

Concordia University

Sprint 1 Planning Document

Deliverable

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**COEN/ELEC 390 - Computer & Electrical Engineering Product Design Project
Professor William Lynch
June 18th, 2023**

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Expectations of Originality

Faculty of Engineering and Computer Science Expectations of Originality

This form sets out the requirements for originality for work submitted by students in the Faculty of Engineering and Computer Science. Submissions such as assignments, lab reports, project reports, computer programs and take-home exams must conform to the requirements stated on this form and to the Academic Code of Conduct. The course outline may stipulate additional requirements for the course.

1. Your submissions must be your own original work. Group submissions must be the original work of the students in the group.
2. Direct quotations must not exceed 5% of the content of a report, must be enclosed in quotation marks, and must be attributed to the source by a numerical reference citation¹. Note that engineering reports rarely contain direct quotations.
3. Material paraphrased or taken from a source must be attributed to the source by a numerical reference citation.
4. Text that is inserted from a web site must be enclosed in quotation marks and attributed to the web site by numerical reference citation.
5. Drawings, diagrams, photos, maps or other visual material taken from a source must be attributed to that source by a numerical reference citation.
6. No part of any assignment, lab report or project report submitted for this course can be submitted for any other course.
7. In preparing your submissions, the work of other past or present students cannot be consulted, used, copied, paraphrased or relied upon in any manner whatsoever.
8. Your submissions must consist entirely of your own or your group's ideas, observations, calculations, information and conclusions, except for statements attributed to sources by numerical citation.
9. Your submissions cannot be edited or revised by any other student.
10. For lab reports, the data must be obtained from your own or your lab group's experimental work.
11. For software, the code must be composed by you or by the group submitting the work, except for code that is attributed to its sources by numerical reference.

You must write one of the following statements on each piece of work that you submit:

For individual work: **"I certify that this submission is my original work and meets the Faculty's Expectations of Originality"**, with your signature, I.D. #, and the date.

For group work: **"We certify that this submission is the original work of members of the group and meets the Faculty's Expectations of Originality"**, with the signatures and I.D. #s of all the team members and the date.

A signed copy of this form must be submitted to the instructor at the beginning of the semester in each course.

I certify that I have read the requirements set out on this form, and that I am aware of these requirements. I certify that all the work I will submit for this course will comply with these requirements and with additional requirements stated in the course outline.

Course Number: COEN/ELEC 390
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Date: June 18th 2023

Product Backlog

Story ID	Story Title	Card	Story Points	Sprint	Status	Conversation	Confirmation
BK-1	Accurate sensors sending reliable information	<i>As a user I want to connect to the app's device through Bluetooth so that I may be able to start tracking my UV exposure with reliable data.</i>	9	Future	Not in sprint	<p>Will need to do research on how to make a bluetooth connection from the phone to the device (or from the device to the phone).</p> <p>Will need to do more research on how to communicate from the device to the app. (We know that Bluetooth is capable of sending information like: text, sounds,...)</p>	<p>Have to ensure a Bluetooth connection.</p> <p>Need to confirm that good, reliable and accurate data is being sent to the app.</p>
BK-2	Tracking and analytics	<i>As a user I want to be able to track my exposure to UV rays so that I may be able to get notification when to reapply sunscreen, drink water and to visualize personalized stats based on my exposure.</i>	9	Sprint 1	In Progress	<p>To be able to track data a database will be required.</p> <p>Notifications will have to be implemented.</p> <p>Need to do some research on when users should be reminded to drink water and apply sunscreen.</p> <p>The available data should be used to</p>	<p>*Assuming that the connection to the device is already made</p> <p>Based on certain timers, the user will be reminded to drink water or reapply sunscreen.</p> <p>The statistics will be based on the available data and will be useful information to the user.</p>

						create personalized statistics for the user.	
BK-3	Session creation and family monitoring	As a user I spend prolonged periods of time outside with my friends and family and I want to monitor their exposure so that we do not overexpose ourselves to UV rays.	13	Sprint 1	In Progress	<p>Sessions could be used to monitor exposure of friends/family. (Each session will have a maximum number of family/friends, but each session could have different people and different number)</p> <p>Since this will be used for friends/family all those people are different in their own way (age, sex, skin color,...) and the app will need to account for that.</p> <p>We could save "friends/family members" so that users don't have to input the same information over and over again. (This also implies the need for CRUD operations → database)</p> <p>When a session ends all friends/family data will be destroyed. We only track main user stats.</p>	<p>When the main user starts the "session" mode they are asked to add friends/family</p> <p>Main user could have friends/family users already saved or they may create new ones.</p> <p>Main user can perform all the CRUD operations on friends/family users.</p> <p>User can monitor friends/family UV exposure.</p> <p>Friends/family have their own timers(?) that will recommend when to drink water,...</p> <p>When the session is terminated all friends/family data is destroyed.</p>

Preliminary Sprint 1 goal

The preliminary goals of Sprint 1 are:

1. Develop the interface (Activities) so that the skeleton of the app starts to take shape.

We find that it would be easier to start by having a good foundation for our app. By having all the activities and their layouts made first it will be easier to add features and functionalities and test them with a robust interface.

2. Develop the database with all the necessary CRUD (Create - Read - Update - Delete) for both tables.

Seeing as they are building a data centric application it is imperative that our database can process all operations without fault. All the data validation will be handled at a different level. All data passed to the database WILL BE validated before being passed to the database.

3. Develop all the fragments that will be reused throughout the app

Making use of fragments will save us a lot of time coding. Instead of creating similar dialog fragments, we will be able to call the fragment whenever it is required.

4. Create a mockup for the sensor

Seeing as our device will not be ready for this Sprint, we will be creating a mockup (which will provide us with spoof data) of the device so that we can get familiar interacting with it.

Preliminary Sprint 1 backlog

Story ID	Task ID	Task Title	Task Description	Ideal Hours	Status	Comments
BK-1	BK-1.1	Create sensor communication protocol documentation	Design and document a preliminary communication protocol across BLE for the implementation of the protocol once the hardware is ready.	6 hrs	Planned	
	BK-1.2	Create sensor test stub	Create a sensor and sensor manager interface, and implement a sensor test stub, allowing the team to start validating hardware-related functionalities without access to hardware.	2 hrs	Planned	
	BK-1.3	Create sensor interface documentation	Document sensor interface and test stub implementation.	2 hrs	Planned	
BK-2	BK-2.1	Create MainActivity	Create a user-friendly "dashboard" UI so user can be greeted with all the available and relevant options before and after login in	5 hrs	Planned	
	BK-2.2	Implement sensor connectivity	establish connection with the external UV and ambient light sensor to enable data retrieval	5 hrs	Planned	
	BK-2.3	Create the StatsActivity	Create the skeleton UI for the activity where the user will be able to see useful statistics concerning their sun exposure	4 hrs	Planned	
	BK-2.4	Notification system	Send timed notifications to remind users to drink water and reapply sunscreen.	3 hrs	Planned	Must conduct research on recommended and appropriate intervals for the user to reapply sunscreen

						and drink water.
	BK-2.5	Database for statistics	Create database that will hold all required statistics (Date, Time spent outside, UV exposure)	5 hrs	Planned	
	BK-2.6	Personalized statistics	Using the "database for statistic" we will be able to generate personalize statistics and insights for the user that are based on the user's UV exposure data	7 hrs	Planned	
	BK-2.7	Support CRUD operations	Create functions that allow database entries to be created, read, updated and deleted	3 hrs	Planned	
BK-3	BK-3.1	Create the SessionActivity	The session activity will be the place where the main user will be able to create sessions, session users and where the main user can find more information concerning the session	4 hrs	Planned	
	BK-3.2	Create the SessionUser table	Being a central table to the session feature the SessionUser table needs to be well implemented to avoid headaches later on	5 hrs	Planned	
	BK-3.2.1	Create the SessionUser dialog fragment	To avoid using an activity to insert and update session users, we will use a dialog fragment that way we will be able to re-use it whenever we need it	3 hrs	Planned	
	BK-3.2.2	Add session user	After verifying that all inputted information is correct (validation from the fragment) inset the new session user into the database	3 hrs	Planned	
	BK-3.2.3	Edit session user	Using the dialog fragment, populate the fields with current information and allow the user to update their (main user or session user) information	3 hrs	Planned	
	BK-3.2.4	Delete session user	After verifying that all inputted information is correct (validation from the fragment) inset the new session user into the database	3 hrs	Planned	

Misc	M-1.1	Create and setup the repository according to convention	We want to simulate a "real working environment" in that sense our Github repository will follow the convention. No one will work in Master; the Dev branch will support 5 individual branches for each DT member.	2 hrs	Planned	
	M-1.2	Properly setup the Trello board	A properly set up Trello board can be as effective as a Jira board. The purpose of this board is to keep track of the state of each task in the current sprint.	2 hrs	Planned	
	M-1.3	Perform preliminary power analysis	Carry out a preliminary power analysis according to computer simulation plans. Develop simulation infrastructure, obtain data sources and perform simulation according to current hardware design. Deliver a simulation report.	10 hrs	Planned	

Sketch of the screens

