**Intro:**

**Background:**

**Current-uses:**

* Our current design of our product is primarily aimed for large taxi companies such of course Taxi, Uber, AAA Halton Taxi, as well as many more
  + It is designed to be able to provide a safe option for people to travel without having to own a vehicle
  + It is designed to allow people to remain protected in direct ways, such as with the contactless pay. As well as in ways that they might have not even noticed such as with the duel ventilation system
    - It allows for people to operate the door without contact, alleviating the worry of contracting germs from the door
    - It provides replaceable seats that can be switched in between trips
    - As well as a shield to separate the passengers from the driver, along with a microphone so that the drive and passenger can still communicate
    - We also provided device that checks vaccination status as well as temperature
    - Along with a duel ventilation system, to separate the air the passengers breath with the air the driver breathes

**Limitations:**

* One main limitation of our product is that if it is going to be used for something like UberPool, there will have to be a lot more modifications that will need to be made and in order to meet our covid free criteria.
* If you don't know what UberPool is, it's basically where multiple people share a ride for a more affordable price. Since the main objective of our product is to separate the passengers from the driver to break any sort of contact, it would be fine if the passengers were from the same household, but if they are random people, more separation would be required.
* This means that the ventilation systems would also have to be modified, more dividers will have to be added to the covid free taxi and for a five seater taxi the middle seat will have to be removed reducing the number of passengers that can be carried at a time.

**1st iteration**

* The first iteration of the design had the bare minimum to keep people safe and protected when using the taxi
  + It had contactless pay, as well as a contactless door, installed to make sure that people do not have to worry about have the virus passed on to them through direct contact
    - The contactless pay works by using an app on your phone ensuring maximum safety from the virus
    - The contactless door works by allowing people to wave their hand in front of the door allowing it to open on it’s own
  + We also installed the first design for replaceable seats, they take the form of plastic coverings that envelope the seats, once a passenger leaves they can be taken off and cleaned. They are designed to make sure that people do not have to worry about coming into contact with the germs of past passengers.
  + We also installed the first design of the passenger shield, taking the form of a clear vinyl pane separating the driver from the passenger. This ensures that airborne germs cannot be spread between the passenger and the driver.
  + Finally we also installed a highly sophisticated device that uses Ultraviolet light to disinfect all surfaces in the vehicle from Covid-19. Based on research done by the U.S. Food & Drug administration (**research found here:** <https://www.fda.gov/medical-devices/coronavirus-covid-19-and-medical-devices/uv-lights-and-lamps-ultraviolet-c-radiation-disinfection-and-coronavirus> ) We found that UV light can be used to disinfect surfaces of Covid.

**2nd iteration**

**3rd iteration**

**Evaluation:**

* The team at Safe Taxi ensured that products are made with the highest degree of quality. To do this they used eight qualities to evaluate the Safe Taxi’s iterations and original design, those qualities are as follows: durability, sustainability, user experience, accessibility, profitability, affordability, performance, and public good.
* Durability:
  + Regular taxis are tested to be fairly durable, as it was designed with safety feature to begin with
  + For the first iteration the vehicle remained durable, although the clear vinyl shield and seat covers were flimsy and not very durable
  + So for the second iteration the team replaced the old shield with a new polycarbonate shield, making it more durable. Replaced plastic covers with paper, making the seats recyclable making durability less of an issue
  + For the third iteration nothing added substantially affected durability
* Sustainability:
  + Typically regular taxis last around 3 years, our iterations did not change the taxi itself so they should last a similar amount of time, they also are often time recycled
  + For the first iteration, as mentioned before clear vinyl shields and plastic coverings needed to be replaced often, this is an issue as plastic is not easily recyclable
  + The second iteration added a new polycarbonate shield that did not need to be thrown away as often, and the paper seat covers were much easier to recycle
  + For the third iteration nothing added effected sustainability
* User Experience:
  + User experience consists of being taken to a destination, but currently they do not consider Covid-19
  + 1st iteration implements features such as contactless pay and door, replaceable seats, and the passenger shield, make users more comfortable
  + 2nd iteration introduced the microphone making communication much easier
  + 3rd iteration uses HEPA filters and dual ventilation system to prevent spread of airborne germs, and make the passenger even more comfortable
* Accessibility:
  + Regular Taxis are not as effective with accessibility during the pandemic due to not making many changes to suit the new normal
  + The accessibility of the iterations remained the same throughout all iterations, making a vehicle that allows people with a mobile device, and are fully vaccinated to be able to use the service.
* Affordability:
  + Taxis are estimated to cost around $19450
  + Cost of iteration 1 totals to about $19920
  + Cost of iteration 2 totals to about $19910
  + Cost of iteration 3 totals to about $19970
* Profitability:
  + It is fairly obvious that a regular taxi would cost more causing expenses to be raised.
  + This problem could be solved by simply charging a slight premium for use of the Safe Taxi, enough of one to make back the cost of the safe Taxis. This premium will vary depending on the iteration which all vary in price.
* Performance:
  + As it stands regular taxis do not entirely do the best job at protecting people from the Covid-19 pandemic.
  + The first iteration improves this by adding new features such as contactless pay and contactless doors, disposable seat covers, a clear vinyl shield for the passenger and the driver, and a UV light device that disinfects the interior of the vehicle
  + The second iteration improves this by making the plastic shield more durable helping to ensure that the passenger and the driver are separate
  + The third iteration improves this by implementing a dual ventilation system, along with HEPA filters to keep the passengers even more safe
* Public Good:
  + Taxis are seen to be a big part of many people’s lives, but they are doing anything to protect the public against Covid-19
  + All the iterations serve the same public good of protecting people from the ongoing pandemic