

Concordia University

Milestone 1

Deliverable

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**COEN/ELEC 390 - Computer & Electrical Engineering Product Design Project
Professor William Lynch
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Expectations of Originality

Opportunity Statements

Selected project

- Develop an Android app that connects to an external UV and ambient light sensor. The sensor monitors UV exposure and daily sunlight intake statistics, and works in conjunction with the app to generate recommendations to avoid sunburns and achieve healthy sunlight intake goals. As a bonus the app may track user location to generate an UV intensity map and upload to the cloud, to inform other users with the app but without the sensor.

Opportunity statement 1:

- Develop an android app that provides users with real-time UV exposure level monitoring, with the option to track daily sunlight intake, generating personalized recommendations with the use of alerts or notifications so as to avoid exposure to strong UV light so as to reach healthy sunlight intake goals.

Opportunity statement 2:

- Develop an android app that connects to a fitness tracker or a smartwatch to offer users a different and full approach to health (mental and physical) by incorporating UV exposure monitoring and recommendation into their fitness and daily outdoor routines.

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- develop an android app that targets outdoor enthusiasts and travelers to provide them with location based UV exposure data, sun safety guidelines for different destinations and climates (based on existing data or with the use of live weather), and travel recommendations.

Opportunity statement 4:

- Develop an android app that targets athletes to monitor their daily sunlight intake in effort to optimize their Vitamin D levels, and enhance their energy levels and health conditions.

Opportunity statement 5:

- Develop an android app that targets skincare clinics and practitioners, promoting and offering comprehensive UV monitoring solutions, and possibly with a skin health analysis to provide personalized treatment recommendations based on UV exposure.

Opportunity statement 6:

- Develop an android app that caters to anyone with specific health conditions, such as individuals with photosensitive conditions, to offer real-time alerts and notifications, and personalized recommendations to avoid excessive UV exposure and protect their health.

Opportunity statement 7:

- Develop an android app that targets schools to provide students with real-time data on UV exposure in effort to promote sun safety awareness and healthy sunlight exposure habits.

Opportunity statement 8:

- Develop an android app that targets communities located in off-grid sectors to promote solar energy usage. With the use of the sunlight sensor in the app, it will allow the user to locate the best locations to install solar panels.

Evaluation & Ranking of Statements

Evaluation Criteria

- Criteria 1 - Scalability and Adaptability: Assess the scalability and adaptability of the solution. Consider if the app and sensor/actuator combination can be easily scaled to accommodate a larger user base or expanded to cater to additional features or functionalities.
- Criteria 2 - Market Demand: Assess the potential market demand for the Android app and sensor/actuator solution. Consider the target audience, their needs, and the extent to which the solution addresses those needs.
- Criteria 3 - Technical Feasibility: Evaluate whether the Android app and sensor/actuator combination is technically feasible. Consider factors such as compatibility, connectivity, and integration requirements between the app and the sensor/actuator.
- Criteria 4 - Value Proposition: Evaluate the unique value proposition of the Android app and sensor/actuator combination. Assess how the solution solves a problem or fulfills a need better than existing alternatives. Consider the potential benefits, such as improved functionality, enhanced user experience, or increased efficiency.
- Criteria 5 - Revenue Generation: Evaluate the potential for revenue generation through the Android app and sensor/actuator solution. Consider possible monetization strategies, such as app purchases, in-app purchases, subscriptions, or partnerships.
- Criteria 6: Complementary/Scalability of Product: Evaluate how the proposed solution can potentially fit other existing or future products, and its ability to be scaled up to accommodate a larger user base or expanded to incorporate additional features/functionalities.
- Criteria 7: Novelty of Product/Competitive Advantage: Evaluate the originality and distinctiveness of the product. Assesses how innovative and unique the solution is in comparison to existing alternatives/competitors.
- Criteria 8: Usability and Accessibility: Evaluate the ease of use, intuitiveness, and accessibility of the product for the target audience, considering factors such as user interface design, navigation, and overall user satisfaction.
- Criteria 9: Cost-effectiveness: Evaluate the financial feasibility of developing the solution, considering factors such as the initial investment required, ongoing operational costs, and potential return on investment

These criteria are evaluated on a scale from 1-10 (with a score of 1 denoting poor compliance to the criteria and a score of 10 denoting complete compliance to the criteria). In addition, each criterion is given a “criteria weight” to denote the importance of its criteria in comparison to the others. For each opportunity statement, the scores across all criteria are totalled for a final score.

Evaluation Table

Criteria	Criteria Weight	Opp. 1	Opp. 2	Opp. 3	Opp. 4
Criteria 1	10%	4	3	3	3
Criteria 2	10%	9	7	2	4
Criteria 3	8%	7	5	6	5
Criteria 4	5%	10	7	4	3
Criteria 5	20%	10	5	5	2
Criteria 6	7%	5	3	3	3
Criteria 7	15%	9	2	4	4
Criteria 8	10%	8	4	4	5
Criteria 9	15%	8	6	3	4
Score		8.06	4.56	3.84	3.56

Criteria	Criteria Weight	Opp. 5	Opp. 6	Opp. 7	Opp. 8
Criteria 1	10%	4	4	10	2
Criteria 2	10%	5	5	3	4
Criteria 3	8%	6	6	6	5
Criteria 4	5%	10	7	4	6
Criteria 5	20%	5	8	10	4

Criteria 6	7%	8	7	8	3
Criteria 7	15%	10	5	5	4
Criteria 8	10%	9	6	3	4
Criteria 9	15%	5	7	4	4
Score		6.59	6.22	6.19	3.91

Based on the evaluation score, opportunity statement 1 is analyzed to be the most beneficial.

Ranking of Statements

1. Opportunity 1
2. Opportunity 5
3. Opportunity 6
4. Opportunity 7
5. Opportunity 2
6. Opportunity 8
7. Opportunity 3
8. Opportunity 4

Mission Statement (No bueno)

Our mission is to empower individuals to take control of their sun exposure and promote healthy lifestyles by developing and deploying the UV and sunlight intensity sensor. Our product enables users to monitor their UV exposure, track daily sunlight consumption, and receive tailored suggestions to avoid sunburns and heat strokes through wearable technology and sophisticated data processing. We give people access to their data without an internet connection by continually operating and using Bluetooth connectivity to sync with smartphones.

Additionally, we use the GPS capabilities of the phone to produce a dynamic "UV intensity map" in order to raise community awareness of UV concerns. This map shows places with high UV exposure, warning users to stay away from certain areas and assisting them in making decisions about their outdoor activities. Additionally, our app extends the advantages of this map to users who have downloaded it but do not own the wearable device, ensuring widespread accessibility to crucial data for everyone's wellbeing.

Together, we hope to transform current sun safety procedures and promote a positive relationship with the sun, allowing people to enjoy the great outdoors while reducing the dangers of excessive UV exposure.

Mission Statement (revised)

Product description: The “UV exposure tracker app” will measure the wearer’s UV exposure and send recommendations that will prompt the user to take action.

Benefit Proposition: Summer is a season that is better spent outside. Unfortunately, overexposure to the Sun and its UV rays can turn any memorable day into a nightmare. Spending too much time under UV rays can cause sunburns and/or heat strokes which can cause more severe complications. With the “UV exposure tracker app”, the user will be asked to input some personal information(?) in the app and to secure the device to their clothing with the UV sensor pointed towards the sky. Based on the user’s information and the data gathered from the device, the app will alert the user if they need to: hydrate, apply sunscreen, reduce physical effort, spend more time in the shade or if they have spent too much time outside.

Key business goals: ???

Target market: The initial target market will be individuals that spend prolonged periods of time outside. This app would be useful in a professional or recreational setting as even if sun exposure does not affect everyone identically it is a safety issue that cannot be ignored. Construction workers, farmers, seasonal employees and day camp counselors/lifeguards are but a few professions that spend a lot of time outside even during heat waves. Amateur sporting leagues, runners, cyclists and beachgoers are but a few examples where our application can make a difference.

Assumptions:

Assumption 1: The device will be comfortable enough to wear for short or medium periods of time.

Assumption 2: The device will be able to attach (or clip onto) to accessories or bags and it will still be able to capture UV rays

Constraints:

Constraint 1: The project must be completed by August 8th, 2023

//Need to add some more...

Stakeholders:

- 1) users who will pay for and use the project
- 2) distributors for the software and the sensors
- 3) suppliers for the sensors
- 4) the app store/google play store
- 5) Eventually medical professionals (if aware they might promote this app/device) may use our app in medical settings to promote healthy sun exposure

Team Blog (Team 6)

Date	Who					Type of Activity	Number of hours spent	Purpose	Output	Hours spent					
	A	M	O	M	Z					A	M	O	M	Z	
	T	A	L	I	H					T	A	L	I	H	
	H	T	I	K	E					H	T	I	K	E	
	I			E	N					I			E	N	
Milestone 1															
26-May-23	1	1	1	1	1	Brainstorm and work at home	2	Think of opportunities and writing of the opportunity statement	Input for Milestone 1	2	2	2	2	2	
30-May-23	1	1	1	1	1	meeting	3	Vote/Rank opportunity statements, Set mission statement, Create Milestone 1 deliverable	8 opportunity statements. Vote. Rank. Write mission statement	3	3	3	3	3	
								Total hours		5	5	5	5	5	
								Total team hours							25