User-Centered Design CSP 588
Homework – 4

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Homework - 4

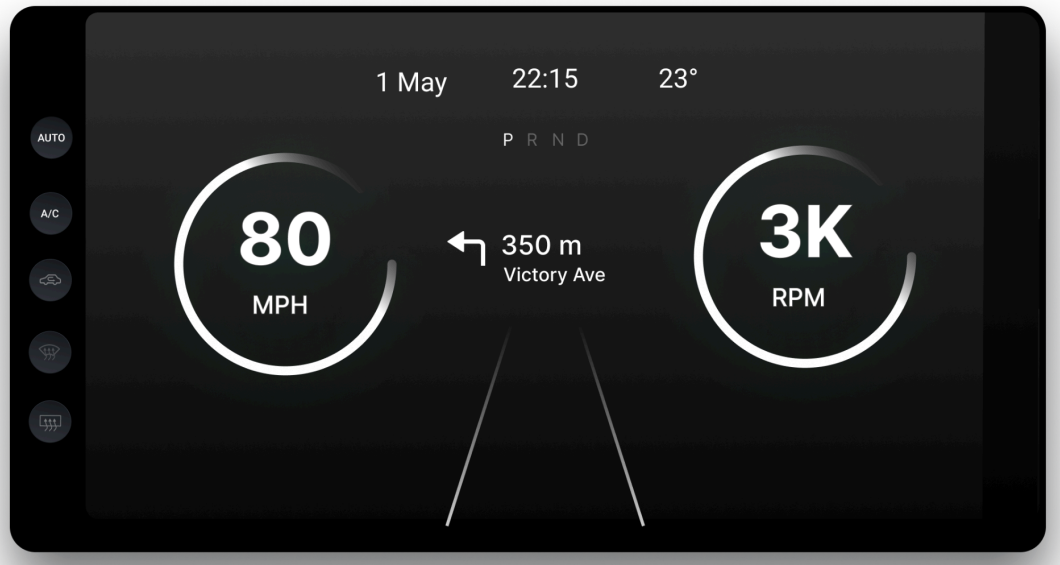
Tools Used for UI/UX: Figma
URL for Over Design and UI:
https://www.figma.com/file/vDQqGLg2lqcapRUhBxGUya/UCD-HW-4?type=design&node-id=0-1&mode=design&t=uCUI1OFElr9kGT7W-0

UX design for passengers in driverless ride-shares:

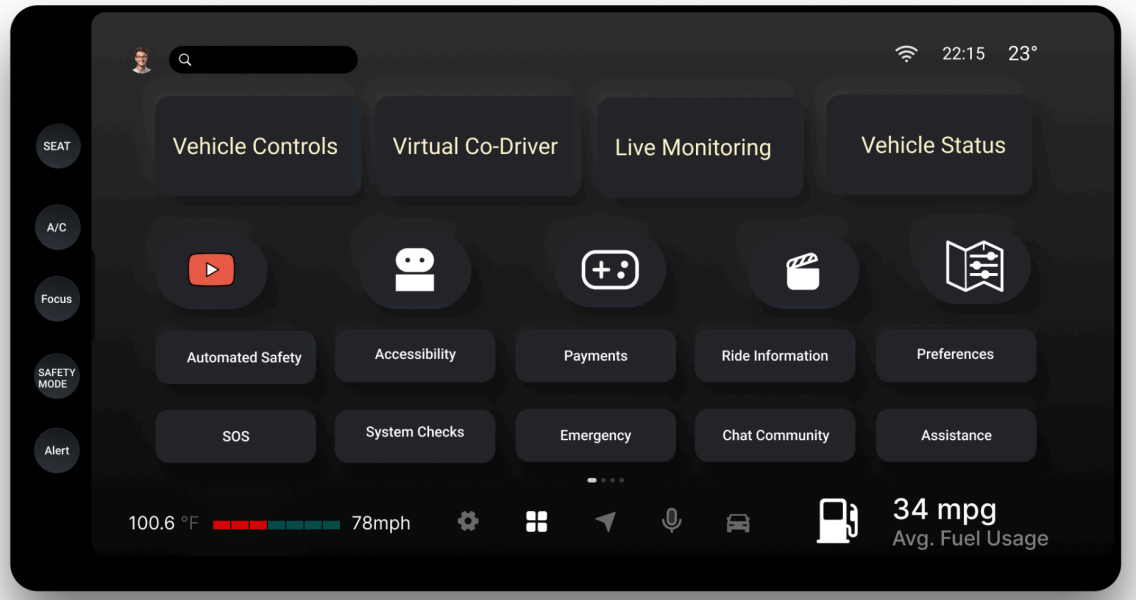
1. Specify passenger requirements in terms of:
   a)Pain points
   b)Objectives
   c)Emotional Impact

   The UX design for passengers in driverless ride-share is illustrated in
   The following UX design is below :

   Digital Dashboard of Driverless Car



UX design for passengers' view :



Now, Addressing the given points based on the illustrated UX designs of the Driverless Dashboard and the Passengers View UI screen :

In the above UX designs, I have addressed the various requirements of passengers as follows :

Pain Points:

1. **Lack of control:** Passengers may experience a loss of agency in the absence of a human driver.

   The solution for Lack of control is Illustrated in the given UX i.e. **Vehicle Controls feature** mitigates the loss of agency, allowing passengers to influence the ride.

2. **Lack of information:** If passengers are not given enough details about their ride and the status of their vehicle, they may become anxious.

   The solution for Lack of Information is Illustrated in the given UX i.e. **Vehicle Status and Ride Information** provide critical data to keep passengers informed, reducing anxiety from information gaps.

3. **Interaction gap:** When there isn't a human driver, there may be a delay in receiving help or assurance from a human.

The solution for the Interaction gap is illustrated in the given UX i.e. **Virtual Co-Driver and Live Monitoring** substitute for a human driver's presence, offering guidance and support.

Objectives:

1. Empowerment: Give passengers the power to customise and direct their in-ride experience.

   An idea of how to empower the passengers through certain features is Illustrated in the given UX i.e. features like **Vehicle Controls and Preferences** allow for customization and control, empowering the passenger.

2. **Information:** Make sure that passengers are kept up to date on the status of their vehicle and their journey.

   An idea of how to empower the passengers through certain features is Illustrated in the given UX i.e. Providing clear, real-time updates about the ride and vehicle conditions helps in maintaining transparency.

3. **Connectivity:** Keep an open line of communication for assistance at all times.

   An idea of how to empower the passengers through certain features is Illustrated in the given UX i.e. Quick access to **Emergency and Assistance** ensures that help is available when needed.

Emotional Impact:

1. **Comfort:** The UX should offer a reassuring presence, making passengers feel secure and relaxed.

   The interface's **intuitive layout and the ability to customize the environment contribute to a comfortable ride.**

2. **Trust:** Features that increase one's faith in the safety and capabilities of the car.

   Continuous updates and the presence of a **Virtual Co-Driver** build trust in the vehicle's systems.

3. **Control:** Provide features that give passengers a sense of control over their surroundings and security.

   Visible Automated Safety and SOS features provide a feeling of security, knowing that safety measures are in place.

2. Examine concerns:

a)Safety

b)Reliability

c)Ethical concerns regarding job displacement

To examine concerns we need to understand that what are the major facts and conditions that can be a major point of concern concerning the Passenger's point if view.

1. **Safety:**

    - Fear of technology failure
    - Uncertainty in emergencies
    - Lack of immediate human assistance

    The UX that I designed provides an optimal **solution and supports** the following concern to a greater extend.

    - Illustrated an easy-to-access SOS button within the UI for emergencies.
    - Display safety feature activations in real-time to reassure passengers.

2. **Reliability:**

    - Dependence on technology for timely arrivals
    - Concerns over vehicle maintenance and up-time
    - Software glitches or navigation errors

    The UX that I designed provides an optimal **solution and supports** the following concern to a greater extent.

    - Give real-time status reports on the functionality of the car.
    - Make sure the backup systems are operational and connected via the user interface.
    - Create an interface that provides quick tools for reporting issues.

3. **Ethical concerns** regarding job displacement:

    - Effect on professional drivers' employment
    - Economic implications for industries that depend on them
    - The change in opportunities and skills for the workforce

    The UX that I designed provides an optimal **solution and supports** the following concern to a greater extent.

    - Include information on retraining and upskilling programs for displaced workers.
    - Provide details on the creation of new job opportunities stemming from the AV industry.
    - Offer insights into the broader positive social impact of autonomous technology.

3. Design a UX for the passenger to feel adequately aware and “in control”

a)Sketch information displays and user inputs in the car
b)Describe the functions of an app for managing trips

The UX design for the passengers to feel adequately aware and in control is illustrated through the following UX design:

The UX design I presented enhances passenger awareness and control in a driverless vehicle through accessible vehicle controls, a virtual assistant for companionship and support, transparent safety feature displays, and an easy-to-use assistance interface. The comprehensive ride information and entertainment options let passengers personalize their experience, while clear indicators of the vehicle's status keep them informed throughout their journey, ensuring comfort and a sense of security.

a)

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Q3)

a).

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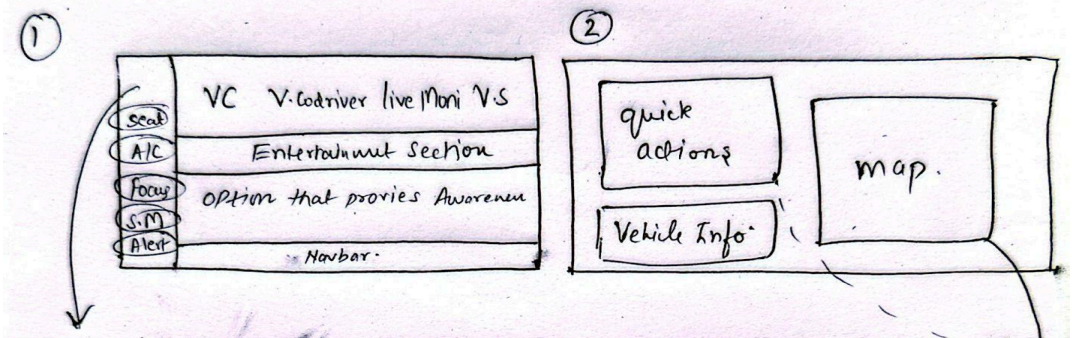
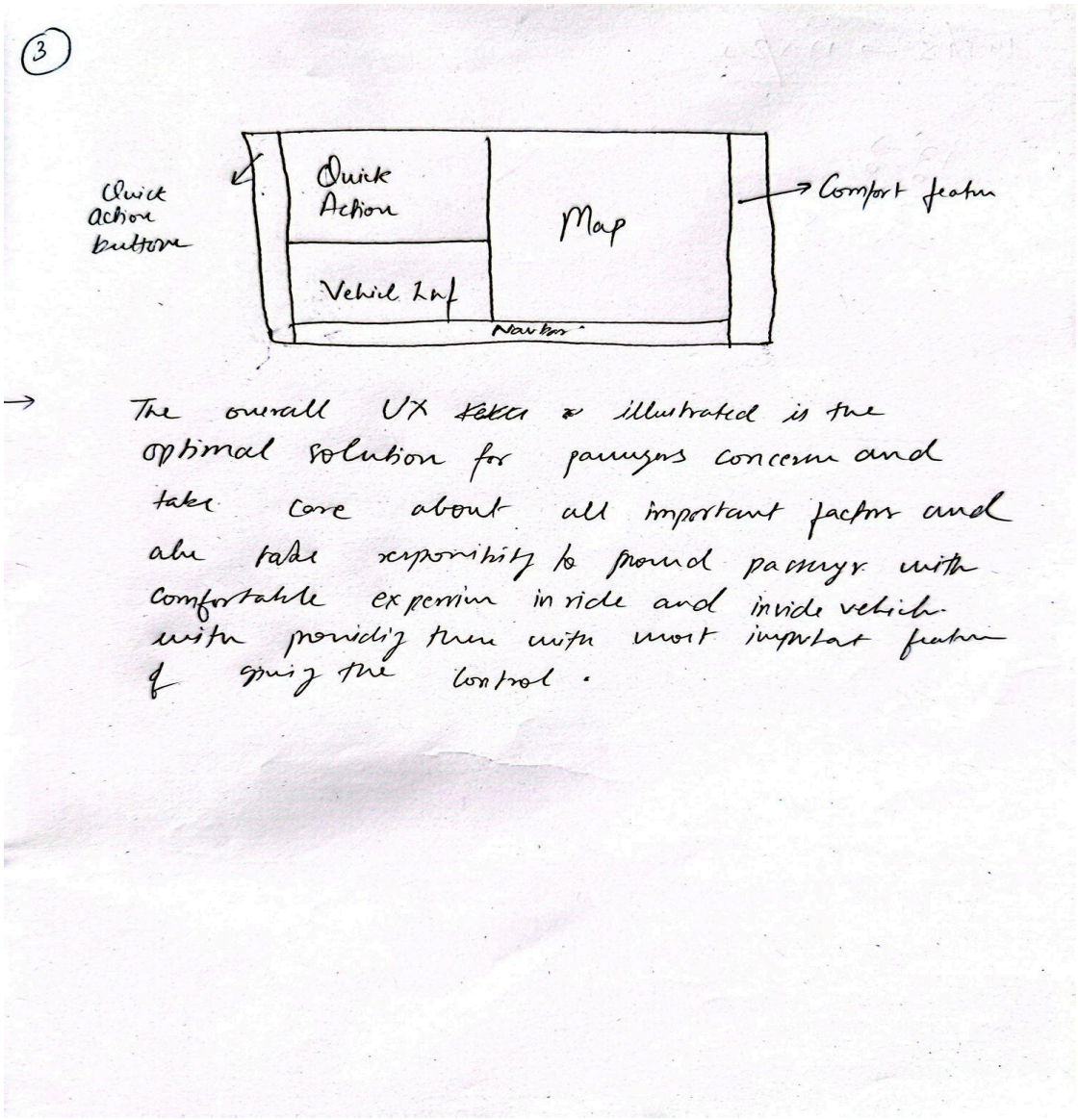


→ This section provide a clear Interface that user will understand real quick in case of emergency. Even if the user is not very clear with the overall Interface they can get a real quick understanding of the buttons and take action as soon as possible

→ This UI illustrate all the important features and functionalities that addresses the user concerns and needs like Maps(C the Info about their location, distances, destination) * Functionalities like quick action provide accessibility to passenger to take control of the vehicle whenever the want and Vehicle Info provide and keep passenger updated about the Vehicle condition -



b) Describe the functions of an app for managing trips

Typically, a trip management app would include several essential features to improve the user's preparation and journey:

To answer this question I am considering the discussion on the major requirements and functionalities of the application

Overview SDLC for application :
Users can input their destination into the app's trip planning feature to quickly receive customised route suggestions. To ensure a smooth trip, it estimates travel times and offers detours to avoid traffic bottlenecks. Users can customise their route to fit in sightseeing or running errands by adding waypoints or stops. The scheduling feature makes it easy to plan

and manage regular commutes by providing the convenience of pre-arranging trips with timely reminders and notifications. Furthermore, the real-time navigation feature of the app provides comprehensive turn-by-turn instructions along with real-time updates on traffic, road closures, construction, and detours to help you modify your route as necessary. Together, these integrated features provide a smooth travel assistant in the form of a streamlined trip planning and navigation experience.

1. **Travel Planning:** Enter your destination to get suggested routes.
   gives alternative routes and travel time estimates.
   waypoint setting option for journeys with several stops.
2. **Planning:** Make travel plans ahead of time by integrating your calendar.
   Configure alerts and reminders for upcoming travel.
   functionality for scheduled recurrent travel.
3. **Real-time navigation** that uses traffic data in real-time for turn-by-turn guidance.
   updates regarding construction and road closures.
   dynamic rerouting to cut down on time and avoid traffic.

Effective Transport Management: The app should make travelling easier by providing options for driving, taking public transportation, and engaging in active travel like biking and walking. It also seamlessly integrates ride-sharing services to provide fare and wait time information. It simplifies reservations and payments for a range of transport options and controls expenses such as parking and tolls. The app arranges travel documents neatly and reminds users when they need to renew them. It also acts as a local guide, providing information on attractions and user reviews to improve the trip experience.

1. **Booking and options**
2. **Transport Options**
3. **Travel Documentation**

Streamlined Journey Experience: The app should enrich travel with comprehensive local information, offering insights into various points of interest and crowd-sourced reviews to inform choices along the way. Personalization is central, with options to save favourites and tailor the navigation experience. Social features enable trip sharing and calendar syncing for coordinated planning. In case of emergencies, users have quick access to assistance and can report issues within the app. Vehicle management tools monitor health and upkeep, while eco-friendly routing suggests greener paths, aligning with sustainability goals.

1. **Local Information**
2. **Customization**
3. **Emergency**
4. **Social Integration**
5. **Vehicle management**
6. **Eco-Friendly Routing**

Improved Sustainability and Safety:
By tapping to report accidents or request roadside assistance, users of the app can instantly access emergency services. Updated maintenance is guaranteed by vehicle management features, which also track vital metrics like battery or fuel levels for peak efficiency. It finds electric vehicle charging stations and suggests routes with lower emissions for environmentally friendly routing.