

Concordia University

Milestone 2

Deliverable

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**COEN/ELEC 390 - Computer & Electrical Engineering Product Design Project
Professor William Lynch
June 16th, 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
Name: Michael Dickson, Zhenggen Zhang, Matei Razvan Garila,
Signature: Olivier Germain, Athiru Pathiraja
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Date: June 16th 2023

¹ Rules for reference citation can be found in "Form and Style" by Patrich MacDonagh and Jack Bordan, fourth edition, May, 2000, available at <http://www.encs.concordia.ca/scs/Forms/Form&Style.pdf>.

Stakeholder Information

Stakeholder 1

As the Product Owner (P.O.) for the UV Tracker app, to mask the identity of the P.O. we will only refer to them as Paul, Paul plays a crucial role in the development and success of the product. With an understanding of user needs and market trends, the P.O. is responsible for defining and prioritizing the features, functionalities and overall vision of the product/app. Paul works closely with the development team, stakeholders and end-users to ensure the product meets their expectations and provides a valuable solution.

Paul brings a wealth of experience and expertise to the role of Product Owner. With a background in mobile application development and a passion for health and wellness, they possess a strong understanding of the technical aspects of app development as well as the importance of addressing user needs and concerns related to UV exposure and sunlight intake. They have a solid understanding of Android app development frameworks, APIs, and user experience design principles.

Stakeholder 2

As for the second stakeholder, our team decided to interview a possible user who will be referred to as Ulysses throughout the interview process. Ulysses is an active outdoor enthusiast that spends a significant amount of time outside, especially during the Summer months. They understand the importance of maintaining a healthy lifestyle and enjoy engaging in outdoor activities such as running, hiking and swimming. They are conscious of the potential risks associated with excessive sun exposure but also recognize the benefits of sunlight for overall well-being.

As a fitness instructor, Ulysses leads an active lifestyle and encourages others to stay physically fit. He believes in the positive impact of outdoor activities on mental and physical health. Ulysses is passionate about exploring nature, participating in outdoor events, and embracing the warm summer weather. He often takes his workouts to local parks, beaches, and trails to enjoy the natural surroundings.

Consent form

Development of an Android App for UV Exposure Monitoring and Sunlight Intake Recommendations

Researcher(s): nah

Athiru Pathiraja, Michael Dickson, Zhengeng Zhang, Olivier Germain, Matei Razvan Garila

Date: June 16th 2023

You are being invited to participate in an interview as part of a research study aiming to develop an Android app that connects to an external UV and ambient light sensor. The purpose of this study is to monitor UV exposure and daily sunlight intake statistics and generate recommendations to avoid sunburns and achieve healthy sunlight intake goals. As a bonus, the app may track user location to generate a UV intensity map and upload it to the cloud to inform other users with the app but without the sensor.

Your participation in this study is voluntary, and before you decide to participate, it is important that you understand the purpose of the study, the procedures involved, and any potential risks or benefits associated with your involvement.

If you agree to participate, you will be asked to:

1. Attend an interview session with the researchers.
2. Discuss your experiences, preferences, and opinions regarding UV exposure, sunlight intake, and related mobile applications.
3. Provide feedback and suggestions on the proposed features, functionality, and usability of the Android app.
4. Answer questions regarding your comfort level with the app tracking your location for generating the UV intensity map.

Your participation in the interview is expected to take approximately [estimated duration] minutes. The interview may be recorded for accuracy and research purposes only.

Your identity will be kept strictly confidential throughout the study. Any information collected during the interview will be used for research purposes only and will be reported in aggregate form. Any direct quotes or personal identifiers will be anonymized to ensure your privacy. The recordings, if taken, will be securely stored and accessible only to the research team.

Your participation in this study is entirely voluntary. You have the right to withdraw from the study at any time without providing any explanation or suffering any consequences. Your decision to participate or decline participation will not have any impact on your current or future relationship with the researchers or the institution involved.

The interview may involve discussions about personal experiences and opinions related to UV exposure, sunlight intake, and health conditions. While every effort will be made to ensure a comfortable environment, there is a minimal risk of discomfort or emotional distress during the interview. If you feel uncomfortable or distressed during the interview, please inform the researcher immediately, and appropriate support will be provided.

By participating in this study, you will have the opportunity to contribute your insights and experiences to the development of an Android app aimed at promoting healthy sunlight intake and avoiding sunburns. Your feedback will help improve the functionality and usability of the app, potentially benefiting other users in the future.

If you have any questions or concerns regarding this study, please feel free to contact the researcher(s) at the following contact information:

Team 6 Labs
Team6Labs@gmail.com
514 555-6565

If you have any concerns about the study's conduct or your rights as a participant, you may contact the Team 6 Labs Research Ethics Board at Team6Labs@gmail.com.

By agreeing to participate in this interview, you acknowledge that you have read and understood the information provided in this consent form. You have had the opportunity to ask questions and have received satisfactory answers. Your participation is voluntary, and you are free to withdraw at any time without any consequences.

I hereby consent to participate in the interview and understand that the information collected during the interview will be used for research purposes only.

Participant Name:

Participant Signature:

Date:

Interview Script

Part 0: Set Interviewee at Ease and Begin a Rapport

- Hi there! It's great to have you here for this interview. How have you been?
- Welcome! Thank you for joining us today. How's your day going so far?

Part 1: Establish User Profile

For Product Owners:

- Could you please share some insights into the organization's activities and the typical tasks your team members engage in on a regular basis?
- Could you share insights into outdoor activities your company engages in on a regular basis?
- Could you share insights into your employees' sunlight exposure on a daily/weekly/monthly basis?

For Users:

- In your day-to-day life, what are some instances where you find yourself spending a considerable amount of time outdoors
- Could you please share some of your favorite outdoor activities?
- How do you spend your weekends during the Summer months?"

Part 2: Assess the Problem - Context-Free Questions

For Product Owners:

- Are there any specific problems related to recommending outdoor activities and healthy sunlight intake that you feel lack good solutions in the market? Could you please elaborate on those?
- Apart from the challenges you mentioned earlier, are there any other aspects related to recommending healthy sunlight intake where you feel existing solutions fall short?

For Users:

- Based on your activities and interests, are there any specific problems or limitations you face when it comes to receiving recommendations for healthy sunlight intake? Are there aspects of existing solutions that you find lacking?
- Can you think of any specific problems or hurdles you face when trying to achieve a healthy sunlight intake?
- In your current approach to receiving recommendations for healthy sunlight intake, what are some specific challenges you face?

Part 3: Understand User Environment

For Product Owners:

- Who are the primary users or target audience for the activities related to achieving healthy sunlight intake that you have in mind? Can you provide some insights into their characteristics or demographics?

- When it comes to the activities or tasks associated with achieving healthy sunlight intake, do target users generally perform these activities alone or in a group?
- In terms of the app's usage, where do you envision your users primarily using it to support their activities for achieving healthy sunlight intake? Are there specific locations or environments where they are more likely to engage with such apps?

For Users:

- In your outdoor activities, do you typically perform these activities alone or in a group?
- Can you share some insights about the demographics or types of people who are typically engaged in the outdoor activities you participate in?
- In which settings or environments do you usually engage in activities related to achieving healthy sunlight intake? Are there specific locations or situations where you think using an app or similar resources would be most relevant and effective?
- Which platforms or devices do you prefer to use for accessing apps or resources related to achieving healthy sunlight intake?

Part 4: Recap for Understanding

Begin by providing a summary of P.O and Users responses.

- Is this an adequate reflection of your current situation and the challenges you face with maintaining a healthy sunlight intake?
- Is this an accurate representation of the demographics, scenarios and situations you've described?
- Is this a comprehensive representation of the challenges you're experiencing with your current solution?

Part 5: Analyst's Input on the Customer Problem - Problem Context Questions

For Product Owners:

- How much time, on average, do you think your target users spend outside during a typical day?
- What are barriers that you anticipate that target users would have when trying to maintain a healthy sunlight intake over a consistent period?
- In terms of the activities related to achieving healthy sunlight intake, do you anticipate your target users spending prolonged periods of time outside for consecutive days? If so, could you provide some insights into the frequency and duration of such periods?

For Users:

- In your daily routine, how much time do you typically spend outside on average?
- Are there instances where you find yourself spending prolonged periods of time outside for consecutive days? If so, could you provide some insights into the frequency and duration of these periods?
- What are barriers that you have when trying to maintain a healthy sunlight intake over a consistent period?
- During these prolonged periods of outdoor exposure, how do you typically cool off or manage your comfort levels?

Part 6: Assessing your Solution & Opportunity- Solution Context Questions

For Product Owners:

- What if there was a solution that could help your target users keep track of their exposure to the sun? How do you think such a capability could address the problems we discussed earlier and benefit your organization?
- Imagine if there was a way for your users to monitor their sunlight exposure and receive personalized recommendations based on their individual needs. How do you envision such a solution addressing the challenges we discussed and improving the overall experience for your users?
- Considering the problems we explored earlier, what if there was a tool that could provide users with real-time updates on their sun exposure and provide an actionable set of steps for maintaining a healthy sunlight intake? How do you think such a solution would contribute to solving the identified problems?

For Users:

- Have you ever wished there was a way for you to keep track of your exposure to the sun? What do you think would be the benefits of having such a capability in terms of maintaining a healthy sunlight intake?
- What if there was a solution that could help you monitor your sun exposure and provide personalized recommendations based on your individual needs? How do you think this could enhance your ability to achieve a healthy sunlight intake?
- If there was a way for you to easily monitor your sun exposure and provide an actionable set of steps on achieving a healthy sunlight intake, how do you think it would impact your daily routine and activities?

Part 7: Assessing the Reliability, Performance and Support Needs

Reliability:

- In terms of reliability, what are the key factors or metrics that your organization considers when evaluating a product like ours? How would you define reliability in the context of a sun exposure tracking and recommendation solution?
- In terms of reliability, what aspects or functionalities of a sun exposure tracking and recommendation solution do you think should work without failure?

Performance:

- How would you assess the performance requirements for a product that tracks sun exposure and offers recommendations? Are there any specific performance indicators or benchmarks that your organization would prioritize in evaluating such a solution?
- In your opinion, what are the critical aspects of performance that should be considered when developing a solution like ours?

Support:

- How would you define the level of support your organization expects when adopting a product like ours? Are there any specific support channels or resources that you believe would be essential in ensuring a smooth user experience?

- How important is it for you to have adequate support resources or channels when using a product like ours? What types of support would be most helpful to you in navigating and maximizing the benefits of the solution?

Part 8: Other Requirements: Legal, Regulatory or Environmental Requirements

For Product Owners:

- Privacy is a critical concern when it comes to tracking personal data, such as sun exposure. Are there any specific privacy requirements or regulations that our solution needs to comply with? How important is it for your organization to ensure the privacy and security of user data in the context of this product?
- Are there any legal or regulatory requirements that our solution needs to comply with in order to be used effectively by your organization?

For Users:

- Are there any other requirements or standards that you believe a solution like ours should support to meet your needs effectively? Are there any industry-specific guidelines or considerations that you think should be taken into account?
- Are there any specific privacy concerns or requirements that you have in mind when using a sun exposure tracking and recommendation solution? What features or measures do you believe are necessary to protect your privacy and data?

Part 9: Wrap-Up

- Is there anything else that we haven't covered in this interview that you believe is important for us to consider?
- Is there anything else you would like to share or any additional questions or concerns you have regarding a sun exposure tracking and recommendation solution?
- In case we have any follow-up questions or need further clarification, would it be possible for us to reach out to you for additional discussions? Are you open to participating in a requirements review or providing feedback as we progress with the development of our solution?
- Thank you for your time!

Part 10: Analyst's Summary

Each Analyst must write a summary of the critical points discovered during the interview

Important Interview Outcomes

Athiru Pathiraja

Interview 1 outcomes (P.O.)

1. The P.O mentioned the need for the sensors to accurately pick up the UV intensity regardless of the placement or location of the device. He identified the accuracy of the sensors as a key prerequisite for other functionality, including the recommendation feature.
2. The P.O mentioned that it is crucial to speak to the target audience, including outdoor sports players and hobbyists for product research and to understand the features and functionalities that should be implemented.
3. The P.O mentioned the need to use the data to provide analytics and recommendations. He mentioned that the key value added from the product is within our product's ability to provide actionable recommendations to its users and help differentiate from competition.

Interview 2 outcomes (User)

1. The user mentioned the need for a convenient and comfortable location to place the device. As the device is to be worn for an extended period of time, it is crucial that the product is designed with the user's comfort in mind.
2. The user spoke about the need for ease of use with the application. This translates to expressive visuals, an intuitive UI and easy-to-understand recommendations.
3. The user mentioned the importance of privacy with the user's data. As data on the user's location and daily sunlight is captured, it is vital that this information is stored securely. In addition, the user's consent must be acquired before the data is used for analysis.

Michael Dickson

Interview 1 outcomes (P.O.)

1. The P.O. expressed concerns for the reliability of the data stored from the sensor. The DB needs to be able to store data for long periods of time. To increase reliability and allow the device to work offline, the DB will not be stored on a remote server.
2. The P.O. pointed out that outdoor enthusiasts and fitness enthusiasts are the target users, and the visual style and design of the app should reflect that.
3. The P.O. expressed great concern in keeping user data secure, therefore the app will not collect any unnecessary data from the user's phones, such as location or audio.

Interview 2 outcomes (User)

1. The user spends lengthy amounts of time outdoors and expressed interest in a notification system that would remind them to reapply sunscreen and drink water based on their measured sun exposure.

2. The user expressed interest in being able to monitor multiple people's UV exposure through the use of separate profiles, since they typically spend time outdoors with family and friends.
3. The user is interested in how the UV monitor will account for their skin complexion while monitoring their UV intake and providing skin care suggestions.

Zhengen Zhang

Interview 1 outcomes (P.O.)

1. The P.O. mentioned possible integrations of the platform with other third-party health monitoring platforms or fitness apps.
2. The P.O. is aware of user privacy and due to the nature of the platform, discourages centralized account and data management, promoting the use of local storage for user data. The P.O. stressed the importance of end-to-end data encryption across devices and data anonymization on the server end, should sensitive data be stored on the cloud.
3. The P.O. stressed that it is important to notify users regarding the limitations of the sensor and the platform. The sensor readings are for estimation and personal references only, and do not hold medical or clinical significance. The user should be aware that the manufacturer is not liable for injuries and/or health problems that arose from utilizing the platform.

Interview 2 outcomes (User)

1. The user is concerned about the robustness and reliability of the sensor, since outdoor activities may be rough and can involve water, dust, shocks and extreme temperatures. At least one model of the sensor family needs to be reasonably resistant to water and dust to satisfy user needs.
2. The user mentioned that the phone may not be carried around at all times, for instance, when swimming. The sensor needs to be capable of recording data and provide at least critical warnings, even when not connected to the phone.
3. The user pointed out that people would engage in outdoor activities with family and friends, and is expecting the platform to support multiple user profiles sharing the same sensor, either on the same phone or on different phones.

Olivier Germain

Interview 1 outcomes (P.O.)

1. The P.O. expressed concerns on the performance of the app which would involve factors such as the speed of data collection, processing, and updating of UV exposure stats. The app should deliver information promptly and ensure the reliability of both hardware and software components.

2. The P.O expressed concerns on the data that is to be collected. The P.O suggested that the app should follow regulations concerning privacy, data protection, and health information management to protect its users, and should also allow users to control their data sharing preferences when online.
3. The P.O believed that it may be beneficial to explore how and if the app can be integrated with other existing wellness platforms to provide seamless transition and product reliability that will point to the overall stability of the app.

Interview 2 outcomes (user)

1. The User spends an enormous amount of time outdoors with friends and family to enjoy summer outdoor activities; therefore, this may require careful management of sun protection and healthy sunlight intake which the app can offer specially for activities that take place in the sun so as to monitor their own and their family's sunlight intake.
2. The user, their friends and family members have different skin complexions therefore may need to consider factors such as skin type, time of day and/or location to personalize and so to gauge the optimal amount of sunlight and provide recommendations for sun protection during different outdoor activities and UV intensity.
3. The user wants the ability to monitor their exposure level, receive personalized recommendations as well as real-time updates on UV intensity and suggestion for UV protection methods specific to the activity taking place so as to avoid sunburn, heat stroke, premature skin aging, skin cancer and others.

Matei Razvan Garila

Interview 1 outcomes (P.O.)

1. The P.O. mentioned the app being able to track the daily UV exposure of the users. This tells me that a DB is required to store the information gathered by the sensor and app.
2. The P.O. also expressed the need for users to be able to track their daily exposure along with statistics to help their users make more informed decisions about their UV exposure.
3. Concerns were raised by the P.O. regarding the planned data collection. In order to protect its users, the P.O. recommended that the app adhere to privacy, data protection, and health information management requirements. It should also give users the ability to modify their online data sharing preferences.

Interview 2 outcomes (User)

1. From the interview with a User, it was revealed that they like spending prolonged periods of time outside with friends and family. This tells me that the user will get more utility from the app if they were able to monitor everyone's UV exposure from the app's main activity.
2. Due to the fact that the user, their friends, and family members may have different skin tones, it may be necessary to take into account variables like skin type, age, time of day

and/or location to determine the ideal amount of sunlight and offer suggestions for sun protection during various outdoor activities and UV intensity.

3. The customer indicated interest in a notification system that would remind them to reapply sunscreen and drink water depending on their estimated sun exposure.

Product Backlog

Story ID	Story Title	Card	Story Point	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		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). 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, audio,...)	Have to ensure a Bluetooth connection. Need to confirm that good, reliable and accurate data is being sent to the app.
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 a notification when to reapply sunscreen, drink water and to visualize personalized stats based on my exposure.</i>	9	Future		To be able to track data a database will be required. Notifications will have to be implemented. Need to do some research on when users should be reminded to drink water and apply sunscreen. The available data should be used to create personalized statistics for the user.	*Assuming that the connection to the device is already made Based on certain timers, the user will be reminded to drink water or reapply sunscreen. The statistics will be based on the available data and will be useful information to 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	Future		<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>Main 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>

Computer Simulation Plan

Objectives: The simulation aims to obtain an estimation of battery life of the hardware sensor, in hours or days, under the following three usage scenarios:

- On-line (active): the device is connected to Bluetooth and actively communicating with the phone periodically;
- Off-line: the device disengages from all wireless activities but is still actively taking measurements and logging data;
- Standby: the device ceases almost all activities and aims to consume as little energy as possible until the user reactivates it.

During simulation, the following parameters will be varied to observe different outcomes:

- MCU core frequency. The faster the MCU runs, the more energy it consumes, but the quicker it completes pending tasks and enters one of the low-power modes. Complicated trade-offs are difficult to compute analytically and will be obtained through simulation.
- Functionality. Some optional functionalities consume power, such as the internal real-time clock, buzzers and LEDs. These functionalities will be toggled to assess their impact on battery life.
- Battery type. Rechargeable lithium polymer batteries and non-rechargeable cell batteries will be studied.
- Battery management scheme. The device will automatically power-off when the battery is low. A lower termination voltage will extend user-perceivable battery life but reduce battery longevity in the long run. The trade-offs will be studied.

Methodology: All selected hardware components have been fully characterized for their power consumption by their manufacturers, i.e. current draw under different conditions. A simple model is also assumed for all target batteries. These characteristics will be obtained from the datasheet and entered into a simple time-domain simulation algorithm which integrates energy consumption over time. The algorithm will numerically derive application curves, such as voltage/current/energy versus time, and evaluate battery life in hours or days.

Actionable Story:

Card: As a hardware developer I want to, through simulation, evaluate battery life of the sensor under different operating conditions and part selection / feature implementation choices.

Conversation: I wish to perform battery life under a subset of device operation modes, namely on-line, off-line, and standby modes. I also wish to perform sensitivity analysis over MCU frequency, optional device functionalities, and battery management strategies. I also want to assess the performance of rechargeable and non-rechargeable batteries.

Confirmation:

- Decide on an optimal MCU core frequency,
- Decide on a set of optional functionalities to implement (check with P.O.),
- Decide on an optimal battery management scheme,
- Obtain a battery life estimation for the above scenario.

Ethical Dimension

Ethics are of high priority when designing products such as ours. Within the scope of our application, privacy is the top ethical concern. Our application collects minimal user information, and the data that is collected is only done if absolutely necessary. When creating a profile, users will be asked to enter information such as their name and skin type. This information may be considered sensitive to some, but will not be stored on an online server. Names of the users will be used only for profile and session tracking, while skin types will be used for UV exposure information and sunscreen application recommendations. Data collected on the user's UV exposure throughout the day will be saved locally in the applications database. This data will only be used for personal statistics and viewing history. This data will never be uploaded to a remote server, therefore privacy will be upheld. Users may also add family members or friends to their profile for group session tracking. Personal data from their family or friends will always be stored locally on the device. Furthermore, data collected on their UV exposure will always be destroyed at the end of the session. Users will always have full control over their data. Any UV exposure statistics, personal information and family and friend information can be destroyed upon the user's request.

Real world ethical impacts on the individual user are also of high priority. Our application will make recommendations to its users about protecting their skin, which will have effects on the health of their skin. To ensure a user's health is never at risk, the application will always provide an early reapplication time frame for sunscreen. This will ensure users will always reapply their sunscreen before they are at risk of burning. Furthermore, our application will also make recommendations for users to stay hydrated or cool off during long periods spent in direct sunlight. Preventing heat stroke is very important to a user's health, therefore the application will frequently remind users to stay hydrated and cool.

Informed consent is another ethical concern of ours. Users must be informed of the health risks associated with UV radiation and the sensor device. High UV exposure can lead to serious health issues, such as skin cancer, and the application should inform users of that. Users should also be aware of the sensor's limitations and how they can affect the recommendations they receive for hydration and sunscreen application.

Legally, the user must be informed that our product is not a medically certified device and the health recommendations made to them are simply suggestions. The end user will always be responsible for making sure they are adequately protected from the sun, and this device is solely a tool to help them accomplish that. All of these legal and ethical issues shall be made fully transparent to the user to minimize the potential for any ethical wrongdoing or legal liabilities.

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 2															
06-06-23	1	1	1	1	1	Work at home	2	Interviews, outcomes and separation of tasks	All outcomes written, separation of tasks	2	2	2	2	2	
06-16-23	1	1	1	1	1	Work at home	2	Work + finishing touches for Milestone 2 deliverable	Milestone 2 deliverable	2	2	2	2	2	
								Total hours		4	4	4	4	4	
								Total team hours							20