1. Participant Summary: describe who participated in your study and how many people participated. You should describe them anonymously i.e., no use of personal identifiers. Explain why you recruited them and how they helped your project goal.
   1. Leslie: I recruited a sophomore law student for our study, recognizing the unique nature of law education, particularly its examination format. Unlike conventional exams that emphasize memorization, law exams often permit open book or take-home formats and allow supplementary materials like cheat sheets. This approach necessitates distinct study methods. The insights gleaned from interviewing and observing this student were invaluable, revealing aspects of study strategies for law exams that our initial application design had not considered. Additionally, the participant has past experience taking science courses, which heavily rely on memorization, which provided a contrasting perspective, enabling us to understand the significant differences in study techniques between these two academic disciplines.
   2. Maya: I recruited 2 UVic undergraduate students (3rd year): one in Political Science, and one in Sociology. Both participants had different levels of literacy with the given technology, which was able to give us a varied perspective, seeing how a new user and a more experienced user might interact with the technology provided. They also each had different preferences when it came to studying, with one preferring to study in a quiet group and another preferring to study alone with background noise.
   3. Magdalen: The participant is a 23-year-old psychology student in their senior year at the University of Victoria. They were recruited based on their extensive university experience and their studies in multiple subjects, including biology, computer science, and social sciences like psychology and Indigenous studies. Their contribution to the project is valuable due to their unique insights into studying and study methods. For instance, they employ mind maps as part of their study approach. Additionally, the participant indicates a preference for solo study sessions or small groups of three or fewer, depending on the nature of the course.
   4. Soyun: I recruited three UVic undergraduate students, two in their third year and one in their fourth year, all majoring in computer science and software engineering. All three participants consistently achieve high performance in their courses and have well-established study habits, which i believed could be beneficial for our study aimed at understanding their preferences for a positive learning experience with high grades. All three mentioned that they listen to music/background noise while studying, and prefer to study in small groups. They also shared a similar approach to studying for tests: creating a study planner and breaking the contents down into different sections. One preferred studying in time intervals using the Pomodoro technique (30 minutes studying, 5-10 minutes break), while two mentioned that their typical study duration is more of task-oriented rather than sticking to regular time periods. Educational software mentioned during the interview: Brightspace, Wolfram Alpha, Youtube, Spreadsheet (for creating a weekly planner)
2. Research Methods: provide a summary of your findings from each method, and reflect on your use of the methods – what went well, what went poorly, and what you would do differently next time. Remember the results should not identify the participants by the use of personal identifiers.
3. Task descriptions: include task descriptions for the 3-5 key tasks of how you expect the system to be used and provide justification for why these were identified as key tasks

1. Condensing and reviewing study materials - Maya

2. Study planning and time allocation - Soyun

3. Initiating study sessions - Leslie

4. Actively learning and memorizing material - Magdalen

1. Persona: Provide a description of at least one Persona, based on your user research data.
2. Journey Maps: Include images of the completed journey maps for the corresponding key tasks. The diagram should be clear and Understandable.
3. Design Requirements: discuss the requirements clearly identifying which the interface must, should, and could meet and provide justifications for them

**Participant Summary**

Our team recruited seven participants, each selected based on specific criteria tailored to our research objectives. These criteria included various factors such as the distinctive nature of different academic programs, varying levels of literacy with technology, and a combination of academic achievement along with well-established study habits. This approach allowed us to delve into the dynamics of learning experiences.

For instance, participants from diverse academic programs provided insights into how studying styles vary based on the examination formats inherent in each discipline. Additionally, the range in literacy levels with technology allowed us to explore how both new and experienced users interact with our technology, offering varied perspectives on its usability and effectiveness. Furthermore, participants with interdisciplinary backgrounds, from indigenous studies to sciences, provided unique viewpoints on learning approaches across different fields. Moreover, the inclusion of high-achieving students enabled us to understand how our project could support and enhance academic success strategies.

These participants, ranging from second to fourth year undergraduate students at UVic, represent a broad array of academic backgrounds including law, political science, sociology, psychology, computer science, and engineering. Through our research, we aimed to gain a comprehensive understanding of their habits and preferences, contributing to a positive learning experience.

**Research Methods**

Our research methods consisted of 3 main tasks: requesting that the participant make a study plan by themselves, attempt to study a new topic themselves using any resources or methods they normally utilize, and finally attempt to learn by directly interacting with an AI chat model. These tasks were selected to give us a better understanding of how different people go about summarizing information and planning out what they need to study on their own, as well as get a glimpse into what technologies or strategies students currently find most useful. As our participants were undergraduate students from a variety of different faculties and areas of study, we first gave them a specific study topic to focus on before beginning our research, being a specific species of frog. Before completing any of the other tasks, participants were first asked to skim a website page in order to gain a brief amount of knowledge on the topic, before delving into a more advanced study session.

By asking the user to create a study plan by themselves, we were able to gain some insight into their thought process, and observe how they break down what they need to learn and summarize key points. This activity was fairly open ended, so we did end up getting a variety of responses. In future studies, it may be a good idea to have a more specific guideline for them to follow when completing this task, as there was some confusion with what exactly they would complete the task.

The second task we had participants complete during our research was to learn about our provided topic, using whatever technology, strategies, or techniques they would normally utilize whilst they are studying. This task was very useful, as it helped us see what methods are preferred by different students, as well as what aspects of current study tools are most favored amongst this group of students. This provided some helpful insight for our research, and we observed that many of the participants liked having features such as flashcards and text to speech. However, because the original source we provided the participants with had plenty of information within it, many of them opted to continue reviewing directly from the material, rather than use other sources or technologies to fill the gaps in their knowledge. The amount of information readily available on this specific type of frog that we asked the participants to learn about was also quite limited, which may also explain why many of the participants opted to continue studying directly from the source material.

The final task we asked our participants to complete was to interact with an AI language model, and attempt to continue studying the given topic. For our purposes, we used ChatGPT, but we did not give the participants any pointed directions about what kinds of questions to ask. Each one of the participants had a different level of experience utilizing ChatGPT, which meant that some of them were unsure about the limitations of what they could ask. However, this ultimately gave us some great insight into how users of different skill levels will interact with an AI language model, and how effectively artificial intelligence is able to teach.

Ultimately, our research allowed us to get a better idea as to how we can implement AI in our solution, as well as what other features would be most useful for our intended user base.

**Task descriptions**

After reviewing the responses we received from our interviews and ethnographic study, we identified a few main tasks we found that were most beneficial for student success. Even with the varied backgrounds of each of our participants, their needs and challenges faced while studying for exams and tests remained similar. The first key task that we identified was the condensation of material. The first task in our ethnographic study requested that the student create their own study plan, assuming they would be having a test on the given topic in the near future. Many of the participants had the same approach to this task, as they began writing down all of their current knowledge on the subject and leaving blank areas where they would later need to fill the gaps in their learning.

Another significant task identified through our study was the importance of study planning and time allocation. Managing one's time is often a struggle for students, but time management becomes especially important for undergraduate students, as they have to juggle their academics along with the other tasks that come with early adulthood. The responses from our interview gave us some insight into how this small group of students allocated their time, with many of them taking advantage of the gaps in their busy schedules to study, rather than plan out specific time periods for them to study a specific subject. Procrastination was also a notable challenge amongst our participants, who often found that initiating a study session was often more difficult than working throughout the duration of the session itself. Thus, we identified initiating study sessions as another one of our key tasks, as it was a common struggle amongst students and could easily be addressed within our solution.

The final key task we identified was the need for active engagement with study materials. Whether this meant working with flashcards, memorizing passages from a textbook, or simply working to understand a concept, engaging with the material remained a strong priority for each of our participants.

With these specific tasks identified from the results of our research study, we now have a better idea as to how we can implement these different aspects into our final solution.

**Personas**

**Persona 1**

Background Information

Victoria Smiths is a third-year 22 year old Political Science student at UVIC currently preparing for an upcoming exam.

Goals and Motivations

Victoria's primary objective is to enhance her grades, leveraging technology to achieve this. Proficient with technology, she wants a positive learning experience while studying for exams. Her focus is on improving planning and time management skills to avoid spending excessive time on the initial phase of exam preparation. Victoria has recognized that this approach often leaves insufficient time for the remaining materials, resulting in rushed studying. Her aim is to allocate time more wisely, starting from this semester.

User Needs

Victoria needs the ability to check her schedule, including classes, work, and personal commitments, in order to set academic goals for the semester. She also wants to easily input important information into the system, either from instructors or accessible textbooks, for her exam study sessions.

**Persona 2**

Background Information

James Pelletier is a fourth-year 23-year-old Computer Science student at UVIC.

Goals and Motivations

James's primary goal is to overcome procrastination and anxiety issues that have hampered his ability to succeed academically. He aims to proactively plan out his study material ahead of time to avoid last-minute cramming before exams and assignments. Additionally, he seeks to streamline his study sessions with other students, a task made challenging due to his anxiety.

User Needs

James requires a solution that enables him to set reminders for upcoming exams and deadlines. He also needs a platform that facilitates initiating study sessions with other students in a way that minimizes anxiety. For instance, he is looking for features like suggesting optimal study locations based on user preferences and past successful sessions, or integration with campus resources to easily book study spaces.

**Journey Maps**

**Design Requirements**

**Must Be Met**

1. **Integration with UVic Brightspace:** Seamless access to course materials and exam dates.
2. **Automated Study Plan Creation:** Automatic generation of personalized study calendars based on exam dates and course materials.
3. **Material Condensation:** Functionality to condense course materials into manageable and summarized notes.
4. **Interactive Study Tools and Assessments**: Integration of AI-powered interactive tools such as flashcards, quizzes, practice tests, and exercises.
5. **Guided Study Sessions**: Offer structured study sessions guiding students through the material in an efficient way.
6. **Data Security and Privacy**: Ensure protection of student data and course materials.
7. **User-Friendly Interface:** A simple, easily navigable interface for undergrad students with clear instructions and summary of the AI’s capabilities.
8. **Cross-Platform Compatibility:** Accessibility across various devices (laptops, tablets, smartphones).

### **Should Be Met If Possible**

1. **Customization Options:** Flexibility for students to tailor study plans and note-condensing preferences.
2. **Performance Tracking:** Feature to track and analyze student’s progress and study efficiency.
3. **Feedback Mechanism:** Enable students to provide feedback on the material, study plan, and app usability.
4. **Study Time Notifications:** Timely reminders and notifications to keep students on track with their study schedule.
5. **URL Content Analysis:** Ability for students to copy and paste a URL, and have the AI analyze and learn from the open-text on the web page.
6. **Document Upload Capability:** Option for students to upload documents in various formats (PDFs, Word documents, etc.) for the AI to process and utilize.

### **Could Be Met**

1. **Adaptability to Study Methods:** A mechanism (like a questionnaire) to assess and adapt to a student's preferred study method.
2. **Study Style Adaptation:** Advanced AI to adapt to changes in the student’s study style over time.
3. **Collaborative Study Features:** Options for group study or peer interaction.
4. **Gamification Elements:** Implementing gamified elements for motivation and engagement.
5. **Offline Access:** Functionality for offline access to certain app features.
6. **Integration with External Educational Resources:** Linking with additional platforms or resources for supplementary material.