Final Design Materials

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INFO 360

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Defining Problem Space

In this time period, more and more people are depending on rideshare services like Lyft and Uber as a means of transportation. These new rideshare services bring a plethora of safety problems not only for the passengers but also for the drivers. The drivers often have to be in difficult situations where their safety is in jeopardy. Most ride-sharing drivers are exposed to many types of passengers: drunk people, aggressive people, and rude people. There are some safety features for passengers, but not enough for drivers even though their encounters with many different people are compounded daily.

Specifically, we focused on problems that might arise when the driver has a problem with the passenger. For example, what if the passenger is very rude when they get in the car, what if the passenger makes the driver uncomfortable, what if the driver encounters a drunk passenger. We believed this is the most important problem because it could be the most common problem that the driver faces. This specific problem also gave us the ability to be more creative with our solutions as opposed to physical car or other device solutions that could improve the driver experience.

We brainstormed many options of specific types of drivers to focus on. We considered focusing on female drivers because that gave us a better perspective and a problem space that many do not usually look at. When we looked up what female drivers experience, we were surprised by not only the amount and frequency of uncomfortable situations they face, but also the lack of action that Uber took to make sure it did not happen again. We also considered drivers who do not speak the English language fluently. The language barrier leads to experiences where the passenger may not be empathetic of the driver and their position. This may lead to an uncomfortable situation for the driver. We eventually found that even though we considered these subgroups while ideating, that our solution could be applied to all drivers, not just women or non-native-speakers.

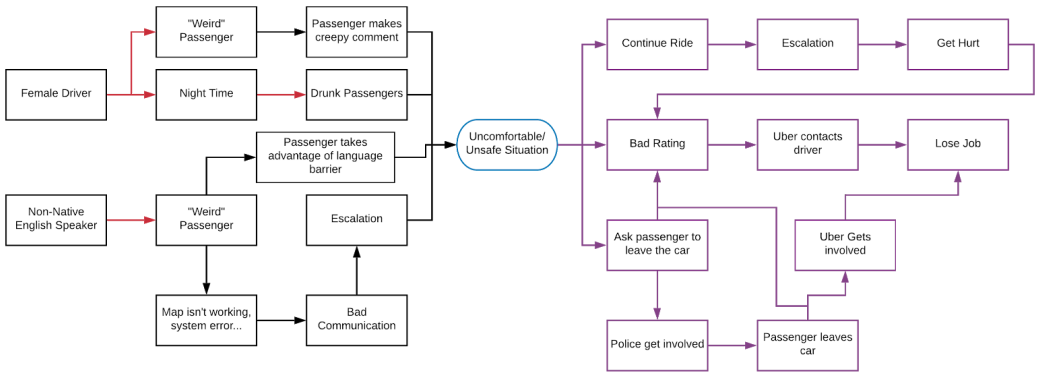


Figure 1: mind map (driver side) and the situation that uber driver is able to be faced with

Socio-Technical System Elements

Social Systems	Technological Systems
Structure	**Physical System**
Uber (and all sub companies), local governments, Uber research, Uber business decisions, Uber recruitment and retainment, Uber advertising, Map systems	Roads and other infastructure, vehicles and their maintenance, gasoline infastructure, Uber sticker, phones, cellular infastrucutre, Uber beacon, law enforcement, restauaraunts, homes
People	**Tasks**
Uber Drivers, riders, Uber engineers, Uber business executives, other drivers, cyclists and pedestrians, voters, taxi and competing drivers, small business owners, car development and manufacturing workers	Pair drivers with riders, pick up riders, drive riders to their destinations, obey traffic laws, enforce laws, charge riders, pay drivers, pay other employees, pick up food, deliver food to destination, give directions to driver, interaction between driver and rider (identification, small talk...)

Figure 2: System Elements Chart

User Research

Online Sources

News stories often depict the worst case scenarios of a bad altercation between a rideshare driver and passenger. There were many specific stories of escalations, and statistics that show a surprising amount of harassment within rideshare systems.

Reddit (r/uberdrivers)

The Uber Driver subreddit was a great source of rideshare drivers voicing their own opinions and needs. We witnessed a resentment towards Uber for not taking their safety as seriously, as well as many pieces of anecdotal evidence of unsafe situations.

Contextual Interview: Rider

In the first contextual interview, the focus was on the safety of the rider in the rideshare equation. A key observation made was that the perceived safety of both the rider and the driver were dependent on each other. All of the safety features that we could see were available to the rider. It was unclear what was available to the driver. The driver is also in control of the environment of the car, which contributes to the safety and comfortability of the driver and rider.

Questions for riders:

1. Have you ever used ride-sharing apps before?
2. (if yes) How were the experiences of your ride-sharing app?
3. (if yes) Do you usually talk with drivers?
4. (if yes) Why do you use ride-sharing apps?

Contextual Interview: Driver

The last contextual interview put the driver in focus in order to think about safety from a different perspective. An interesting observation was that most of the time, the driver had more to lose. If the driver did not want to pick up the passenger because the passenger had a low rating, it increased the declining rate for the driver. The higher the declining rate the lower the chance of the driver getting a ride that made them the most amount of money. This meant that the drivers sometimes have to sacrifice their safety for money. This was an important observation because it allowed us to see how the driver is often at a disadvantage.

Questions for the driver:

1. What would you say is one of the hardest things when you are driving Uber?
2. How does being an uber driver physically harm the drivers?
3. How do you think rideshare services like Uber and Lyft help you when it comes to your physical health?
4. What kinds of passengers do you consider good passengers? What kinds of passengers do you consider bad passengers?

How Might We Statement

After defining our problem space and doing research, we decided on this how we might question: How might we create a safe and comfortable environment for drivers when interacting with potentially threatening riders?

Outcomes

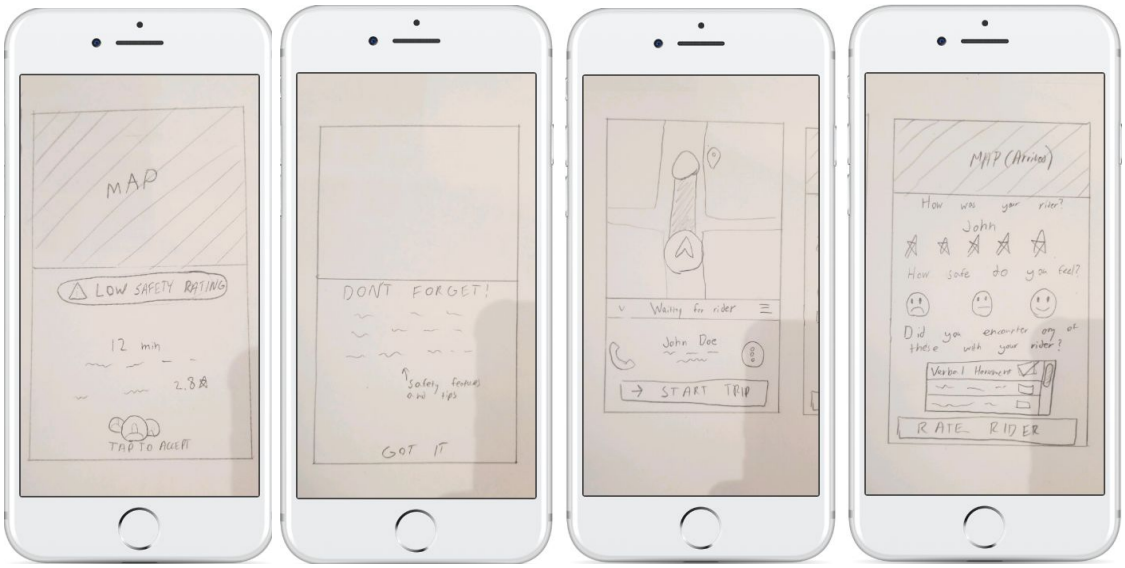
1. Identify different scenarios that put drivers in an unsafe situations
2. Create efficient and motivating interventions
3. Focus on safety within sub-groups that may be more at risk (female, non-native speakers…)

Ideation

As a group we ideated 60 different ideas within our problem space and HMW to consider. We put these up on Mural.ly and then organized them based on how they intervened. Our final decision was an extension of one of these categories.
Mural.ly Link

Low Fidelity Prototype

After deciding on our desired goals, we brainstormed a plethora of ideas. We decided that an intervention method that gives the driver more freedom to be able to get out of a potentially threatening rider was a systems approach. With this approach, the driver will get a warning if the person they are about to pick has a low rating. They will be able to cancel the ride if they don't want to give the passenger a ride without a penalty. If they do decide to pick up the passenger they will be directed to the second screen where they will get helpful safety tips. Then the third screen shows the driver giving the passenger a ride. After the ride is over, the driver will be able to rate the passenger based on how safe they felt and any problems they might have faced. This data will be used to make the safety rating of the passagner more accurate. Our low fidelity prototype was made by sketching wireframes, and then uploading these frames to Marvel, a prototyping tool. This helped us see our wireframes as a real app, navigate across the screens and share the prototype online.



User Testing

Questions

How can we make this more streamline?

Efficiency is important to rideshare drivers, as a quick turnaround time for each ride means they can maximize their total rides to make more money. We did not want our feature to be intrusive to time, so we needed to know how necessary each piece of information was, and make transitions smooth and snappy.

How clear are the prompts and responses? How can we improve?

It is important for consistency and accuracy of the data we are collecting that the prompts and response options make sense. We don't want certain things to be misinterpreted, and don't want to have confused drivers either.

Does this improve the feeling of safety?

Because the purpose of this entire feature is to improve both safety, and also the perception of safety, we asked this question to see if we were on the right track. We also opened this up to drivers specifically to see if other options like filtering certain riders, times or areas with this data, connecting other drivers to help, or more accessible emergency communication would help too.

Peer Testing

Our first testing experience was with peers in our classroom (Figure 3). The benefits this group had was that they were critical in a very constructive way. As far as general usability, we were able to find some poor design

decisions throughout the prototype. These people did not have experience using the Uber driver app though, so they did not give feedback on redundancy and integration of our feature.

Figure 3 : *Peer testing in info360 classroom*

Online Rideshare Driver Testing

We put our prototype online and posted it to the uber driver sub reddit (figure 4) with a description of what our purpose was and what our research questions were. A lot of responses on this online platform were not very constructive, but some were especially helpful. These drivers showed us that the app has an emergency alert system within the driving part of the app, so this is not a feature that we needed to add in. Some made efforts to answer our research questions directly, while others expressed the thought process drivers have when reviewing in general. Drivers liked the ability to choose to pick up customers that have a safety risk, because some really prioritized safety, while others seemed to think picking up unsafe riders was just part of the job. This group had issues with the rating system, and believed that drivers would not rate honestly, either to retaliate against a bad, but non-threatening experience with a customer, or for times-sake.

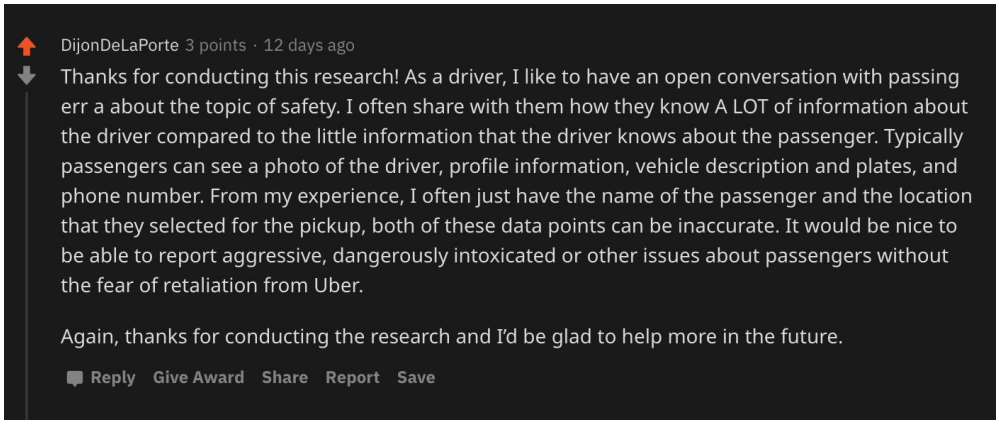


Figure 4: *User testing from the uber driver sub reddit page*

Testing Insights

Different Rating Screens

Moving the different rating prompts to different screens addresses many different issues that were identified to us through testing. One problem with the rating design, Uber drivers found: Uber drivers rate without much thought. They believe that drivers will probably give bad safety ratings for someone being late or a little annoying during the ride, instead of legitimate safety concerns. Another concern with the ratings is that it was that the screen was crowded and confusing as to which rating meant what. The screen also introduces the idea of the environment not being safe, and if the driver thought the passenger was good and deserved a good rating, it makes no sense to give the option for bad safety experiences.

Clarity Within Options

Another problem identified through testing is that when deciding to pick up a rider that has potential for safety risk, it is not clear exactly what this means. Having a popup that shows the driver why this is showing up (why this feature exists and why this passenger got this alert) can reduce confusion for drivers, and help inform them to make a better choice.

Some drivers thought it was a bad idea to have drivers choose to pick up unsafe riders because they felt that safety was not that big of a deal and that they should just pick up everyone. Other drivers thought it was a bad idea to have drivers choose to pick up unsafe riders because safety is a top priority, and if someone is deemed for being unsafe in any way they should not be allowed to use the app. Because of this, we are seeing the ability to choose to pick up a questionably unsafe rider as a good option, because these riders felt so passionately on their two sides, which was actually a pretty even split. Having clarity and transparency over what decisions are being made will help inform each driver to act in their best interest and values.

Filtering Riders

Through testing with peers, users thought it would be intuitive that because specific data is being collected on what makes passengers unsafe, that drivers can select which of these reasons (racism, misogyny…) they want to minimize involvement with. Drivers should also have the option to never receive the same passenger if they want to, or maybe this will just be automatic too. This connects to our other insight that clarity of each choice matters a lot, and by communicating why a certain rider may be a possible

risk with the driver, they are able to make a decision that aligns with their individual safety concerns.

When drivers were given this idea however, none said that they would actually use a feature like this. Their reasoning being that there are a lot of complexities, and not wanting to deal with a certain type of rider over not getting paid is very circumstantial (area, time, health, past-riders, personal events…). It would have been very difficult building a feature to take all of these into account, and create a feature that would be easy and quick to use. In the future it would probably be worth exploring this concept with at least a lo-fi prototype just to see if it does have legs, but for our purposes, the drivers discouraged us from including a base version of it.

Refining Concept

In order to refine our concept, instead of putting rating and answering details on the same page we decided to split every part with separate pages. This is because we wanted to make drivers take our survey seriously to provide correct information to other drivers. We wanted the drivers to not skip the survey, and breaking it apart made it easier for them to fill it out. Next, for the customers, we are considering giving them warning until they get a low rating a certain amount of times. For example, in the past few months, if the customer gets more than 3 times with a questionable-to-bad safety rating, Uber will send a notification to the passenger with a warning message threatening to freeze the account for 3 months or permanent ban. The main goal from this feature is changing their behaviors that are related with safety issues to Uber drivers. Giving riders tips to be safer and help drivers feel more comfortable may also be available.

High Fidelity Prototype

Figma Link | Walk Through Video

Driver-side Prototype

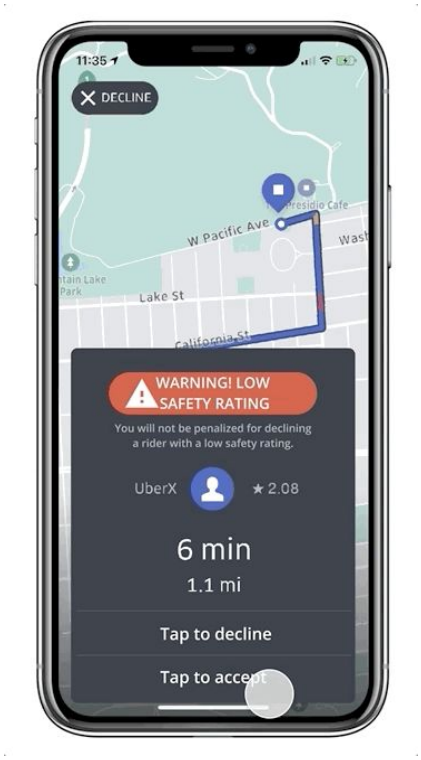


Figure 5: The process of accepting the low-rating rider

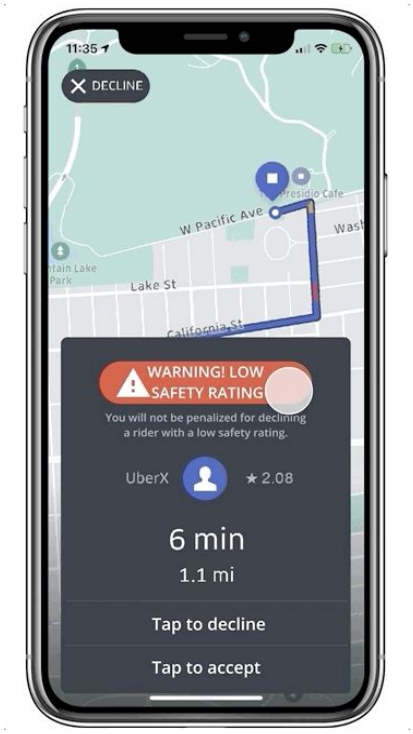


Figure 6: The process of declining the low-rating rider

Rider-side Prototype

1st Level Warning
A rider can rethink about their bad behavior from the past uber experiences from this warning. (Figure 7)

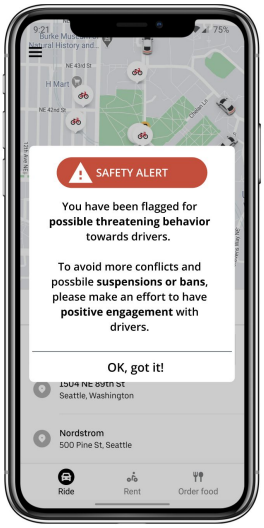


Figure 7 : 1st level warning screen to rider

2nd Level Warning (Suspension)
If the rider repeats bad behavior to the driver, the rider's uber account will be suspended for three days. (Figure 8)

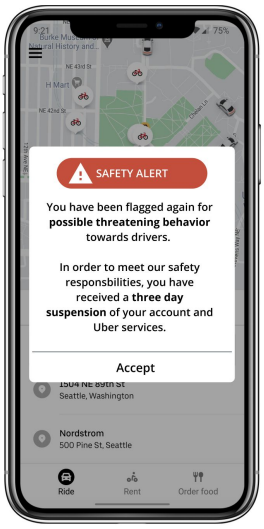


Figure 8 : suspension screen to rider after getting other warning from 1st level warning

3rd Permanent Ban
It is the last warning : **permanent ban** if the rider gets other bad reports from drivers after 2nd warning. (Figure 9)

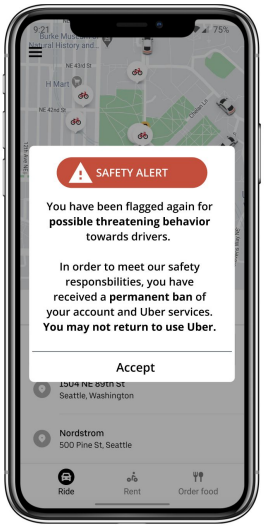


Figure 9 : permanent ban screen

Future/Takeaways/Conclusion

More user testing needs to be done with the hi-fi prototype, especially with groups we wanted to focus on (women, non-native-speakers), and riders too so we can test out that functionality. Developing some prototypes and testing of the Filtering feature we considered earlier would also be a great next step to utilizing this intervention better.

If this feature ever were to be used it would need to be implemented in the already existing Uber environment: Uber app, Uber Driver app, and the backend. With this, Uber would also need to make changes to the rider verification process to ensure that unsafe riders stay out of the system. It is unclear exactly how much Uber actually values driver safety, but this feature was made in part as a compromise between these two groups and could potentially give a competitive edge to a rideshare company.

Creating this feature has shown our team that rideshare drivers are a marginalized group in respect to their safety. It is easier for everyone to identify with the rider, and rally for safety improvements for them, but the reality is that these solutions can leave the drivers even more at risk. Our design hopes to be the beginning of some efforts towards creating a safe work environment for drivers.

Rideshare Driver Safety

Connor, Bertwocane, Jisu

Why Rideshare Driver Safety?

Rideshare apps are used by **millions**, but safety of riders going into **strangers' cars** is becoming a bigger concern

Companies are addressing this problem by focusing on **passenger safety**

But what about the **drivers**?

Research

r/uberdrivers

- Female drivers legitimately feel unsafe (small part of population, 15-20%)
- Current safety measures and strategies
- Big problem, community abandoned by Uber

News

- Only the worst instances make the news
- Shows the worst cases of escalation
- Violence between strangers, premeditated and not

Contextual Interviews

- Specifics of unsafe interactions
- Little initial communication
- Interaction between driver and passengers is important
- Drivers can tell easily when a customer will be uncomfortable

How might we...

How might we create a **safe** and **comfortable** environment for **drivers** when interacting with **potentially threatening riders**?

Desired Outcomes

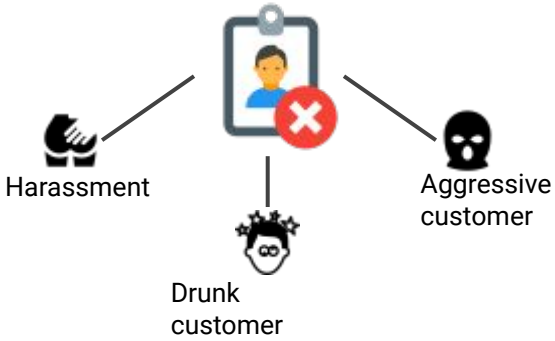
1. **Identify different scenarios that put drivers in an unsafe situations**

2. **Create efficient and motivating interventions**

3. **Focus on safety within sub-groups that may be more at risk (female, non-native speakers…)**

Intervention: System Approach

Before a driver starts driving, an info page pops up with information of the different types of passengers.



This information page includes the data of unsafe passenger's pattern. And, it helps drivers to prepare from unsafe situation through existing tips.

Low Fidelity Prototype

User Testing

How can we make this more streamline?

How clear are the prompts and responses? How can we improve?

Does this improve the feeling of safety?

DijonDeLaPorte 3 points · 12 days ago

Thanks for conducting this research! As a driver, I like to have an open conversation with passing err a about the topic of safety. I often share with them how they know A LOT of information about the driver compared to the little information that the driver knows about the passenger. Typically passengers can see a photo of the driver, profile information, vehicle description and plates, and phone number. From my experience, I often just have the name of the passenger and the location that they selected for the pickup, both of these data points can be inaccurate. It would be nice to be able to report aggressive, dangerously intoxicated or other issues about passengers without the fear of retaliation from Uber.

Again, thanks for conducting the research and I'd be glad to help more in the future.

Reply Give Award Share Report Save

Insights: Peer Testing

Design/Usability

Tweaks like font is too small, colors are not contrasting enough to display information...

“ There are too many things to look at, I won’t focus on the one question, I will look ahead ”

Transparency

This was a goal of our intervention. We failed to communicate completely with both the rider and the driver why things were happening.

“Why does the rider have a bad rating? This changes my decision”

Insights: Driver Testing

Efficiency
Time is valuable, and drivers like to minimize their turnaround time between jobs.

“ I have to rate them right after the drop off before I can get another ride, and my care factor is low”

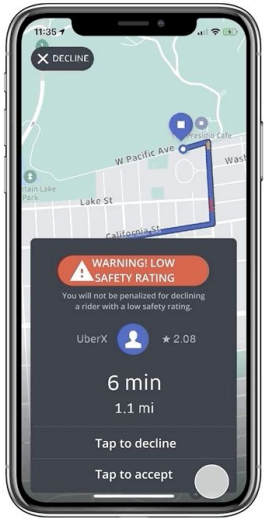
Integrity
Drivers did not even trust themselves when it came to leaving honest answers about

“They will rate 1 star because they are late...smelled like weed... bad pickup...awkward, it would just mirror the existing broken system that is a 5 star rating and double standard between drivers and riders.”

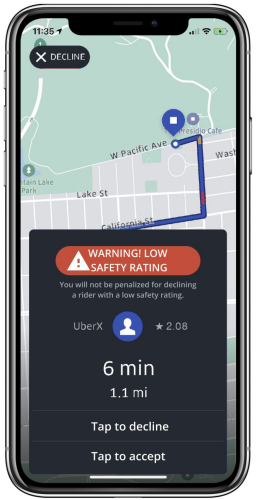
Encouraging too!

High Fidelity Prototype (Driver view)

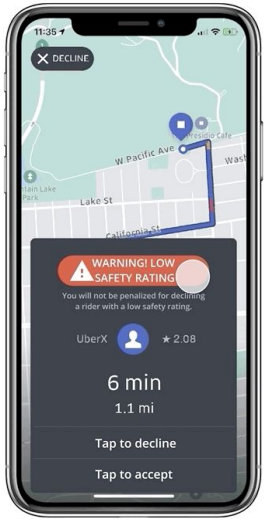
Safety Warning Information



ACCEPT



DECLINE

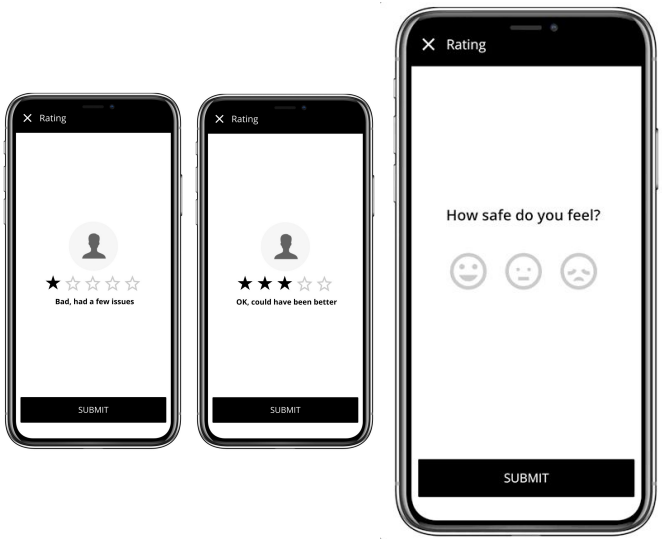


- It provides safety tips how the driver takes action with unsafe situations.

- Warning button provides extra information about the passenger.
- Decline message shows no-penalty with this case.

High Fidelity Prototype (Driver view)

Driver Rating System



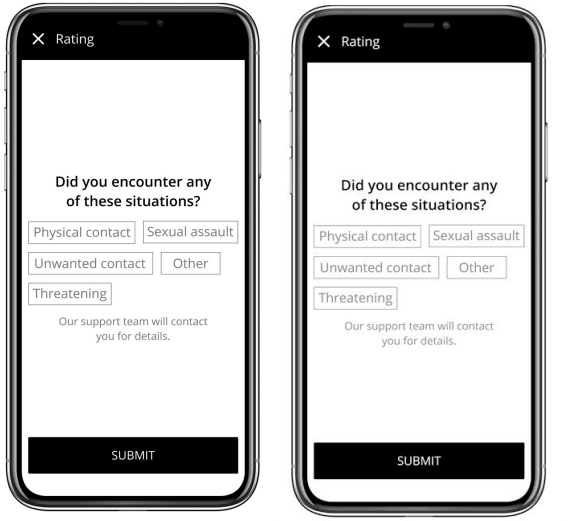
- **General rating** : ★ 4 (pretty good) or 5 (good) does not report safety rating.
  ★ 1 to 3 goes to safety rating screen.

- **1-step safety rating** : the driver should choose one of feeling emoji to get the support from Uber team.
    - This information decides whether the driver should report more details about the situation or not to Uber team.
    - 1st emoji : doesn't go to the next step.
    - 2nd and 3rd emojis : guides to the next step.

Key feature : reporting self-assessed safety level (easy and quick)

High Fidelity Prototype (Driver view)

Reporting Cases



- **2 - step safety rating :** five situation options that uber drivers can encounter while they are driving.

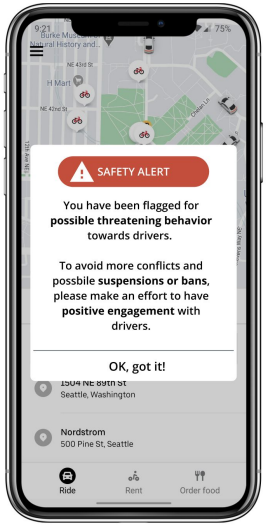
- Through this data, Uber support team will try to make better riding work environment to the drivers.
    - Giving warning to the passenger, providing safety information (passenger case details) to drivers.

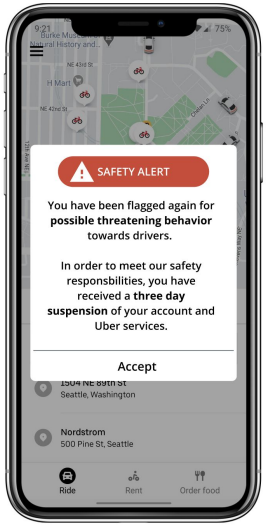
Key feature : reporting self-assessed unsafe situation with simple button

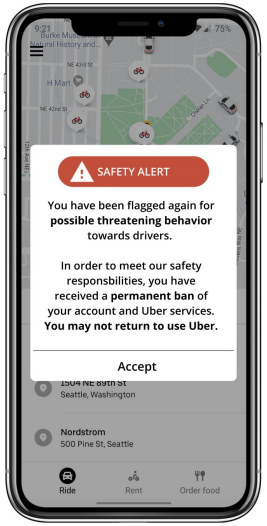
Five common unsafe situation

1. Physical contact 2. Sexual assault 3. Unwanted contact 4. Threatening 5. Other (if the situation is not listed, the driver can write the specific unsafe situation.)

High Fidelity Prototype (Rider view)







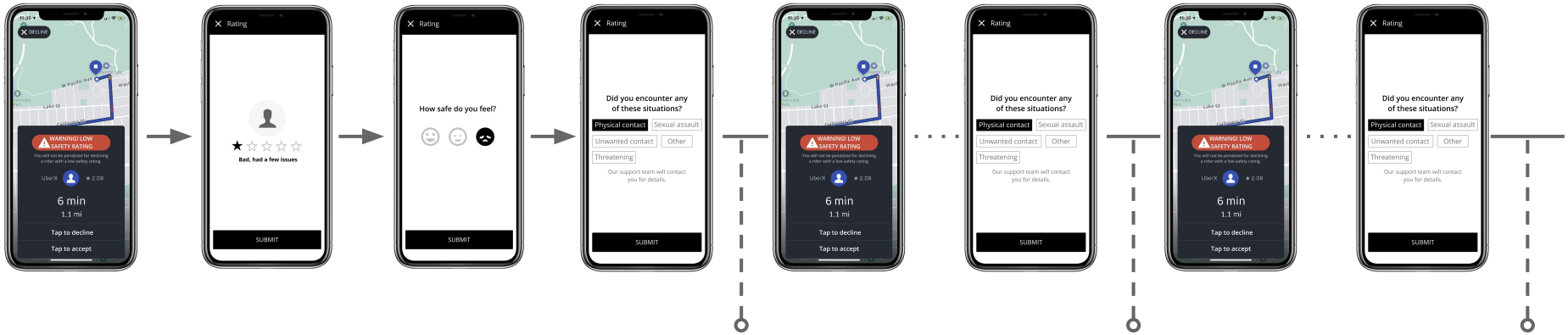
1st Level Warning
A rider can rethink about their bad behavior from the past uber experiences from this warning.

2nd Level Warning (Suspension)
If the rider repeats bad behavior to driver, rider's uber account will suspended for three days.

3rd Permanent Ban
It is the last warning : **permanent ban** if the rider gets other bad reports from drivers after 2nd warning.

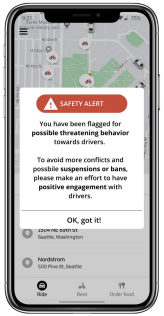
Timeline

Driver

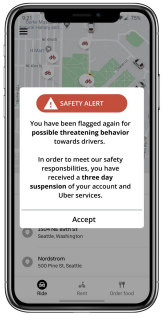


Rider

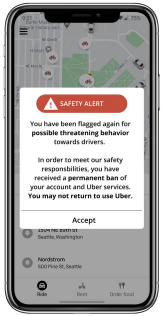
Data collecting



Warning notification



Suspend account

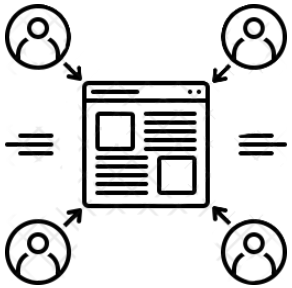


Permanent ban

Next Steps

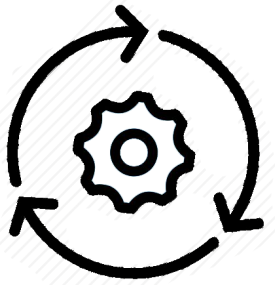
Continue User Testing

The Rider intervention has not been tested for effectivity or any response with actual riders. We did not specifically include women or non-native speaking drivers in our testing



Implementation

In order for these features to work they need to implemented within the existing Uber environment. These features are extensions of the Uber app.



User (Rider) Verification

One big flaw in this service is that riders can easily re-register for the Uber app after being banned. Uber drivers we spoke to brought to our attention.

Citations

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Thank you