SENG 310 - Human-Computer Interaction
Project Milestone 2
Team Aahhh

Hailey Baron
Clayton Dowdell
Dylan Dvorachek
Adebayo Ogunmuyiwa
Yiming Su
Hans Lee

Methods

The aim of our project is to provide an optimized, functional and less distractive dashboard and Navigating system. We are basing our system on Tesla new model 3 which has yet to hit the market.

To gather user experience information on concurrent systems and determine requirements, we chose a survey based review and an interview process for deductive reasoning.

The survey based review was chosen as a method of polling a large population of individuals using an unbiased approach. Survey answers can be easily analyzed to guide our decision making.

By also including an interview process within our requirements gathering stage, we diversify the type of data that we can use towards building our model. The questions we chose were both tightly scripted and open ended. The tightly scripted questions provide insight on how the user feels about certain features, or their current situation. The structured questions guide the user into illustrating what features they want.

Instruments

Survey

A consent form was handed out to each participant in the survey and we reserved the rights to keep the participants anonymous throughout the research.
The survey questions include:

1) Do you give your consent to complete the following survey? The results will be anonymous. If no please exit the survey.
   - ❑ Yes
   - ❑ No

2) What is your current mode of transportation?
   - ❑ Walking
   - ❑ Bus
   - ❑ Car
   - ❑ Bike

3) What kind of license do you have?
   - ❑ L
   - ❑ N
   - ❑ Class 5
   - ❑ Other (international..)
   - ❑ None

4) What features does your car currently have (check all that apply)
   - ❑ Voice control
   - ❑ Steering wheel function buttons (radio channel, volume control, etc.)
   - ❑ Navigation system
   - ❑ On board entertainment
   - ❑ Electronic seat adjustment
   - ❑ Seat warmer
   - ❑ A/C System

5) How often do you use a navigation system? (If your car has one)

- ❑ Every time
- ❑ Often
- ❑ Occasionally
- ❑ Rarely

6) How satisfied are you with your current vehicle's interface?

- ❑ Very satisfied
- ❑ Satisfied
- ❑ Unsatisfied
- ❑ Very unsatisfied

7) How often do your dashboard instruments (speedometer, fuel tank level, rpm, etc…) distract your eyes from the road?

- ❑ Very often
- ❑ Often
- ❑ Sometimes
- ❑ Never

8) How comfortable are you with the steering wheel features?

- ❑ Very Comfortable
- ❑ Comfortable
- ❑ Uncomfortable
- ❑ Very uncomfortable

9) How distracting is changing the temperature/radio while driving?

- ❑ Very distracting
- ❑ Distracting
- ❑ Not very distracting
- ❑ I don't drive

10) What actions can you do without moving your eyes off the road? (Select all that apply.)

- ❑ Changing the temperature
- ❑ Changing the volume
- ❑ Changing radio channel/song
- ❑ Starting the navigation system (looking up destinations)

Interview

A semi-structured interview of some individuals in the target demographic was used for requirements gathering, in order to get a more in-depth picture of the requirements of the project. Since the nature of a semi-structured interview is to prompt the interviewee and pursue more in-depth answers, it will help our team determine both the needs of the drivers we're designing for, as well as the way they operate while driving a car.

The interview questions include:

1. How much money would you be willing to spend on a luxury vehicle?
2. What features of your car do you use most?
3. Do you use any of these features while driving? Which ones?
4. Do you find the features that your car has easy to use? Why?
5. Are there any features that are standard in other cars that you would like your car to have?
6. How often do you feel like controlling the features of your car distracts you from the road?
7. Have you had any moments while driving where you felt that using your dashboard features compromised your safety on the road?
8. In a vehicle are you looking for specific attributes like automation, luxury level, sports level. How would you describe your most valued attribute in a vehicle, either it be eco-friendly or sports luxury vehicle?
9. While driving are you a pro-active, interactive driver. How do you interact with your navigation system, A/C system, entertainment systems while you drive?

Requirements Gathering

While the requirements gathering phase is still undergoing, the initial survey results from questions four to ten are displayed below. While six data points is hardly enough to conduct a formal analysis, there are a few points of interest.

Upon reviewing these preliminary results it is clear that some of the questions are not useful. Specifically questions two and three are somewhat irrelevant as the current mode of transportation and license held by the individual do not help with our design. These questions focus on the demographic of those who answered the survey, while there are definitely better methods of acquiring population data.

Question four shows the features each participant currently has in their respective vehicles. By analyzing this data, we can determine that:

- 80 % of the current demographic use their A/C system and steering wheel functions. This implies that the demographic are drawn towards comfort and efficiency
- 20% of the participants have features like voice control, electronic seat adjustment, seat warmers. From this group, we can determine that 20% of the participants are familiar with futuristic technology like “voice control” and are more likely to prefer automated technology. This result can be generalized for the 40% populous that currently have.

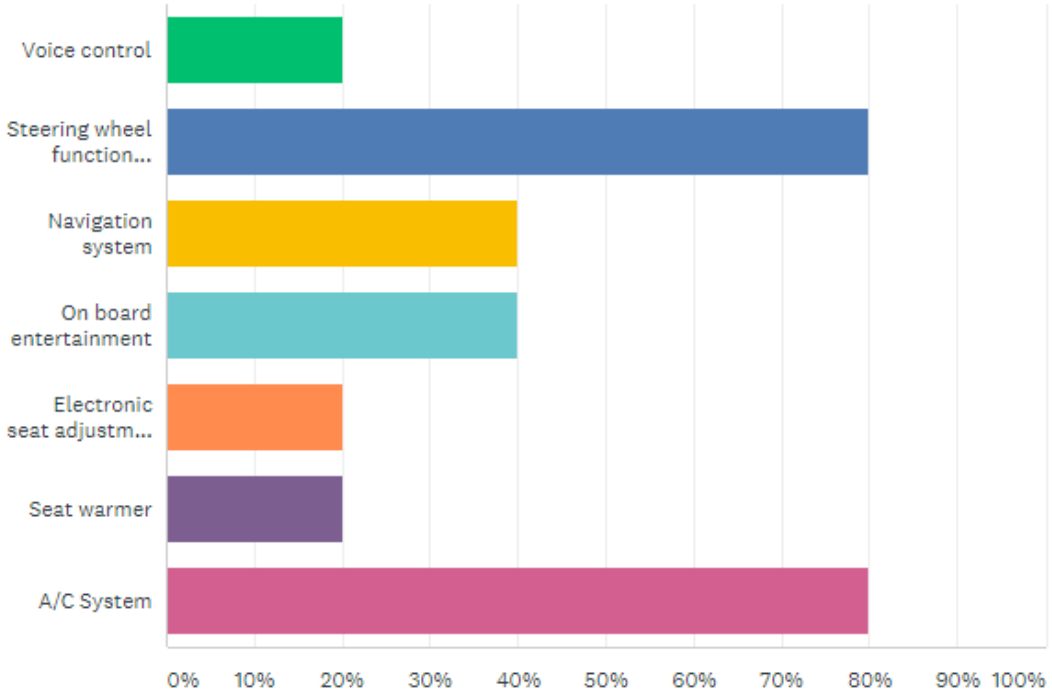
From question 6, we see that people are sometime distracted by their current dashboard system. This aligned with one of our goals is to minimize the distraction caused by the dashboard to its minimum.

In question 10 it appears that none of the individuals who answered the survey are able to set up navigation without taking their eyes off the road. This is definitely a feature we should include in our design.

Q4

What features does your car currently have? (check all that apply)

Answered: 5 Skipped: 1

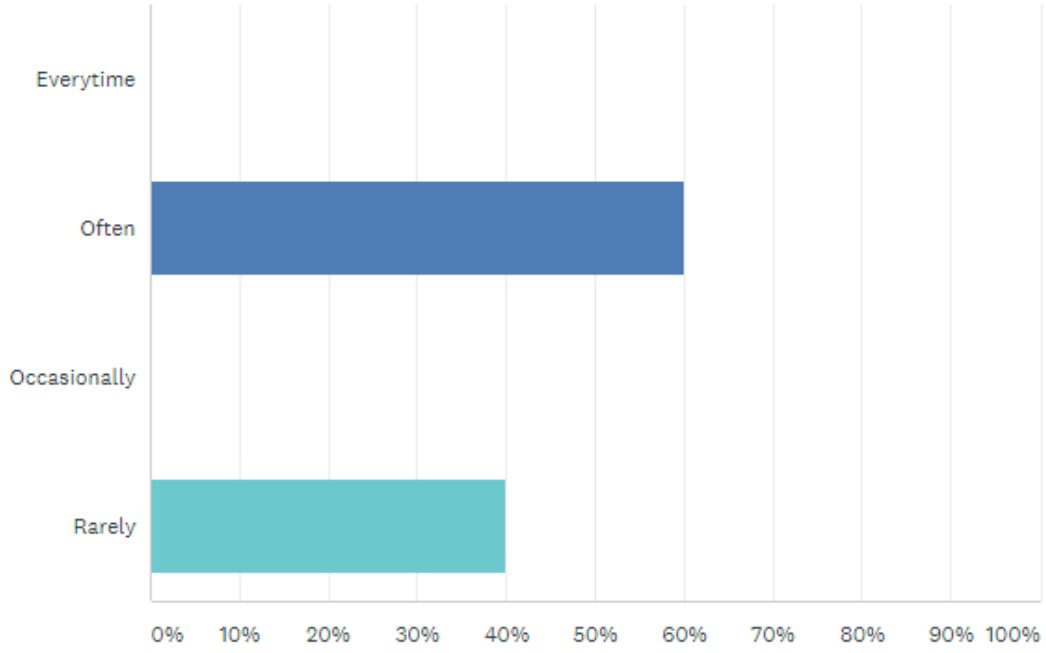


ANSWER CHOICES	RESPONSES	
Voice control	20.00%	1
Steering wheel function buttons (radio channel, volume control, etc.)	80.00%	4
Navigation system	40.00%	2
On board entertainment	40.00%	2
Electronic seat adjustment	20.00%	1
Seat warmer	20.00%	1
A/C System	80.00%	4
Total Respondents: 5		

Q5

How often do you use a navigation system? (If your car has one)

Answered: 5 Skipped: 1

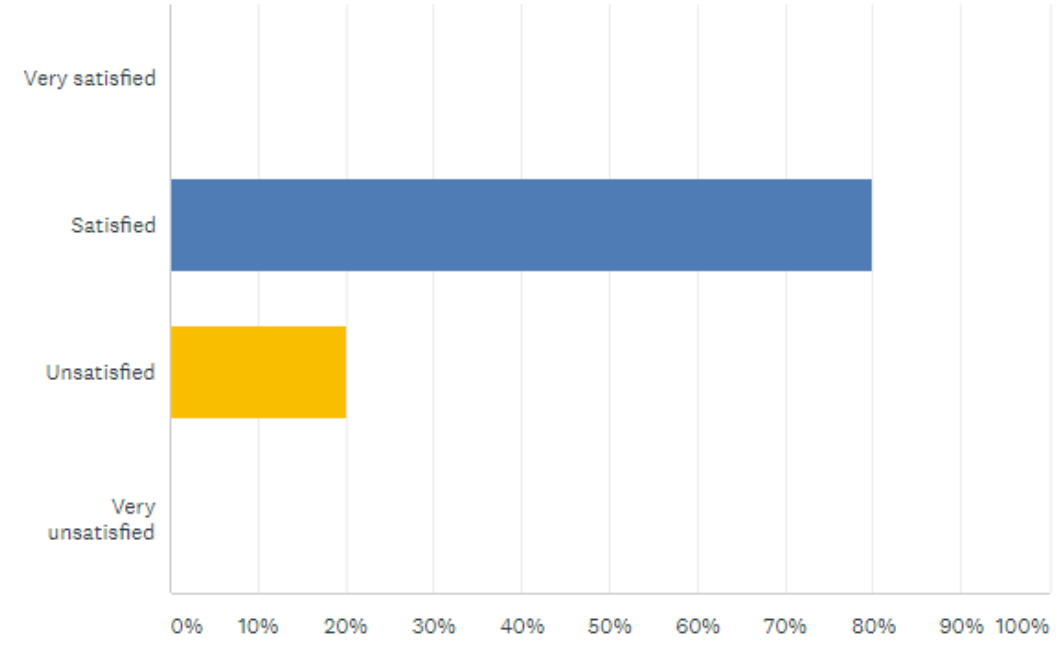


ANSWER CHOICES	RESPONSES	
Everytime	0.00%	0
Often	60.00%	3
Occasionally	0.00%	0
Rarely	40.00%	2
TOTAL		5

Q6

How satisfied are you with your current vehicle's interface?

Answered: 5 Skipped: 1

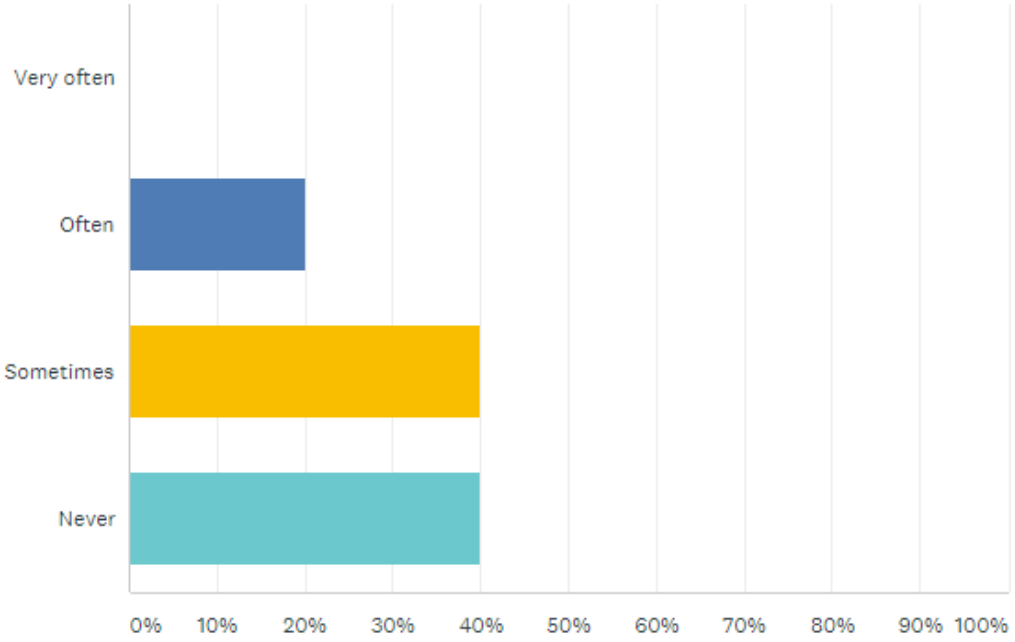


ANSWER CHOICES	RESPONSES	
Very satisfied	0.00%	0
Satisfied	80.00%	4
Unsatisfied	20.00%	1
Very unsatisfied	0.00%	0
TOTAL		5

Q7

How often do your dashboard instruments (spedometer, fuel tank level, rpm, etc...) distract your eyes from the road?

Answered: 5 Skipped: 1

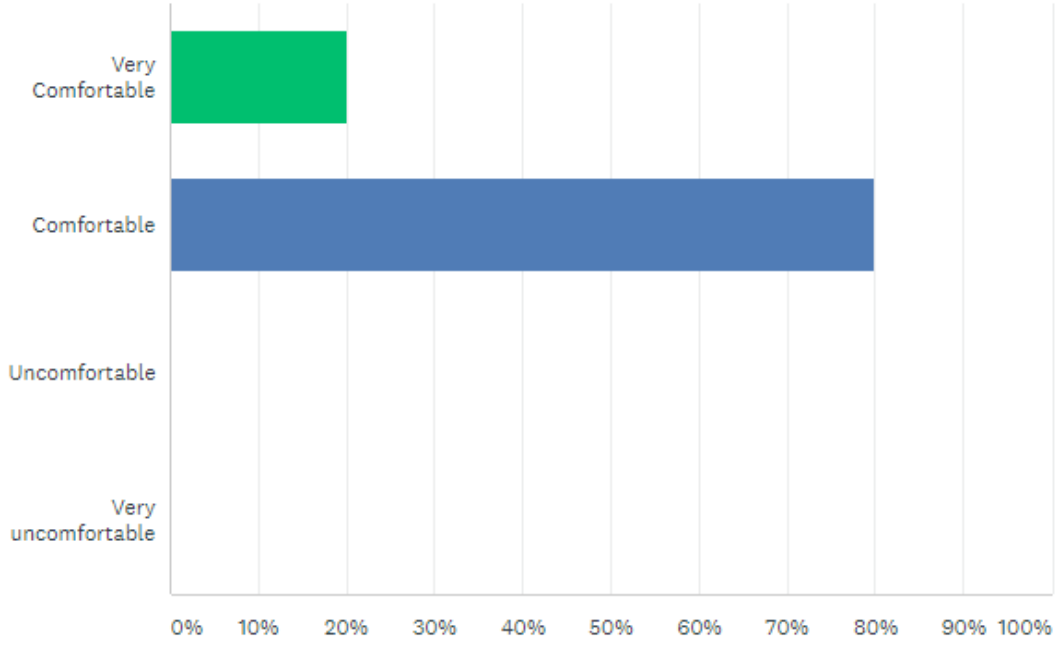


ANSWER CHOICES	RESPONSES	
Very often	0.00%	0
Often	20.00%	1
Sometimes	40.00%	2
Never	40.00%	2
TOTAL		5

Q8

How comfortable are you with the steering wheel features?

Answered: 5 Skipped: 1

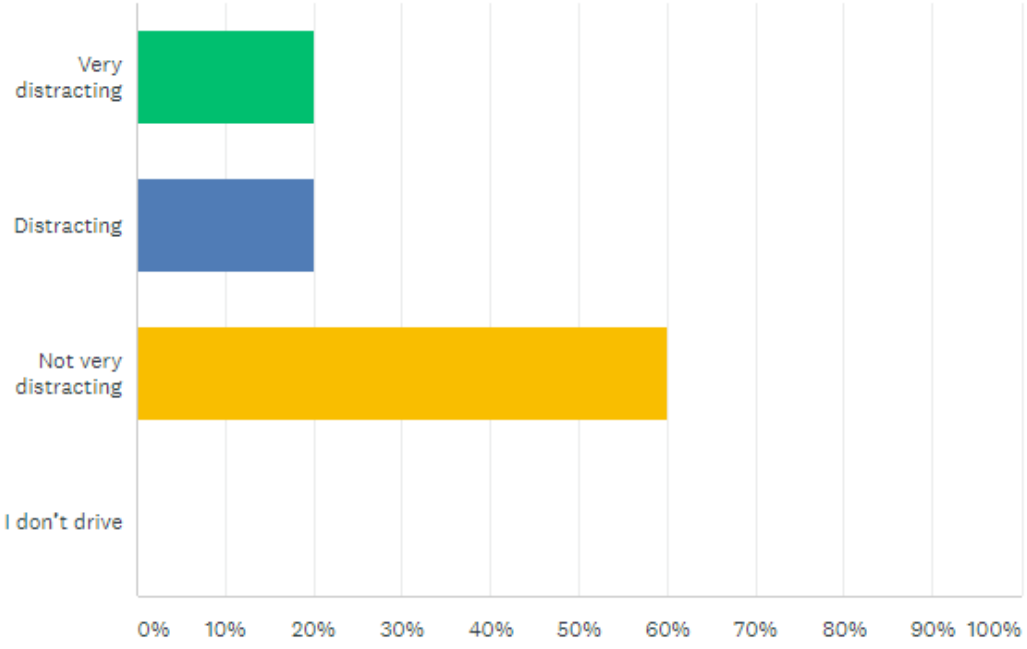


ANSWER CHOICES	RESPONSES	
Very Comfortable	20.00%	1
Comfortable	80.00%	4
Uncomfortable	0.00%	0
Very uncomfortable	0.00%	0
TOTAL		**5**

Q9

How distracting is changing the temperature/radio while driving?

Answered: 5 Skipped: 1

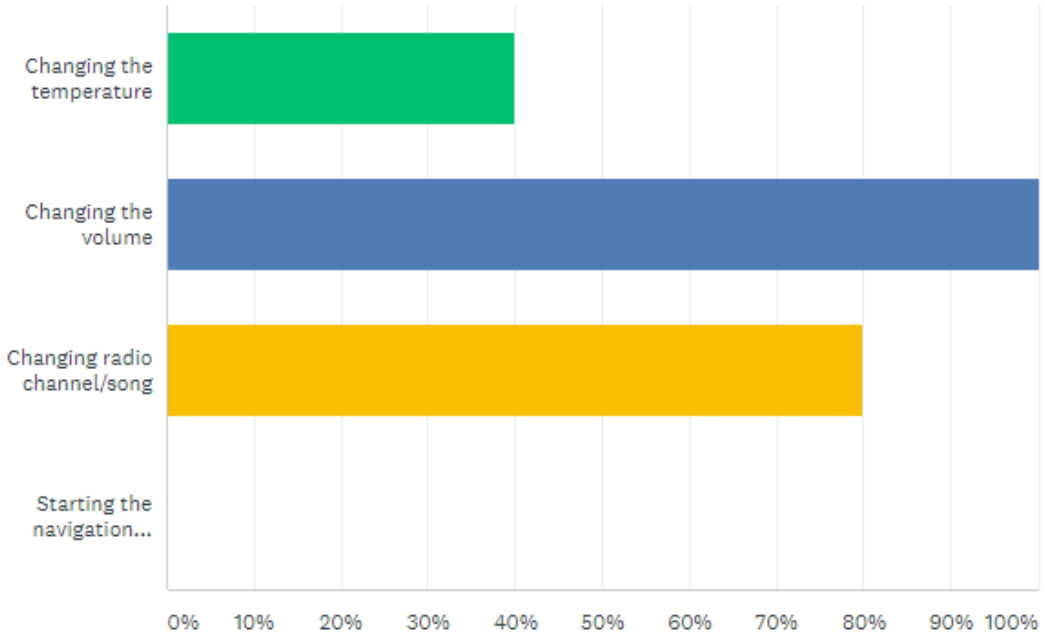


ANSWER CHOICES	RESPONSES	
Very distracting	20.00%	1
Distracting	20.00%	1
Not very distracting	60.00%	3
I don't drive	0.00%	0
TOTAL		5

Q10

What actions can you do without moving your eyes off the road? (Select all that apply.)

Answered: 5 Skipped: 1



ANSWER CHOICES	RESPONSES	
Changing the temperature	40.00%	2
Changing the volume	100.00%	5
Changing radio channel/song	80.00%	4
Starting the navigation system (looking up destinations)	0.00%	0
Total Respondents: 5		

Personas and Scenarios

Persona	Young professional
Photo	
Fictional name	Taylor McGill
Job title	Sales Manager, AT&T
Demographics	28 years old Single Lives in California BSC in economics
Goals and tasks	Taylor wants a futuristic, technologically advanced vehicle - unlike her current vehicle that she feels is outdated. Wants to be able to do as much as possible without needing to add more devices to her car.
Scenarios	After buying a new car with Dashboard in place Taylor now uploads her files from her other devices to the Dashboard system. Taylor then plays her favourite songs without having to connect her old device. Taylor also uses the built in navigation system to help her get where she is going and no longer relies on using her phone, significantly decreasing her distractions while driving.

Persona	Upper Middle class family - Father
Photo	
Fictional name	Bob Lee
Job title	Business Owner - multiple coffee shops
Demographics	40 Father of two, married Lives in Coquitlam MSC in Business Analytic
Goals and tasks	Bob would like to buy a new vehicle for his wife that would be used as transportation for his wife and kids. The vehicle should help his wife transport the kids and ensure that they do not distract her while she is driving.
Scenarios	Bob purchases a vehicle which uses the dashboard features. He then uploads various shows and movies to the system which can then be played on the screen behind the driver. The children then select and watch whichever videos they want for the duration of the trip. These videos now distract the children so that they aren't distracting the driver.