New exploration of passengers' matching system for future driverless car sharing system

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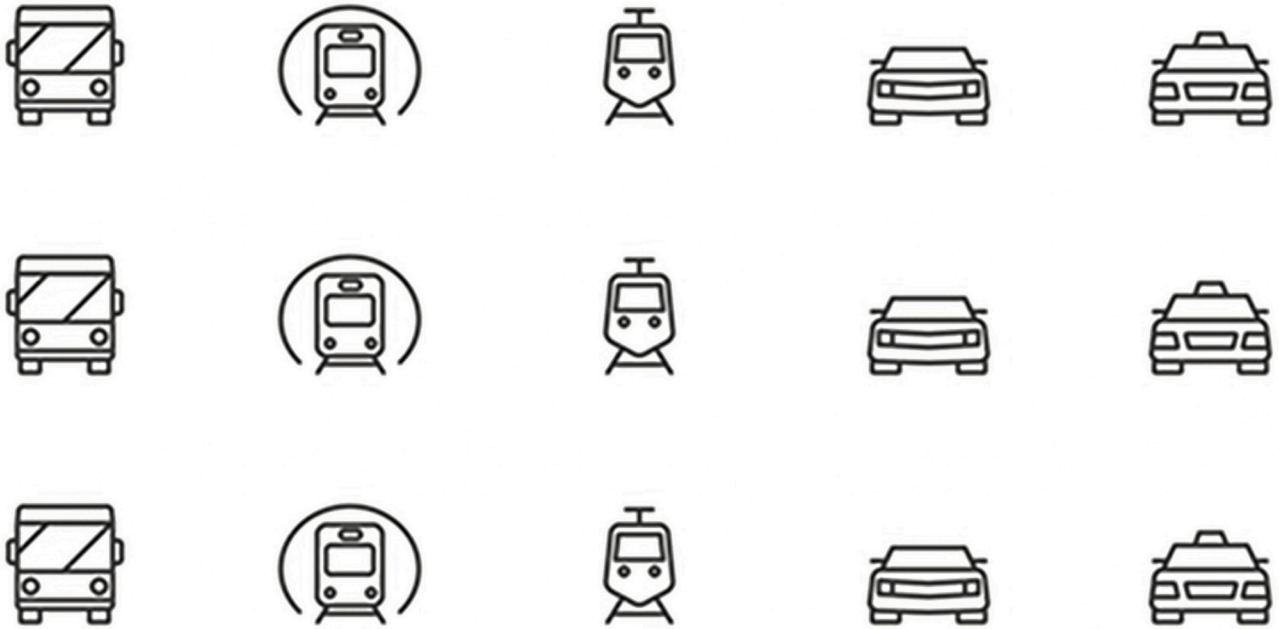

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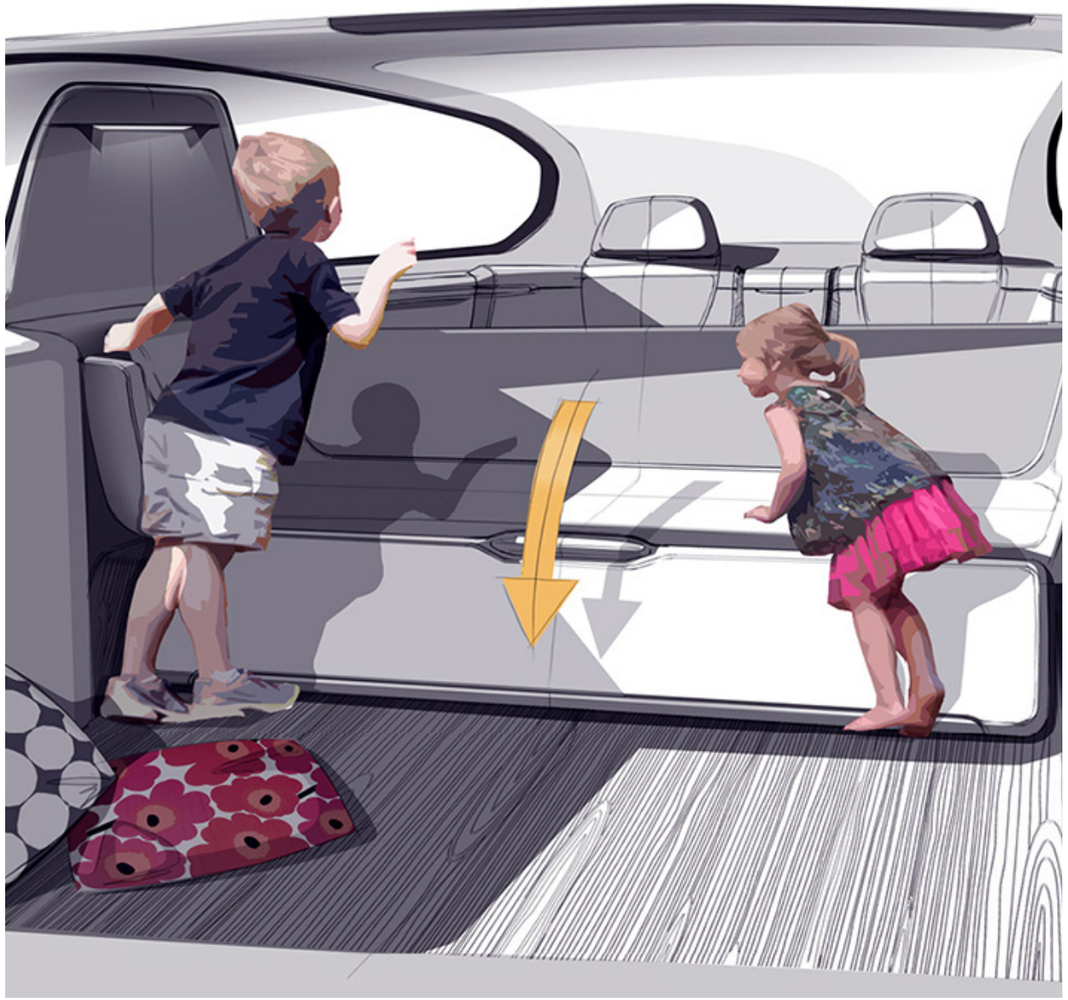
ABSTRACT

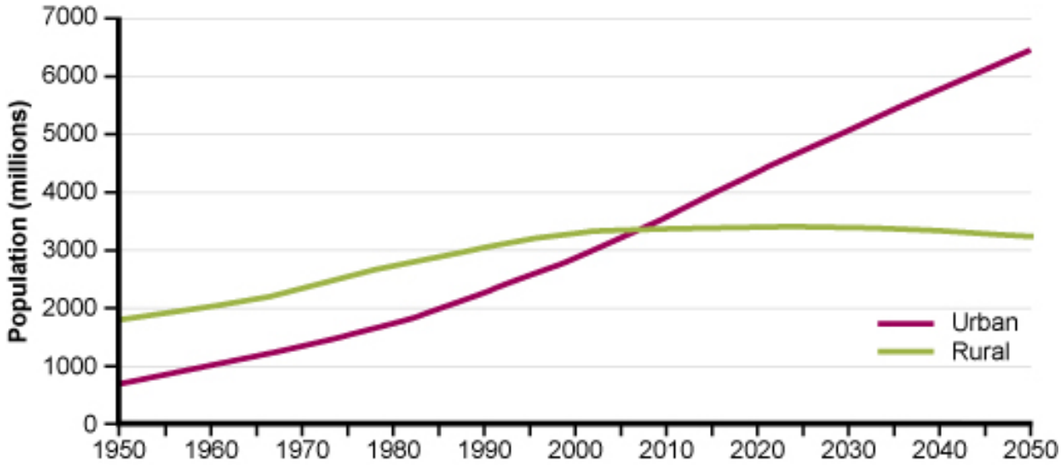
Nowadays, the software of the car sharing system used by society, such as Uber, etc., is focused on the benefits. When passengers share the trip, passengers can ride at a cheaper price, and the driver can also obtain greater profits. In the future of the unmanned society background, the driver has disappeared, so what is the focus of people in this trip sharing? Punctuality? Accuracy? Comfortable? This paper will explore some of the demands that passengers need in the future of the driverless sharing system. After summarizing some of the most needed requirements, the entire system or the tools in the car sharing system will get adjusted and redesigned so that passengers can enjoy the future driverless car sharing system.

keywords: ridesharing, passengers matching, passengers' communication



Chapter 1
Background in 2030

1.1 Urbanization



Urban and rural population of the world, 1950–2050. (UNDESA, 2014)

We can see from the graph, In 1960, the global urban population was 34% of the total; however, by 2014 the urban population accounted for 54% of the total and continues to grow. By 2050 the proportion living in urban areas is expected to reach 66% (UNDESA, 2014).

Although in reality, the population of the city is constantly growing, the cohesiveness of the city is not as strong as that of the countryside. The dense population brought about by urbanization has actually reduced the frequency of people's communication. In the past, the concept of distant relatives in the rural areas was completely subversive, and neighbors living next door may not be able to say a word a year. People in the city, the opportunities to meet new friends are less and less, more and more like to stay comfortably in their own comfort circle, not to choose to communicate with strangers in reality.

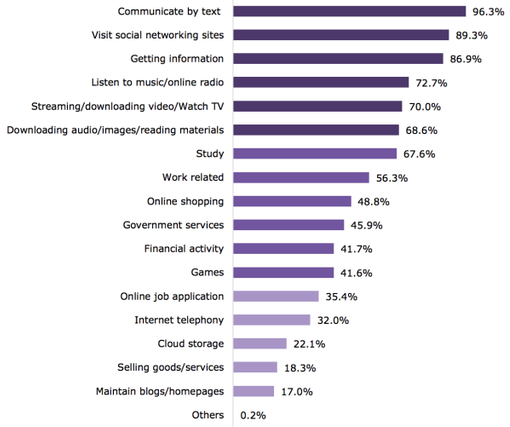
1.2 Digital Disruption

WORLD INTERNET USAGE AND POPULATION STATISTICS JUNE 30, 2018 - Update						
World Regions	Population (2018 Est.)	Population % of World	Internet Users 30 June 2018	Penetration Rate (% Pop.)	Growth 2000-2018	Internet Users %
Africa	1,287,914,329	16.9 %	464,923,169	36.1 %	10,199 %	11.0 %
Asia	4,207,588,157	55.1 %	2,062,197,366	49.0 %	1,704 %	49.0 %
Europe	827,650,849	10.8 %	705,064,923	85.2 %	570 %	16.8 %
Latin America / Caribbean	652,047,996	8.5 %	438,248,446	67.2 %	2,325 %	10.4 %
Middle East	254,438,981	3.3 %	164,037,259	64.5 %	4,894 %	3.9 %
North America	363,844,662	4.8 %	345,660,847	95.0 %	219 %	8.2 %
Oceania / Australia	41,273,454	0.6 %	28,439,277	68.9 %	273 %	0.7 %
WORLD TOTAL	7,634,758,428	100.0 %	4,208,571,287	55.1 %	1,066 %	100.0 %

Internet Usage and world population statistics estimates in June 30,2018 from www.internetworldstats.com

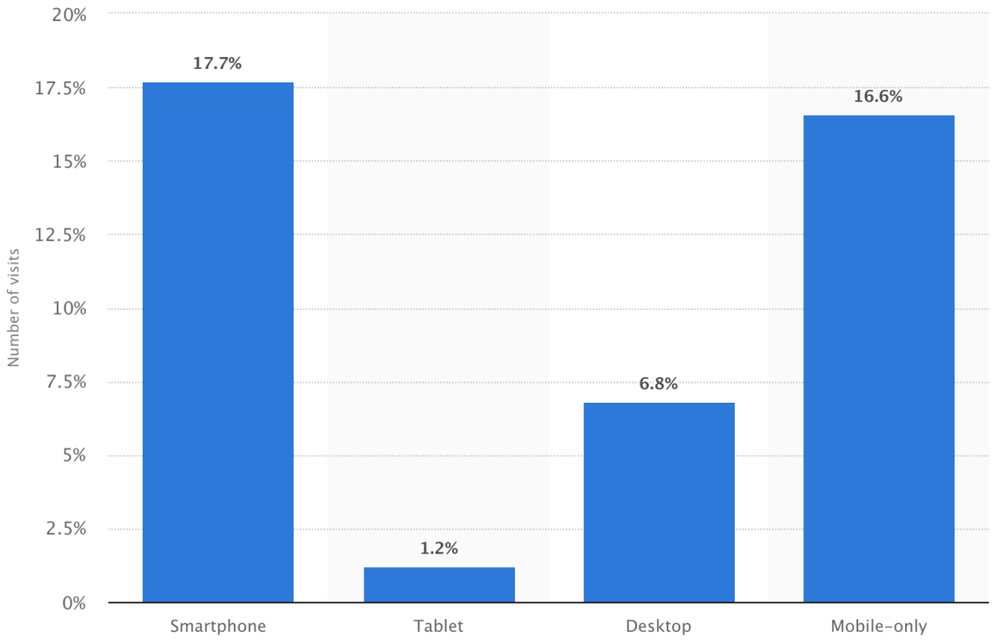
The network has become an indispensable part of people's lives. According to statistics, as of June 30, 2018, the number of Internet users worldwide has exceeded 4 billion, and this number will continue to grow in the future.

With the rapid development of the Internet, people's network activities are becoming more and more abundant. According to statistics, the main activity of people surfing the Internet is social, occupying the top two rankings. We can speculate that no matter how advanced technology is, communication between people has always been the need of life, and communication through various social software has occupied a large part of people's lives.



Percentage of Internet users by online activities. (MCMC,2017)

1.3 Social Production And Co-creation



Number of Uber users in the United States as of April 2017, by device (in millions), Statista 2018

Because of the rapid development of the Internet, the development of a large number of new types of the economy has also been driven. One of the more typical ones, such as the circular economy, is the formation of car sharing. Uber and other software use the advantages of the Internet to lease the space in the private car that was not used, thereby reducing the cost of direct transportation. Although this method of car sharing has been controversial, its development through the Internet has indeed brought benefits to people's lives. As of April 2017, the number of Uber users in the United States has reached 16.6 million. This kind of shared driving service really reduces people's travel costs. However, it also has many problems.

case study 1

Mr. Sam chose to share a carpool and sat in the back seat of the car. The driver chatted with another passenger in the co-pilot position. Mr. Sam felt very noisy and annoyed at the back, and did not enjoy the journey very much.

case study 2

Three passengers who did not know each other shared a journey. Everyone didn't talk about the whole process. The small space was full of embarrassment. Everyone didn't know each other's destinations. They don't know where the driver's next destination would be. The passengers were nervous and scared in the car and did not know when they could reach their destination.

Conclusion

Therefore, we can conclude that the period when people use transportation is one of the best moment for people to increase their communication with each other, and conversely, moderate and timely communication can also increase the enjoyment of people's car sharing.

In the behavior of car sharing, we can find that the driver is usually the leader of communication, However, in 2030, the driverless car would become the main car in the car sharing system, so when the driver is not driving the car anymore, how can such a timely communication be better? Who will become the leader in communication?

Chapter 2
Scenario in 2030

2.1 Present Situation of Driverless Car share system

2.1.1 Present situation of driverless car

It might surprise some to learn that the autonomous vehicle first gained public exposure at the 1939 World's Fair, on the General Motors Futurama exhibit. The car manufacturer envisioned, "abundant sunshine, fresh air and fine green parkways" upon which cars would drive themselves. Today, in 2018, 79 years later, the autonomous vehicle is a reality thanks to new sensor technology, advances in HD mapping, improvements in analytics, innovations in deep learning and much more.

Industry experts have defined five levels in the progression of autonomous driving. Each level describes the extent to which a car takes over the task and responsibility from the driver, and how the car and driver interact.

Level 1: Driver assistance. Driver assistance systems support the driver through such things as automatic cruise control and automatic emergency braking but do not take control.

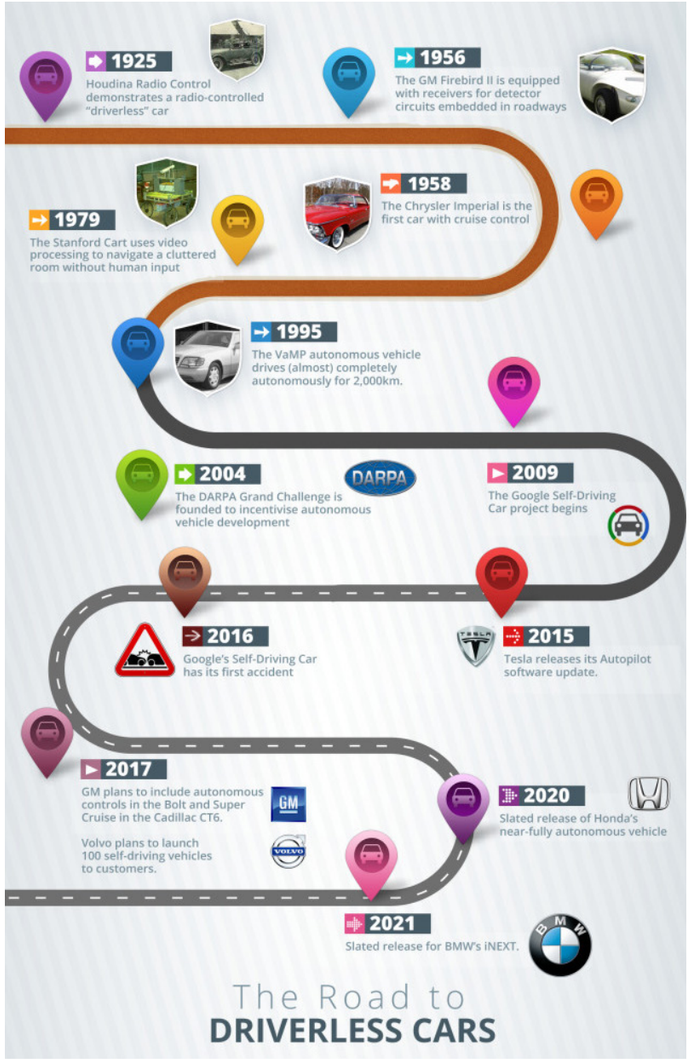
Level 2: Partly automated driving. Driver assistance functions can take control but the driver continues to operate the vehicle.

Level 3: Highly automated driving. In certain situations, the driver can disengage from driving for extended periods of time - some refer to this as 'eyes off road'. The latest Audi A8 supports Level 3, for example.

Level 4: Fully automated driving. The car drives itself most of the time in specific areas such as cities or motorway. The driver must remain able to drive but can, for example, read a magazine.

Level 5: Fully automated. The driver can have "hands off, eyes off, brain off". This means that there is no driver and people in the car are all passengers. There is also no need for a steering wheel.

Many new car models are coming out with Level 2 functionality down to mid-range family cars, however, as an industry; we have barely scratched the surface of Advanced Driver Assistance Systems (ADAS) functionality; far less full autonomy. However, newspaper headlines are screaming that fully autonomous driving is 'just around the corner'.



2.1.2 Present situation of driverless car sharing

Alphaba in shenzhen,China

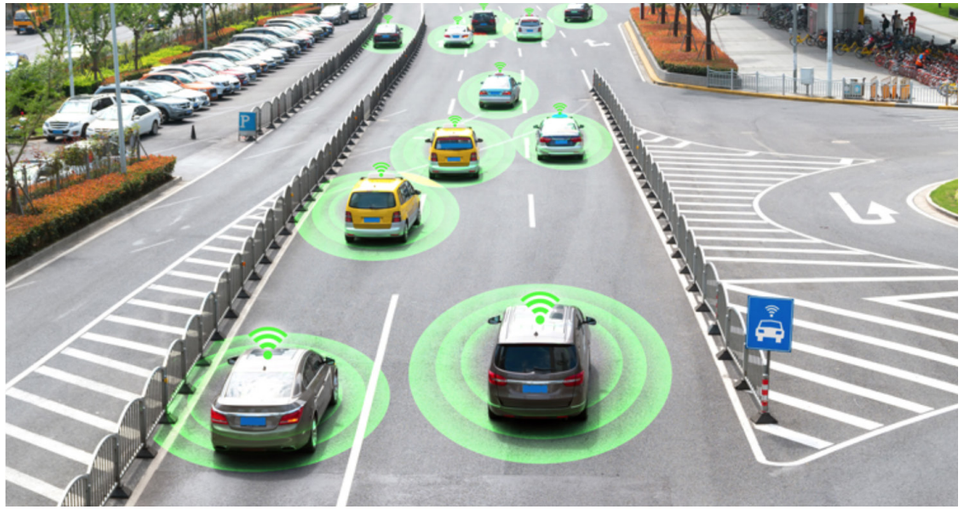
The first exploratory attempt was made on December 2, 2017, in Shenzhen, China, where the driverless bus “Alphaba” officially went on the road. “Alphaba” has two modes of manual and intelligent driving, which can be switched according to actual needs. In order to fully protect the safety of passengers, during the trial operation, each “Alphaba” is equipped with a driver, so that the driver can intervene in time when the vehicle is in an emergency. Up to now, it has been trial operation in Shenzhen for more than 300 days.

We can predict that in the future, driverless cars will be used in public transportation systems, such as bus, taxis and also car sharing system.

In 2030, the unmanned public transport system will become the main way for people to travel, and in the future, the driverless car with four-seat or two-seat will become the mainstream of the society.

The use of this type of car will no longer set up the site, people do not have to wait at the site. Through the appointment and call service, the driverless car will directly pick up and drop off passengers from the place of departure and to the destination, which will make people's travel more convenient.

Furthermore, in order to increase the utilization rate of the car, carpooling is carried out on the way, according to the co-passengers' route of travel.



Chapter 3
Mode of Carsharing

3.1 Random Rides

The most primitive way for passengers to call a car is to take random rides. For example, standing on the side of the road, making the gesture of thumbing up, the driver of the route will stop and ask the destination of the rider, if the passenger is on the way, maybe the driver would be willing to give a lift because of kindness,therefore,most of the rides are free behavior.

Normally, the gesture of asking for a ride is like a picture in the right hand with the thumbing up and extending the arm.

This method has a low success rate, and it may take several lifts to reach the final destination. The behavior is between strangers which will lead higher risk.

3.2 Site Hitching

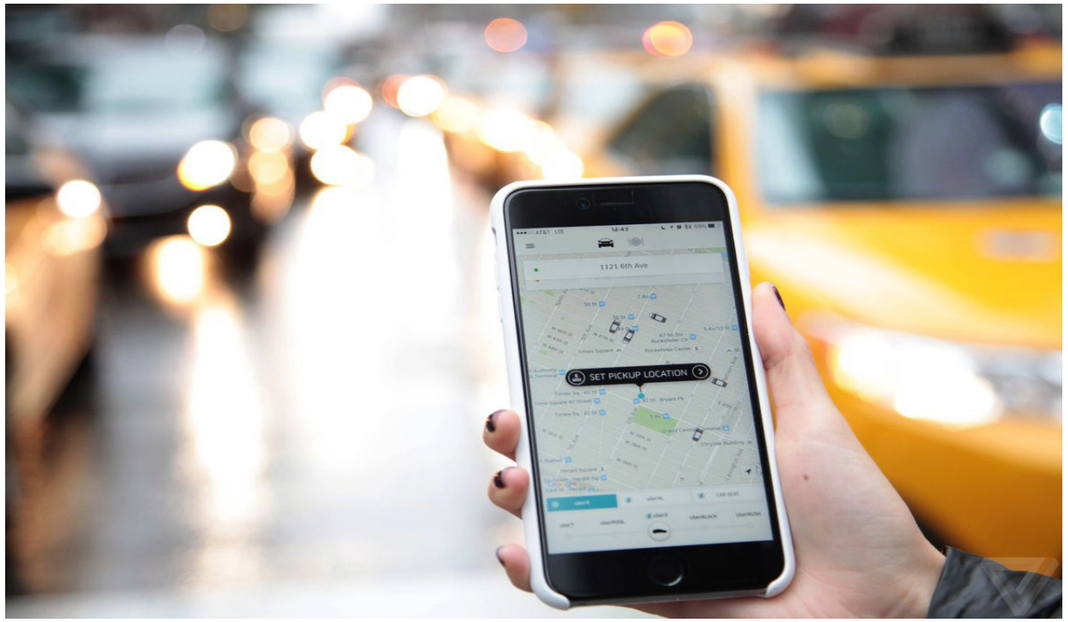
Most of the initial site hitching occur in the rural areas with poor economic development. When a villager wants to go to a certain place, he will wait at a certain customary site and pass the message between other villagers, thus those who have the same destination can take a ride.

This behavior can be profitable or non-profit, and in most cases operates between acquaintances.

3.3 Application Connection

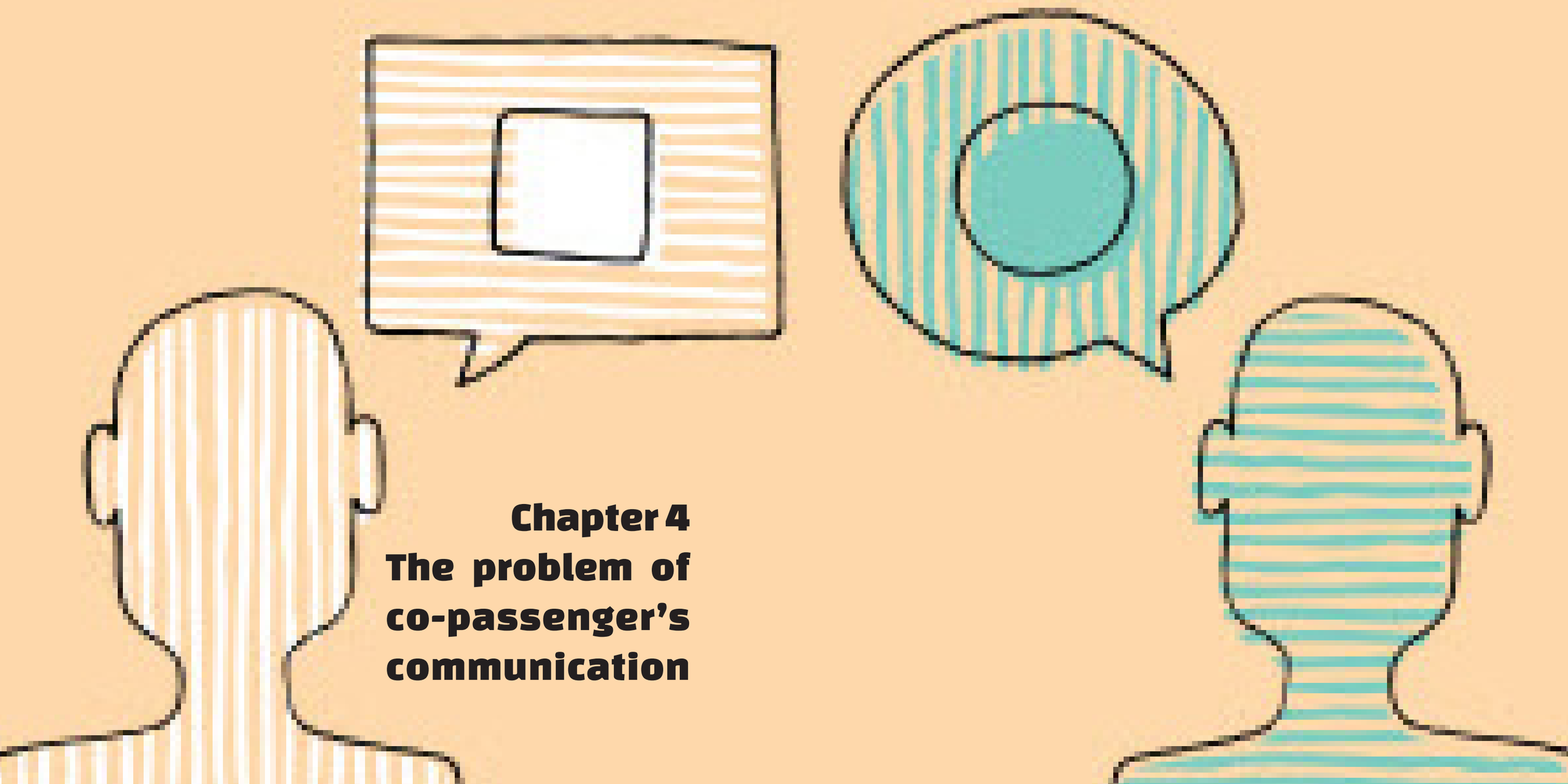
With the popularization of smartphones, the operation of carpooling through mobile phone software today has become the main way of carpooling. Usually, people will make a carpool reservation through the pre-downloaded app software in their own smart devices. Passengers release the ride demands on the app, the driver is automatically matched by the software system to the passer-by passengers or the driver selects the best target that suits his or her wishes in order to achieve a win-win situation.

This approach greatly increases the likelihood of successful carpooling. Although the ride is still a behavior between strangers, some measures within the app can reduce a lot of dangers, and this method greatly increases the convenience of people going out, but its shortcomings are also obvious, the app is mainly suitable for the large city. In remote areas like villages, this operation is hard to obtain. And another, drivers in the app pay more attention to maximizing profits.



3.3 The way of hitching in 2030

In 2030, with the development of technology, in addition to smartphones, smart watches, smart glasses, and other wearable smart devices will be further popularized, so car sharing by APP will be the mainstream trend of the future society.



Chapter 4
The problem of co-passenger's communication

4.1 Stranger Scaring

Humans have spent a large part of their history in small groups, sharing resources and protection; in that context, an outsider is a valid threat.

Examinations of primate psychology have borne this theory out: in primate species that keep to small, protective groups, infants show huge fear of strangers early on; conversely, in primate species where babies are regularly handed out to “strange” adults as a matter of course, they’re more chilled out.

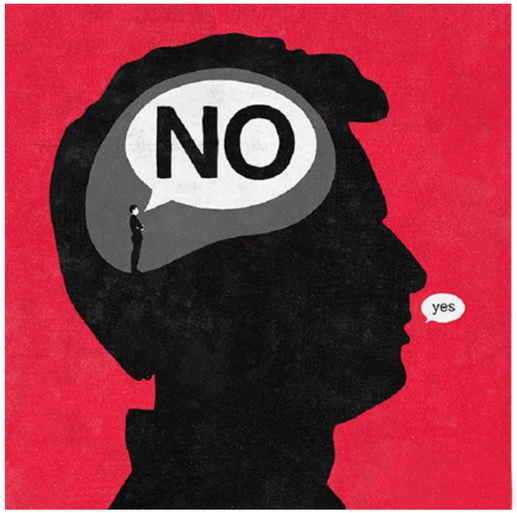
Studies have shown that the fear of strangers is common across most, if not all, human cultures; and the fear of strangers isn’t an idle one in many animal species.

In some primates, infants who aren’t under the protection of the dominant male are likely to be killed, and species that operate in extreme closeness, like rhesus monkeys, also kill outsiders of any age. Perhaps most interestingly: human children have been shown to be a lot more scared of male strangers than female ones, even if they’ve had nothing indicate to them that males are more dangerous — which suggests that fear of strange dudes has been a good evolutionary strategy in the past.

Another study in 2015 found that being around strangers actually raises our levels of cortisol, a hormone that produces stress responses, which had an unusual consequence: it makes us less empathetic. This is likely a hangover from evolutionary stranger-danger and makes us even less interested in hearing a stranger’s problems on our train ride home.

Therefore, we can assume that the reason that people aren’t willing to talk with strangers maybe comes from their DNA. But back in today’s society, people’s lives have changed dramatically. The group-style life has gradually evolved into a small group life of 2-3 people in the family. People are eager to communicate with the outside world to get timely information. However, how to overcome the fear of strangers seems to be very important in today’s society.

4.2 Personal Reasons



In deciding whether to communicate with strangers around us, we can find that personal reasons occupy a very important proportion, such as age, personality, hobbies, etc. These factors will affect the harmony of the shared environment when the car is shared.

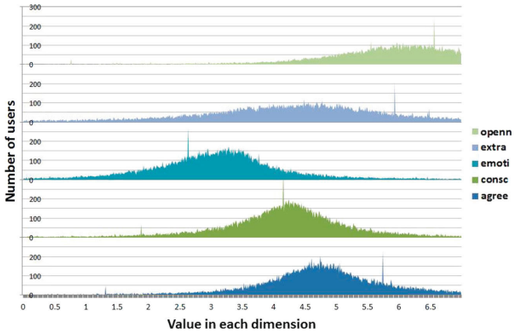
4.2.1 The Factor of Age

In different eras, there are different social environments, so people born in different ages will naturally have different beliefs, policies, and values. This problem is also called the generation gap, which is studied by many researchers. For example, when an 80-year-old man and an 18-year-old old man are sharing a shared car, they are obviously less likely to communicate. One is that they are less interested in common topics, and the other is that the dialogue between them normally presents a different level that will put pressure on young people.

4.2.2 Personality

People with different personalities also have different ways of communication when they get along. People with more active personality are often more willing to actively communicate with strangers, while those with introverted personality are shyer and more passive in dialogue.

There are many ways to classify personality. In psychology, there are classifications of professional problems to distinguish personality differences, and some alternative methods such as constellation to classify personality.



Different Personality traits users in social networks, by Jose Maria Balmaceda, Silvia Schiaffino, Daniela Godoy, (2014)

In the study of “How do personality traits affect communication among users in online social networks?”, Jose Maria Balmaceda, Silvia Schiaffino, Daniela Godoy, (2014), has shown that there are patterns between some personality dimensions in conversation threads, for example, agreeable people tend to communicate with extroverted people.

4.2.3 Hobby

The same hobbies between people can promote communication because it can bring interesting topics to each other, and after having the topics of interest, people are more inclined to communicate.

For example, when passengers are doing the car sharing, if the passengers are AC Milan football fans, it is more likely to have dialogues between them than other situations, and it is easier to achieve consistent and harmonious communication in the period of car sharing.

4.2.3 Emotion

The mood of passengers when doing car sharing is also an important factor in determining whether to communicate or not.
The different mood has different ways to influence the quality of communication.

Anger Hinders Communication

Anger can cause you to lash out and say things you don't mean. Anger can also affect the way your brain processes information given to you. For example, angry people have difficulty processing logical statements, limiting their ability to accept explanations and solutions offered by others, says John Schafer, a former behavioral analyst for the FBI, in his Psychology Today article, "Controlling Angry People."

Depression Demotivates You

Depression, whether clinical or short-term, can cause a person to isolate himself and block out communication, altogether. Depression can also lead to cold feelings toward loved ones, or irritating and sarcastic remarks suggests the University of Florida's Counseling and Wellness Center in an article titled, "How to Deal with Depression."

Pride Interferes with Listening

Pride -- or the need to be right all the time -- will not only annoy others, but it can also shut down effective communication. For example, you might focus only on your perspective, or you might come up with ways to shoot down other people before you even listen to their points. The drive to win every argument or get the last word often spawns from overcompensation, or trying to cover emotional insecurities with a sense of superiority, suggests Erika Krull, a licensed mental health practitioner, in her PsychCentral article, "Marriage Communication: Three Common Mistakes and How To Fix Them." Other people might find you easier to communicate with when you accept your imperfections from time to time, suggests Krull.

Anxiousness Distracts You

Anxiety has a negative impact on the part of your brain that manages creativity and communication skills, explains the University of Michigan's Department of Psychiatry in "Anxiety." For example, your constant worries can hinder your ability to concentrate on the information you are giving or receiving. Irritability and restlessness might also push others away from you, decreasing the chances of effective or lengthy communication.

4.3 Environmental Reasons

Environmental contexts can have negative or positive effects on interpersonal communication or produce barriers, things that inhibit effective communication. ... So things like location, temperature, weather or time of day affect communication and present different barriers to effective communication.

In the context of a driverless car society, the point that environment can affect the communication between co-passenger will only be limited to the interior and exterior of the car.

4.3.1 Exterior of Car

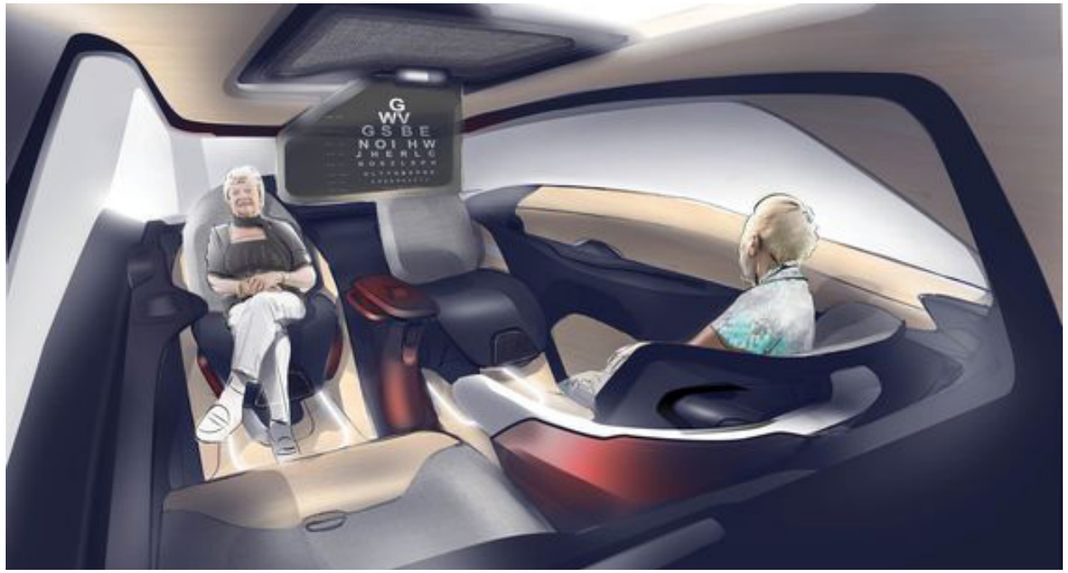
Although the exterior of the car cannot be intuitively perceived by the passengers when it is shared, the exterior of the car may change the first impression of the co-passenger.
If an artist needs to share an unmanned car, when he sees that the shape of the driverless car is very artistic, he will be very happy to take the car. If the artist has a good mood, it will be easier for him to communicate with the people who share the journey.

4.3.2 Interior of Car

When people share a car, the environment of communication is limited to the space of the car, so the interior environment of the car also has an impact on people's communication.

For example, when the space inside the car is relatively spacious, people may add gestures to promote mutual understanding during communication.

Another example is to design the interior of the car to be liked by the passengers, for example, if the passengers are all Marvel fans, the interior decoration of the car is mostly based on Marvel, then the co-passengers maybe will use this interior decoration as a starting point for communication and dialogue, so that the atmosphere would be more harmonious.



4.4 Direction of Passengers' Matching system in 2030

According to the above survey, for the future design of the driverless car sharing APP, we need to pay attention to the following points of the user and the car:

1. For the user: first, classify the passengers by some basic factors, and then combine the mood detection system to detect the emotions at that time, then combine the two to match the passengers.

2. For the driverless car: the car can be classified according to the corresponding classification so that the interior and exterior of the car are classified according to the classification.

Chapter 5
The Research of Car Sharing APP

5.1 The Matching System of Current Car Sharing App

This system operates on the basis of carpooling software, so it is necessary to study the existing carpooling software. We can get the characteristics and commonality of this software compared with others, so as to get better inspiration for our own software design. There are two main types of existing carpooling software systems, one is to make calls from the passenger side, such as uber, and the other is that the driver makes a carpooling request on a certain platform, such as blabla car.

5.1.1 Demands From Passenger

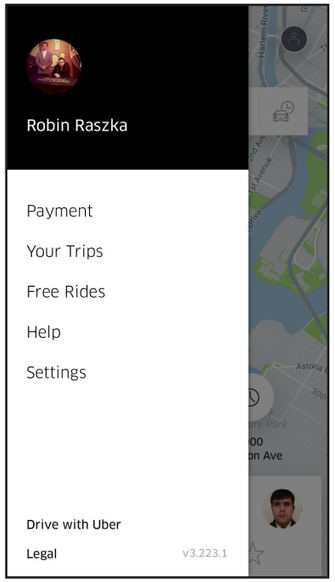
This kind of carpooling often occurs in the case of short-distance rides, mostly from one place in the city to another in the city, which is equivalent to an alternative way of public transportation. The most typical example is Uber.

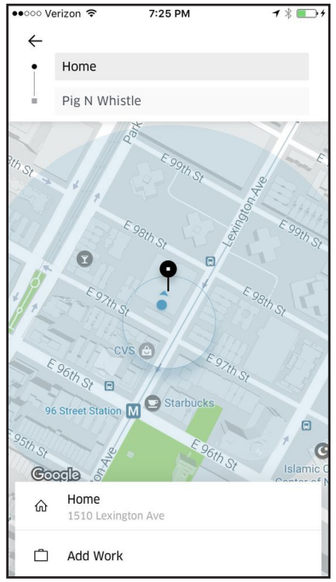
The precise algorithm for matching riders to drivers is probably unknown to anyone outside Uber's internal ecosystem; it is, however, theorized that Uber's search algorithm has 20-plus markers with proximity to the requester (rider) being one of them.

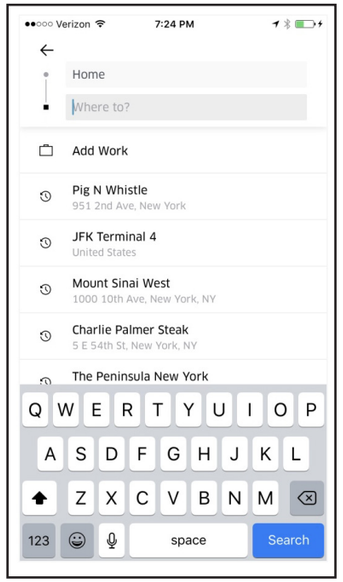
Proximity is based on the driving route that the app figures how to get there, not physically closest. For example, if the passenger stands behind the driver and the road is a one-way street, then the driver needs to make a detour to reach the passenger, which may consume more time.
Another important factor is the star-rating of both the rider and the driver. Normally a 5-star passenger would not match a 2-star driver.

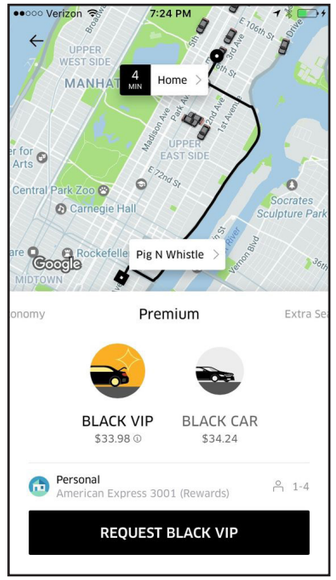
If the passenger chooses the carpooling the uber, the way of matching is quite the same. When the first passenger requests the ride, the system will find the nearest driver according to the passenger's location. If there are lots of cars nearby, the system will select the best driver according to the rating. If the second passenger needs to carpool, the system does the same process, first according to the destination, the system selects the vehicles passing by the road in the vicinity and then selects the car driver according to the driver's rating.

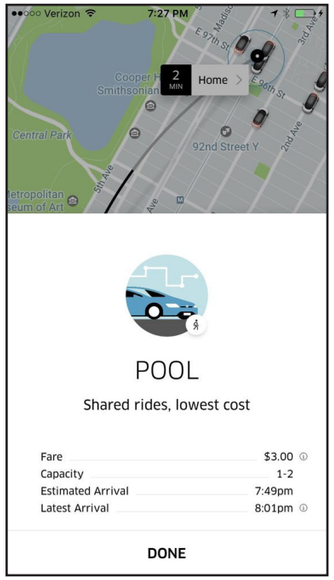
The process of taking an uber

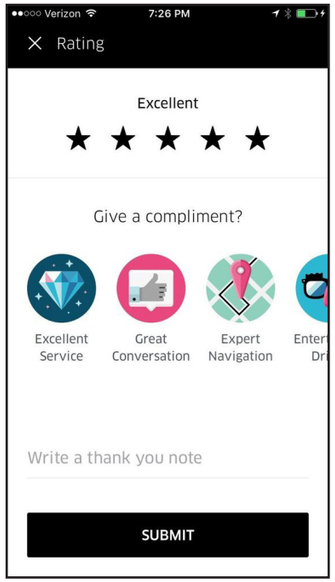












Personal File

Request

Insert your pickup location
Get picked up wherever you are
whenever you're ready

Ride

A driver directly to you in minu-
tes.Payment is automatical and
cashless,no tipping.

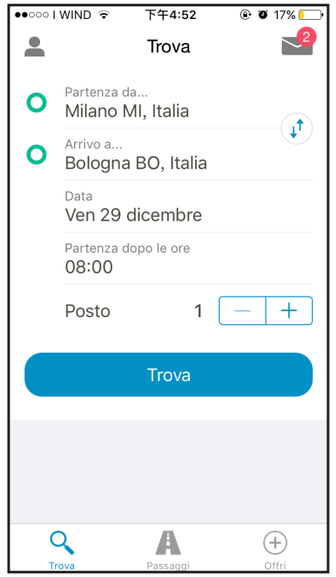
Rate

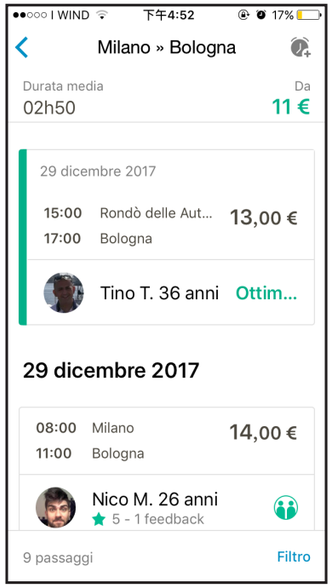
Give your driver a star rating to
help uber maintain the highest
quality experience on every ride.

5.1.2 Demands From Drivers

This kind of carpooling often occurs in the case of medium and long distance rides, mostly from one city to another, which is equivalent to an alternative way of intercity bus. The most typical example is blabla car.

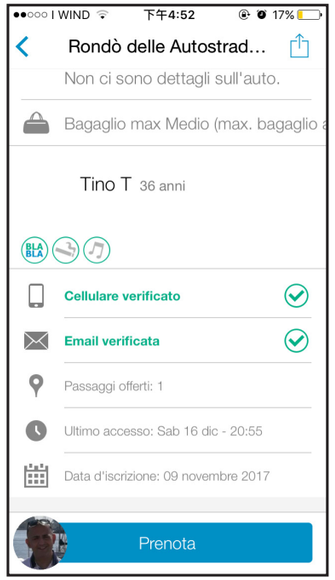
The driver provides the destination of the departure point, allowing the passenger to choose the appropriate itinerary in the official website. During the period, the driver will write some requirements for the passengers, such as the smoke-free environment. The passenger can also see the driver's previous evaluation. The two then choose each other according to their mutual wishes.





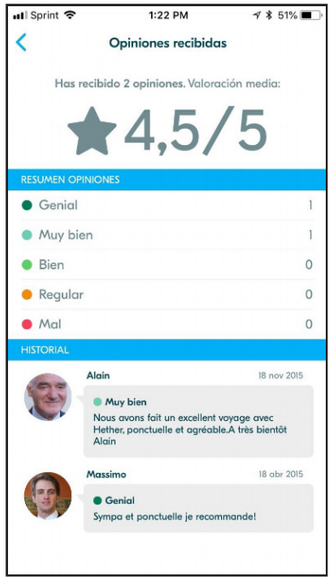
Request

Passengers enter the starting point, destination, time and number of people, then search to find the same journey



Reservation

Check the owner's requirements for this trip and make an appointment.



Rate

Give your driver a star rating and comments.

5.2 Analysis of Online Social App

Because the software involves the problem of passenger matching, the exploration of the matching mechanism can let us find some interesting or practical matching methods from the existing social software, so as to graft into this passenger matching app for the future driverless car sharing system.

5.2.1 Acquaintance Social Software

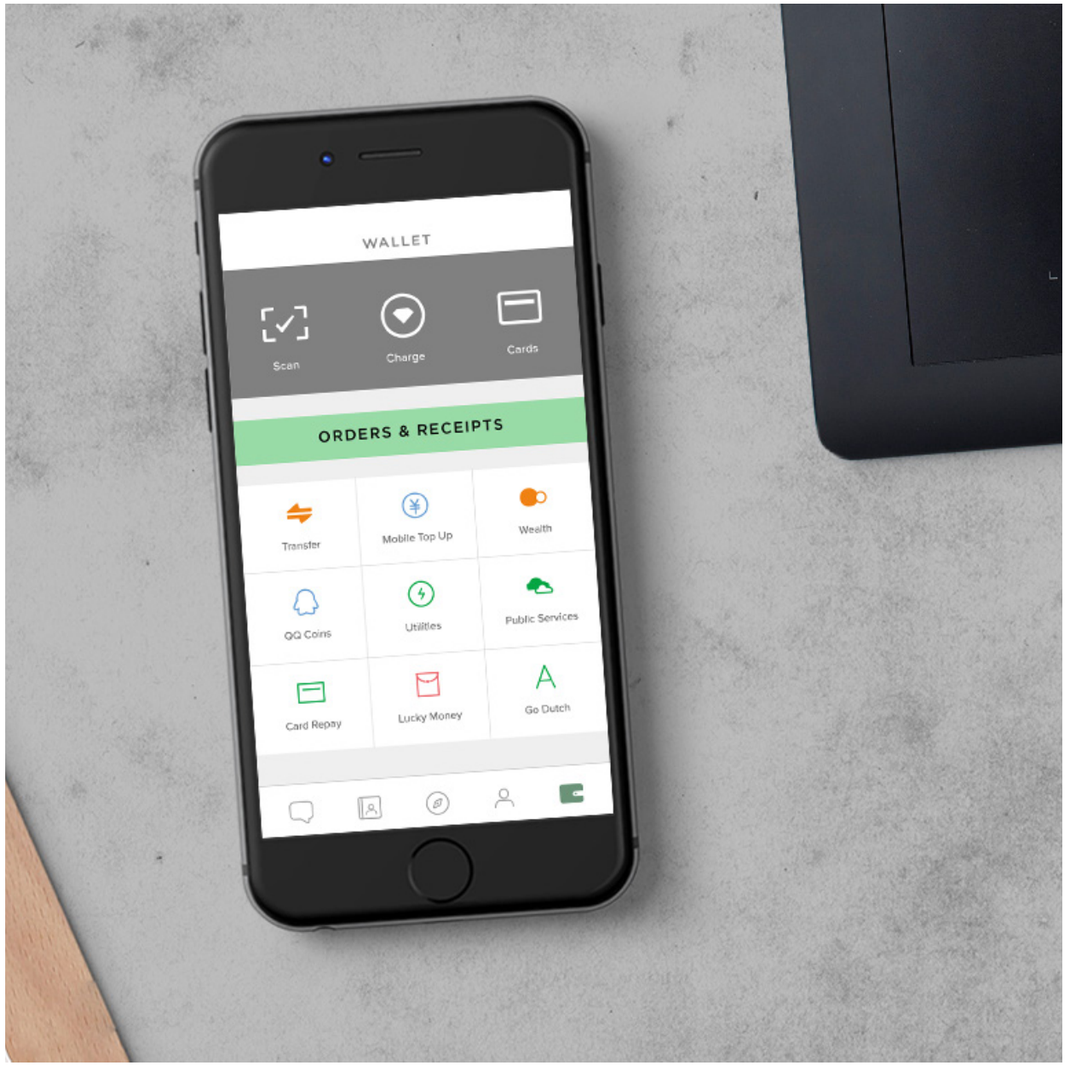
Acquaintance social software is mostly designed for the social contact between acquaintances, such as Wechat and Whatsapp.

This kind of social software has a large user base, it can not only enhance the emotional contact between friends and relatives, but also come with some other ancillary functions, such as video chat, location sharing ,and money transfer to facilitate people's daily life.

This kind of social software usually adds friends through more personal information, such as phone number, real name and so on. Its matching method is relatively simple and direct, usually, acquaintance adds friends directly in person or through the recommendation of the system from the address book.

Some mainstream social software for acquaintances will also have some matching ways for strangers to socialize, such as "Nearby", a function of WeChat.

Many people will try to make new friends through these attached functions, but generally speaking, the effect is not good. Because of the privacy of acquaintances social software, people generally do not apply through friends from strangers.



5.2.2 Stranger social software

This kind of software is mainly used for the social contact between strangers, with various forms, such as tinder, etc., which is generally targeted at finding a partner or setting up a topic discussion group.

One interesting thing is, when people find new friends in the stranger social software, they will be reverted to acquaintances social software to further communication, even strangers social software has the function of the instant communication.

Therefore, an acquaintance social software is more like a life tool, people are more inclined to use it for a long period of time, however, a stranger social software is more like a tool to ease loneliness, people are more inclined to use it occasionally.

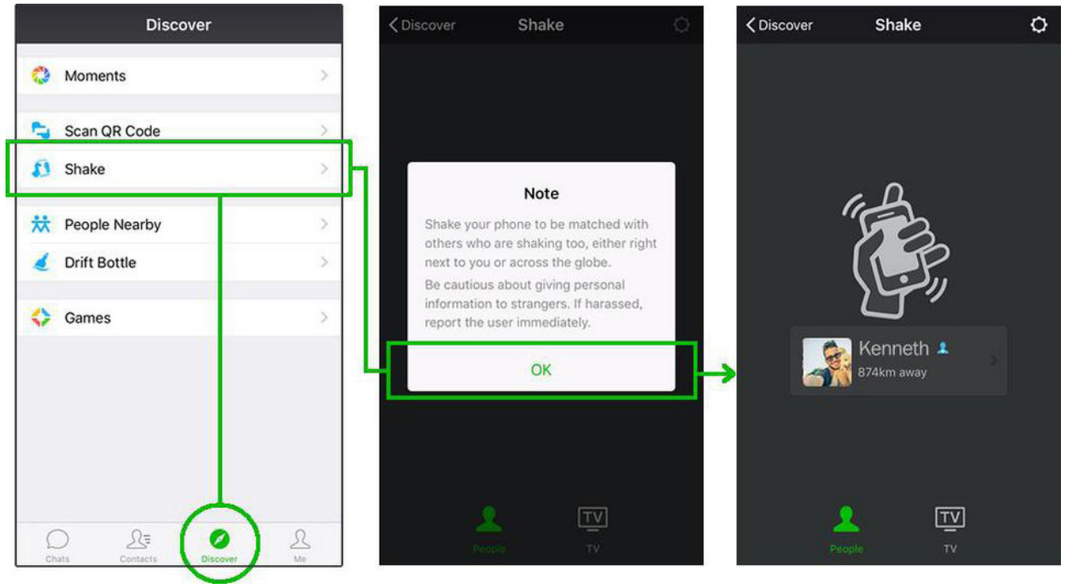
There are various ways to match people in stranger social software, which can be roughly divided into the following four categories:

1.Through random match
2.Through common interest
3.Through professional knowledge
4.Through virtual society

Through Random Match

The original random matching method of making friends is similar to the concept of the floating bottle. Both parties do not know any personal information about the other party, such as height, age, occupation , and appearance, and only make friends through random matching. This method is like the floating bottle in reality because there is no information to provide, it has a very low chance of success in matching.

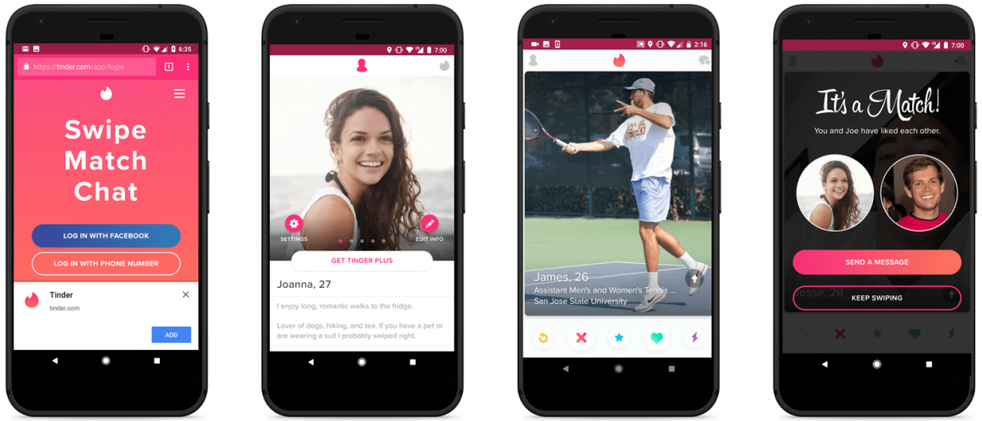
One example is the “shake function” of WeChat. Users can simulate shake by shaking their mobile phones or clicking buttons, which can be matched to the WeChat users who triggered this function at the same time, thus providing the possibility of social interaction between unfamiliar WeChat users.



Another type of random match will provide more personal information, like Tinder. In fact, this random matching method is not as random as it seems. The software is bound to facebook. And because of using Facebook, Tinder is able to build a user profile with photos that have already been uploaded. Basic information is gathered and the users' social graph is analyzed. Candidates who are most likely to be compatible based on geographical location, number of mutual friends, and common interests are then streamed into a list of matches. Based on the results of potential candidates, the app allows the user to anonymously like another user by swiping right or pass by swiping left on them. If two users like each other it then results in a "match" and they are able to chat within the app.

The central feature of this app is the swipe, this kind of behavior can increase the interest of making friends and the success rate of matching. The action of swiping that we like each other will be a successful matching method, which can make both sides let go of the fear of strangers to each other.

tinder



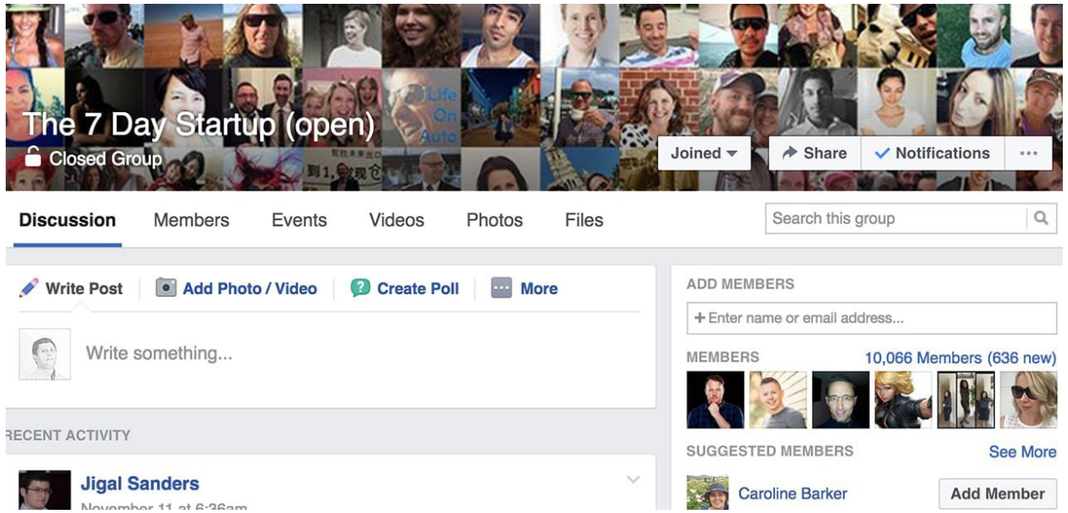
Through Common Interest

This kind of social software establishes various groups based on the classification of interests and hobbies. Users can join different groups based on their own interest selection, so as to discuss topics and even socialize.

This matching mechanism is not a direct match between users, but a gathering of the same kind of people so that they can communicate freely in their own groups. This matching mechanism has a weak purpose, and whether the matching is successful depends on the initiative of users.

However, since all members of the group share the same hobbies, communication between them will be more smooth and harmonious, and the probability of finding new friends is relatively high.

A typical example is the Facebook group, which sets up groups based on different topics so that people can post about the topic.

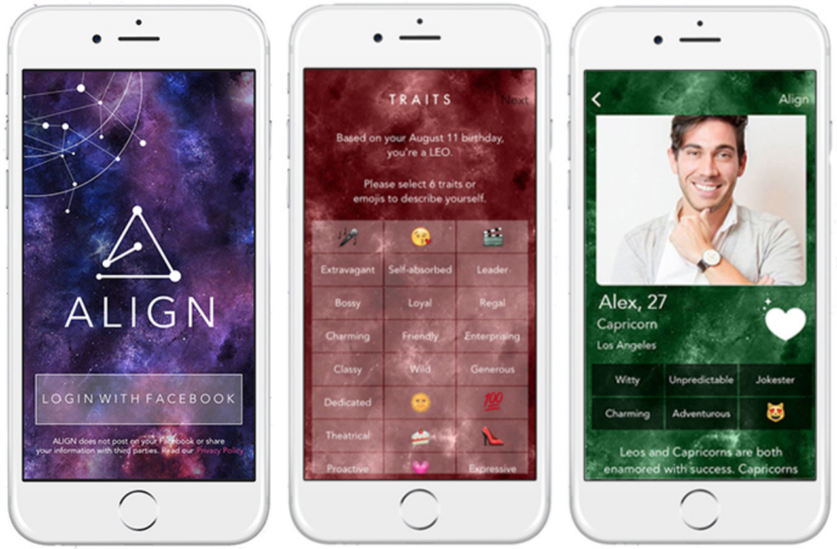


Another form of this kind of software is directly targeted at different users, like Pinterest, Behance, they're directly targeted at people who like design, or IMDB, they're directly targeted at people who like movies.

Through Professional Knowledge

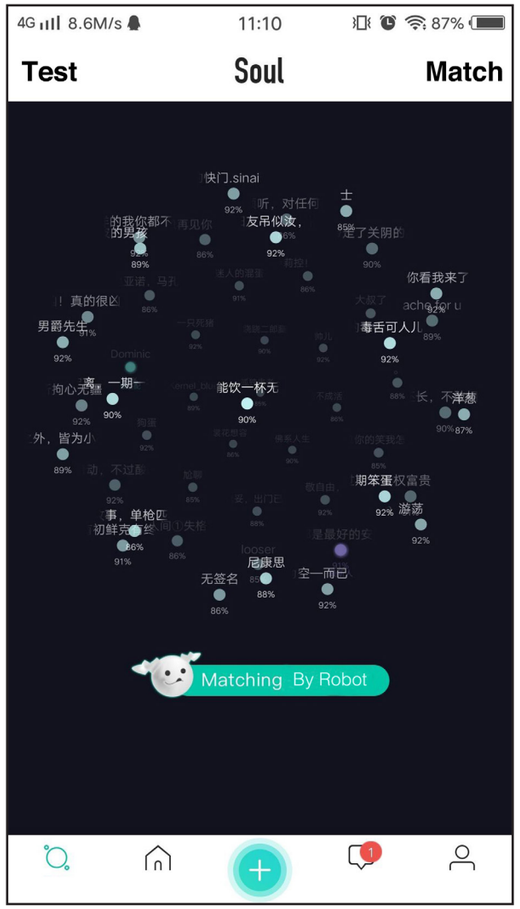
This kind of software classifies users by professional knowledge, such as psychology or astrology. Firstly, the software requires users to do some questionnaire surveys before using the app, and then classify users into different categories through the answers of these questionnaires. Then, through the analysis of this professional knowledge, the matching degree between different users is calculated, and then different users are pushed to socialize according to the calculated matching degree.

One example is the "Align", an App based on the astrology. The App uses the theory of Astrolabe to establish a database of user's personality, and then match the database to know whether the people between each other would be happy to stay together or not.



Another example is the APP soul. This app position and distinguish the basic personality of the user through the completion of the psychological research questionnaire and then create a concept of planet to isolate the person with a similar personality.

The people on the planet can be matched by the robot or they can try to find their own friends. This matching mode is more targeted and pays attention to the communication at the spiritual level.

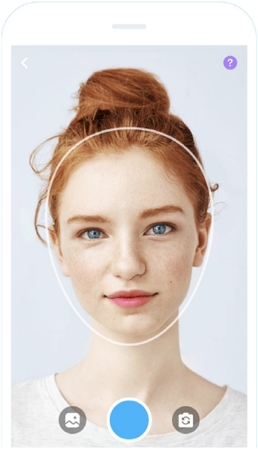


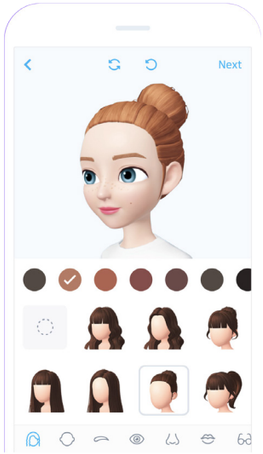
Through Virtual Society

This is the most recent form of social interaction. Users' social interaction is no longer limited to the two-dimensional level, but more to the three-dimensional level.

One example is zepeto. After registration, users can create a 3D version of you based on their selfie, and these different 3D versions of you will be put into one community, where users can make friends just like in the real world.

The match is also kind of random, but it shows more contents of you, which will make the communication of people more real.





Stylisher

Taking a selfie and style the 3D version of you with various items.

Social

Users can meet new people in the street and greet with friends with various actions and expression on face.

5.3 The Needs of Driverless Car Sharing Matching System

5.3.1 One Time Social

Going back to the way of social for driverless car sharing system in the future, we can see that it is more inclined to one-time social contact.

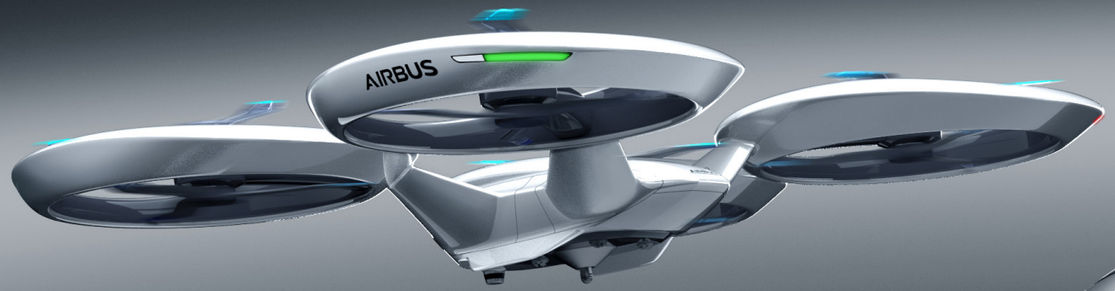
There is a big possibility that the passenger will only meet one time, so the first impression will be more important than any other factors.

Since the appearance of passengers is not considered by us, all kinds of conditions that affect the first impression, including attitude, mood ,and manner of treating others, will be considered by the App that we designed.

5.3.2 Weak purpose

The main purpose of using a Shared car is to take a ride to the next destination, and the communication between passengers in the car is not the most important purpose of passengers.

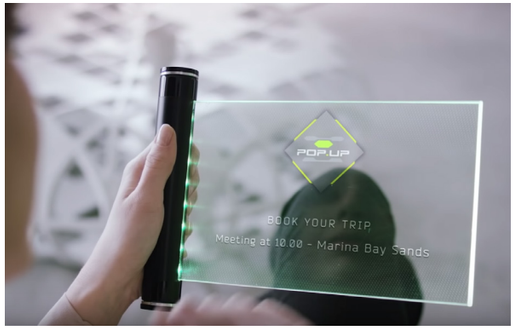
Therefore, the matching method we designed will reduce the purpose of making friends and focus on promoting communication between passengers rather than making them be good friends or even lovers.



Chapter 6
Design Section

6.1 Application Design

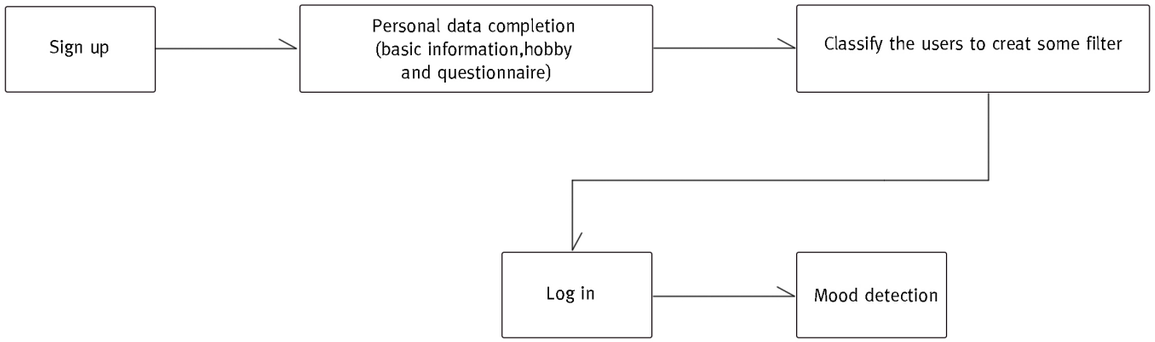
6.1.1 Device in 2030

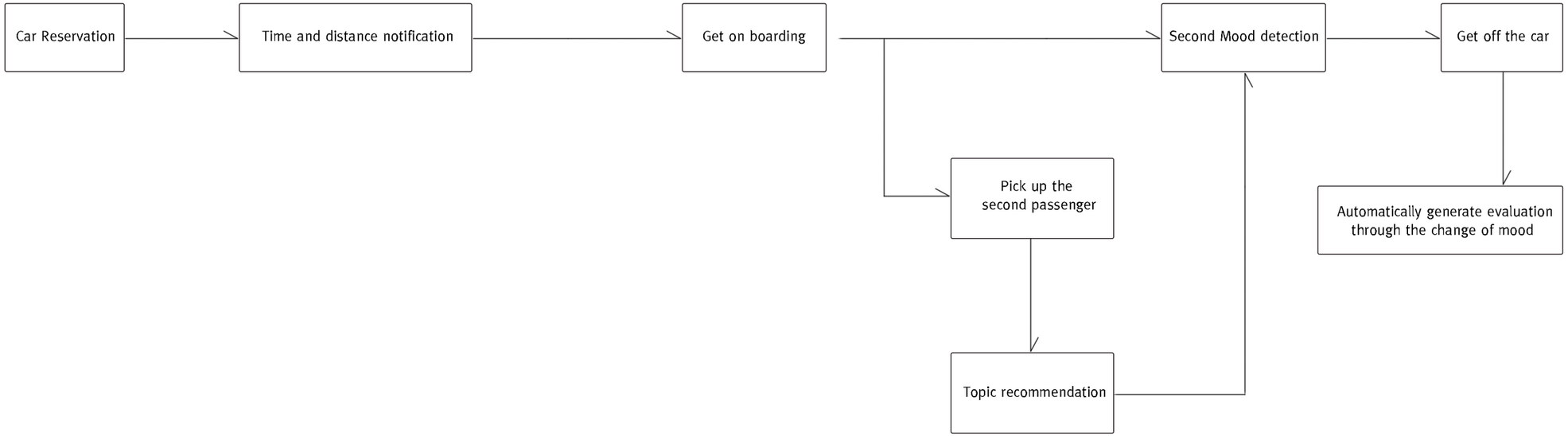


In 2030, transparent electronic devices will come into people's sight and be widely used. One possible way is to use projection technology to project the interface of electronic devices onto a transparent panel with sensors. People can operate the device by clicking on the screen of the transparent panel.

This transparent device is full of futuristic feeling, and its design is closer to the lifestyle in the future.

6.1.2 System process



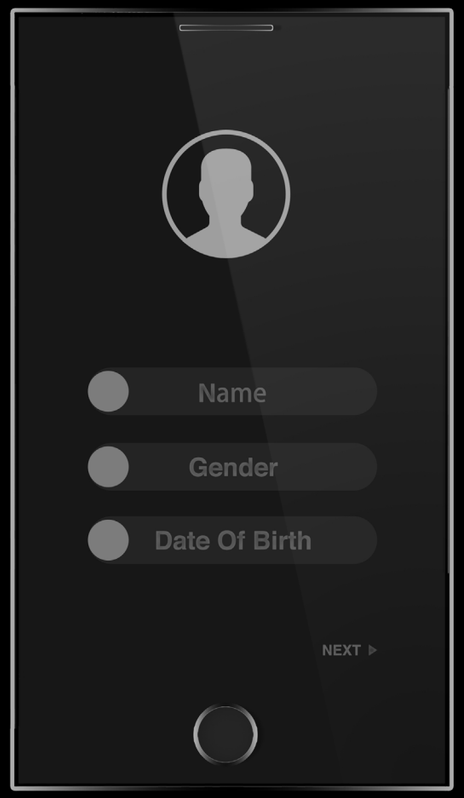


6.1.3 Interface of App

The Welcome Page

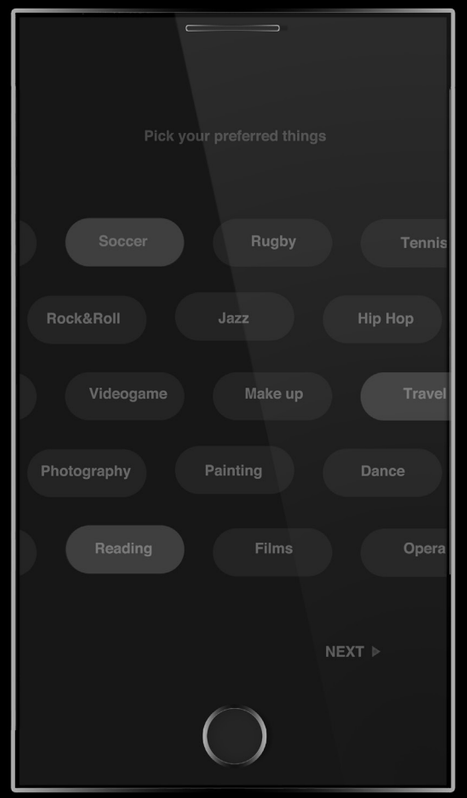
The Log In And Sign Up Page

Users who log in for the first time can register users through the binding of social software. Binding social software can better make the software know some life information of users, so as to provide good data for the classification of later users.



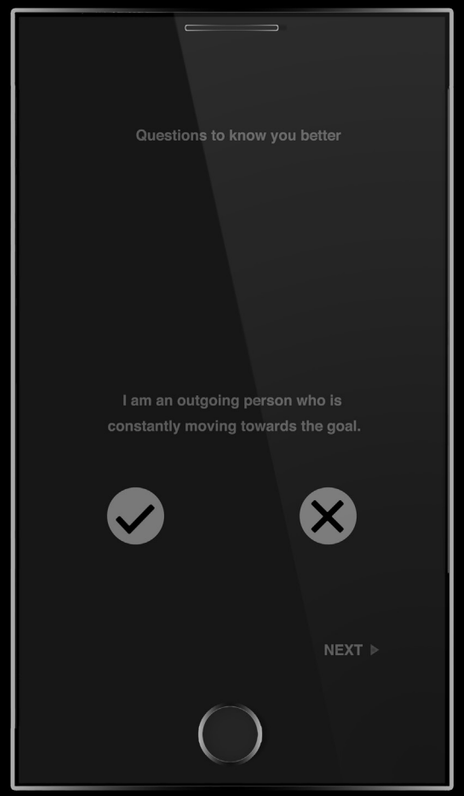
Personal Data Completion Page

Users fill in some basic personal information to get some factors such as age, gender and so on that affect passenger communication.



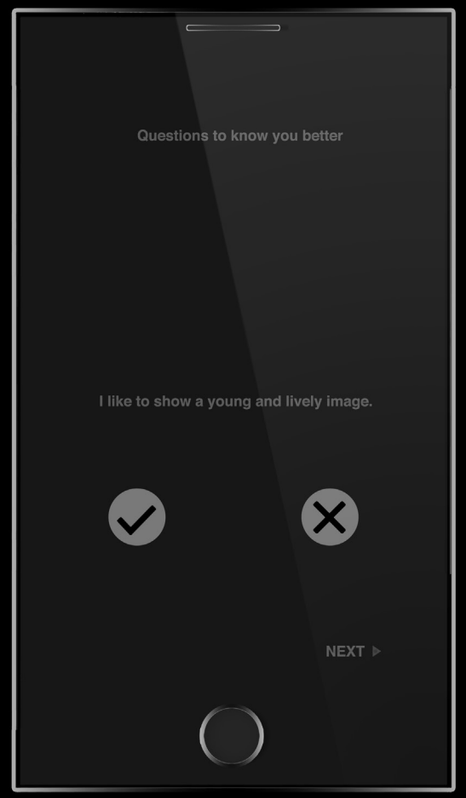
Interest Selection Page

The system will give some interest labels, users can choose any label, so as to choose their own interests.



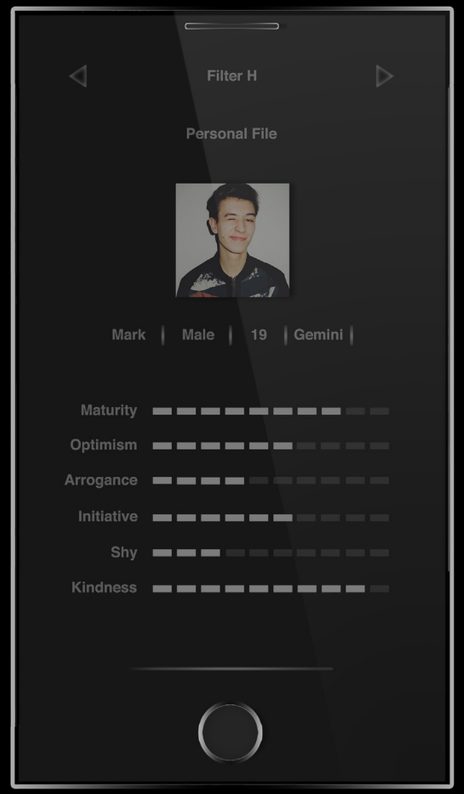
The Questionnaire Page

Users need to answer some questions in the questionnaire. Through the questions, the system can better understand the user's personality and classify users more accurately.



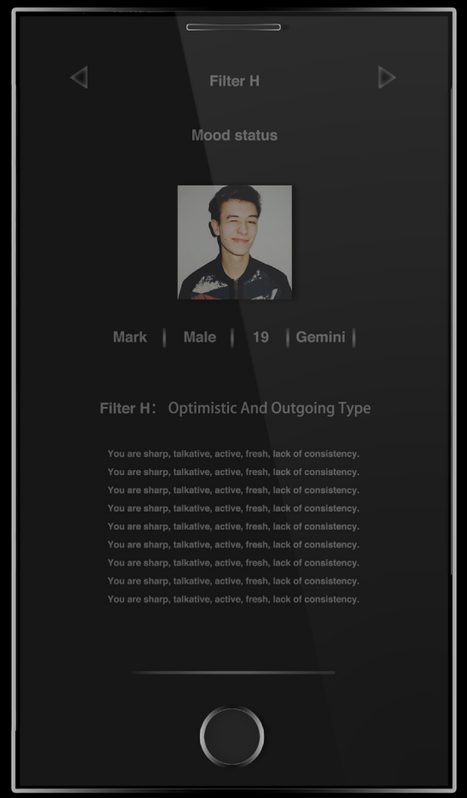
The Questionnaire Page

Click next to go to the next question.



Personal Classification Page

After the completion of the questionnaire, the system will evaluate the different personality indicators of users according to the answers of the questionnaire, and users can check their own personality data at any time.

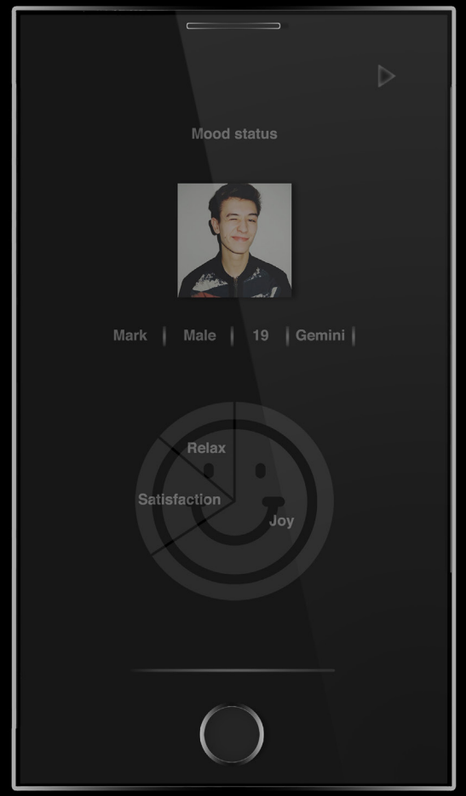


Personal Classification Page

If you swipe right, then you can find the explanation of the filter of yours.

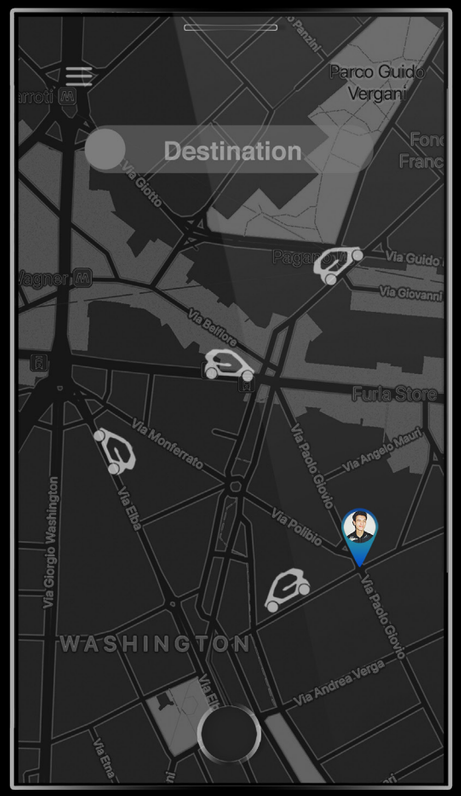
Mood Detection Page

Before you start to use the car share system,you have to scan your face to detect your mood.
This can also ensure the authenticity of the passenger to prevent the change of the user.



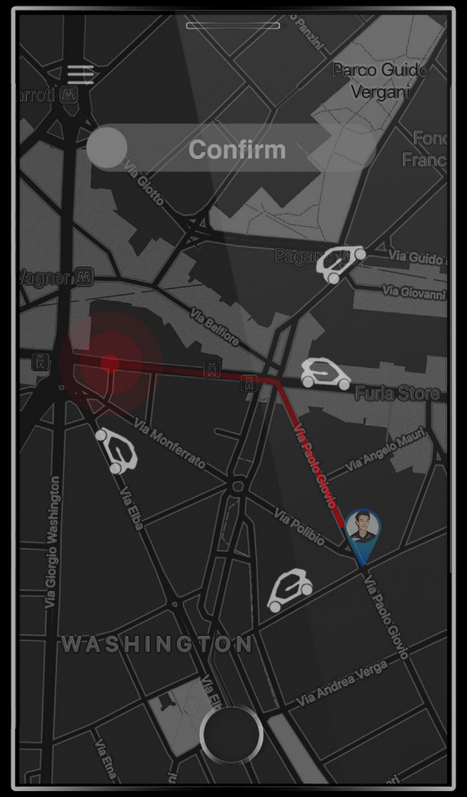
Mood Status Page

After scaning the mood, there would be a feedback of your mood status.



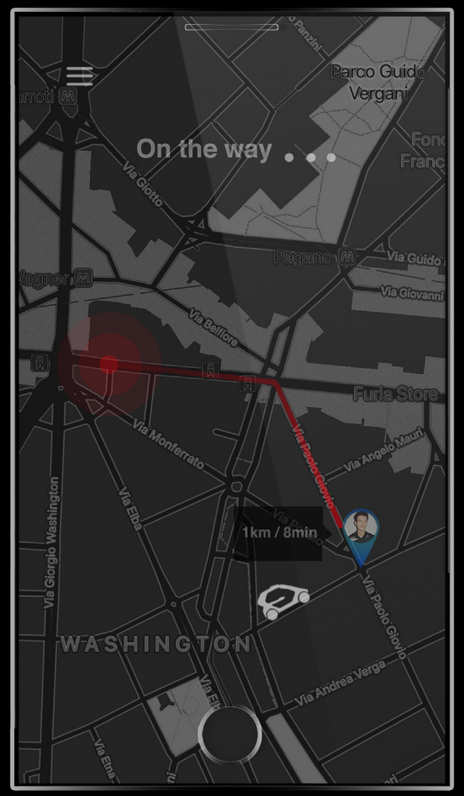
Car Reservation Page

It will automatically locate your location and the user just need to enter the destination of the journey to reserve a car.



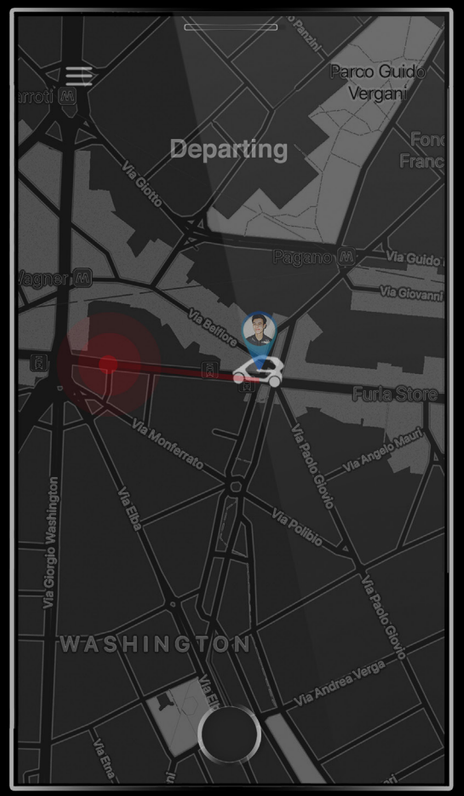
Route Confirmation Page

It will show the route of the journey, if the destination is right, the user just need to click confirm to make the appointment.



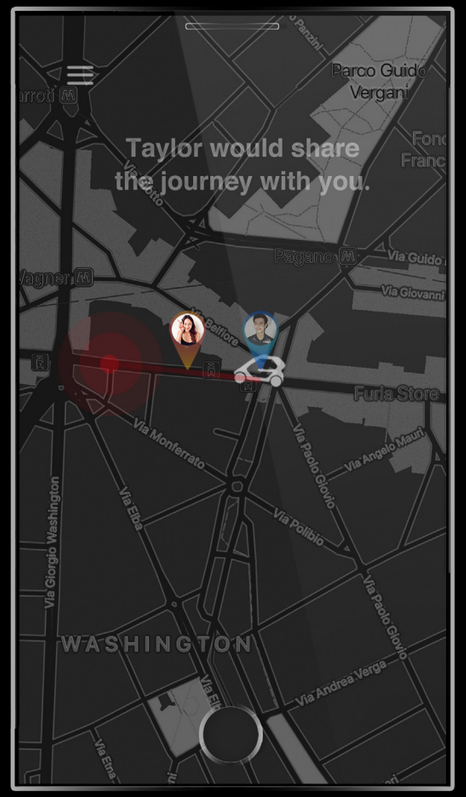
Picking Up Page

The distance and time between the car and the user will be updated in time.



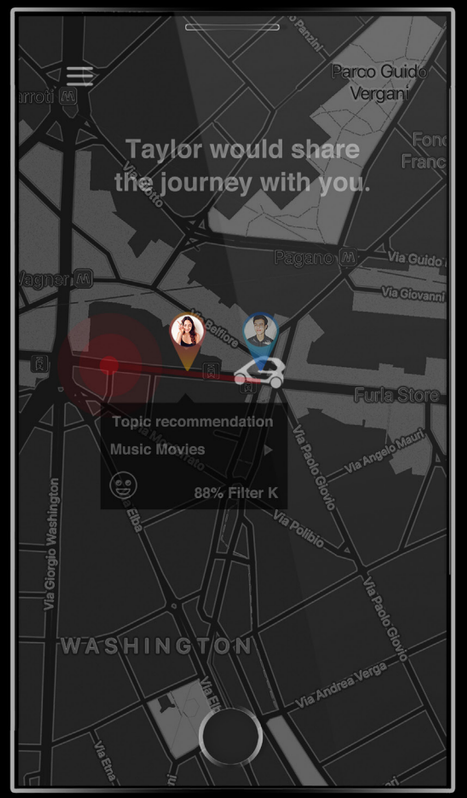
Departing Page

The route will gradually shorten with the progress of the car, so that the user can know the distance from the destination in time.



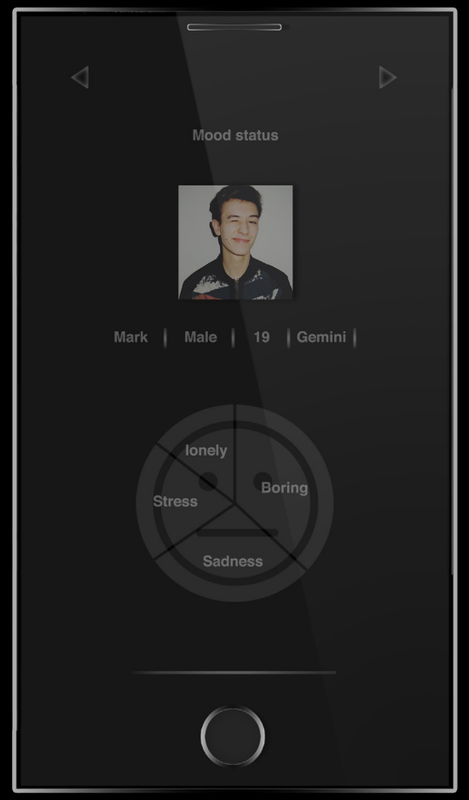
Car Share Page

There would be a notification if the route overlaps with that of other users, the system automatically carpools to increase the utilization rate of cars.



Topic Recommendation Page

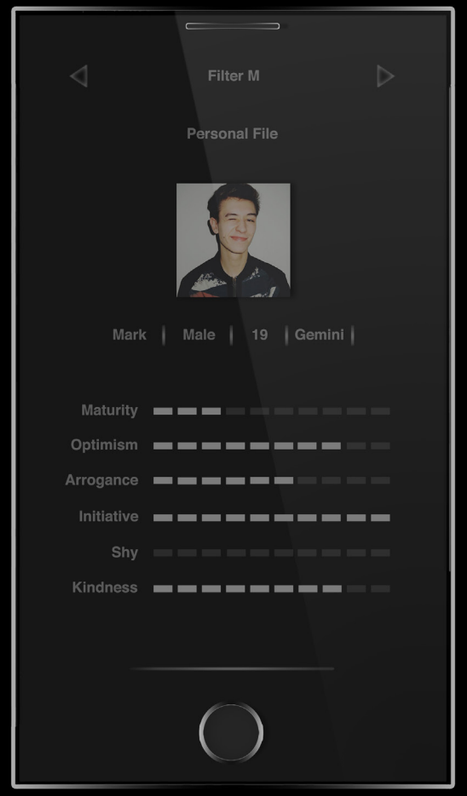
Click the avatar of the co-passenger to view the co-passenger's mood, matching degree, category and topic recommendation.



Mood Evaluation Page

Before the passenger gets off the bus, the passenger's mood will be detected again on the screen of the car like the picture in the next page.

The evaluation of the experience will be automatically generated by the system according to the change of mood.



Filter Change Page

After several reviews of co-passengers, users' data will be updated and changed to achieve a more realistic state.

There would be two times of detection in the car, one after passenger getting on the car, another before passenger getting off the car. The degree of change in mood represents the evaluation of the experience which will be recorded and feedback to the user database, so as to have a more comprehensive understanding of the user's real character.

6.2 The Exterior and Interior Decoration of the Car

6.1.1 Decoration by the filter

From the above investigation, it can be seen that the exterior and interior decoration of the car also play a positive role in the communication between passengers in the car, so we can make some design on the exterior and interior decoration of the car.

In the App, we will divide passengers into different categories and match passengers according to the categories. Then we can use this category to decorate the external and internal decorations of the car.

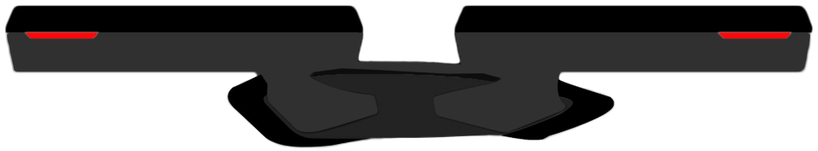
Now if one of my categories is all AC Milan fans, then we can design the car according to the AC Milan team logo and so on.

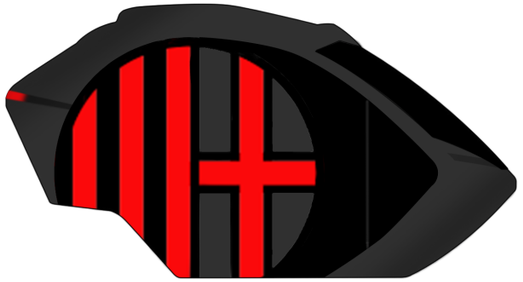
Analysis of AC Milan Category

We can use red and black as the main color of pop up and apply the logo to the decoration.

This category all has the same interest in playing football, therefore, we could also apply some elements of football and football peripheral products.

The design of exterior decration





The design of interior decration

Based on some representative elements of ac Milan, the interior decoration of the car was changed to enhance the possibility of communication between passengers.

The design of interior decration

The screen in front of the car would be able to play anything that the passenger wants.
Normally two co-passengers would share the same video together based on their common interest.
Sometimes if the co-passengers have disagreements, there would be a separate screen projected on the glass or view details as a split screen.

6.1.2 Decoration By The Theme

Another way is to design the exterior of the car with the theme of the city. Different cities have their unique urban characteristics and landmark buildings, and people living in different cities have been influenced by the urban environment since childhood, so the first impression of many people who grow up in the city will have the character of the city.

This kind of the first impression comes to the car, it is more like the visual feeling that the car exterior decoration brings to the person, so this kind of theme is more suitable for the design of the car exterior decoration only.
Here we will choose Milan and Shanghai as the inspiration.

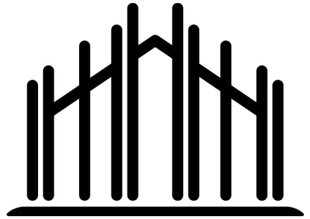
Milan

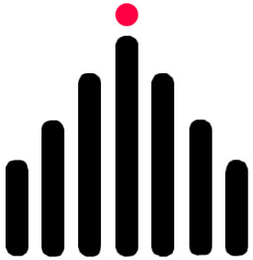
The most famous attraction in Milan is the Duomo cathedral, which we can use as inspiration.

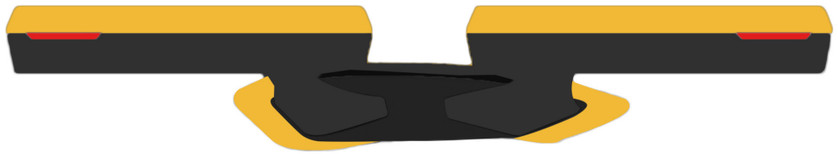
First of all, we can simplify the line elements of the church to obtain an abstract city mark, and then apply the city mark uniformly on the door handle, so that the whole theme of different products have the same elements.

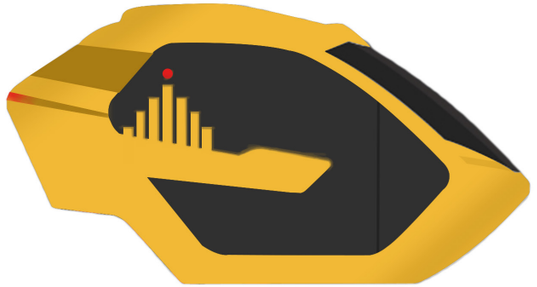
Secondly, we can extract the logo color of the city and change the color of the exterior decoration of the car. For example, in Milan, yellow represents its characteristics of vitality, and yellow is also the color of Duomo church, so it is appropriate to use yellow as the color of Milian.

The process of simplify the line elements









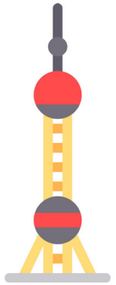
Shanghai

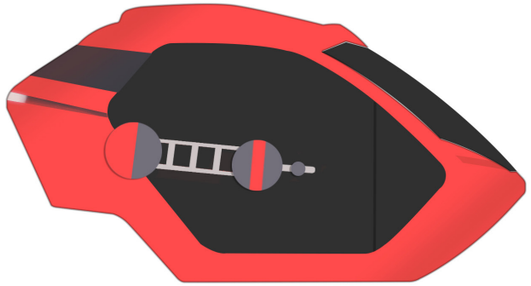
The most famous attraction in Shanghai is The Oriental pearl tower, which we can use as inspiration.

First of all, we can simplify the line elements of the Tower to obtain an abstract city mark, and then apply the city mark uniformly on the door handle, so that the whole theme of different products have the same elements.

Secondly, we can extract the logo color of the city and change the color of the exterior decoration of the car. For example, in Shanghai, red represents its characteristics of passion, and red is also the most popular color in China, so it is appropriate to use red as the color of Shanghai.

The process of simplify the line elements





Reference

Sitegraphy:

https://www.iyiou.com/p/46614.html
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http://findingthefreedom.com/blablacar-european-travel/
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