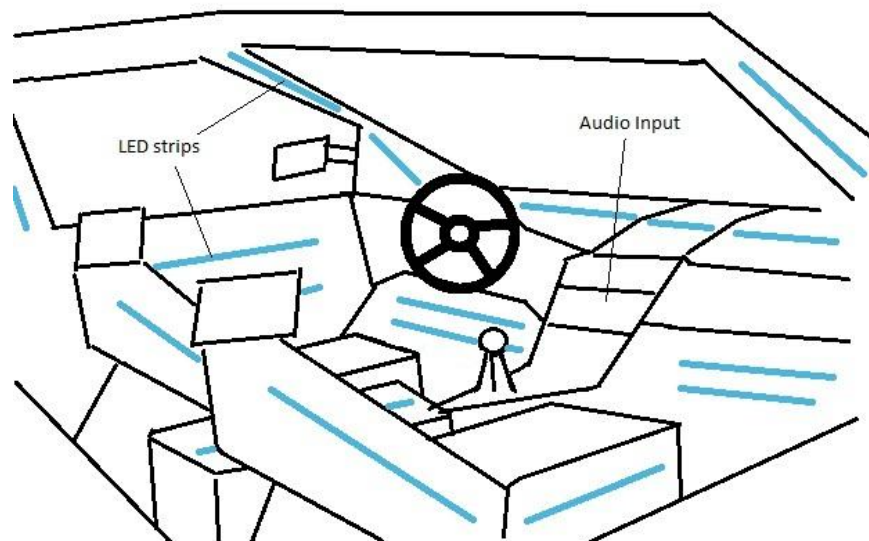


## Final Report

The overall objective of this class is to explore the concepts and teach what goes into a digital-physical system. I believe the goal for this class is fulfilled as several different options are explored. I have learned to make an idea involving people and technology, the steps and needs required to make an interaction, and what such a system accomplishes for both the creator(s) and user(s).

The first step to creating a digital-physical system is creating an idea and probably the hardest to achieve if starting from scratch. This initial thought and design phase requires so many considerations for both you and the subject. Let's start with what you want to fulfill; do you want to provide a service? Maybe you want something entertaining. Maybe something practical. How about something just annoying? Being annoying is a matter of opinion so it doesn't go too much against Core Theory 5 of your lecture. It's all somewhat subjective according to the persuasion part of that lecture. How ethical is my wonderful system going to be? Does it shoot arrows at people? That would be a bad idea. A positive perception is usually wanted by most creators, unless you're just evil. The next logical step would be choosing who and how many people you are targeting; a single person, a small group such as a family, maybe an entire city. Are you targeting children? Older people? How about only a specific race? Maybe just men or just women? Who is your target demographic? This will help in finding a location to help promote your system. You aren't going to build a system at a playground if your target audience is old people. The last step in the idea phase would be to think of a way to implement your system. I definitely have a ton of unique options for this. It does correlate directly with the two above steps. A perfect example is Kate Hartman's system called The Discommunicator shown on TED talk briefly. This tiny system is used to: "mediate experiences" and is a "tool for arguments". Her goal is to "allow an intense emotional exchange". It absorbs and muffles sounds so trying to hear a specific word is very difficult. Only emotions are meant to be exchanged. Obviously a common argument usually occurs between two people and this device only allows for two people

at once, it wouldn't work on a big group. In our final group project, our idea/concept was to add another level of immersion to listening to music in your automobile. Our target audience was any person or persons in the car, but more towards the 16 - 40 age range. We thought lights that change accordingly with whatever audio you have would be a good idea as they wouldn't be too distracting while still being entertaining. A friend of mine also suggested it can also be great at entertaining younger children or infants in the backseat that might be a nuisance to your driving, a thought that never occurred to me. Our implementation would be strips of LEDs in the vehicle. A sketch of our vision is below:



Now that the hard part is over. The technology to implement your stuff needs to be sorted out. This is easier than the idea phase, but not by much, you just need the proper skill set or enough money to outsource. According to what I learned in class which makes complete sense, every digital-physical system can be divided into three components. An input, processing, and output. As long as these are clear and sorted out, there will be no problem determining how to get your system to work. The Eyewriter system is a good example of a simple system that can be broken in these three parts. The input would be the person's eye that moves around which the computer then uses to process the movements into an output which would be a drawing on the screen, and

additional output of that system is to take that drawing and to display it on the side of a building using a laser projector. For our final group project, the input, process and output are also very clear. Our input would be the audio in the vehicle which would be channeled through either a USB interface, auxiliary audio jack, or microphone. We chose these three inputs because it covers a wide range of vehicles to insure nobody is left out of our system. The processing would be taking that audio and using the arduino to determine the kicks, snares, and drums(maybe more if our coding skills improve) and then turn them into an output which in our project would be to activate strips of LEDs that line the interior of your car.

My opinion about the end result for any successful digital-physical system should be to please both creators and all the users involved. If that is achieved, then there really isn't an issue with your idea. Hartman's Discommunicator emphasizes emotion for both parties involved. The Eyewriter system enables the user to simply spread his message, whatever that may be. And our final group project was conceived to be entertaining (to the user). If the user is satisfied with the system, more success will be had by the creator as the user will draw others or simply play a longer role. This is successful for the creator because without user input, there would be no system. Through the system interaction, the creators and the users must have a mutual understanding and agreeable relationship for both sides to be satisfied.