

SENG 310 - Human-Computer Interaction - Midterm

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Exam Details:

- **Made available:** June 26, 11:30 am Victoria Time.
- **Due:** June 28, before 5:00 pm Victoria Time.
- **Test Duration:** You have 2 days to complete the test. You can update your submission as many times as you like.
- **Instructor email:** hmansoor@uvic.ca
- **Grades:** This midterm is for 30 points and counts for 30% of your course grade.
- **Format:** This is an open book exam. This means you can reference any material posted on the SENG 310 Brightspace page. However, this does not include things such as: asking friends for help, asking someone else to write the exam for you or copy-pasting information from websites/blogs not cited in the course material.
- **Submission:** Answer the questions in this document and when complete, save the file as a **PDF** document.

Upload the completed file to Brightspace.

- The completed exam **must not exceed 10 pages, including instructions. Do not alter the formatting, content, or margins. Use Calibri font size 10. Content beyond the page limit will not be marked.**
- In case of Brightspace issues, consult:
<https://onlineacademiccommunity.uvic.ca/TeachAnywhere/Student-help/>
- You are **not allowed** to communicate with other students or teaching assistants about the midterm, during the labs, or through other means. You **must not** post exam-related questions on Brightspace during the exam period.
- When in doubt, use your best judgment and go ahead and answer the questions. If there are any unintentional ambiguities, just articulate them in your exam answers and if you provide sound reasoning, I will take that into account when grading. Do know however that some open-endedness is intentional as the point of the exam is for you to think and reason.

Academic Integrity Pledge:

You must abide by UVic academic regulations and observe standards of 'scholarly integrity,' (no plagiarism or cheating). Therefore, this exam must be taken individually and not with a friend, classmate, or group. You are also prohibited from sharing any information about the exam with others.

I, **ARFAZ HOSSAIN** affirm that I will not give or receive any aid on this exam and that all work will be my own.

For the following questions, select a sub-part of the interface that was assigned to you and use that to answer the remainder of the exam.

Sub-part of an interface can consist of one of the below or a combination of the below examples:

- (a) A sub-part for an entire system or interface can be a few specific screens on an app or a few specific web pages for a website.*
- (b) A sub-part can consist of interaction sequences that enable people to complete 1-2 tasks.*
- (c) A sub-part can consist of one specific and important feature of the interface.*

When selecting the sub-part you will use for the following questions, I suggest you think about the following:

- 1. Does your choice provide you with enough material to study and evaluate? That is, is it meaningful enough? (Make sure you carefully read all questions before deciding on the sub-part to select.)*
- 2. Can you use this sub-part for the exam questions without spending too much time and running out of space? That is, is your choice of sub-part manageable? (See the exam submission page limit requirements).*

Interface assigned to you via the midterm quiz:

Question 1 [2 marks] [suggested length: 0.5-1 page (p)]

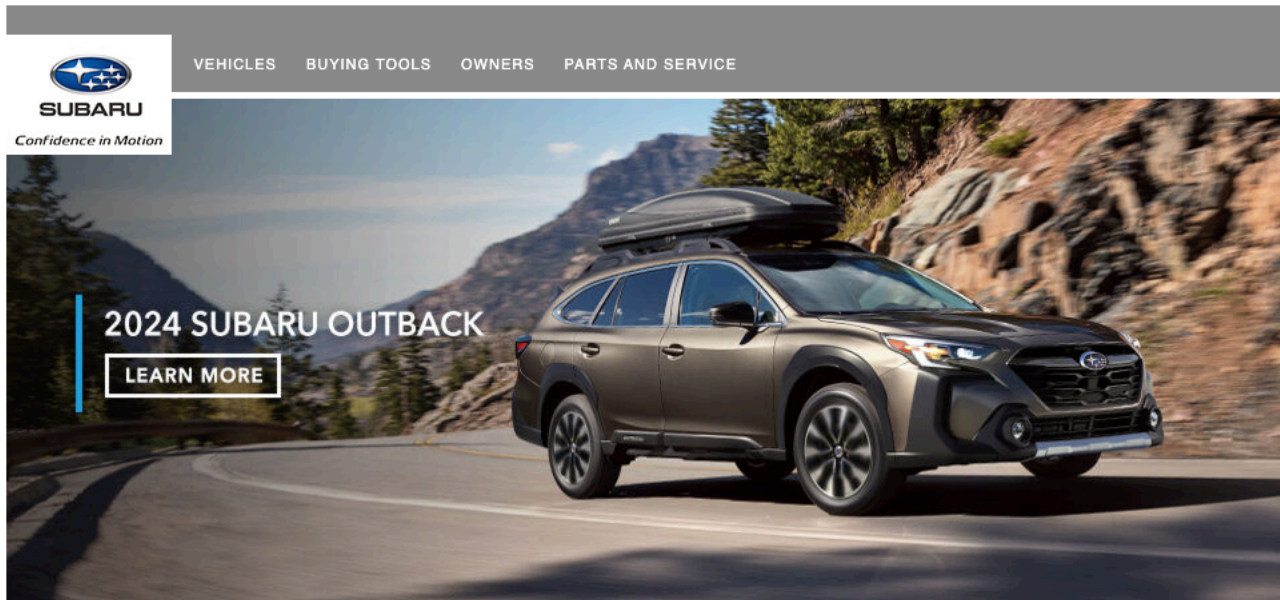
*Describe the interface sub-part you are focusing on in detail and include screenshot(s) as figures (not as a link).
Provide a rationale for why you selected the sub-part.*

===== BEGIN QUESTION 1 ANSWER =====

Interface Sub-Part: The interface sub-part I am focusing on is the hero section of the Subaru Canada website. This is the part of the website that users see first, and it is important to make a good first impression.

Rationale:

I selected this sub-part because I think there is room for improvement in the design. The current design is a bit busy, with a lot of different elements competing for attention. The current navbar is too general and does not provide enough information to users about what they will find on each page. This can be confusing for users, and it can make it difficult for them to find the information they are looking for. The "Learn More" button is also very bland and does not give users any indication of what they will find when they click on it.



Suggested changes:

- **Redesign:** The Hero Section could be redesigned to make it more informative. For example, the overlay text could be changed to include more information about the 2024 Subaru Impreza, such as its features, specifications, and pricing.
- **Improved Image Section:** The Hero Section could feature a rotating carousel of 5 different images of Subaru cars, which users could click on to learn more about each car.
- **Improved Nav Bar:** (A simplified example) The Nav Bar could feature:
 1. **Explore:** This navigation link would take users to a page with information about all of Subaru's current models. The page could include things like photos, videos, specifications, and reviews of each model.
 2. **Buy Used:** This navigation link would take users to a page with information about how to buy a used Subaru. The page could also include things like financing, leasing, and test drives.
 3. **Resources and Tools:** This would take users to a page with information about owning a Subaru. The navigation link could include things like maintenance, repairs, warranty information, and owner's manuals.
 4. **About Us / Connect:** This link would take users to a page with information about connecting with other Subaru owners.
- **Text Overlay Improvement:** The "Learn More" button could be made more visually appealing and informative. For example, the button could be changed to "Learn More about the 2024 Subaru Impreza".

===== END QUESTION 1 ANSWER =====

Question 2 [5 marks] [suggested length: 0.5-1p]

Explain **any five** of Don Norman's Principles of Design in your own words and for each principle provide one example from the interface sub-part you have selected.

===== BEGIN QUESTION 2 ANSWER =====

Here are 5 of Don Norman's Principles of Design, along with an example from the Subaru Canada website:

- **Visibility:** The design should be clear and obvious, so that users know what they are supposed to do. *For example, the overlay text on the Subaru Canada website could be made more informative, so that users know what the 2024 Subaru Impreza is and why they should be interested in it.*
- **Feedback:** The design should provide feedback to users, so that they know what their actions have accomplished. *For example, the "Learn More" button could be made to change color when it is clicked, so that users know that their action has been registered.*
- **Affordance:** The design should be intuitive and easy to understand, so that users know how to interact with it. *For example, the rotating carousel of images on the Subaru Canada website is a good example of affordance, as it is clear to users that they can click on the images to learn more about each car.*
- **Constraints:** The design should constrain the user's actions, so that they are not overwhelmed by too many options. *For example, the Nav Bar (Navigation Bar) on the Subaru Canada website could be simplified to include only the most important links, so that users do not have to scroll through a long list of options.*
- **Mapping:** The design should be consistent, so that users can learn from their experience and predict what will happen next. *For example, the "Learn More" button on the Subaru Canada website could be made to look the same on every page, so that users know what to expect when they click on it.*

===== END QUESTION 2 ANSWER =====

For questions 3, 4 and 5 assume that you are asked to re-design the sub-part of the interface using the human-centered design process.

Question 3 [5 marks] [suggested length: 0.5p]

Create a fictitious persona for someone you would consider is a typical user for the interface and provide rationale/justification for your choice.

===== BEGIN QUESTION 3 ANSWER =====

For a fictitious persona, I chose Sarah as a typical user for the Subaru Canada website because she is a young, professional woman who is looking to buy a new car. She is likely to be familiar with technology, and she is likely to be looking for information that is clear, concise, and easy to understand. She is also likely to be interested in comparing different car brands, and she is likely to be open to learning about different financing options (Lease, Installment Loans, Personal Loan Options etc.).

Name: Sarah

Age: 35

Occupation: Marketing Manager

Location: Toronto, Ontario

Goals: Sarah is looking to buy a new car, and she is considering a Subaru. She wants to learn more about Subaru's current models, and she wants to compare them to other cars on the market. She is also interested in finding out about Subaru's financing options.

Needs: Sarah needs to find information about Subaru's cars that is clear, concise, and easy to understand. She also needs to be able to compare Subaru's cars to other cars on the market. She is interested in finding out about Subaru's financing options, but she is not sure what she qualifies for.

Context: Sarah is currently researching cars online. She is using her laptop at home, and she is open to learning about different car brands. She is not sure how much she wants to spend on a new car, but she is willing to spend up to \$30,000.

===== END QUESTION 3 ANSWER =====

Question 4 [8 marks] [suggested length: 1-1.5p]

Develop **two** key task descriptions for this persona and provide rationale/justification for your choice.

===== BEGIN QUESTION 4 ANSWER =====

Task 1: Research and Compare Subaru Models

Rationale: Sarah's goal is to buy a new car, and she is considering a Subaru. One key task for her would be to research and compare Subaru's models to make an informed decision. This task is crucial because it helps Sarah understand the features, specifications, and pricing of different Subaru models, allowing her to assess which one best suit her needs and preferences.

Task Steps:

1. Sarah visits the Subaru Canada website and navigates to the "Vehicles" section, which provides information about Subaru's current models.
2. She explores each model individually, viewing photos, videos, specifications, and customer reviews.
3. Sarah takes note of the features and specifications that are important to her, such as fuel efficiency, safety features, and available technology.
4. She compares the different models side by side, using the provided comparison tool on the website.
5. Sarah pays attention to pricing information, considering her budget of up to \$30,000, and looks for any ongoing promotions or discounts.

Task 2: Explore Financing Options

Rationale: Sarah is interested in finding out about Subaru's financing options. Understanding the financing options available to her is essential for Sarah to assess the affordability and feasibility of purchasing a Subaru. This task helps her determine the financing plans that align with her budget and preferences.

Task Steps:

1. Sarah navigates to the "Vehicles" and then "Buy Used" section on the Subaru Canada website, as financing options are usually available for both new and used cars.
2. She explores the financing information provided, including lease options, installment loans, and personal loan options.
3. Sarah looks for details on interest rates, down payment requirements, and repayment terms for each financing option.
4. She investigates any available incentives or special financing deals that may be offered by Subaru, considering her budget and financial goals.
5. If necessary, Sarah seeks additional information or contacts the Subaru dealership to clarify any questions she may have about the financing process.

Rationale: These two tasks were chosen because they align with Sarah's goals and needs as a typical user of the Subaru Canada website. Researching and comparing Subaru models allows her to make an informed decision about which car to purchase. Exploring financing options helps her assess the affordability and feasibility of owning a Subaru. By addressing these tasks, the redesigned interface can provide Sarah with clear and concise information, intuitive navigation, and relevant details to support her decision-making process.

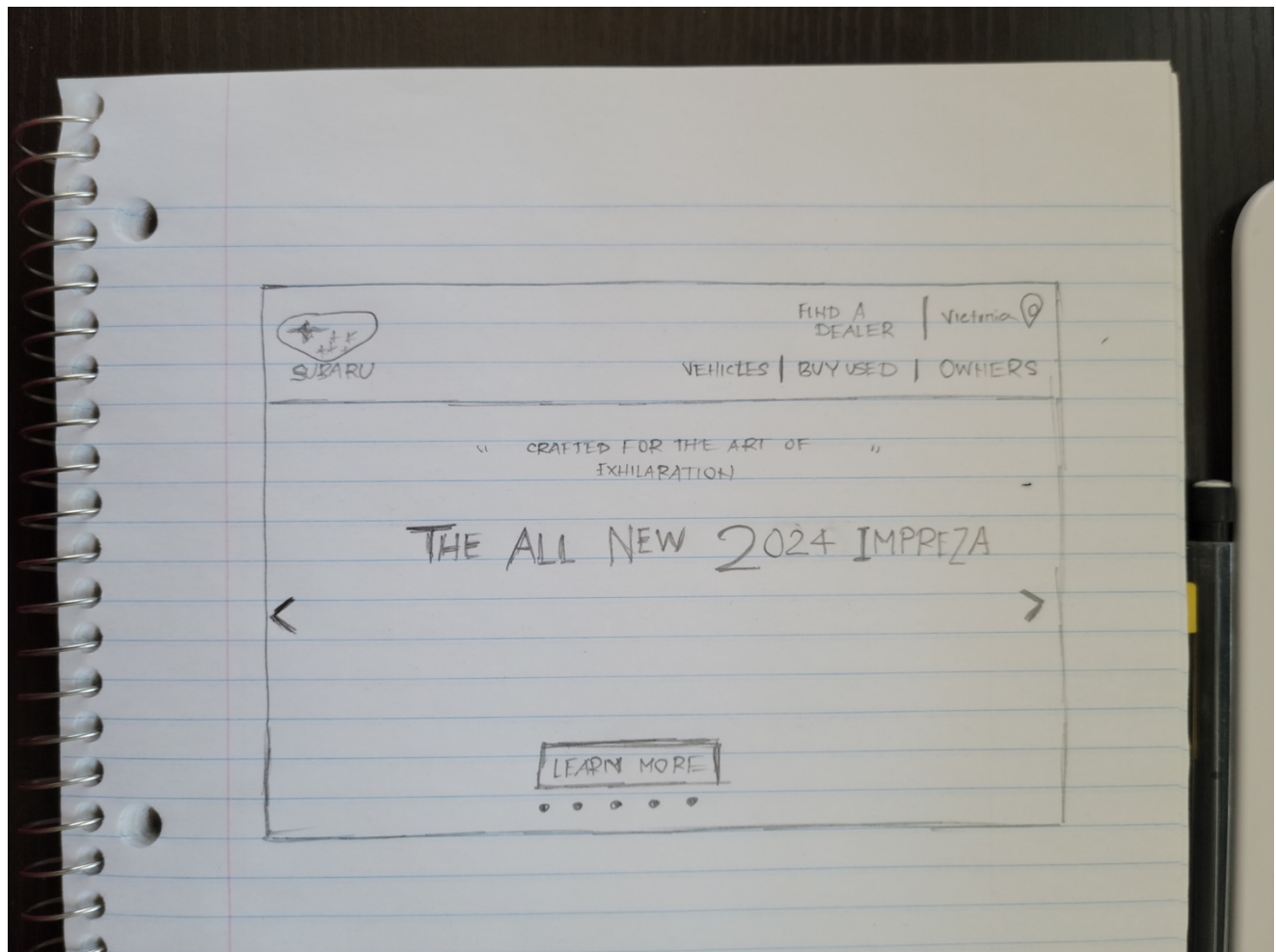
===== END QUESTION 4 ANSWER =====

Question 5 [10 marks] [suggested length: 1.5-2p]

*Demonstrate, using sketches/photographs and textual descriptions, **one new** interface idea that allows the persona from Question 3 to complete one task identified in Question 4, and discuss the strengths and limitations of your solution. Again, the sketches/photographs must be included as figures, not as a link to an external site.*

===== BEGIN QUESTION 5 ANSWER =====

PART 1



My new conceptual design incorporates several enhancements that align with principles of Human-Computer Interaction (HCI) and design philosophy.

1. Redesigned Navigation Bar: The use of contrasting colors ensures that navigation elements stand out and are easily distinguishable, facilitating effortless interaction for users. This approach adheres to the principle of providing clear visual cues to guide users and reduce cognitive load.

2. New "Buy Used" Section: The inclusion of a "Buy Used" section reflects an understanding of user needs and their potential desire for affordable options. This approach aligns with the principle of providing users with a range of choices and catering to diverse preferences.

3. Redesigned "Learn More" Button: The redesign of the "Learn More" button with interactive feedback upon hovering enhances the user's sense of control and engagement. This feature supports the principle of providing direct and immediate feedback to users, reinforcing their actions and providing a sense of progress.

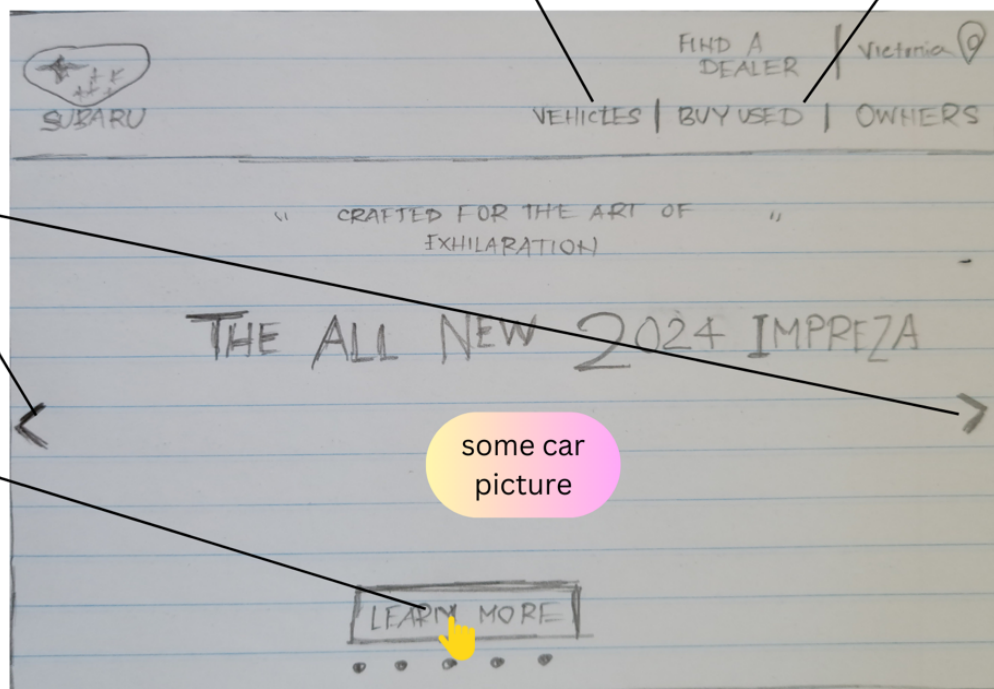
4. Central Placement of Title, Subtitle, and Car Image: The central placement draws the user's attention to the most critical information, ensuring they can quickly understand the purpose and content of the page. It reduces cognitive effort by eliminating unnecessary confusion caused by scattered or disorganized elements.

The **VEHICLES** Section consists of all the New Cars of Subaru, including all information and specifications among other information.

The **BUY USED** Section consists of all cars and vehicle products that have been previously owned and are now being sold by Subaru.

The **Carousel Navigation Buttons** are visible and cycle through the slideshows of visual contents.

The **Learn More** button is uniquely tailored to each page, allowing users to seamlessly navigate to the specific car specification and details section on the website upon clicking it.



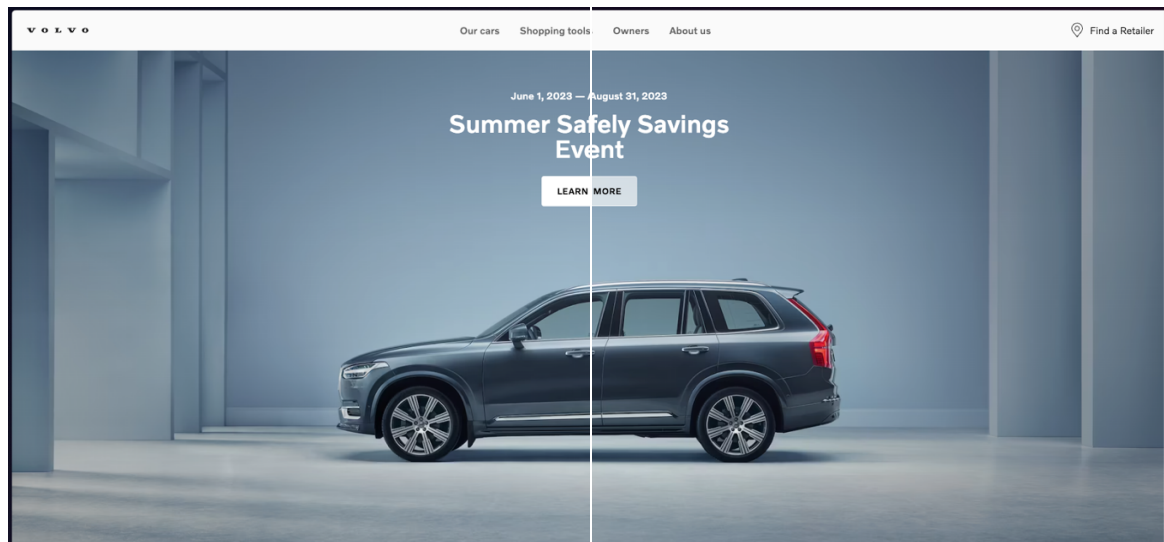


Figure: Before and After Hovering Mouse on “Learn More” on VOLVO’s Website
 <website src=“<https://www.volvocars.com/us/>”>

PART 2: Task 2 (Financial Options)

The "Buy Used" link would allow Sarah to complete the task of exploring affordable options and potentially purchasing a refurbished Subaru through the Subaru Canada website. The new link in the navigation bar would allow her to easily access the site without having to navigate through the "Vehicles" section and then select "Buy Used". This direct entry would eliminate any confusion and streamline her browsing experience.

Strengths:

1. Affordability: The "Buy Used" tool provides Sarah with access to a range of affordable options, allowing her to find a Subaru within her desired price range of up to \$30,000.

2. Renovated Cars: By offering renovated and reworked Subaru cars, the tool provides Sarah with an opportunity to purchase a used car that has been refurbished by the company.

Limitations:

1. Limited Inventory: The "Buy Used" tool's effectiveness is dependent on the availability of renovated Subaru cars within Sarah's desired price range. If the inventory is limited, she may have fewer options to choose from.

2. Specific to Subaru: The tool focuses on used Subaru cars, limiting Sarah's ability to compare different car brands directly. While it aligns with her initial preference, it may not fulfill her need to explore other car options comprehensively.