working on the call graph.	Complete call graph .
04-09-17	Valérie	Work at home 2h	App testing.	Text view in setup Exercise. Shorter about us message
04-9-17	Aurélie	Work at home 4h	Working on the presentation and ethical dimension document	Presentation is ready, introduction video was done.
04-09-17	All	Meeting 2h	Preparing for final demonstration	The presentation was separated and we practiced.
04-09-17	Marie-Pier	Work at home 1h	Worked on the layout for mac activity.	An aesthetically pleasing layout for the activity.
04-10-17	Ryan	Work at home and at school 12h	Last minute changes, adding java code for MAC address change, debugging, testing. Getting app ready to present	App is ready to present
04-10-17	Valérie	Work at school – 2h	App testing with Subhi and Ryan. Worn the sensor. Demo rehearsal.	Proved sensor accuracy. Know what boundaries to input for the demo under stress situation.
04-10-17	Marie-Pier	Work at home 1h	Worked on the call graph	Edited the hand written version of the call graph
04-11-17	Marie-Pier	Work at home 5h	Worked on the final document	The dynamic model, flow charts were completed.
04-13-17	Valérie	Work at home 2h	Editing backlog.	Cards are now in right format. Have enough story for another sprint.

04-14-17	Aurélie	Work at home 5h	Working on the final document.	Sequence diagram and class diagram are completed.
04-15-17	Aurélie	Work at home 3h	Working on the final document.	Ethical dimension is done
04-16-17	Valérie	Work at home 5h	Gathering documentation.	Creation of Team_H_final_Submission

Form ENCS-SAS (03/04)

Faculty of Engineering and Computer Science
Expectations of Originality

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Course Number: ELEC 390 / COEN 390 **Instructor:** Dr. Lynch

Type of Submission (Please check off reponses to both a & b)

a. __ Report X Assignment __ Lab Report __ Software

b. __ Individual submission X Group Submission (All members of the team must sign below)

Having read both sides of this form, I certify that I/we have conformed to the Faculty's expectations of originality and standards of academic integrity.

Name (please print clearly)	ID No	Signature	Date
Marie Pier Charlton	27179243		Jan 25 2017
Aurélie d'Anjou Drouin	27453671		01/25/17
Valérie Dubé	27761600		01/25/17
Subhi El-farram	27395744		01/25/17
Ryan Nichols	29787739	Ryan Nichols	01/25/17

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